



CJ-Series

First Edition

Standard Specifications for Composite Steel Joists

**Weight Tables and Bridging Tables
Code of Standard Practice**

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The following documents contained in this catalog have been approved by the American National Standards Institute (ANSI):

Standard Specifications for Composite Steel Joists,
CJ-Series (SJI-CJ-1.0)

Code of Standard Practice for Composite Steel Joists
(SJI-CJ COSP-1.0)



HISTORY

Formed five years after the first open web steel joist was manufactured, the Institute has worked since 1928 to maintain sound engineering practice throughout our industry. As a non-profit organization of active manufacturers, the Institute cooperates with governmental and business agencies to establish steel joist standards. Continuing research and updating are included in its work.

The first joist in 1923 was a Warren truss type, with top and bottom chords of round bars and a web formed from a single continuous bent bar. Various other types were developed, but problems also followed because each manufacturer had their own design and fabrication standards. Architects, engineers and builders found it difficult to compare rated capacities and to use fully the economies of steel joist construction.

Members of the industry began to organize the Institute, and in 1928 the first standard specifications were adopted, followed in 1929 by the first load table. The joists covered by these early standards were later identified as open web steel joists, SJ-Series.

Other landmark adoptions by the Institute include the following:

1953

Introduction of Longspan Steel Joists, L-Series. Specifications and a standard load table, covering spans through 96 feet and depths through 48 inches, were jointly approved with the American Institute of Steel Construction.

1959

Introduction of the S-Series Joists, which replaced the SJ-Series Joists. The allowable tensile stress was increased from 18,000 to 20,000 psi, joist depths were expanded through 24 inches, and spans increased through 48 feet.

1961

(a) Introduction of the J-Series Joists, which replaced the S-Series Joists. The allowable tensile stress was increased from 20,000 psi to 22,000 psi, based on the use of steel with a minimum yield strength of 36,000 psi.

(b) Introduction of the LA-Series Joists, which replaced the L-Series Joists. The LA-Series Joists were designed to a maximum tensile stress of either 20,000 psi or 22,000 psi, depending on the yield strength of the steel.

(c) Introduction of the H-Series Joists, whose design was based on steel with a minimum yield strength of 50,000 psi, and an allowable tensile stress of 30,000 psi.

1962

Introduction of the LH-Series Joists, utilizing steel whose minimum yield strength was between 36,000 psi and 50,000 psi and an allowable tensile strength of 22,000 psi to 30,000 psi.

1965

Development of a single specification for both the J- and H-Series Joists by the Steel Joist Institute and the American Institute of Steel Construction.

1966

Development and introduction by the SJI and AISC of the LJ-Series Joists, which replaced the LA-Series Joists. Also, the development of a single specification for both the LJ- and the LH-Series Joists, with the use of 36,000 psi minimum yield strength steel for the LJ-Series, and 36,000 psi to 50,000 psi minimum yield strength steel for the LH-Series.

1970

Introduction of the DLJ- and DLH-Series Joists to include depths through 72 inches and spans through 144 feet.

1971

Elimination of chord section number 2 and the addition of joist designations 8J3 and 8H3 to the load tables.

1972

(a) Adoption by the SJI and AISC of a single specification for the LJ-, LH-, DLJ-, and DLH-Series Joists.

(b) Adoption by the SJI and AISC of the expanded specifications and load tables for Open Web Steel Joists with increased depths through 30 inches, and spans through 60 feet, plus adding chord section numbers 9, 10 and 11.

1978

(a) Elimination of the J-, LJ-, and DLJ-Series Joists because of the widespread acceptance of high strength steel joists.

(b) Introduction of Joist Girders, complete with specifications and weight tables, in response to the growing need for longer span primary structural members with highly efficient use of steel.

1986

Introduction of the K-Series Joists, which replaced the H-Series Joists. The reasons for developing the K-Series Joists were: (1) to achieve greater economies by utilizing the Load Span design concept; (2) to meet the demand for roofs with lighter loads at depths from 18 inches to 30 inches; (3) to offer joists whose load carrying capacities at frequently used spans are those most commonly required; (4) to eliminate the very heavy joists in medium depths for which there was little, if any, demand.

1994

(a) Introduction of the KCS Joists as a part of the K-Series Specification in response to the need for a joist with a constant moment and constant shear. The KCS Joist is an economical alternative joist that may be specified for special loading situations.



(b) Addition of metric nomenclature for all Joist and Joist Girder Series in compliance with government and industry standards.

(c) Addition of revised stability criteria.

2002

(a) Introduction of Joist Substitutes, K-Series.

(b) K-Series, LH- and DLH- Series and Joist Girder Specifications approved as American National Standards (ANSI).

(c) Revisions to K-Series Section 6, LH- and DLH-Series Section 105, and Recommended Code of Standard Practice for conformance to OSHA Steel Erection Standard § 1926.757.

(d) Addition of Standing Seam Roof requirements to the K-Series Specification Section 5.8(g) and the LH- and DLH-Series Specification Section 104.9(g).

(e) Addition of Definition for Parallel Chord Sloped Joists – K-Series Section 5.13 and LH-Series Section 104.14.

2005

(a) Major revision of K-Series, LH- and DLH-Series and Joist Girder Specifications to allow the design of joists and Joist Girders to be either in accordance with Load and Resistance Factor design (LRFD) or Allowable Strength Design (ASD).

(b) Major revision of K-Series and LH- and DLH-Series Load Tables to be in both LRFD and ASD.

(c) Expansion of Joist Girder Weight Tables to spans through 120 feet.

(d) Code of Standard Practice was renamed.

2007

Introduction of the CJ-Series Composite Joists, complete with specifications, weight tables and bridging tables, in response to the growing need to have a standard design specification for all member companies producing composite steel joists.

POLICY

The manufacturers of any standard SJI products shall be required to submit design data for verification of compliance with Steel Joist Institute Specifications, undergo physical design verification tests (on K-Series only), and undergo an initial plant inspection and subsequent biennial in-plant inspections for all products for which they wish to be certified.

SJI Member companies complying with the above conditions shall be licensed to publish the appropriate copyrighted SJI Specifications, Load Tables, Weight Tables and Bridging Tables.

MEMBERSHIP

Open to manufacturers who produce, on a continuing basis, joists of the **K-**, **LH-**, **DLH-**, **CJ-**Series and/or Joist Girders, conforming to the Institute's Specifications and Load Tables or Weight Tables and/or Bridging Tables as appropriate. Membership requirements differ as described below.

APPLICANTS BASED ON K-SERIES JOISTS

The Institute's Consulting Engineer checks to see that designs conform to the Institute's Specifications and Load Tables. This comprises an examination of: (1) Complete engineering design details and calculations of all **K-Series** Joists, bridging and accessories for which standards have been adopted; (2) Data obtained from physical tests of a limited number of joists, conducted by an independent laboratory, to verify conclusions from analysis of the applicant's engineering design details and calculations.

An initial plant inspection and subsequent biennial inspections are required to ensure that the applicant/member possesses the facilities, equipment and personnel required to properly fabricate the **K-Series** Joists.

APPLICANTS BASED ON LH- OR DLH-SERIES OR CJ-SERIES JOISTS OR JOIST GIRDERS

Designs are checked by the Consulting Engineer. Biennial in-plant inspections (but no physical tests) are required.

RESPONSIBILITY FOR PRODUCT QUALITY

The plant inspections are not a guarantee of the quality of any specific joists or Joist Girders; this responsibility lies fully and solely with the individual manufacturer.

SERVICES TO NONMEMBERS

The Institute's facilities for checking the design of **K-**, **LH-**, **DLH-**, **CJ-**Series Joists or Joist Girders are available on a cost basis.

The Steel Joist Institute does not check joist designs for specific construction projects. Fabrication to Institute Specifications is the responsibility of the individual manufacturer.



STEEL JOIST INSTITUTE PUBLICATIONS

Visit the SJI Web Site at <www.steeljoist.org> for a complete listing of SJI publications and a copy of the standard order form. Also, be sure to check the website for upcoming Education Seminars in your area.

- A. 42nd Edition Catalog of **Standard Specifications, Load Tables and Weight Tables** for Steel Joists and Joist Girders (2005)
- B. The following **TECHNICAL DIGESTS** are also available from the Institute:
 - No. 3 Structural Design of Steel Joist Roofs to Resist Ponding Loads (2007)
 - No. 5 Vibration of Steel Joist - Concrete Slab Floors (1988)
 - No. 6 Structural Design of Steel Joist Roofs to Resist Uplift Loads (2007)
 - No. 8 Welding of Open Web Steel Joists (1983)
 - No. 9 Handling and Erection of Steel Joists and Joist Girders (2006)
 - No. 11 Design of Lateral Load Resisting Frames using Steel Joists and Joist Girders (2007)
 - No. 12 Evaluation and Modification of Open Web Steel Joists and Joist Girders (2007)
- C. 75-Year Steel Joist Manual (1928-2003)
- D. Computer Vibration Program
- E. SJI Video No. 1 – Introduction to Steel Joists
- F. SJI Video No. 2 – The Safe Erection of Steel Joists and

INTRODUCTION TO CJ-SERIES

Joist Girders (2001)

Open Web Composite Steel Joists, **CJ-Series** are light weight, shop-manufactured steel trusses. Composite Steel Joists are used to directly support floor or roof slabs or decks between walls, beams, and main structural members.

The **CJ-Series** joists are capable of supporting larger floor or roof loadings due to the attachment of the concrete slab to the top chord of the composite joist. Shear connection between the concrete slab and steel joist is typically made by the welding of shear studs ranging in diameter from 3/8 inch (10 mm) to 3/4 inch (19 mm) thru the steel deck to the underlying **CJ-Series** Composite Steel Joist.

The composite joist designation is determined by its nominal depth, the letters “**CJ**”, followed by the total uniform composite load, uniform composite live load, and finally the uni-

form composite dead load.

The depth of the bearing seat at the ends of under-slung **CJ-Series** Composite Steel Joists can vary from 2.5 inches (64 mm) to 7.5 inches (191 mm). Suggested bearing depths for a given composite joist are included in the **DESIGN GUIDE WEIGHT TABLES FOR COMPOSITE STEEL JOISTS, CJ-SERIES** that are included in this catalog.

All Composite Steel Joists are fabricated with special camber. **CJ-Series** joists act as pinned-pinned members when fabricated with the typical under-slung bearing seats. Minimum camber is typically equal to the anticipated deflection resulting from the dead load of the joist, metal deck, and concrete slab.

ADVANTAGES ASSOCIATED WITH UTILIZING CJ-SERIES COMPOSITE STEEL JOISTS

CJ-Series joists provide a number of advantages including those listed below:

1. Reductions in overall floor to floor height of the structure.
2. Mechanical ducts and piping can be run through the open webs of the **CJ-Series** joists instead of running beneath the joist bottom chord. Specially designed panel configurations and web openings can be provided.
3. Maximum span-to-depth ratios of 30 permit the use of shallower joists for any given span.
4. Efficient composite design makes it possible to span greater distances. This results in larger column spacing, thus increasing the rental value of the floor space.
5. Composite Steel Joists are more efficient allowing a reduction in the joist weight for any given joist depth. Lighter weight joists translate into potentially lighter weight columns and reduced foundation costs.
6. Live load deflections are significantly reduced. With the overlying concrete slab locked to the steel joist, the resulting composite action provides a stiffer floor system.
7. Efficient erection of the **CJ-Series** joist system reduces construction time and permits early occu-

STANDARD TYPES

pancy of the building. Wider joist spacing reduces the number of joists to be erected and fireproofed.

Composite Steel Joists can be furnished with either under-slung or square ends, with parallel chords.



ADDED MEMBERS

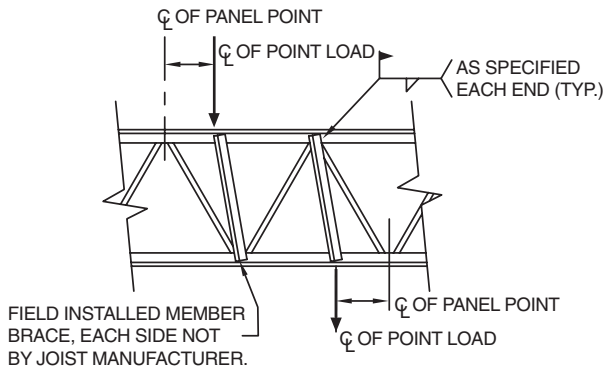


FIG. 1 - TYPICAL JOIST REINFORCEMENT AT CONCENTRATED LOADS

Standard joists, including **CJ-Series**, are not designed for localized bending from point loads. Concentrated loads must be applied at joist panel points or field strut members must be utilized as shown.

Joist manufacturers can provide a specially designed joist with the capability to take point loads without the added members if this requirement and the exact location and magnitude of the loads are clearly shown on the contract drawings. Also, the manufacturer can consider the worst case for both the shear and bending moment for a traveling load with no specific location. When a traveling load is specified, the contract drawings should indicate whether the load is to be applied at the top or bottom chord, and at any panel point, or at any point with the local bending effects considered.

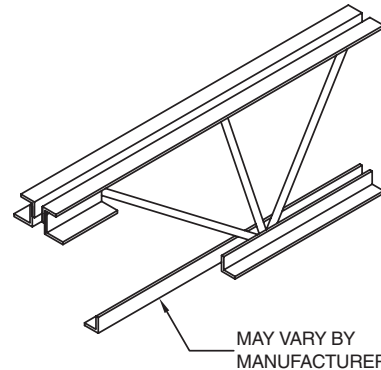


FIG. 2 - CEILING EXTENSION

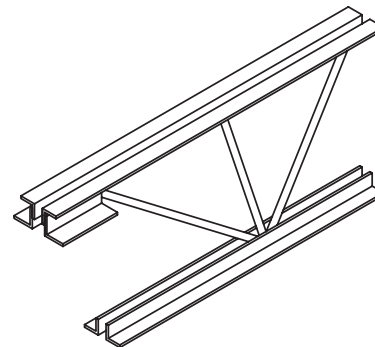


FIG. 3 - BOTTOM CHORD EXTENSION

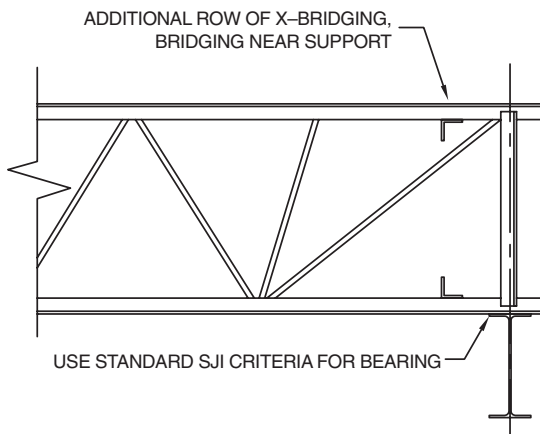


FIG. 4 - SQUARE ENDED, BOTTOM BEARING

Whenever joists are bottom chord bearing, (diagonal bridging) should be installed from joist to joist at or near the bearing location to provide additional lateral erection stability.

Note: Joist configuration and member sizes may vary.

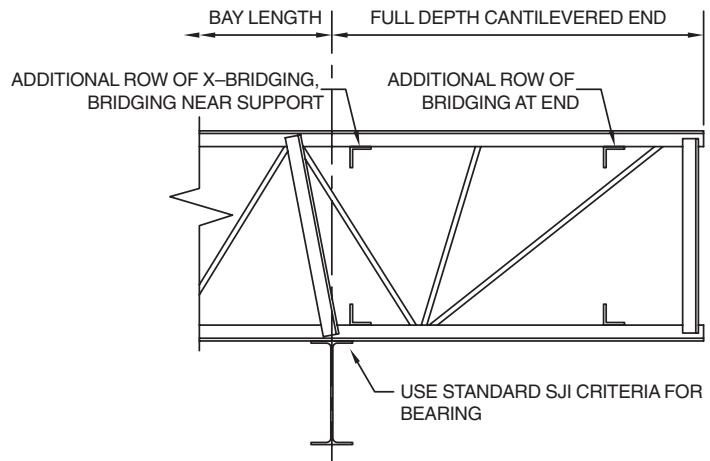


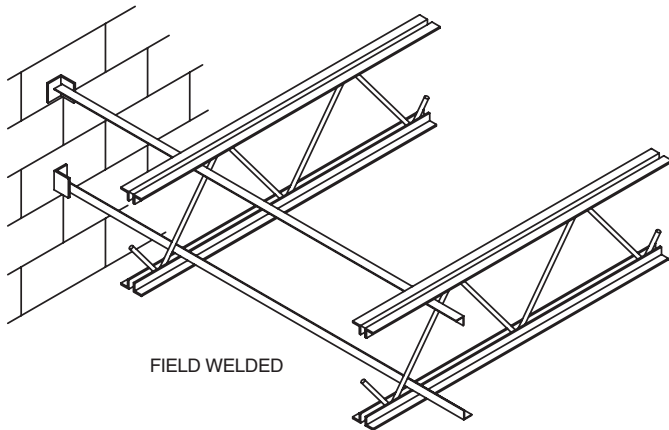
FIG. 5 - CANTILEVERED, BOTTOM BEARING, SQUARE END

The weight of walls, signage, fascia, etc. supported at the end of a cantilever square end must be shown on the contract drawings to be properly considered in the joist design.

Note: Joist configuration and member sizes may vary.



CJ-SERIES BRIDGING DETAILS



**FIG. 6 - HORIZONTAL BRIDGING
SEE SJI SPECIFICATIONS**

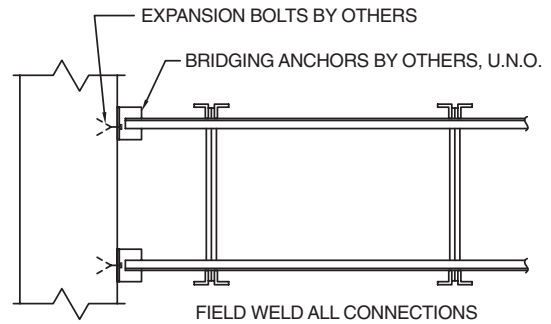
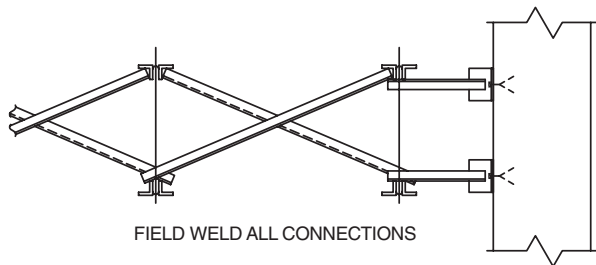


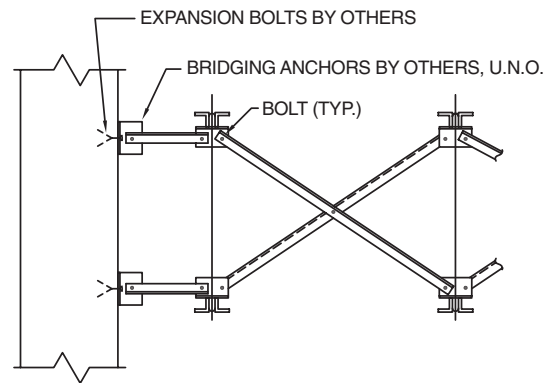
FIG. 6 - HORIZONTAL BRIDGING ANCHORAGE

NOTE: DO NOT WELD BRIDGING TO JOIST WEB MEMBERS. DO NOT HANG ANY MECHANICAL, ELECTRICAL, ETC. FROM BRIDGING.



**FIG. 7 - WELDED CROSS BRIDGING
SEE SJI SPECIFICATIONS**

HORIZONTAL BRIDGING SHALL BE USED IN SPACE ADJACENT TO THE WALL TO ALLOW FOR PROPER DEFLECTION OF THE JOIST NEAREST THE WALL.



**FIG. 8 - BOLTED CROSS BRIDGING
SEE SJI SPECIFICATIONS**

(a) HORIZONTAL BRIDGING UNITS SHALL BE USED IN THE SPACE ADJACENT TO THE WALL TO ALLOW FOR PROPER DEFLECTION OF THE JOIST NEAREST THE WALL.

(b) CLIP CONFIGURATION MAY VARY FROM THAT SHOWN.

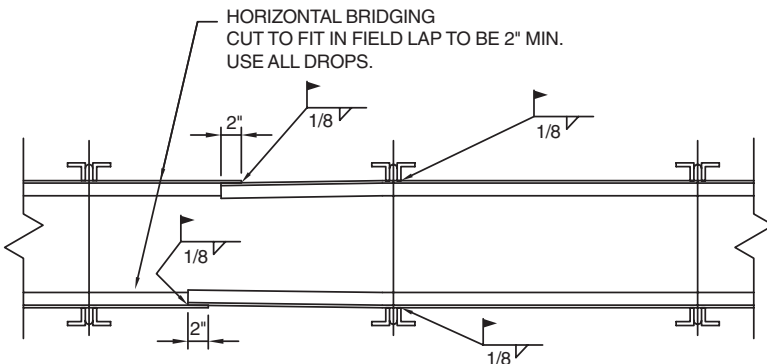


FIG. 9 - HORIZONTAL BRIDGING LAP JOINTS AND ATTACHMENT TO JOISTS



ACCESSORIES AND DETAILS

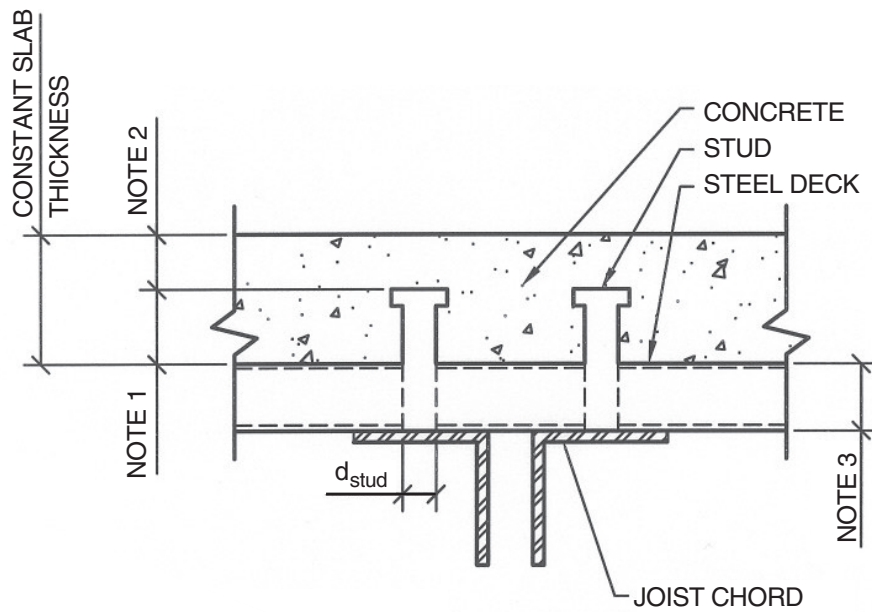


FIG. 10 - MINIMUM SHEER STUD HEIGHT, MINIMUM CONCRETE COVER AND MAXIMUM DECK HEIGHT

NOTES:

- 1) THE TOP OF THE SHEER STUD HEAD SHALL BE A MINIMUM OF 1—1/2 in. (38 mm) ABOVE THE TOP OF THE DECK RIB.
- 2) THE TOP COVERING OF CONCRETE OVER THE HEAD OF THE STUD SHALL BE A MINIMUM OF 1/2 in. (13 mm).
- 3) MAXIMUM DECK HEIGHT = 3 in. (76 mm);
MINIMUM DECK HEIGHT = 1 in. (25 mm).

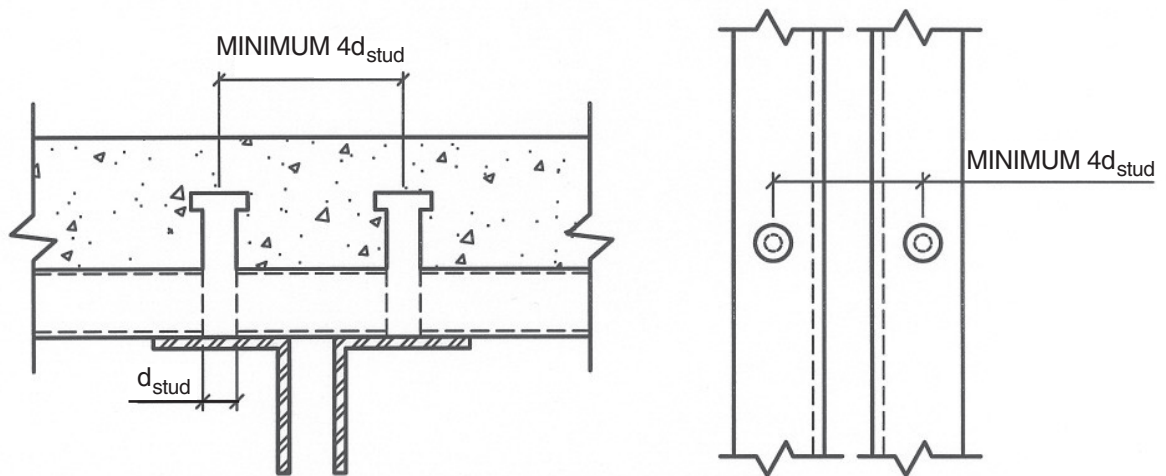


FIG. 11 - MINIMUM TRANSVERSE SHEER STUD SPACING

THE STUDS SHALL BE TRANSVERSELY SPACED A MINIMUM OF 4 STUD DIAMETERS WHEN SHEER STUD PAIRS ARE PLACED WITHIN ONE DECK RIB.



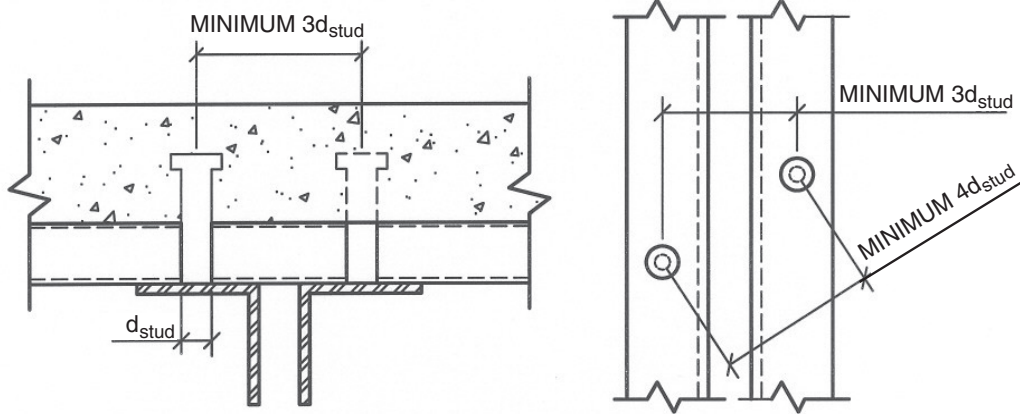


FIG. 12 - MINIMUM TRANSVERSE SHEAR STUD SPACING

THE STUDS SHALL BE TRANSVERSELY SPACED A MINIMUM OF 3 STUD DIAMETERS WHEN SHEAR STUDS ARE STAGGERED WITHIN ONE DECK RIB.

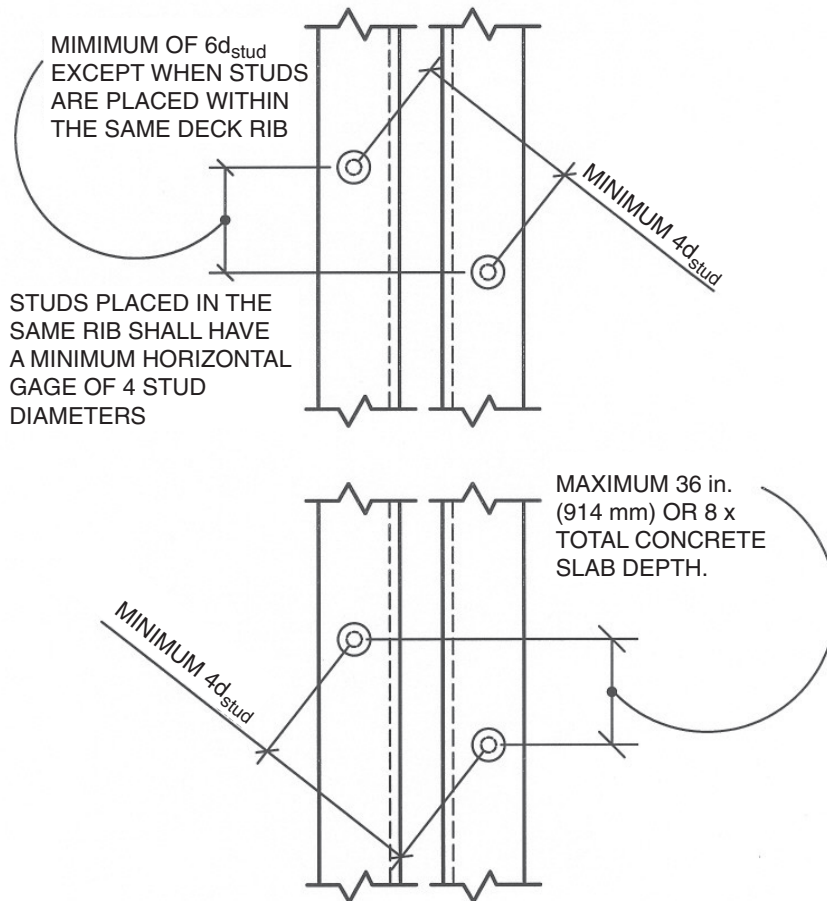


FIG. 13 - MINIMUM AND MAXIMUM LONGITUDE SHEAR STUD SPACING

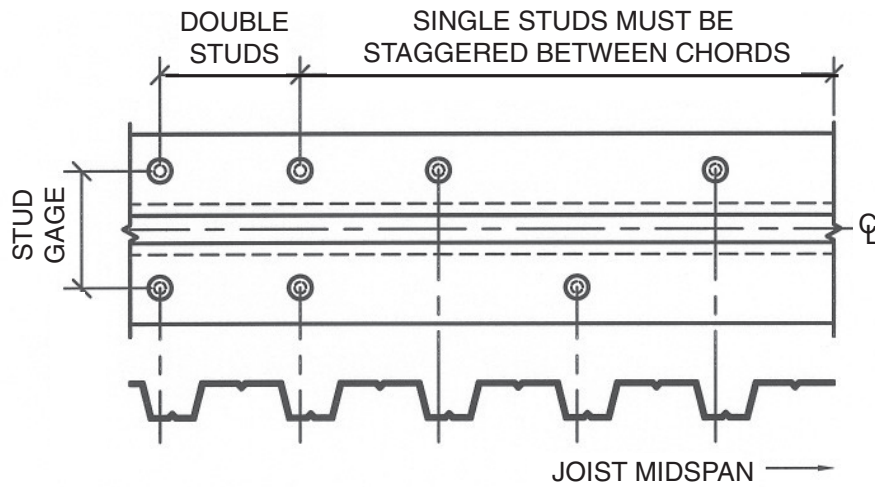


FIG. 14 - SINGLE AND DOUBLE SHEAR STUD POSITIONS ON TOP CHORD

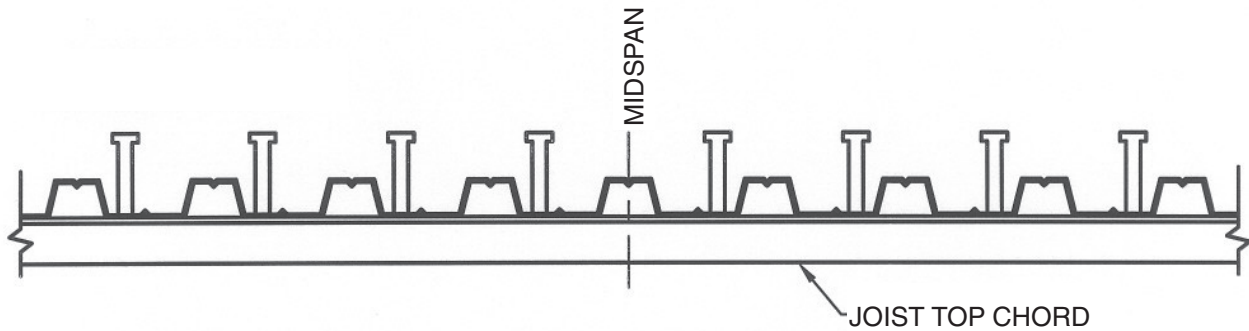


FIG. 15 - SHEAR STUD LAYOUT IN "STRONG" POSITION

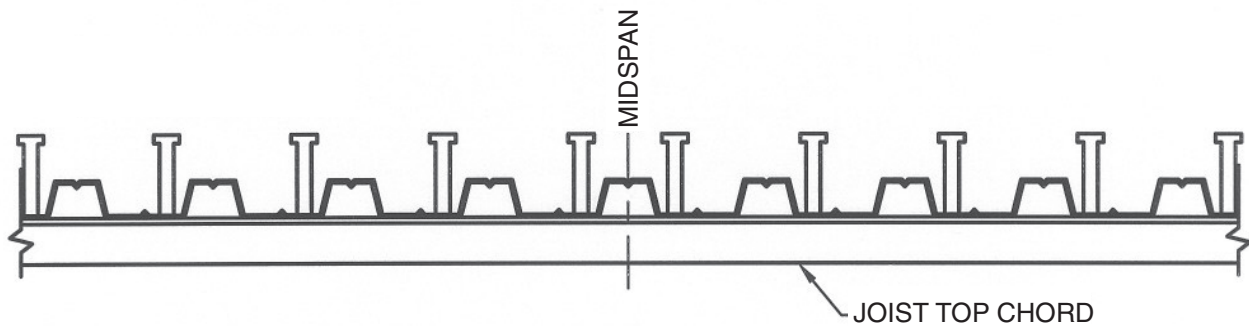


FIG. 16 - SHEAR STUD LAYOUT IN "WEAK" POSITION



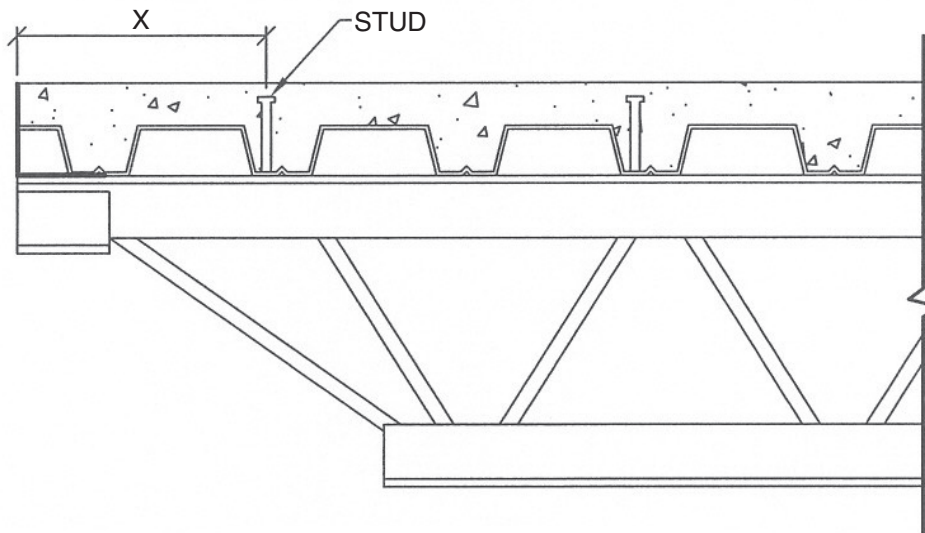


FIG. 17 - MINIMUM LONGITUDINAL EDGE DISTANCE FOR END SHEAR STUDS

NOTE: $X \geq \text{DECK HEIGHT} + 4d_{\text{stud}}$

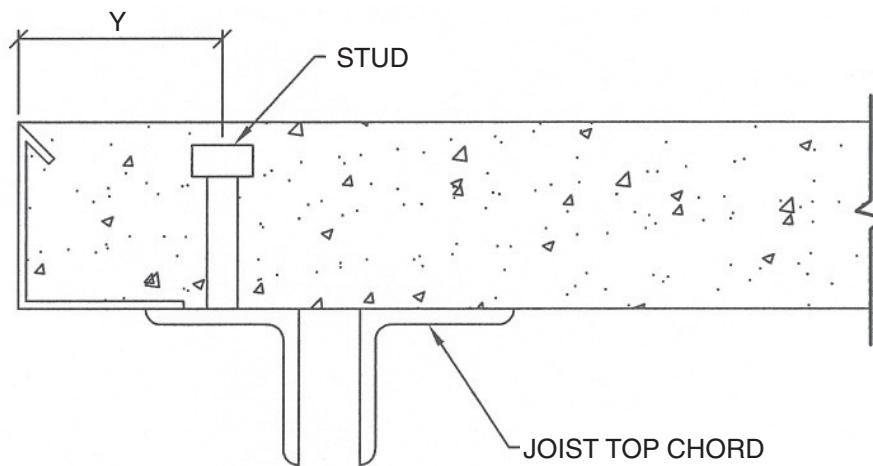


FIG. 18 - MINIMUM TRANSVERSE EDGE DISTANCE FOR END SHEAR STUDS

NOTE: $Y \geq 6 \text{ INCHES}$



ACCESSORIES / DETAILS

APPROXIMATE DUCT OPENING SIZES

Joist Depth		Round		Square		Rectangle	
10	INCHES	3	INCHES	2	X 2	2	X 3
12	INCHES	3	INCHES	2	X 2	2	X 4
14	INCHES	3	INCHES	2	X 2	2	X 3
16	INCHES	6	INCHES	4	X 4	4	X 6
18	INCHES	7	INCHES	6	X 6	4	X 9
20	INCHES	8	INCHES	7	X 7	5	X 11
22	INCHES	10	INCHES	8	X 8	6	X 13
24	INCHES	12	INCHES	9	X 9	9	X 11
26	INCHES	12	INCHES	10	X 10	7	X 16
28	INCHES	14	INCHES	11	X 11	10	X 13
30	INCHES	15	INCHES	12	X 12	10	X 15
32	INCHES	16	INCHES	13	X 13	11	X 16
34	INCHES	17	INCHES	14	X 14	11	X 19
36	INCHES	19	INCHES	15	X 15	13	X 19
38	INCHES	20	INCHES	16	X 16	14	X 20
40	INCHES	22	INCHES	17	X 17	14	X 23
42	INCHES	23	INCHES	18	X 18	16	X 23
44	INCHES	25	INCHES	20	X 20	16	X 26
46	INCHES	26	INCHES	21	X 21	18	X 26
48	INCHES	28	INCHES	22	X 22	18	X 29
50	INCHES	29	INCHES	23	X 23	20	X 29
52	INCHES	30	INCHES	24	X 24	21	X 29
54	INCHES	31	INCHES	25	X 25	21	X 32
56	INCHES	33	INCHES	26	X 26	23	X 32
58	INCHES	34	INCHES	27	X 27	23	X 35
60	INCHES	36	INCHES	29	X 29	25	X 35
62	INCHES	37	INCHES	30	X 30	24	X 39
64	INCHES	39	INCHES	31	X 31	26	X 39
66	INCHES	40	INCHES	32	X 32	26	X 42
68	INCHES	42	INCHES	33	X 33	28	X 42
70	INCHES	43	INCHES	34	X 34	28	X 45
72	INCHES	45	INCHES	36	X 36	30	X 45
74	INCHES	46	INCHES	37	X 37	30	X 48
76	INCHES	48	INCHES	38	X 38	32	X 48
78	INCHES	49	INCHES	39	X 39	32	X 51
80	INCHES	51	INCHES	40	X 40	34	X 51
82	INCHES	52	INCHES	42	X 42	34	X 54
84	INCHES	54	INCHES	43	X 43	36	X 54
86	INCHES	55	INCHES	44	X 44	36	X 57
88	INCHES	57	INCHES	45	X 45	38	X 57
90	INCHES	58	INCHES	46	X 46	38	x 60
92	INCHES	60	INCHES	48	X 48	40	x 60
94	INCHES	61	INCHES	49	X 49	40	x 63
96	INCHES	63	INCHES	50	X 50	42	x 63

SPECIFYING PROFESSIONAL MUST INDICATE ON STRUCTURAL DRAWINGS SIZE AND LOCATION OF ANY DUCT THAT IS TO PASS THRU JOIST. THIS DOES NOT INCLUDE ANY FIRE PROOFING ATTACHED TO JOIST. THE APPROXIMATE DUCT OPENING SIZES SHOWN IN THE TABLE ARE TO BE UTILIZED ONLY FOR PRELIMINARY ESTIMATING PURPOSES. CONTACT JOIST MANUFACTURER DURING FINAL DESIGN PHASE FOR DUCT SIZES SPECIFIC FOR THE JOIST IN THE PROJECT.



NOTES:



STANDARD SPECIFICATIONS FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Adopted by the Steel Joist Institute May 10, 2006
- Effective May 10, 2006

SECTION 100. SCOPE

This specification covers the Load and Resistance Factor Design (LRFD), manufacture, and use of simply-supported Open Web Composite Steel Joists, **CJ-Series**.

SECTION 101. DEFINITION

The term "Composite Steel Joists", as used herein, refers to open web, parallel chord, load-carrying members suitable for direct support of one-way floor or roof systems. Members may consist of hot-rolled or cold-formed steel, including cold-formed steel whose yield strength* has been attained by cold working. Shear connection between the joist top chord and overlying concrete slab allows the steel joist and slab to act together as an integral unit after the concrete has adequately cured.

The design of **CJ-Series** joist chord sections shall be based on a yield strength of 50 ksi (345 MPa). Web sections shall be based on a yield strength of at least 36 ksi (250 MPa), but not greater than 50 ksi (345 MPa). Steel used for **CJ-Series** joist chord or web sections shall have a minimum yield strength determined in accordance with one of the procedures specified in Section 102.1(b), which is equal to the yield strength assumed in the design.

Composite Steel Joists shall be designed in accordance with these specifications to support the loads defined by the specifying professional.

* The term "Yield Strength" as used herein shall designate the yield level of a material as determined by the applicable method outlined in ASTM A 370, *Standard Test Methods and Definitions for Mechanical Testing of Steel Products*, paragraph 13.1 "Yield Point", and in paragraph 13.2 "Yield Strength", or as specified in Section 102.1(b) of this Specification.

Standard Specifications for Composite Steel Joists,
CJ-Series,

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SECTION 102. MATERIALS

102.1 STEEL CHORD and WEB MEMBERS

(a) Specifications

The steel used in the manufacture of chord and web sections shall conform to one of the following ASTM Specifications of latest adoption:

- Carbon Structural Steel, ASTM A36/A36M.
- High-Strength, Low-Alloy Structural Steel, ASTM A242/A242M.
- High-Strength Carbon-Manganese Steel of Structural Quality ASTM A529/A529M, Grade 50.
- High-Strength Low-Alloy Columbium-Vanadium Structural Steel, ASTM A572/A572M Grade 42 or 50.
- High-Strength Low-Alloy Structural Steel with 50 ksi (345 MPa) Minimum Yield Point to 4 inches (100 millimeters) thick, ASTM A588/A588M.
- Steel, Sheet and Strip, High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, with Improved Atmospheric Corrosion Resistance, ASTM A606.
- Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability, ASTM A1008/A1008M.
- Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability, ASTM A1011/A1011M.

or shall be of suitable quality ordered or produced to other than the listed specifications, provided that such material in the state used for final assembly and manufacture is weldable and is proved by tests performed by the producer or manufacturer to have the properties specified in Section 102.1(b).

(b) Mechanical Properties

The yield strength used as a basis for the design stresses prescribed in Section 103 shall be at least 36 ksi (250 MPa), but not greater than 50 ksi (345 MPa). Evidence that the steel furnished meets or exceeds the design yield strength shall, if requested, be provided in the form of an affidavit, or by witnessed or certified test reports.

For material used without consideration of increase in yield strength resulting from cold forming, the specimens shall be taken from as-rolled material. In the case of material with mechanical properties that conform to the requirements of one of the listed specifications, the test specimens and procedures shall conform to those of



such specifications and to ASTM A370.

In the case of material with mechanical properties that do not conform to the requirements of one of the listed specifications, the test specimens and procedures shall conform to the applicable requirements of ASTM A370, and the specimens shall exhibit a yield strength equal to or exceeding the design yield strength and an elongation of not less than (a) 20 percent in 2 inches (51 millimeters) for sheet and strip, or (b) 18 percent in 8 inches (203 millimeters) for plates, shapes and bars with adjustments for thickness for plates, shapes and bars as prescribed in ASTM A36/A36M, A242/A242M, A529/A529M, A572/A572M, or A588/A588M, whichever specification is applicable on the basis of design yield strength.

The number of tests shall be as prescribed in ASTM A6/A6M for plates, shapes, and bars; and ASTM A606, A1008/A1008M and A1011/A1011M for sheet and strip.

If as-formed strength is utilized, the test reports shall show the results of tests performed on full section specimens in accordance with the provisions of the *AISI North American Specification for the Design of Cold-Formed Steel Structural Members*. They shall also indicate compliance with these provisions and with the following additional requirements:

- a) The yield strength calculated from the test data shall equal or exceed the design yield strength.
- b) Where tension tests are made for acceptance and control purposes, the tensile strength shall be at least 6 percent greater than the yield strength of the section.
- c) Where compression tests are used for acceptance and control purposes, the specimen shall withstand a gross shortening of 2 percent of its original length without cracking. The length of the specimen shall be not greater than 20 times its least radius of gyration.
- d) If any test specimen fails to pass the requirements of subparagraphs (a), (b), or (c) above, as applicable, two retests shall be made of specimens from the same lot. Failure of one of the retest specimens to meet such requirements shall be the cause for rejection of the lot represented by the specimens.

102.2 STEEL SHEAR STUDS

Headed steel shear studs shall conform to the requirements of AWS D1.1 *Structural Welding Code-Steel*, Sections 7 and C7, *Stud Welding* with a minimum tensile strength of 65 ksi (450 MPa). Manufacturer's certification shall constitute sufficient evidence of conformity with AWS D1.1.

102.3 REINFORCING STEEL

The specified minimum yield stress of reinforcing bars utilized in the concrete slab shall not exceed 75 ksi (525 MPa). Additional concrete and steel reinforcing bar material limitations are specified in the American Concrete Institute,

ACI-318, *Building Code Requirements for Structural Concrete and Commentary*.

102.4 CONCRETE

For the determination of the available strength, concrete shall have a compressive strength, f'_c , of not less than 3 ksi (21 MPa) nor more than 10 ksi (70 MPa) for normal weight concrete and not less than 3 ksi (21 MPa) nor more than 6 ksi (42 MPa) for lightweight concrete.

102.5 WELDING ELECTRODES

The following electrodes shall be used for arc welding:

- a) For connected members both having a specified yield strength greater than 36 ksi (250 MPa).
 - AWS A5.1: E70XX
 - AWS A5.5: E70XX-X
 - AWS A5.17: F7XX-EXXX, F7XX-ECXXX flux electrode combination
 - AWS A5.18: ER70S-X, E70C-XC, E70C-XM
 - AWS A5.20: E7XT-X, E7XT-XM
 - AWS A5.23: F7XX-EXXX-XX, F7XX-ECXXX-XX
 - AWS A5.28: ER70S-XXX, E70C-XXX
 - AWS A5.29: E7XTX-X, E7XTX-XM
- b) For connected members both having a specified minimum yield strength of 36 ksi (250 MPa) or one having a specified minimum yield strength of 36 ksi (250 MPa), and the other having a specified minimum yield strength greater than 36 ksi (250 MPa).
 - AWS A5.1: E60XX
 - AWS A5.17: F6XX-EXXX, F6XX-ECXXX flux electrode combination
 - AWS A5.20: E6XT-X, E6XT-XM
 - AWS A5.29: E6XTX-X, E6XTX-XM

or any of those listed in Section 102.5(a).

Other welding methods, providing equivalent strength as demonstrated by tests, shall be permitted.

102.6 PAINT

Standard shop practice is to furnish composite joists unpainted. Paint may potentially hinder the installation of welded shear studs to the joist top chord.

SECTION 103.
**DESIGN AND
MANUFACTURE**

103.1 METHOD

The design of Composite Steel Joists shall be based on achieving the nominal flexural strength of the composite member and is limited to the design of one-way, composite joist systems that meet the following criteria:

CJ-SERIES SPECIFICATIONS



- a) Members are simply-supported and are not considered part of the lateral load-resisting system.
- b) Horizontal shear connection is achieved by direct bearing of embedments within the concrete slab.

Where any applicable design feature is not specifically covered herein, the design shall be in accordance with the following specifications:

- For steel that consists of hot-rolled shapes, bars, or plates, use the American Institute of Steel Construction, *Specification for Structural Steel Buildings*.
- For members that are cold-formed from sheet or strip steel, use the American Iron and Steel Institute, *North American Specification for the Design of Cold-Formed Steel Structural Members*.

103.2 LOAD COMBINATIONS

When load combinations are not specified to the joist manufacturer, the required stress shall be computed for the factored loads based on the factors and load combinations as follows:

(a) Noncomposite

$$1.4D_c \quad (103.2-1)$$

$$1.2D_c + 1.6L_c \quad (103.2-2)$$

Where:

D_c = construction dead load due to weight of the joist, the decking, and the fresh concrete, lb/ft.² (kPa)

L_c = construction live load due to the work crews and the construction equipment, lb/ft.² (kPa)

(b) Composite

$$1.4D \quad (103.2-3)$$

$$1.2D + 1.6(L, \text{ or } L_r, \text{ or } S, \text{ or } R) \quad (103.2-4)$$

Where:

D = dead load due to the weight of the structural elements and the permanent features of the structure, lb/ft.² (kPa)

L = live load due to occupancy and movable equipment, lb/ft.² (kPa)

L_r = roof live load, when composite joists are utilized in roofs, lb/ft.² (kPa)

S = snow load, when composite joists are utilized in roofs, lb/ft.² (kPa)

R = load due to initial rainwater or ice exclusive of the ponding contribution, when composite joists are utilized in roofs, lb/ft.² (kPa)

When special loads are specified and the specifying professional does not provide the load combinations, the provisions of SEI/ASCE 7, *Minimum Design Loads for Buildings and Other Structures* shall be used for load combinations.

103.3 NOMINAL STRESSES

Joists shall have their components so proportioned that the required stresses, f_u , shall not exceed ϕF_n where,

f_u = required stress computed for the factored loads based on the factors and load combinations, ksi (MPa)

ϕ = resistance factor

F_n = nominal stress, ksi (MPa)

ϕF_n = design stress, ksi (MPa)

F_y = specified minimum yield stress, ksi (MPa)

E = modulus of elasticity of steel, ksi (MPa)

(a) Tension: $\phi_t = 0.90$

For Chords: $F_y = 50$ ksi (345 MPa)

For Webs: $F_y = 50$ ksi (345 MPa), or $F_y = 36$ ksi (250 MPa)

$$F_n = F_y \quad (103.3-1)$$

$$\phi F_n = \phi_t F_y \quad (103.3-2)$$

(b) Compression: $\phi_c = 0.90$

For members with $K\ell/r \leq 4.71 \sqrt{E/QF_y}$

$$F_{cr} = Q \left[0.658 \left(\frac{QF_y}{F_e} \right) \right] F_y \quad (103.3-3)$$

For members with $K\ell/r > 4.71 \sqrt{E/QF_y}$

$$F_{cr} = 0.877F_e \quad (103.3-4)$$

Where, F_e = elastic buckling stress determined in accordance with Equation 103.3-5.

$$F_e = \frac{\pi^2 E}{\left(\frac{K\ell}{r} \right)^2} \quad (103.3-5)$$

For hot-rolled sections, "Q" is the full reduction factor for slender compression elements.

$$F_n = F_{cr} \quad (103.3-6)$$

$$\phi F_n = \phi_c F_{cr} \quad (103.3-7)$$

In the above equations, ℓ is taken as the distance in inches (millimeters) between panel points for the chord members and web members, and r is the corresponding least radius of gyration of the member or any component thereof. E is equal to 29,000 ksi (200,000 MPa).



Use $1.2/\ell_x$ for a crimped, first primary compression web member when a moment-resistant weld group is not used for this member; where r_x = member radius of gyration in the plane of the joist.

For cold-formed sections the method of calculating the nominal compressive strength is given in the AISI, *North American Specification for the Design of Cold-Formed Steel Structural Members*.

(c) Bending: $\phi_b = 0.90$

Bending calculations are to be based on using the elastic section modulus.

For chords and web members other than solid rounds:
 $F_y = 50$ ksi (345 MPa)

$$F_n = F_y \quad (103.3-8)$$

$$\phi F_n = \phi_b F_y \quad (103.3-9)$$

For web members of solid round cross section:

$F_y = 50$ ksi (345 MPa), or
 $F_y = 36$ ksi (250 MPa)

$$F_n = 1.6 F_y \quad (103.3-10)$$

$$\phi F_n = \phi_b (1.6 F_y) \quad (103.3-11)$$

For bearing plates:

$F_y = 50$ ksi (345 MPa), or
 $F_y = 36$ ksi (250 MPa)

$$F_n = 1.5 F_y \quad (103.3-12)$$

$$\phi F_n = \phi_b (1.5 F_y) \quad (103.3-13)$$

(d) Weld Design Strength: $\phi_w = 0.75$

$$F_n = 0.6 F_{\text{exx}} \quad (103.3-14)$$

$$\phi F_n = \phi_w (0.6 F_{\text{exx}}) \quad (103.3-15)$$

$$\text{Design Shear Strength} = \phi R_n = \phi F_n A = \phi_w (0.6 F_{\text{exx}}) A \quad (103.3-16)$$

Where, A = effective throat area

Made with E70 series electrodes or F7XX-EXXX flux-electrode combinations

$$F_{\text{exx}} = 70 \text{ ksi (483 MPa)}$$

Made with E60 series electrodes or F6XX-EXXX flux-electrode combinations

$$F_{\text{exx}} = 60 \text{ ksi (414 MPa)}$$

Tension or compression on groove or butt welds shall be the same as those specified for the connected material.

103.4 MAXIMUM SLENDERNESS RATIOS

The slenderness ratios, $1.0\ell/r$ and $1.0\ell_s/r$ of members as a whole or any component part shall not exceed the values given in Table 103.4-1, Parts A.

The effective slenderness ratio, $k\ell/r$ (Chod and Galambos 1975), to be used in calculating the nominal stresses, F_{cr} and F'_e , is the largest value as determined from Table 103.4-1, Parts B and C.

In compression members when fillers or ties are used, they shall be spaced so that the ℓ_s/r_z ratio of each component does not exceed the governing ℓ/r ratio of the member as a whole. The terms used in Table 103.4-1 are defined as follows:

ℓ = length center-to-center of panel points, except $\ell = 36$ inches (914 millimeters) for calculating ℓ/r_y of top chord member, in. (mm).

ℓ_s = maximum length center-to-center between panel point and filler (tie), or between adjacent fillers (ties), in. (mm).

r_x = member radius of gyration in the plane of the joist, in. (mm).

r_y = member radius of gyration out of the plane of the joist, in. (mm).

r_z = least radius of gyration of a member component, in. (mm).



TABLE 103.4-1
MAXIMUM AND EFFECTIVE SLENDERNESS RATIOS

Description	$k\ell/r_x$	$k\ell/r_y$	$k\ell/r_z$	$k\ell_s/r_z$
I TOP CHORD INTERIOR PANEL				
A. The slenderness ratios, $1.0\ell/r$ and $1.0\ell_s/r$, of members as a whole or any component part shall not exceed 90.				
B. The effective slenderness ratio, $k\ell/r$, to determine F_{cr} where k is:				
1. With fillers or ties	0.75	1.0	---	1.0
2. Without fillers or ties	---	---	0.75	---
3. Single component members	0.75	1.0	---	---
C. The effective slenderness ratio, $k\ell/r$, to determine F'_e where k is:				
1. With fillers or ties	0.75	---	---	---
2. Without fillers or ties	0.75	---	---	---
3. Single component members	0.75	---	---	---
II TOP CHORD END PANEL				
A. The slenderness ratios, $1.0\ell/r$ and $1.0\ell_s/r$, of members as a whole or any component part shall not exceed 120.				
B. The effective slenderness ratio, $k\ell/r$, to determine F_{cr} where k is:				
1. With fillers or ties	1.0	1.0	---	1.0
2. Without fillers or ties	---	---	1.0	---
3. Single component members	1.0	1.0	---	---
C. The effective slenderness ratio, $k\ell/r$, to determine F'_e where k is:				
1. With fillers or ties	1.0	---	---	---
2. Without fillers or ties	1.0	---	---	---
3. Single component members	1.0	---	---	---
III TENSION MEMBERS – CHORDS AND WEBS				
A. The slenderness ratios, $1.0\ell/r$ and $1.0\ell_s/r$, of members as a whole or any component part shall not exceed 240.				
IV COMPRESSION MEMBERS				
A. The slenderness ratios, $1.0\ell/r$ and $1.0\ell_s/r$, of members as a whole or any component part shall not exceed 200.				
B. The effective slenderness ratio, $k\ell/r$, to determine F_{cr} where k is:				
1. With fillers or ties	0.75	1.0	---	1.0
2. Without fillers or ties	---	---	1.0	---
3. Single component members	0.75*	1.0	---	---
* If moment-resistant weld groups are not used at the ends of a crimped, first primary compression web member, then $1.2 \ell/r_x$ must be used.				



103.5 MEMBERS

(a) Chords

(1) Non-composite Design

The bottom chord shall be designed as an axially loaded tension member.

The top chord must resist the construction loads, at which time the joist is behaving non-compositely. An analysis shall be made using an effective depth of the joist to determine the member forces due to construction loads. The effective depth for a non-composite joist shall be considered the vertical distance between the centroids of the top and bottom chord members.

The minimum horizontal flat leg width and minimum thickness of top chord shall be as specified in Table 103.5-1.

TABLE 103.5-1

MINIMUM TOP CHORD SIZES FOR INSTALLING WELDED SHEAR STUDS

Shear Stud Diameter in. (mm)	Minimum Horizontal Flat Leg Width in. (mm)	Minimum Leg Thickness in. (mm)
0.375 (10)	1.50 (38)	0.125 (3.2)
0.500 (13)	1.75 (44)	0.167 (4.2)
0.625 (16)	2.00 (51)	0.209 (5.3)
0.750 (19)	2.50 (64)	0.250 (6.3)

The top chord shall be designed as a continuous member subject to combined axial and bending stresses and shall be so proportioned that

at the panel point:

$$f_{au} + f_{bu} \leq 0.9F_y \quad (103.5-1)$$

at the mid panel:

$$\text{for } \frac{f_{au}}{\phi_c F_{cr}} \geq 0.2, \frac{f_{au}}{\phi_c F_{cr}} + \frac{8}{9} \left[\frac{C_m f_{bu}}{\left[1 - \left(\frac{f_{au}}{\phi_c F'_e} \right) \right] Q \phi_b F_y} \right] \leq 1.0 \quad (103.5-2)$$

$$\text{for } \frac{f_{au}}{\phi_c F_{cr}} < 0.2, \left(\frac{f_{au}}{2\phi_c F_{cr}} \right) + \left[\frac{C_m f_{bu}}{\left[1 - \left(\frac{f_{au}}{\phi_c F'_e} \right) \right] Q \phi_b F_y} \right] \leq 1.0 \quad (103.5-3)$$

Where,

$$f_{au} = P_u/A_t = \text{required compressive stress, ksi (MPa)}$$

$$P_u = \text{required axial strength using LRFD load combinations, kips (N)}$$

$$f_{bu} = M_u/S = \text{required bending stress at the location under consideration, ksi (MPa)}$$

$$M_u = \text{required flexural strength using LRFD load combinations, kip-in. (N-mm)}$$

$$S = \text{elastic section modulus, in.}^3 \text{ (mm}^3\text{)}$$

$$F_{cr} = \text{nominal axial compressive stress in ksi (MPa) based on } \ell/r \text{ as defined in Section 103.4}$$

$$C_m = 1 - 0.3 f_{au} / \phi_c F'_e \text{ for end panels}$$

$$C_m = 1 - 0.4 f_{au} / \phi_c F'_e \text{ for interior panels}$$

$$F_y = \text{specified minimum yield strength, ksi (MPa)}$$

$$F'_e = \frac{\pi^2 E}{\left(\frac{K \ell}{r_x} \right)^2}, \text{ ksi (MPa)}$$

$$\ell = \text{chord panel length per Section 103.4, in. (mm)}$$

$$r_x = \text{radius of gyration about the axis of bending, in. (mm)}$$

$$Q = \text{form factor defined in Section 103.3}$$

$$A_t = \text{area of the top chord, in.}^2 \text{ (mm}^2\text{)}$$

The top chord shall be considered as stayed laterally by the floor provided the requirements of Section 104.9(d) of these specifications are met.

(2) Composite Design

The distance between the centroid of the tension bottom chord and the centroid of the concrete compression block, d_e , shall be computed using a concrete stress of $0.85f'_c$ and an effective concrete width, b_e , taken as the sum of the effective widths for each side of the joist centerline, each of which shall be the lowest value of the following:

1. one-eighth of the joist span, center-to-center of supports;
2. one-half the distance to the center-line of the adjacent joist;
3. the distance to the edge of the slab.

$$a = M_n / (0.85 f'_c b_e d_e) \leq t_c, \text{ in. (mm)} \quad (103.5-4)$$

$$d_e = d_j - y_{bc} + h_{deck} + t_c - a/2, \text{ in. (mm)} \quad (103.5-5)$$



Where,

- a = depth of concrete compressive stress block, in. (mm)
- b_e = effective width of concrete slab over the joist, in. (mm)
- d_j = steel joist depth, in. (mm)
- f'_c = specified minimum 28 day concrete compressive strength, ksi (MPa)
- h_{deck} = height of metal deck, in. (mm)
- M_n = nominal moment capacity of the composite joist, kip-in. (N-mm)
- t_c = thickness of concrete slab above the steel deck, in. (mm)
- y_{bc} = vertical distance to centroidal axis of bottom chord measured from the bottom of the bottom chord, in. (mm)

When the metal deck ribs are perpendicular to the steel joists, the concrete below the top of the metal deck shall be neglected when determining section properties and in calculating the concrete compressive block.

The contribution of the steel joist top chord to the moment capacity of the composite system shall be ignored. The first top chord end panel member shall be designed for the full factored load requirements as a non-composite member per Section 103.5(a)(1).

$$M_u \leq \phi M_n \quad (103.5-6)$$

ϕM_n = minimum design flexural strength of composite section as determined from Equations 103.5-7, 103.5-8, 103.5-9, and 103.5-10 kip-in. (N-mm)

M_u = required flexural strength determined from applied factored loads, kip-in. (N-mm)

The design flexural strength of the composite section, ϕM_n , shall be computed as the lowest value of the following limit states: Bottom Chord Tensile Yielding, Bottom Chord Tensile Rupture, Concrete Crushing, and Shear Connector Strength.

a) Bottom Chord Tensile Yielding: $\phi_t = 0.90$

$$\phi M_n = \phi_t A_b F_y d_e \quad (103.5-7)$$

b) Bottom Chord Tensile Rupture: $\phi_{tr} = 0.75$

$$\phi M_n = \phi_{tr} A_n F_u d_e \quad (103.5-8)$$

c) Concrete Crushing: $\phi_{cc} = 0.85$

$$\phi M_n = \phi_{cc} 0.85 f'_c b_e t_c d_e \quad (103.5-9)$$

d) Shear Connector Strength: $\phi_{stud} = 0.90$

$$\phi M_n = \phi_{stud} N Q_n d_e \geq 0.50 \phi_t A_b F_y d_e \quad (103.5-10)$$

Where,

- A_b = cross-sectional area of steel joist bottom chord, in.² (mm²)
- A_n = net cross-sectional area of the steel joist bottom chord, in.² (mm²)
- b_e = effective width of concrete slab over the joist, in. (mm)
- d_e = vertical distance from the centroid of steel joist bottom chord to the centroid of resistance of the concrete in compression, in. (mm)
- F_u = tensile strength of the steel joist bottom chord, ksi (MPa)
- F_y = specified minimum yield stress of steel joist bottom chord, ksi (MPa)
- N = number of shear studs between the point of maximum moment and zero moment
- t_c = minimum thickness of the concrete slab above the top of the metal deck, in. (mm)

(b) Webs

Vertical shears to be used in the design of the web members shall be determined from the controlling load combination from Section 103.2(b), but such vertical shears shall not be less than the following:

- i. 25% of the factored end reaction.
- ii. Tension web members controlled by (i.) shall be designed for a compressive force resulting from a factored shear value of:

$$V_{c \min} = \frac{(1.6w_L)L}{8} \quad (103.5-11)$$

Where,

w_L = non-factored live load due to occupancy and moveable equipment, plf (kN/m)

L = design length for the composite joist as defined in Table 104.2-1, Definition of Span, ft. (m) where design length = Span – 0.33 ft. (Span – 102 mm)

V_{c min} = minimum factored compressive design shear in tension web members, lb (kN)

Interior vertical web members used in modified Warren type web systems shall be designed to resist the gravity loads supported by the member plus 2.0 percent of the composite bottom chord axial force.

Maximum slenderness ratios shall be in accordance with Sections III and IV of Table 103.4-1.

(c) Chord Configuration

Composite joists shall have parallel chords.



(d) Eccentricity

Members connected at a joint shall have their centers of gravity lines meet at a point, if practical. Eccentricity on either side of the neutral axis of chord members may be neglected when it does not exceed the distance between the neutral axis and the back of the chord. Otherwise, provision shall be made for the stresses due to eccentricity.

Eccentricity between the intersection of the centroid of the web members and center of compression in the concrete slab may be neglected. Ends of joists shall be proportioned to resist bending produced by eccentricity at the support.

In those cases where a single angle compression member is attached to the outside of the stem of a tee or double angle chord, due consideration shall be given to eccentricity.

(e) Extended Ends

Extended top chords or full depth cantilever ends require the special attention of the specifying professional. The magnitude and location of the design loads to be supported, the deflection requirements, and the proper bracing shall be clearly indicated on the structural drawings. The extended steel top chord shall support all end loads without relying on any composite action.

Design of concrete reinforcing steel in the negative moment region shall be the responsibility of the specifying professional.

(f) Joist Bearing Depths

The joist bearing depths shall range from 2 1/2 inches (64 millimeters) to 7 1/2 inches (191 millimeters).

103.6 CONNECTIONS

(a) Methods

Joint connections and splices shall be made by attaching the members to one another by arc or resistance welding or other accredited methods.

(1) Welded Connections

- a) Selected welds shall be inspected visually by the manufacturer. Prior to this inspection, weld slag shall be removed.
- b) Cracks are not acceptable and shall be repaired.
- c) Thorough fusion shall exist between layers of weld metal and base metal for the required design length of the weld; such fusion shall be verified by visual inspection.
- d) Unfilled weld craters shall not be included in the design length of the weld.
- e) Undercut shall not exceed 1/16 inch (2 millimeters) for welds oriented parallel to the principal stress.

- f) The sum of surface (piping) porosity diameters shall not exceed 1/16 inch (2 millimeters) in any 1 inch (25 millimeters) of design weld length.

- g) Weld splatter is acceptable.

(2) Welding Program

Manufacturers shall have a program for establishing weld procedures and operator qualification and for weld sampling and testing.

(3) Weld inspection by Outside Agencies (See Section 104.13 of this specification).

The agency shall arrange for visual inspection to determine that welds meet the acceptance standards of Section 103.6(a)(1) above. Ultrasonic, X-Ray, and magnetic particle testing are inappropriate for joists due to the configurations of the components and welds.

(b) Strength

- (1) Joint Connections - Joint connections shall develop the maximum force due to any of the design loads, but not less than 50 percent of the nominal strength of the member in tension or compression, whichever force is the controlling factor in the selection of the member.

- (2) Shop Splices - Shop splices may occur at any point in chord or web members. Splices shall be designed for the member force but not less than 50 percent of the nominal member strength. Members containing a butt weld splice shall develop an ultimate tensile force of at least 57 ksi (390 MPa) times the full design area of the chord or web. The term "member" shall be defined as all component parts, comprising the chord or web, at the point of splice.

(c) Field Splices

Field splices shall be designed by the manufacturer and may be either bolted or welded. Splices shall be designed for the member force, but not less than 50 percent of the nominal member strength.

(d) Shear Studs

Shear studs, after installation, shall extend not less than 1 1/2 in. (38 mm) above the top of the steel deck and there shall be at least 1/2 in. (13 mm) of concrete cover above the top of the installed studs.

For studs in 1.5 in. (38 mm), 2 in. (51 mm), or 3 in. (76 mm) deep decks with $d_{stud} / t_{top\ chord} \leq 2.7$:

$$Q_n = \text{Min} \left[0.5A_{stud} \sqrt{f'_c E_c}, R_p R_g A_{stud} F_{u\ stud} \right] \text{ (kips)} \tag{103.6-1}$$

$$Q_n = \text{Min} \left[0.5A_{stud} \sqrt{f'_c E_c}, (R_p R_g A_{stud} F_{u\ stud}) \right] \text{ (N)} \tag{103.6-2}$$



For studs in 1.5 in. (38 mm), 2 in. (51 mm), or 3 in. (76 mm) deep decks with $2.7 < d_{stud} / t_{top\ chord} \leq 3.0$:

$$Q_n = \text{Min} \left[\begin{array}{l} 0.5A_{stud} \sqrt{f'_c E_c} \\ R_p R_g A_{stud} F_{u\ stud} - 1.5 \left(\frac{d_{stud}}{t_{top\ chord}} - 2.7 \right) \end{array} \right] \text{ (kips)} \quad (103.6-3)$$

$$Q_n = \text{Min} \left[\begin{array}{l} 0.5A_{stud} \sqrt{f'_c E_c} \\ R_p R_g A_{stud} F_{u\ stud} - 6670 \left(\frac{d_{stud}}{t_{top\ chord}} - 2.7 \right) \end{array} \right] \text{ (N)} \quad (103.6-4)$$

Where:

- A_{stud} = cross-sectional area of shear stud, in.² (mm²)
- d_{stud} = diameter of shear stud, in. (mm)
- E_c = modulus of elasticity of the concrete, ksi (MPa)
- f'_c = specified minimum 28 day concrete compressive strength, ksi (MPa)
- $F_{u\ stud}$ = minimum tensile strength of stud, 65 ksi (450 MPa)
- Q_n = shear capacity of a single shear stud, kips (N)
- R_p = shear stud coefficient from Table 103.6-1
- R_g = 1.00 for one stud per rib or staggered position studs
= 0.85 for two studs per rib side-by-side
= 0.70 for three studs per rib side-by-side
- $t_{top\ chord}$ = thickness of top chord horizontal leg or flange, in. (mm)

**TABLE 103.6-1
VALUES FOR R_p**

Deck Height	Wr @ mid-height	3/8 in. (10 mm) Dia. Stud	1/2 in. (13 mm) Dia. Stud	5/8 in. (16 mm) Dia. Stud	3/4 in. (19 mm) Dia. Stud
1 in. (25 mm)	1.9 in. (48 mm)	0.55	0.55	0.50	0.45
1.5 in. (38 mm)	2.1 in. (53 mm)	0.55	0.50	0.45	0.40
1.5 in. (38 mm) Inverted	3.9 in. (99 mm)	0.85	0.60	0.60	0.60
2 in. (51 mm)	6 in. (152 mm)	–	0.55	0.50	0.45
3 in. (76 mm)	6 in. (152 mm)	–	0.50	0.50	0.50

- Notes: 1) $Wr_{@\ mid-height}$ = Average deck rib width of deck rib containing the shear stud.
2) The deck is assumed to be oriented perpendicular to the joists.

103.7 CAMBER

CJ-Series joists shall be cambered. The approximate camber will be based on the deflection associated with 100% of the non-composite unfactored dead load plus any additional loads defined by the specifying professional.

103.8 VERIFICATION OF DESIGN AND MANUFACTURE

(a) Design Calculations

Companies manufacturing any **CJ**-Series Joists shall submit design data to the Steel Joist Institute (or an independent agency approved by the Steel Joist Institute) for verification of compliance with the SJI Specifications.

(b) In-Plant Inspections

Each manufacturer shall verify his ability to manufacture **CJ**-Series Joists through periodic In-Plant Inspections. Inspections shall be performed by an independent agency approved by the Steel Joist Institute. The frequency, manner of inspection and manner of reporting shall be determined by the Steel Joist Institute. The Plant inspections are not a guarantee of the quality of any specific joists; this responsibility lies fully and solely with the individual manufacturer.

**SECTION 104.
APPLICATION**

individual manufacturer.

104.1 USAGE

The specifications shall apply to any type of structure where floor and roof decks are to be supported directly by Composite Steel Joists installed as hereinafter specified. Joists used other than for simple spans as prescribed in Section 103.1 shall be investigated and modified as necessary by the specifying professional to limit the unit stresses to those listed in Section 103.3. Design for large openings that interrupt truss action is beyond the scope of this specification.

CAUTION: If a rigid connection of the bottom chord is to be made to the column or other support, it shall be made only after the application of the non-composite dead loads. The joist is no longer simply-supported and the system must be investigated for continuous frame action by the specifying professional.

The designed detail of a rigid type connection and moment plates shall be shown on the structural drawings by the specifying professional. The moment plates shall be furnished by other than the joist manufacturer.

104.2 SPAN

The span of a standard SJI composite joist shall be from 12 to 30 times the depth of the steel joist. The term "Span" is defined in Table 104.2-1, Definition of Span.

104.3 DEPTH

The depth of the composite joist shall be the vertical distance from the top of the steel top chord to the bottom of the bottom



chord.

104.4 END SUPPORTS

(a) Masonry and Concrete

CJ-Series Joists supported by masonry or concrete are to bear on steel bearing plates and shall be designed as steel bearing. Due consideration of the end reactions and all other vertical and lateral forces shall be taken by the specifying professional in the design of the steel bearing plate and the masonry or concrete. The ends of **CJ**-Series Joists shall extend over the masonry or concrete support as shown below and be anchored to a steel bearing plate. This steel bearing plate shall be located no more than 1/2 inch (13 millimeters) from the face of the wall. The distance over the wall that the composite joist shall bear, width of the steel bearing plate and anchorage of the **CJ**-Series Joists shall be as defined below:

For $2\ 1/2" \leq \text{Seat Depth} < 5"$:

- The ends of **CJ**-Series Joists shall extend a distance of not less than 4 inches (102 millimeters) over the masonry or concrete support and be anchored to the steel bearing plate.
- The width of the plate perpendicular to the span of the Composite Steel Joist shall be not less than 6 inches (152 millimeters).
- The Composite Steel Joists must bear a minimum of 2 1/2 inches (64 millimeters) on the steel bearing plate.

For Seat Depth $\geq 5"$:

- The ends of **CJ**-Series Joists shall extend a distance of not less than 6 inches (152 millimeters) over the masonry or concrete support and be anchored to the steel bearing plate.
- The width of the plate perpendicular to the span of the Composite Steel Joist shall be not less than 9 inches (229 millimeters).
- The Composite Steel Joists must bear a minimum of 4 inches (102 millimeters) on the steel bearing plate.

The steel bearing plate is to be designed by the specifying professional and shall be furnished by other than the joist manufacturer.

Where it is deemed necessary to bear less than the dimensions listed above over the masonry or concrete support, special consideration is to be given to the design of the steel bearing plate and the masonry or concrete by the specifying professional. The joist must meet the minimum bearing requirement on the steel bearing plate.

(b) Steel

Due consideration of the end reactions and all other vertical and lateral forces shall be taken by the specifying pro-

fessional in the design of the steel support.

For $2\ 1/2" \leq \text{Seat Depth} < 5"$:

The ends of **CJ**-Series Joists shall extend a distance of not less than 2 1/2 inches (64 millimeters) over the steel supports.

For Seat Depth $\geq 5"$:

The ends of **CJ**-Series Joists shall extend a distance of not less than 4 inches (102 millimeters) over the steel supports.

Where it is deemed necessary to butt opposite joists over a narrow steel support with bearing less than that noted above, special ends must be specified, and such ends shall have positive attachment to the support, either by bolting or welding.

104.5 BRIDGING

Top and bottom chord bridging is required and shall consist of one or both of the following types:

(a) Horizontal

Horizontal bridging lines shall consist of continuous horizontal steel members. The ℓ/r ratio of the bridging member shall not exceed 300, where ℓ is the distance in inches (millimeters) between attachments and r is the least radius of gyration of the bridging member.

(b) Diagonal

Diagonal bridging lines shall consist of cross-bracing with a ℓ/r ratio of not more than 200, where ℓ is the distance in inches (millimeters) between connections and r is the least radius of gyration of the bracing member. Where cross-bracing members are connected at their point of intersection, the ℓ distance shall be taken as the distance in inches (millimeters) between connections at the point of intersection of the bridging members and the connections to the chords of the joists.

(c) Bridging Lines

For spans up through 60 feet (18.3 meters), welded horizontal bridging may be used except where the row of bridging nearest the center is required to be bolted diagonal bridging as indicated on the joist manufacturer's joist placement plans. When the span of the composite steel joist is over 60 feet (18.3 meters), but not greater than 100 feet (30.5 meters), hoisting cables shall not be released until the two rows of bridging nearest the third points are completely installed. When the span exceeds 100 feet (30.5 meters) hoisting cables shall not be released until all rows of bridging are completely installed. For spans over 60 feet (18.3 meters) all rows of bridging shall be diagonal bridging with bolted connections at the chords and intersections.

(d) Spacing

Bridging must be properly spaced and anchored to sup-



port the decking and the employees prior to the attachment of the deck to the top chord. The maximum spacing of lines of bridging, l_{br} shall be the lesser of,

$$l_{br} = \left(100 + 0.67d_j + 40 \frac{d_j}{L} \right) r_y, \text{ in.} \quad (104.5-1a)$$

$$l_{br} = \left(100 + 0.026d_j + 0.48 \frac{d_j}{L} \right) r_y, \text{ mm} \quad (104.5-1b)$$

or $l_{br} = 170r_y \quad (104.5-2)$

Where,

d_j is the steel joist depth, in. (mm)

L is the design length for the composite joist, ft. (m)

r_y is the out-of-plane radius of gyration of the top chord, in. (mm)

The number of rows of bottom chord bridging shall not be less than the number of top chord rows. Rows of bottom chord bridging are permitted to be spaced independently of rows of top chord bridging.

(e) Connections

Connection of bridging to the chords of the Composite Steel Joists shall be made by positive mechanical means or by welding. Ends of all bridging lines terminating at walls, beams, or double joists boxed by diagonal bridging shall be anchored.

Connection of the horizontal and diagonal bridging to the joist chord or bridging terminus point shall be capable of resisting the nominal top chord horizontal force, P_{br} given in Equation 104.5-3.

$$P_{br} = 0.0025 n A_t F_{\text{construction}}, \text{ lbs (N)} \quad (104.5-3)$$

Where,

$n = 8$ for horizontal bridging

$n = 2$ for diagonal bridging

A_t = cross sectional area of joist top chord, in.² (mm²)

$F_{\text{construction}}$ = assumed nominal stress in top chord due to construction loads

$$F_{\text{construction}} = \left[\frac{\frac{\pi^2 E}{\left(\frac{0.9 l_{br}}{r_y} \right)^2}}{\right]} \geq 12.2 \text{ksi} \quad (104.5-4a)$$

$$F_{\text{construction}} = \left[\frac{\frac{\pi^2 E}{\left(\frac{0.9 l_{br}}{r_y} \right)^2}}{\right]} \geq 84.1 \text{MPa} \quad (104.5-4b)$$

Where,

E = Modulus of Elasticity of steel = 29,000 ksi (200,000 MPa)

and r_y is determined from Equations 104.5-1a, 104.5-1b or 104.5-2

(f) Sizing of Bridging

Horizontal joist bridging shall be designed to resist the nominal compressive force shown in Equation 104.5-3. Diagonal bridging shall be capable of resisting in tension the nominal horizontal force shown in Equation 104.5-3.

(g) Bottom Chord Bearing Joists

Where bottom chord bearing joists are utilized, a row of diagonal bridging shall be provided near the support(s). This bridging shall be installed and anchored before the hoisting cable(s) is released.

104.6 INSTALLATION OF BRIDGING

Bridging shall be provided to support the top chord during installation of the decking prior to the attachment of the deck to the top chord. All bridging and bridging anchors shall be completely installed before construction loads are placed on the joists. Bridging shall support the top and bottom chords against lateral movement during the construction period and shall hold the steel joists in the approximate position as shown on the joist placement plans.

104.7 END ANCHORAGE

(a) Masonry and Concrete

Ends of Composite Steel Joists resting on steel bearing plates on masonry or structural concrete shall be attached thereto as defined below:

For $2 \frac{1}{2}'' \leq \text{Seat Depth} < 5''$:

With a minimum of two 1/8 inch (3 millimeters) fillet welds 1 inch (25 millimeters) long, or with two 1/2 inch (13 millimeters) ASTM A307 bolts, or with the equivalent.

For Seat Depth $\geq 5''$:

With a minimum of two 1/4 inch (6 millimeters) fillet welds 2 inches (51 millimeters) long, or with two 3/4 inch (19 millimeters) ASTM A307 bolts or the equivalent.

(b) Steel

Ends of Composite Steel Joists resting on steel supports shall be attached thereto as defined below:

For $2 \frac{1}{2}'' \leq \text{Seat Depth} < 5''$:

With a minimum of two 1/8 inch (3 millimeters) fillet welds 1 inch (25 millimeters) long, or with two 1/2



inch (13 millimeters) ASTM A307 bolts, or with the equivalent.

For Seat Depth ≥ 5 "

With a minimum of two 1/4 inch (6 millimeters) fillet welds 2 inches (51 millimeters) long, or with two 3/4 inch (19 millimeters) ASTM A307 bolts or the equivalent.

In steel frames, where columns are not framed in at least two directions with solid structural steel members, joists at column lines shall be field bolted and the joist bottom chords must be restrained by a vertical stabilizer plate attached to the column providing lateral stability during construction. Where constructability does not allow a steel joist to be installed directly at the column, an alternate means of stabilizing the joist shall be installed on both sides near the column (OSHA 2001). When **CJ**-Series joists are used to provide lateral stability to the supporting member, the final connection shall be made by welding or as designated by the specifying professional.

(c) Uplift

Where uplift forces are a design consideration, composite joists used in roof applications shall be anchored to resist such forces (Refer to Section 104.12).

104.8 JOIST SPACING

Composite joists shall be spaced so that the loading on each joist does not exceed the design load.

104.9 DECKS

(a) Material

Floor deck shall consist of formed steel capable of supporting the required load at the specified joist spacing.

(b) Thickness

Cast-in-place slabs shall be not less than 2 inches (51 millimeters) thick above the deck.

(c) Bearing

Slabs or decks shall bear uniformly along the top chords of the joists.

(d) Attachments of the steel deck

The deck shall be attached per Steel Deck Institute requirements prior to placing construction loads on the composite joists. The spacing of the attachments along the top chord shall not exceed 36 inches (914 millimeters).

104.10 DEFLECTION

The deflection due to the design live load shall not exceed the following:

Floors: 1/360 of span.

Roofs: 1/360 of span where a plaster ceiling is attached or suspended.

1/240 of span for all other cases.

The specifying professional shall give due consideration to the effects of deflection, both short and long term, and vibration* in the selection of composite joists. All deflection calculations should account for the inherent flexibility of the open web configuration.

* For further reference, refer to Steel Joist Institute Technical Digest #5, "Vibration of Steel Joist-Concrete Slab Floors" and the Institute's Computer Vibration Program.

104.11 PONDING

When Composite Steel Joists are used in roofs, a ponding* investigation shall be performed by the specifying professional.

* For further reference, refer to the Steel Joist Institute Technical Digest #3, "Structural Design of Steel Joist Roofs to Resist Ponding Loads" and AISC Specifications.

104.12 UPLIFT

When Composite Steel Joists are used in roofs, and where uplift forces due to wind are a design requirement, these forces must be indicated on the contract drawings in terms of net uplift in pounds per square foot (kilopascals). When these forces are specified, they must be considered in the design of the joists and/or bridging. A single line of bottom chord bridging must be provided near the first bottom chord panel points whenever uplift due to wind forces is a design consideration.*

* For further reference, refer to Steel Joist Institute Technical Digest #6, "Structural Design of Steel Joist Roofs to Resist Uplift Loads".

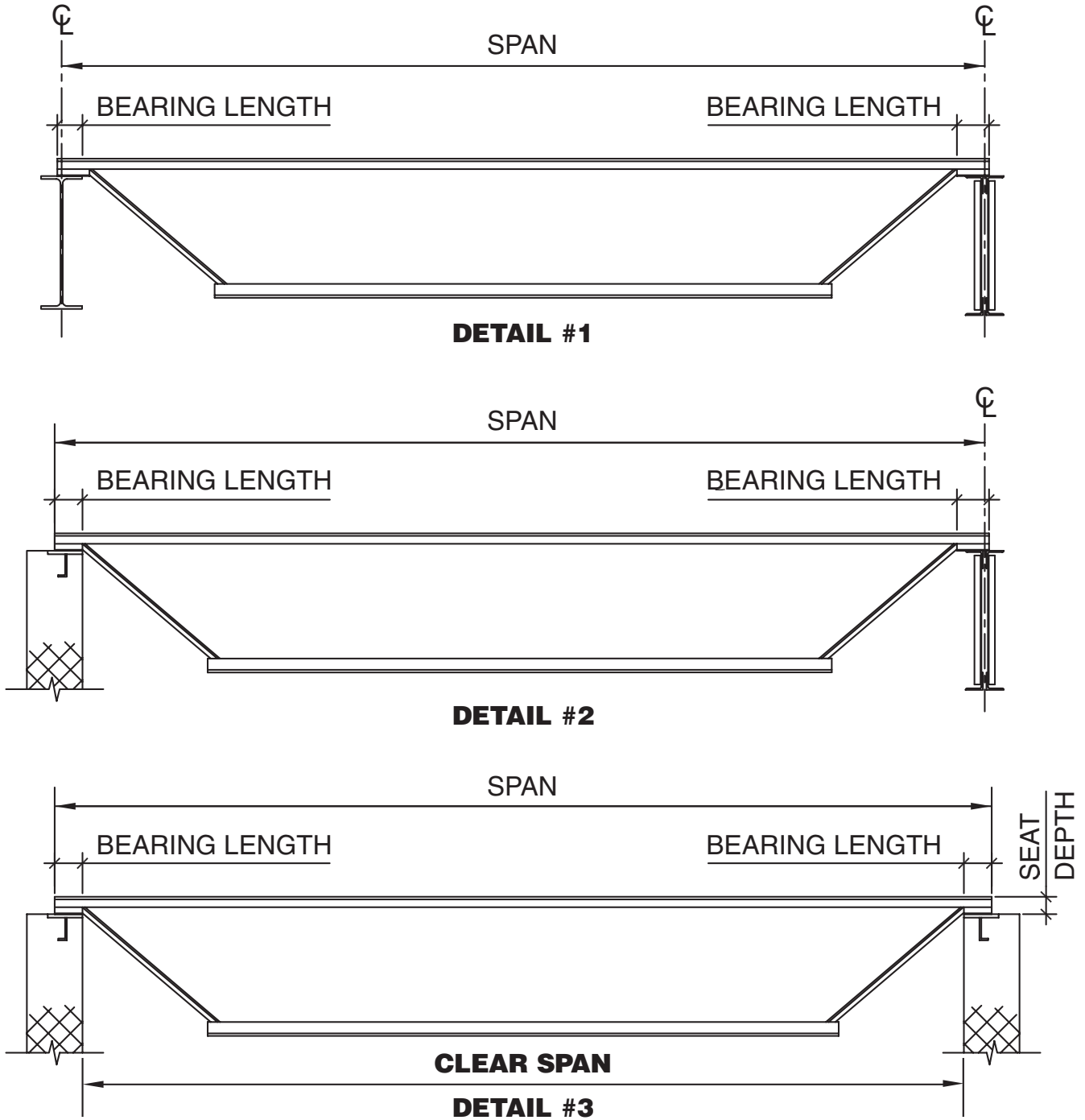
104.13 INSPECTION

Joists shall be inspected by the manufacturer before shipment to verify compliance of materials and workmanship with the requirements of these specifications. If the purchaser wishes an inspection of the steel joists by someone other than the manufacturer's own inspectors, they may reserve the right to do so in their "Invitation to Bid" or the accompanying "Job specifications".

Arrangements shall be made with the manufacturer for such shop inspection of the joists at the manufacturing shop by the purchaser's inspectors at purchaser's expense.



**TABLE 104.2-1
DEFINITION OF SPAN**



- NOTES:** 1) DESIGN LENGTH (ENGLISH UNITS) = SPAN - .033 FT.
 DESIGN LENGTH (METRIC UNITS) = SPAN - 102 mm
- 2) MINIMUM BEARING LENGTH IS A FUNCTION OF THE SEAT DEPTH. (SEE SECTION 104.2)



SECTION 105.*

**ERECTION STABILITY
AND HANDLING****105.1 Joist Erection**

When it is necessary for the erector to climb on the composite steel joists, extreme caution must be exercised since unbridged joists may exhibit some degree of instability under the erector's weight.

* For a thorough coverage of this topic, refer to Steel Joist Institute Technical Digest #9, "Handling and Erection of Steel Joists and Joist Girders".

(a) Erection Stability

Joist erection bridging requirements shall be determined by the joist manufacturer and indicated on the joist placement plans.

(b) Stability Requirements during Joist Erection

- (1) Before an employee is allowed on the composite steel joist: BOTH ends of composite joists at columns (or composite joists designated as column joists) shall be attached to its supports. For all other composite joists a minimum of one end shall be attached before the employee is allowed on the composite joist. The attachment shall be in accordance with Section 104.7- End Anchorage.

When a bolted seat connection is used for erection purposes, as a minimum, the bolts must be snug tightened. The snug tight condition is defined as the tightness that exists when all plies of a joint are in firm contact. This may be attained by a few impacts of an impact wrench or the full effort of an employee using an ordinary spud wrench.

- (2) On composite steel joists that do not require erection bridging as shown on the joist placement plans, only one employee shall be allowed on the composite joist unless all bridging is installed and anchored.
- (3) Where the span of the composite steel joist requires one line of bolted diagonal erection bridging nearest the mid-span of the joist, as indicated on the joist placement plans, the following shall apply:
- Hoisting cables shall not be released until the row of bolted diagonal erection bridging is installed and anchored, unless an alternate method of stabilizing the composite steel joist has been provided; and
 - No more than one employee shall be allowed on these spans until all bridging is installed and anchored.
- (4) Where the span of the Composite Steel Joist requires two lines of bolted diagonal erection bridging nearest

the third points of the joist, as indicated on the joist placement plans, the following shall apply:

- Hoisting cables shall not be released until the two rows of bolted diagonal erection bridging are installed and anchored; and
 - No more than two employees shall be allowed on these spans until all other bridging is installed and anchored.
- (5) Where the span of the composite steel joist requires all lines of bridging to be bolted diagonal erection bridging as indicated on the joist placement plans, the following shall apply:
- Hoisting cables shall not be released until all bridging is installed and anchored; and
 - No more than two employees shall be allowed on these spans until all other bridging is installed and anchored.
- (6) When permanent bridging terminus points can not be used during erection, additional temporary bridging terminus points are required to provide lateral stability.
- (7) In the case of bottom chord bearing joists, the ends of the composite joist must be restrained laterally per Section 104.5(g) before releasing the hoisting cables.
- (8) After the composite steel joist is straightened and plumbed, and all bridging is completely installed and anchored, the ends of the joists shall be fully connected to the supports in accordance with Section 104.7- End Anchorage.

(c) Landing and Placing Loads

- (1) Except as stated in paragraph 105(c)(3) of this section, no "Construction Loads" are allowed on the Composite Steel Joists until all bridging is installed and anchored, and all joist bearing ends are attached. "Construction Loads" (for joist erection) means any load other than the weight of the employee(s), the joists, and the bridging bundle(s).
- (2) During the construction period, loads placed on the Composite Steel Joists shall be distributed so as not to exceed the non-composite capacity of the composite steel joists.
- (3) No bundle of deck may be placed on Composite Steel Joists until all bridging has been installed and anchored and all composite steel joist bearing ends attached, unless the following conditions are met:
- The contractor has first determined from a "qualified person" and documented in a site specific erection plan that the structure or portion of structure is capable of supporting the load. A "qualified person" means one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience,



has successfully demonstrated the ability to solve or resolve problems relating to the subject mater, the work, or the project;

- b. The bundle of decking is placed on a minimum of 3 composite steel joists;
- c. The composite steel joists supporting the bundle of decking are attached at both ends;
- d. At least one row of bridging is installed and anchored;
- e. The total weight of the decking does not exceed 4000 pounds (1816 kilograms);
- f. The edge of the bundle of decking shall be placed within 1 foot (0.30 meter) of the bearing surface of the composite steel joist end.

- (4) The edge of any construction load shall be placed within 1 foot (0.30 meter) of the bearing surface of the composite steel joist end.

(d) Field Welding

- (1) All field welding shall be performed in accordance with contract documents. Field welding shall not damage the composite joists.
- (2) On cold-formed members whose yield strength has been attained by cold working, and whose as-formed strength is used in the design, the total length of weld at any one point shall not exceed 50 percent of the overall developed width of the cold-formed section.

(e) Handling

Particular attention should be paid to the erection of Composite Steel Joists. Care shall be exercised at all times to avoid damage to the composite joists and accessories.

Each Composite Steel Joist shall be adequately braced laterally before any loads are applied. If lateral support is provided by the bridging, the bridging lines as defined in Section 105(b), paragraphs (2), (3), (4) and (5), must be anchored to prevent lateral movement.

(f) Fall Arrest Systems

Composite steel joists shall not be used as anchorage points for a fall arrest system unless written approval to do so is obtained from a “*qualified person*” as defined in paragraph 105(c)(3)(a).

SECTION 106.
**SHEAR CONNECTOR
 PLACEMENT AND
 WELDING**

- (a) Shear connectors required on each side of the point of maximum positive or negative bending moment, shall be distributed uniformly between that point and the adjacent

points of zero moment, unless otherwise specified. However the number of shear connectors placed between any concentrated load and the nearest point of zero moment shall be sufficient to develop the maximum moment required at the concentrated load point.

- (b) Studs shall be alternately placed on each chord angle section for double angle top chords. When constructability does not allow this to occur, stud placement shall be limited as follows:

- 1. No more than three studs shall be placed consecutively on any one chord angle, and
- 2. No more than 60% of the total number of studs shall be placed on any one chord angle.

Studs shall have a minimum of 1/2 inch (13 millimeters) concrete cover over the head of each stud (see Section 103.6(d)).

- (c) The minimum center-to-center spacing of stud connectors shall be six stud diameters along the longitudinal axis of the supporting composite joist, except that within the ribs of formed steel decks oriented perpendicular to the steel joists, the minimum center-to-center spacing shall be four stud diameters in any direction.

- (d) The distance measured along the longitudinal axis of the joist from the free edge of the concrete slab to the first stud shall not be less than the deck height plus four stud diameters.

- (e) The spacing of stud shear connectors along the length of the supporting joist shall not exceed eight times the slab depth or 36 inches (914 millimeters).

- (f) To resist uplift, the steel deck shall be anchored to all supporting members at a spacing not to exceed 18 inches (460 millimeters). Such anchorage shall be provided by stud connectors, a combination of stud connectors and arc spot (puddle) welds, or other devices.

SECTION 107.
SPECIAL CASES

When a method of shear transfer is used other than headed shear studs for developing composite joist behavior, the strength of shear connectors and details of composite construction shall be established by a test program that has been submitted to and accepted by the SJI.



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NOTES:



Responsibility of the Specifying Professional

SJI member companies have developed computer programs to provide composite steel joist designs quickly and efficiently. To do this, some basic information must be provided to the manufacturer. The following list summarizes the needed information from the Specifying Professional:

- 1) Joist Depth:
The joist depth must be provided in inches (mm). This depth includes the steel joist portion only, not the deck slab.
- 2) Joist Span:
The joist span must be given in feet (mm). The span is from the centerline of the supporting joist girder (structural steel) to the centerline of the opposite supporting joist girder (structural steel). In the case of masonry and/or concrete walls, span is measured from the inside face of walls plus 8 inches (203 mm). For more information on span see the Standard Specifications for Composite Steel Joists, CJ-Series, Section 104.2.
- 3) Adjacent Member Spacing:
The distance in feet (mm) to the adjacent member or to the edge of the slab (if an exterior joist) must be provided.
- 4) Type of Floor Deck:
Review each deck manufacturer's deck load capacity and deflection characteristics and specify the deck depth, profile, and thickness to meet the building design.
- 5) Concrete Unit Weight:
The unit weight in pcf (kg/m³) must be indicated.
- 6) Concrete Compressive Strength:
The 28 day specified compressive strength of concrete in ksi (MPa) must be provided.
- 7) Slab Thickness above Floor Deck:
The actual slab thickness in inches (mm) above the top of the deck must be indicated.
- 8) Composite Design Loads:
The loads which must be specified are as follows:
 - a) Noncomposite DL:
Concrete, joists, deck, bridging, and any other non-composite dead loads.
 - b) Construction LL:
A suggested minimum construction live load calculation can be found in the COSP for Composite Steel Joists, SJI Composite Joist Floor Design Parameters Checklist.
 - c) Composite DL:
Partitions, mechanical, electrical, fireproofing, floor covering, ceilings, and other composite dead loads.
 - d) Composite LL:
Reduced design live loads may be specified if applicable.

Note:
The Specifying Professional shall provide the nominal loads and load combinations as stipulated by the appli-

cable code under which the structure is designed.

- 9) Camber:
The load to be used to calculate the camber must be specified.

The "Composite Joist Floor Design Parameters Checklist" that can be found in the **Code of Standard Practice for Composite Steel Joists**, includes a form for filling in the above information.

Composite steel joists have some limitations that the Specifying Professional must be aware of.

These include:

- (a) Parallel top and bottom chords.
- (b) The minimum and maximum deck heights are 1 inch (25 mm) and 3 inches (76 mm), respectively.
- (c) The minimum slab thickness above the top of the deck must be 2 inches (51 mm).
- (d) Shear studs must have at least 1/2 inch (13 mm) of concrete cover.
- (e) The concrete shall be placed to provide a constant thickness along the entire span.

Provisions for field inspection of projects involving composite steel joists shall be made by the Specifying Professional. This inspection shall include, as a minimum, verifying the concrete strength, concrete thickness, and shear stud attachment and placement. For more information on shear stud placement and welding see the Standard Specifications for Composite Steel Joists, CJ-Series, Section 106.

This inspection will not be provided by SJI member manufacturers.



NON-COMPOSITE AND COMPOSITE EFFECTIVE MOMENTS OF INERTIA

$$I_{\text{chords}} = I_{\text{tc}} + I_{\text{bc}} + \frac{d_e^2 (A_{\text{tc}} A_{\text{bc}})}{(A_{\text{tc}} + A_{\text{bc}})}$$

Where,

- A_{tc} = Area of the top chord (in.²)
- A_{bc} = Area of the bottom chord (in.²)
- I_{tc} = Moment of inertia of the top chord about the top chord x-x axis (in.⁴)
- I_{bc} = Moment of inertia of the bottom chord about the bottom chord x-x axis (in.⁴)
- d_e = Effective depth for the steel joist (in.)

Web Type	C_r	L / D
Single or Double Angle Web Members	$0.90 (1 - e^{-0.28 (L/D)^{2.8}})$	$6 \leq L/D \leq 24$
Continuous Round Rod Web Members	$0.721 + 0.00725 (L/D)$	$10 \leq L/D \leq 24$

Where,

- L = Span length (in.)
- D = Nominal depth of steel joist (in.)

The non-composite moment of inertia of the joist can be determined as follows,

$$I_{\text{non-comp eff}} = C_r I_{\text{chords}}$$

and the composite effective moment of inertia of the joist can be determined as follows,

$$I_{\text{eff}} = \frac{1}{\frac{\gamma}{I_{\text{chords}}} + \frac{1}{I_{\text{composite}}}}$$

Where,

$$\gamma = \frac{1}{C_r} - 1$$

$I_{\text{composite}}$ = Transformed moment of inertia using the actual joist chord areas (in.⁴)

References:

- Barry Band Jr. and Tom Murray, "Vibration Characteristics of Joist and Joist Girder Members", Virginia Polytechnic Institute and State University, Report No. CE / VPI-ST 96 / 07, July 1996
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DESIGN GUIDE LRFD WEIGHT TABLE FOR COMPOSITE STEEL JOISTS

CJ-SERIES

Normal Weight Concrete



SJI COMPOSITE STEEL JOIST WEIGHT TABLES

The following tables may be used as a guide to assist with preliminary designs for floor and roof construction utilizing composite steel joists. These weight tables only apply to uniformly loaded composite steel joists with parallel chords. The top chords are considered as laterally supported by the structural deck and slab. The tables are applicable for normal weight concrete with a unit weight of 145 pcf (2350 kg/m³) and lightweight concrete with an assumed unit weight of 110 pcf (1800 kg/m³) and based on a steel yield strength of 50 ksi (345 MPa). Concrete strength listed in the weight tables can vary from 3 – 5 ksi (20.7 – 34.5 MPa), with the higher concrete strength required for longer joist spans. The tables also include a provision based on a one-half span live load condition.

The first row of figures for each joist depth, denoted as “**Wt**”, gives the approximate weight of the composite steel joists in pounds per linear foot, plf (kilonewtons per meter, kN/m). These weights do not include accessories or bridging.

The second row, noted as “**W360**” are the composite live loads in pounds per linear foot, plf (kilonewtons per meter, kN/m) of joist which will produce an approximate composite deflection of 1/360 of the span. Live loads which will produce a composite deflection other than 1/360 of the span may be obtained by using the W360 figures. For example, to obtain the load for a deflection of 1/480 of the span, W480 = W360 x (360/480).

The third row denoted as “**N-ds**” lists the quantity and diameter of welded shear studs required per joist to carry the indicated Total Factored Uniformly Distributed Load. The installed shear stud length in inches is assumed to be equal to the deck height, in., + concrete thickness, in., above the deck – 1/2 inch (the stud length in millimeters is assumed to be equal to the deck height, mm, + concrete thickness, mm, above the deck – 13 mm). When determining the quantity of shear studs listed in the following tables, all studs are assumed to be installed in the “weak” position as shown in Figure 16.

The fourth row noted as “**I_{eff}**” lists the effective moment of inertia for the joist that will allow the Specifying Professional to determine the deflection under composite loading.

The fifth row indicates the number of rows and type of bridging. For more information on bridging type, size, and bridging forces, the Specifying Professional should refer to the Composite Joist Bridging Tables.

A description of the terms and abbreviations used in the weight tables is provided below:

- t_c** = Thickness of concrete above the top of the deck, in. (mm)
- h_r** = Nominal deck rib height, in. (mm)
- Js** = Joist spacing, ft. (m)
- TL** = Total factored uniform load applied to the composite steel joist, plf (kN/m).
- Wt** = Weight of composite steel joist, plf (kN/m).
- W360** = Composite load, plf (kN/m) applied after the concrete has cured that produces an approximate deflection of 1/360 of the span.
- N-ds** = Number of shear studs required/span – diameter of shear stud.
- I_{eff}** = Composite moment of inertia, in.⁴ (mm⁴)

The shaded areas of the weight tables indicate the different seat depths, where the blue shaded area represents a 2 1/2 in. seat; white a 5 in. seat; and green a 7 1/2 in. seat. These seat depths are based on the following criteria:

2 1/2 inches:

Where round web end bars are used and the top chord vertical angle leg is less than or equal to 2 inches.

5 inches:

Where the top chord vertical angle leg is greater than 2 inches, but less than 3 1/2 inches.

7 1/2 inches:

Where the top chord vertical angle leg is greater than or equal to 3 1/2 inches.

There are many design combinations and criteria that need to be considered for the proper design of a composite steel joist such as joist depth, span and spacing, deck type and thickness, concrete strength, concrete unit weight, shear stud diameter, shear stud length, deflection limitations, minimum duct size openings, panel layouts, UL fire rating, etc. The “SJI Composite Joist Floor Design Parameters Checklist” contained in the Code of Standard Practice for Composite Steel Joists and the “Responsibility of the Specifying Professional” may be used to help tailor your design to a specific project.



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		BEARING HEIGHT									
		2 1/2"	5"	7 1/2"							
		Concrete Slab Parameters									
		Normal Weight Concrete (145 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1	1	1	
		tc (in.)	2	2	2	2	2	2	2	2	
		Js (ft.)	3	3	3	3	3	3	3.5	4	
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
20	10	Wt(plf)	5.0	5.2	5.6	6.2	6.7	7.2	7.6	8.1	10.4
		W360(plf)	248	248	296	340	404	439	468	530	639
		N-ds	12-3/8"	12-3/8"	14-3/8"	18-3/8"	22-3/8"	24-3/8"	26-3/8"	30-3/8"	22-1/2"
		Ieff(in4)	46	46	55	63	75	82	87	99	119
		Bridging	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H
	12	Wt(plf)	5.1	5.3	5.7	6.2	6.4	7.1	7.5	7.8	9.9
		W360(plf)	316	316	379	420	436	519	563	608	730
		N-ds	12-3/8"	12-3/8"	14-3/8"	16-3/8"	18-3/8"	22-3/8"	24-3/8"	26-3/8"	18-1/2"
		Ieff(in4)	59	59	71	78	81	97	105	113	136
		Bridging	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H
	14	Wt(plf)	5.1	5.3	5.4	5.9	6.3	6.4	7.0	8.4	9.5
		W360(plf)	396	396	396	477	529	550	602	696	820
		N-ds	12-3/8"	12-3/8"	12-3/8"	14-3/8"	16-3/8"	18-3/8"	20-3/8"	12-1/2"	16-1/2"
		Ieff(in4)	74	74	74	89	98	102	112	130	153
		Bridging	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)H
	16	Wt(plf)	5.2	5.3	5.5	5.9	6.2	6.8	7.9	8.1	9.9
		W360(plf)	488	488	488	589	589	663	711	790	970
		N-ds	12-3/8"	12-3/8"	12-3/8"	14-3/8"	14-3/8"	16-3/8"	10-1/2"	12-1/2"	14-1/2"
		Ieff(in4)	91	91	91	110	110	123	132	147	181
		Bridging	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H
	18	Wt(plf)	5.2	5.2	5.3	5.3	5.7	5.8	6.1	6.5	6.9
		W360(plf)	620	620	620	620	751	751	835	964	1058
		N-ds	12-3/8"	12-3/8"	12-3/8"	12-3/8"	14-3/8"	14-3/8"	16-3/8"	20-3/8"	22-3/8"
		Ieff(in4)	116	116	116	116	140	140	155	179	197
		Bridging	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H
	20	Wt(plf)	5.3	5.3	5.3	5.4	5.4	5.7	5.7	6.1	7.5
		W360(plf)	717	717	717	717	867	867	963	1028	1284
		N-ds	12-3/8"	12-3/8"	12-3/8"	12-3/8"	14-3/8"	14-3/8"	16-3/8"	16-3/8"	12-1/2"
		Ieff(in4)	133	133	133	133	161	161	179	191	239
		Bridging	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H
	24	Wt(plf)	5.4	5.4	5.4	5.5	5.9	5.9	5.8	6.2	8.0
		W360(plf)	898	898	898	898	1084	1084	1200	1284	1605
		N-ds	12-3/8"	12-3/8"	12-3/8"	12-3/8"	14-3/8"	14-3/8"	16-3/8"	16-3/8"	12-1/2"
		Ieff(in4)	167	167	167	167	202	202	224	239	299
		Bridging	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H
	28	Wt(plf)	5.7	5.7	5.7	5.8	6.2	6.2	6.4	6.4	8.2
		W360(plf)	1059	1059	1059	1059	1274	1274	1407	1506	1886
		N-ds	12-3/8"	12-3/8"	12-3/8"	12-3/8"	14-3/8"	14-3/8"	16-3/8"	16-3/8"	12-1/2"
		Ieff(in4)	197	197	197	197	237	237	262	280	351
		Bridging	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H
	32	Wt(plf)	5.9	5.9	5.9	6.0	6.0	6.1	6.6	7.7	7.8
		W360(plf)	1198	1198	1198	1198	1198	1467	1648	1704	2125
		N-ds	12-3/8"	12-3/8"	12-3/8"	12-3/8"	12-3/8"	14-3/8"	16-3/8"	10-1/2"	12-1/2"
		Ieff(in4)	223	223	223	223	223	273	307	317	396
		Bridging	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
BEARING HEIGHT		2 1/2"	5"	7 1/2"								
Concrete Slab Parameters												
Normal Weight Concrete (145 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
11.2	12.8	13.6	15.8	16.3	17.4	20.0	23	23	24	26	28	29
770	882	961	1103	1162	1239	1380	1579	1755	1866	1941	2015	2116
24-1/2"	28-1/2"	32-1/2"	24-5/8"	26-5/8"	28-5/8"	24-3/4"	30-3/4"	26-3/4"	30-3/4"	30-3/4"	32-3/4"	36-3/4"
143	164	179	205	216	231	257	294	327	347	361	375	394
(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
11.0	11.5	12.9	13.2	15.7	16.3	17.8	19.8	21	22	24	25	28
879	965	1061	1161	1322	1377	1549	1656	1898	2017	2164	2301	2492
22-1/2"	24-1/2"	26-1/2"	28-1/2"	20-5/8"	24-5/8"	28-5/8"	30-5/8"	20-3/4"	22-3/4"	26-3/4"	30-3/4"	32-3/4"
164	180	198	216	246	256	288	308	353	375	403	428	464
(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
10.7	11.7	12.3	13.9	14.6	16.5	17.6	19.9	20	23	24	25	27
1053	1127	1202	1433	1514	1613	1774	2041	2209	2418	2576	2771	2836
20-1/2"	22-1/2"	22-1/2"	16-5/8"	18-5/8"	20-5/8"	24-5/8"	20-3/4"	18-3/4"	20-3/4"	22-3/4"	26-3/4"	26-3/4"
196	210	224	267	282	300	330	380	411	450	480	516	528
(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
10.6	12.0	13.2	14.6	15.0	16.0	18.2	19.1	21	23	24	26	27
1144	1319	1441	1693	1808	1893	2132	2363	2774	2938	3132	3452	3519
16-1/2"	18-1/2"	14-5/8"	16-5/8"	18-5/8"	18-5/8"	16-3/4"	18-3/4"	18-3/4"	20-3/4"	22-3/4"	26-3/4"	26-3/4"
213	246	268	315	337	353	397	440	517	547	583	643	655
(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
7.6	9.2	10.3	10.5	11.7	12.3	14.2	15.4	16.5	17.8	20	21	23
1331	1495	1714	1870	2016	2148	2433	2683	3049	3270	3628	3868	4166
26-3/8"	18-1/2"	22-1/2"	22-1/2"	24-1/2"	26-1/2"	18-5/8"	24-5/8"	24-5/8"	28-5/8"	20-3/4"	22-3/4"	26-3/4"
248	278	319	348	375	400	453	500	568	609	676	720	776
(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
8.0	9.6	10.4	11.0	12.1	13.3	14.9	15.7	16.4	18.4	19	20	23
1512	1662	1877	2098	2278	2566	2751	3019	3353	3656	3868	4104	4538
16-1/2"	16-1/2"	20-1/2"	18-1/2"	14-5/8"	16-5/8"	18-5/8"	22-5/8"	24-5/8"	16-3/4"	18-3/4"	20-3/4"	22-3/4"
282	309	350	391	424	478	512	562	624	681	720	764	845
(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
8.1	9.6	10.4	11.1	12.4	13.5	14.8	15.6	16.3	18.2	18.9	20	23
1853	2042	2302	2555	2781	3130	3366	3686	4034	4413	4665	4946	5492
16-1/2"	16-1/2"	20-1/2"	18-1/2"	14-5/8"	16-5/8"	18-5/8"	22-5/8"	24-5/8"	16-3/4"	18-3/4"	20-3/4"	22-3/4"
345	380	429	476	518	583	627	686	751	822	869	921	1020
(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
8.7	9.7	10.6	11.2	12.4	13.5	15.0	15.6	16.4	18.3	19.0	20	23
2143	2369	2664	2940	3210	3607	3891	4250	4600	5049	5329	5644	6294
16-1/2"	16-1/2"	20-1/2"	18-1/2"	14-5/8"	16-5/8"	18-5/8"	22-5/8"	24-5/8"	16-3/4"	18-3/4"	20-3/4"	22-3/4"
399	441	496	547	598	672	724	791	856	940	992	1050	1170
(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
9.4	9.7	11.3	12.4	13.3	13.9	14.8	15.6	17.5	18.2	20	21	22
2479	2644	3071	3427	3676	3891	4330	4718	5291	5575	6169	6548	6959
16-1/2"	16-1/2"	18-1/2"	14-5/8"	14-5/8"	16-5/8"	18-5/8"	22-5/8"	16-3/4"	16-3/4"	18-3/4"	20-3/4"	22-3/4"
462	492	572	638	684	725	806	879	985	1040	1150	1220	1300
(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		BEARING HEIGHT									
		2 1/2"	5"	7 1/2"							
		Concrete Slab Parameters									
		Normal Weight Concrete (145 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1	1	1	
		tc (in.)	2	2	2	2	2	2	2	2	
		Js (ft.)	3	3	3	3	3	3	3.5	4	
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
25	10	Wt(plf)	5.5	6.2	7.0	7.8	8.5	9.1	11.1	12.3	13.7
		W360(plf)	170	215	255	287	328	346	401	446	527
		N-ds	14-3/8"	20-3/8"	24-3/8"	28-3/8"	32-3/8"	36-3/8"	24-1/2"	28-1/2"	34-1/2"
		Ieff(in4)	62	78	93	104	119	126	146	162	192
		Bridging	(1)X+(1)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H
	12	Wt(plf)	5.6	6.2	6.6	7.4	8.0	9.0	9.4	11.9	12.6
		W360(plf)	211	235	268	318	357	407	429	511	564
		N-ds	14-3/8"	16-3/8"	20-3/8"	24-3/8"	28-3/8"	32-3/8"	36-3/8"	24-1/2"	28-1/2"
		Ieff(in4)	77	85	98	116	130	148	156	186	205
		Bridging	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H
	14	Wt(plf)	5.3	6.0	6.4	7.1	7.6	9.5	10.0	10.6	12.7
		W360(plf)	217	262	303	362	394	465	497	571	660
		N-ds	14-3/8"	14-3/8"	18-3/8"	22-3/8"	24-3/8"	16-1/2"	18-1/2"	22-1/2"	24-1/2"
		Ieff(in4)	79	95	110	132	143	169	181	208	240
		Bridging	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H
	16	Wt(plf)	5.6	6.0	6.5	6.9	7.5	8.5	10.2	10.6	11.4
		W360(plf)	265	320	355	406	443	523	570	618	707
		N-ds	14-3/8"	14-3/8"	16-3/8"	20-3/8"	22-3/8"	26-3/8"	16-1/2"	18-1/2"	22-1/2"
		Ieff(in4)	96	116	129	148	161	190	207	225	257
		Bridging	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H
	18	Wt(plf)	5.3	5.3	5.6	6.0	6.4	7.0	7.4	7.8	8.6
		W360(plf)	341	341	415	462	530	631	675	719	831
		N-ds	14-3/8"	14-3/8"	14-3/8"	16-3/8"	20-3/8"	24-3/8"	26-3/8"	28-3/8"	32-3/8"
		Ieff(in4)	124	124	151	168	193	229	245	261	302
		Bridging	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H
	20	Wt(plf)	5.4	5.4	5.7	6.0	6.5	6.8	7.2	7.6	8.2
		W360(plf)	403	403	490	546	627	684	745	805	914
		N-ds	14-3/8"	14-3/8"	14-3/8"	16-3/8"	20-3/8"	22-3/8"	24-3/8"	26-3/8"	30-3/8"
		Ieff(in4)	147	147	178	198	228	249	271	293	333
		Bridging	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H
	24	Wt(plf)	5.6	5.6	5.6	6.0	6.3	6.7	7.1	7.5	7.6
		W360(plf)	528	528	528	642	714	819	892	979	1053
		N-ds	14-3/8"	14-3/8"	14-3/8"	14-3/8"	16-3/8"	20-3/8"	22-3/8"	24-3/8"	26-3/8"
		Ieff(in4)	192	192	192	233	260	298	324	356	383
		Bridging	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H
	28	Wt(plf)	5.6	5.7	5.8	5.8	6.0	6.4	7.2	7.9	9.7
		W360(plf)	649	649	649	787	873	927	1041	1160	1400
		N-ds	14-3/8"	14-3/8"	14-3/8"	14-3/8"	16-3/8"	16-3/8"	18-3/8"	14-1/2"	16-1/2"
		Ieff(in4)	236	236	236	286	318	337	378	422	509
		Bridging	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H
32	Wt(plf)	5.9	5.9	6.0	6.0	6.2	6.6	7.1	8.0	8.7	
	W360(plf)	761	761	761	920	1018	1083	1204	1356	1588	
	N-ds	14-3/8"	14-3/8"	14-3/8"	14-3/8"	16-3/8"	16-3/8"	18-3/8"	14-1/2"	16-1/2"	
	Ieff(in4)	277	277	277	334	370	394	438	493	578	
	Bridging	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
BEARING HEIGHT		2 1/2"	5"	7 1/2"								
Concrete Slab Parameters												
Normal Weight Concrete (145 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	2	3	3	3	3
2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
14.6	16.9	18.7	20.0	22	25	26	31	31	35	39	39	45
637	726	802	937	1014	1097	1159	1336	1507	1660	1845	1845	2040
36-1/2"	42-1/2"	34-5/8"	36-5/8"	42-5/8"	34-3/4"	38-3/4"	48-3/4"	42-3/4"	48-3/4"	56-3/4"	56-3/4"	66-3/4"
232	264	292	341	369	399	422	486	548	604	671	671	742
(2)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
13.1	15.6	17.0	19.1	21	22	25	27	27	30	32	35	38
675	773	869	1019	1097	1127	1312	1384	1518	1670	1757	1940	2113
32-1/2"	36-1/2"	44-1/2"	32-5/8"	38-5/8"	36-5/8"	34-3/4"	38-3/4"	34-3/4"	38-3/4"	42-3/4"	48-3/4"	56-3/4"
245	281	316	371	399	410	477	503	552	608	639	706	768
(2)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
13.0	15.4	17.1	18.1	19.4	20.0	23	26	27	28	31	33	36
774	926	997	1120	1200	1280	1426	1578	1789	1886	2048	2203	2380
28-1/2"	24-5/8"	26-5/8"	24-5/8"	30-5/8"	34-5/8"	28-3/4"	32-3/4"	30-3/4"	34-3/4"	36-3/4"	40-3/4"	48-3/4"
281	337	362	407	436	466	518	574	651	686	745	801	865
(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
12.9	15.3	16.3	17.7	18.7	20.0	22	23	26	27	29	31	33
893	1016	1129	1273	1364	1446	1593	1720	2047	2140	2256	2452	2506
26-1/2"	20-5/8"	24-5/8"	24-5/8"	26-5/8"	30-5/8"	24-3/4"	28-3/4"	28-3/4"	30-3/4"	34-3/4"	36-3/4"	36-3/4"
325	370	411	463	496	526	579	626	744	778	820	892	911
(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
9.1	10.8	12.7	13.2	15.6	16.4	18.3	21	22	24	26	27	30
993	1145	1293	1415	1633	1731	1882	2094	2426	2598	2688	2818	3042
36-3/8"	26-1/2"	30-1/2"	30-1/2"	24-5/8"	26-5/8"	28-5/8"	24-3/4"	24-3/4"	28-3/4"	28-3/4"	30-3/4"	32-3/4"
361	416	470	515	594	629	685	761	882	945	977	1020	1110
(2)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
9.2	10.7	12.4	12.9	15.0	15.8	17.1	19	21	23	26	26	29
1100	1256	1455	1567	1803	1908	2043	2229	2608	2820	3128	3128	3352
32-3/8"	24-1/2"	28-1/2"	28-1/2"	22-5/8"	24-5/8"	24-5/8"	30-5/8"	22-3/4"	24-3/4"	28-3/4"	28-3/4"	30-3/4"
400	457	529	570	656	694	743	811	949	1030	1140	1140	1220
(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
8.9	10.3	12.2	12.8	13.6	15.5	16.7	19	21	23	25	26	29
1312	1541	1781	1916	2017	2302	2462	2853	3303	3567	3703	3969	4265
30-3/8"	24-1/2"	26-1/2"	26-1/2"	26-1/2"	22-5/8"	24-5/8"	30-5/8"	22-3/4"	24-3/4"	24-3/4"	28-3/4"	30-3/4"
477	560	648	697	734	837	895	1040	1200	1300	1350	1440	1550
(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
10.6	11.8	12.8	14.0	15.3	15.8	17.0	18.4	22	23	24	24	27
1677	1858	2088	2336	2583	2724	3035	3268	3819	4083	4414	4414	4844
20-1/2"	20-1/2"	18-5/8"	16-5/8"	20-5/8"	20-5/8"	24-5/8"	24-5/8"	20-3/4"	22-3/4"	24-3/4"	24-3/4"	26-3/4"
610	676	759	850	940	991	1100	1190	1390	1490	1610	1610	1760
(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
10.7	11.4	12.8	13.6	15.4	15.9	16.9	18.4	20	23	24	24	26
1936	2111	2411	2650	2973	3130	3479	3748	4189	4667	5034	5034	5376
20-1/2"	20-1/2"	18-5/8"	16-5/8"	20-5/8"	20-5/8"	24-5/8"	24-5/8"	20-3/4"	22-3/4"	24-3/4"	24-3/4"	28-3/4"
704	768	877	964	1080	1140	1270	1360	1520	1700	1830	1830	1960
(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		BEARING HEIGHT									
		2 1/2"	5"	7 1/2"							
		Concrete Slab Parameters									
		Normal Weight Concrete (145 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1	1	1	
		tc (in.)	2	2	2	2	2	2	2	2	
		Js (ft.)	3	3	3	3	3	3	3.5	4	
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
30	12	Wt(plf)	6.1	7.2	7.9	8.7	10.1	11.4	13.5	14.0	15.5
		W360(plf)	155	204	229	263	310	337	386	418	476
		N-ds	18-3/8"	24-3/8"	28-3/8"	32-3/8"	40-3/8"	46-3/8"	32-1/2"	34-1/2"	40-1/2"
		leff(in4)	97	128	144	166	195	212	243	263	299
		Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(2)H	(2)H	(2)H	(2)H
	14	Wt(plf)	6.2	6.9	7.7	8.4	10.5	11.3	12.3	13.1	15.4
		W360(plf)	181	227	265	298	353	393	411	458	558
		N-ds	16-3/8"	22-3/8"	26-3/8"	30-3/8"	22-1/2"	24-1/2"	26-1/2"	30-1/2"	36-1/2"
		leff(in4)	114	142	166	187	222	247	258	288	350
		Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(2)H	(2)H	(2)H	(2)H	(2)H
	16	Wt(plf)	6.0	6.8	7.4	8.4	9.9	11.2	12.5	13.1	16.0
		W360(plf)	196	251	298	324	376	427	486	518	622
		N-ds	16-3/8"	20-3/8"	24-3/8"	26-3/8"	18-1/2"	22-1/2"	24-1/2"	26-1/2"	22-5/8"
		leff(in4)	123	158	187	203	237	268	306	325	391
		Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H
	18	Wt(plf)	5.6	5.8	6.6	7.0	7.6	8.2	8.6	9.6	11.5
		W360(plf)	247	275	346	378	426	488	515	592	679
		N-ds	16-3/8"	16-3/8"	22-3/8"	24-3/8"	28-3/8"	32-3/8"	36-3/8"	40-3/8"	28-1/2"
		leff(in4)	155	173	218	238	268	307	324	372	427
		Bridging	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H
	20	Wt(plf)	5.3	5.7	6.3	6.7	7.4	8.1	8.3	8.7	11.2
		W360(plf)	243	296	380	415	485	547	586	627	784
		N-ds	16-3/8"	16-3/8"	20-3/8"	22-3/8"	26-3/8"	30-3/8"	32-3/8"	36-3/8"	26-1/2"
		leff(in4)	153	186	239	261	305	344	368	394	493
		Bridging	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H
	24	Wt(plf)	5.5	5.9	6.1	6.6	7.0	7.7	7.8	8.1	10.3
		W360(plf)	328	400	446	513	560	654	689	745	904
		N-ds	16-3/8"	16-3/8"	16-3/8"	20-3/8"	22-3/8"	26-3/8"	28-3/8"	30-3/8"	22-1/2"
		leff(in4)	206	251	280	322	352	411	433	468	568
		Bridging	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H
	26	Wt(plf)	5.6	5.7	6.0	6.4	7.1	7.3	7.6	7.9	9.4
		W360(plf)	371	371	453	528	634	691	738	786	942
		N-ds	16-3/8"	16-3/8"	16-3/8"	18-3/8"	22-3/8"	24-3/8"	26-3/8"	28-3/8"	32-3/8"
		leff(in4)	233	233	285	332	398	434	464	494	592
		Bridging	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H
	28	Wt(plf)	5.8	5.8	6.2	6.5	6.7	7.1	7.5	8.0	9.4
		W360(plf)	415	415	506	563	647	706	769	874	1047
		N-ds	16-3/8"	16-3/8"	16-3/8"	16-3/8"	20-3/8"	22-3/8"	24-3/8"	28-3/8"	32-3/8"
		leff(in4)	261	261	318	354	407	444	483	549	658
		Bridging	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H
32	Wt(plf)	5.8	5.9	6.0	6.2	6.6	7.3	7.8	8.8	10.8	
	W360(plf)	500	500	609	677	776	861	951	1052	1232	
	N-ds	16-3/8"	16-3/8"	16-3/8"	16-3/8"	20-3/8"	22-3/8"	24-3/8"	16-1/2"	18-1/2"	
	leff(in4)	315	315	383	425	488	541	598	661	774	
	Bridging	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)H	



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
BEARING HEIGHT		2 1/2"	5"									
Concrete Slab Parameters												
Normal Weight Concrete (145 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
17.9	19.4	23	27	28	29	34	37	39	42	45	48	53
606	669	776	934	1004	1061	1186	1304	1499	1623	1664	1746	1915
48-1/2"	52-1/2"	46-5/8"	36-3/4"	42-3/4"	46-3/4"	54-3/4"	64-3/4"	54-3/4"	64-3/4"	64-3/4"	72-3/4"	84-3/4"
381	420	487	587	631	667	745	819	942	1020	1050	1100	1200
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
18.1	19.3	21.0	25	25	27	31	33	35	39	40	43	45
693	755	843	989	1043	1103	1281	1390	1547	1729	1753	1894	1926
30-5/8"	34-5/8"	38-5/8"	30-3/4"	34-3/4"	36-3/4"	46-3/4"	54-3/4"	46-3/4"	54-3/4"	54-3/4"	64-3/4"	64-3/4"
436	475	530	622	656	693	805	874	972	1090	1100	1190	1210
(2)H	(2)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
16.9	19.2	21	23	24	27	28	32	33	37	40	41	45
742	861	929	1091	1178	1276	1350	1550	1703	1874	2055	2091	2304
26-5/8"	32-5/8"	34-5/8"	26-3/4"	30-3/4"	34-3/4"	36-3/4"	44-3/4"	38-3/4"	46-3/4"	54-3/4"	54-3/4"	64-3/4"
466	541	584	686	740	802	848	974	1070	1180	1290	1310	1450
(2)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
12.1	14.9	16.9	17.9	20	21	24	28	29	32	35	36	41
825	961	1068	1199	1317	1432	1569	1715	1957	2113	2299	2345	2611
34-1/2"	40-1/2"	30-5/8"	32-5/8"	36-5/8"	40-5/8"	34-3/4"	36-3/4"	36-3/4"	38-3/4"	46-3/4"	46-3/4"	54-3/4"
519	604	671	753	828	900	986	1080	1230	1330	1440	1470	1640
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
11.9	14.2	15.3	17.1	18.6	20	23	25	28	29	32	36	37
939	1083	1168	1335	1450	1591	1782	1872	2180	2322	2507	2786	2786
32-1/2"	36-1/2"	38-1/2"	28-5/8"	30-5/8"	36-5/8"	30-3/4"	34-3/4"	32-3/4"	36-3/4"	38-3/4"	46-3/4"	46-3/4"
590	681	734	839	911	1000	1120	1180	1370	1460	1580	1750	1750
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
11.0	12.9	14.4	15.9	17.0	18.5	22	23	26	27	30	33	34
1087	1229	1386	1565	1685	1821	2204	2204	2577	2713	2934	3186	3371
26-1/2"	30-1/2"	32-1/2"	24-5/8"	24-5/8"	28-5/8"	26-3/4"	26-3/4"	26-3/4"	28-3/4"	30-3/4"	34-3/4"	38-3/4"
683	773	871	984	1060	1140	1390	1390	1620	1700	1840	2000	2120
(2)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
10.6	12.7	14.0	15.5	16.5	18.6	21	23	25	26	29	31	33
1143	1326	1479	1656	1779	2041	2281	2474	2681	2881	3098	3343	3566
24-1/2"	28-1/2"	30-1/2"	22-5/8"	24-5/8"	28-5/8"	24-3/4"	26-3/4"	24-3/4"	26-3/4"	28-3/4"	30-3/4"	34-3/4"
718	833	929	1040	1120	1280	1430	1550	1680	1810	1950	2100	2240
(2)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
10.5	12.7	13.7	15.5	16.7	18.0	21	23	25	27	29	31	33
1211	1401	1553	1830	1966	2115	2355	2736	2957	3176	3419	3692	3936
24-1/2"	26-1/2"	28-1/2"	22-5/8"	24-5/8"	24-5/8"	22-3/4"	26-3/4"	24-3/4"	26-3/4"	28-3/4"	30-3/4"	34-3/4"
761	881	976	1150	1240	1330	1480	1720	1860	2000	2150	2320	2470
(2)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
11.6	13.4	14.2	15.7	17.2	18.1	19.1	21	24	26	27	30	31
1481	1726	1894	2099	2386	2529	2697	2932	3477	3729	3923	4255	4523
22-1/2"	18-5/8"	20-5/8"	20-5/8"	24-5/8"	26-5/8"	28-5/8"	30-5/8"	24-3/4"	26-3/4"	28-3/4"	30-3/4"	34-3/4"
931	1080	1190	1320	1500	1590	1690	1840	2190	2340	2470	2670	2840
(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
		BEARING HEIGHT										
		2 1/2"	5"	7 1/2"								
		Concrete Slab Parameters										
		Normal Weight Concrete (145 pcf) f'c = 4.0 ksi										
		hr (in.)	1	1	1	1	1	1	1	1		
		tc (in.)	2	2	2	2	2	2	2	2		
		Js (ft.)	3	3	3	3	3	3	3.5	4		
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot										
		TL	300	400	500	600	700	800	900	1000	1200	
35	14	Wt(plf)	7.2	8.3	9.1	11.3	12.7	13.6	14.7	16.2	20.0	
		W360(plf)	156	193	222	269	294	324	362	401	485	
		N-ds	22-3/8"	28-3/8"	32-3/8"	24-1/2"	28-1/2"	32-1/2"	36-1/2"	40-1/2"	34-5/8"	34-5/8"
		Ieff(in4)	155	193	222	269	294	324	362	400	484	484
			Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(3)H	(3)H	(2)H	(2)H
			Wt(plf)	6.9	7.8	8.7	10.1	12.0	13.1	13.7	16.3	18.3
			W360(plf)	168	201	243	275	321	368	385	450	522
			N-ds	20-3/8"	24-3/8"	30-3/8"	36-3/8"	24-1/2"	30-1/2"	32-1/2"	36-1/2"	42-1/2"
			Ieff(in4)	168	201	243	275	321	368	384	449	521
			Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(3)H	(2)H	(2)H
			Wt(plf)	5.9	6.6	7.3	8.1	8.8	9.6	11.6	12.2	14.3
			W360(plf)	176	221	272	312	344	382	442	472	565
			N-ds	18-3/8"	22-3/8"	28-3/8"	32-3/8"	38-3/8"	44-3/8"	30-1/2"	32-1/2"	40-1/2"
			Ieff(in4)	175	220	272	312	343	381	442	471	564
			Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(2)H	(2)H	(2)H
			Wt(plf)	5.9	6.6	7.1	7.7	8.6	9.3	10.0	11.7	12.6
			W360(plf)	212	267	313	353	399	443	472	547	614
			N-ds	18-3/8"	22-3/8"	26-3/8"	30-3/8"	36-3/8"	40-3/8"	42-3/8"	30-1/2"	34-1/2"
			Ieff(in4)	212	267	312	352	399	442	471	545	613
			Bridging	(1)X+(1)H	(1)X+(1)H	(1)X+(1)H	(1)X+(1)H	(1)X+(1)H	(2)H	(2)H	(2)H	(2)H
			Wt(plf)	5.8	6.4	7.1	7.5	8.3	8.7	9.7	11.3	12.4
			W360(plf)	225	289	346	391	448	473	536	616	690
			N-ds	18-3/8"	20-3/8"	24-3/8"	28-3/8"	32-3/8"	36-3/8"	40-3/8"	28-1/2"	32-1/2"
			Ieff(in4)	224	289	345	390	447	472	535	615	688
			Bridging	(1)X+(1)H	(1)X+(1)H	(1)X+(1)H	(1)X+(1)H	(1)X+(1)H	(2)H	(2)H	(2)H	(2)H
			Wt(plf)	5.9	6.2	6.9	7.3	8.0	8.4	9.4	10.8	12.0
			W360(plf)	261	305	368	430	486	521	585	657	764
			N-ds	18-3/8"	18-3/8"	22-3/8"	26-3/8"	30-3/8"	32-3/8"	38-3/8"	24-1/2"	30-1/2"
			Ieff(in4)	261	305	367	430	485	520	584	656	763
			Bridging	(1)X+(1)H	(1)X+(1)H	(1)X+(1)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H
			Wt(plf)	6.0	6.2	6.7	7.1	7.7	8.5	9.2	10.5	11.6
			W360(plf)	299	334	385	460	519	595	641	704	830
		N-ds	18-3/8"	18-3/8"	20-3/8"	24-3/8"	28-3/8"	32-3/8"	36-3/8"	22-1/2"	28-1/2"	
		Ieff(in4)	298	333	384	459	518	594	639	703	828	
		Bridging	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	
		Wt(plf)	5.8	6.4	6.8	7.2	7.6	8.2	9.0	10.3	11.4	
		W360(plf)	276	377	434	518	554	625	683	760	898	
		N-ds	18-3/8"	18-3/8"	20-3/8"	24-3/8"	26-3/8"	30-3/8"	32-3/8"	22-1/2"	26-1/2"	
		Ieff(in4)	276	376	433	517	553	624	682	759	896	
		Bridging	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	
		Wt(plf)	5.9	6.0	6.3	6.7	7.3	7.9	9.4	10.0	11.9	
		W360(plf)	340	416	463	533	634	690	810	881	1010	
		N-ds	18-3/8"	18-3/8"	18-3/8"	20-3/8"	24-3/8"	26-3/8"	18-1/2"	20-1/2"	22-1/2"	
		Ieff(in4)	340	415	462	532	633	689	808	879	1010	
		Bridging	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
BEARING HEIGHT	2 1/2"	5"	Concrete Slab Parameters									
Normal Weight Concrete (145 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	2	3	3	3	3
2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
22	25	27	29	33	33	38	41	43	47	53	56	61
607	695	750	871	984	994	1130	1229	1386	1478	1627	1683	1823
40-5/8"	50-5/8"	54-5/8"	44-3/4"	52-3/4"	52-3/4"	60-3/4"	70-3/4"	62-3/4"	70-3/4"	80-3/4"	86-3/4"	100-3/4"
606	694	748	870	982	992	1130	1230	1380	1480	1620	1680	1820
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)H	(1)X	(1)X	(1)X
21	23	25	28	29	31	34	38	41	42	46	52	53
654	724	819	950	1012	1108	1160	1304	1524	1557	1660	1825	1859
38-5/8"	40-5/8"	50-5/8"	38-3/4"	44-3/4"	52-3/4"	52-3/4"	60-3/4"	62-3/4"	62-3/4"	70-3/4"	80-3/4"	80-3/4"
652	722	817	949	1010	1110	1160	1300	1520	1550	1660	1820	1860
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)H	(2)H	(1)H	(1)X	(1)X	(1)X
16.5	19.0	21	22	25	27	33	36	38	40	44	48	54
691	785	857	957	1065	1141	1374	1509	1651	1687	1855	1986	2191
48-1/2"	38-5/8"	40-5/8"	42-5/8"	34-3/4"	38-3/4"	52-3/4"	62-3/4"	52-3/4"	52-3/4"	62-3/4"	70-3/4"	80-3/4"
689	783	855	955	1060	1140	1370	1510	1650	1680	1850	1980	2190
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
15.6	17.8	19.5	21	24	26	30	33	35	39	41	45	48
783	877	966	1100	1212	1292	1520	1659	1804	2026	2054	2267	2392
44-1/2"	34-5/8"	36-5/8"	38-5/8"	32-3/4"	34-3/4"	44-3/4"	52-3/4"	44-3/4"	52-3/4"	52-3/4"	62-3/4"	70-3/4"
781	875	964	1100	1210	1290	1520	1660	1800	2020	2050	2260	2390
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
14.8	16.9	19.1	20	23	24	29	31	35	36	40	42	45
869	968	1129	1207	1358	1438	1694	1794	2120	2161	2415	2452	2666
40-1/2"	30-5/8"	38-5/8"	34-5/8"	30-3/4"	32-3/4"	38-3/4"	44-3/4"	44-3/4"	44-3/4"	52-3/4"	52-3/4"	62-3/4"
868	966	1130	1200	1360	1440	1690	1790	2120	2160	2410	2450	2660
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
14.3	16.2	18.1	20	22	23	28	29	32	36	37	42	43
950	1052	1209	1395	1525	1579	1835	1960	2234	2491	2524	2829	2829
36-1/2"	28-5/8"	34-5/8"	34-5/8"	40-5/8"	30-3/4"	34-3/4"	38-3/4"	36-3/4"	44-3/4"	44-3/4"	52-3/4"	52-3/4"
948	1050	1210	1390	1520	1580	1830	1960	2230	2490	2520	2820	2820
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
13.9	16.3	17.4	19.2	21	23	27	28	31	34	36	39	43
1021	1199	1287	1463	1614	1796	1968	2089	2390	2578	2825	2905	3211
34-1/2"	28-5/8"	30-5/8"	30-5/8"	34-5/8"	30-3/4"	32-3/4"	34-3/4"	32-3/4"	36-3/4"	44-3/4"	44-3/4"	52-3/4"
1020	1200	1280	1460	1610	1790	1960	2080	2390	2570	2820	2900	3200
(2)H	(2)H	(2)H	(2)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
13.6	15.9	16.7	18.5	20	23	26	27	30	33	34	38	40
1088	1268	1354	1530	1667	1871	2091	2208	2501	2720	2882	3203	3252
32-1/2"	26-5/8"	28-5/8"	28-5/8"	30-5/8"	26-3/4"	30-3/4"	32-3/4"	30-3/4"	32-3/4"	36-3/4"	44-3/4"	44-3/4"
1090	1270	1350	1530	1660	1870	2090	2200	2500	2710	2880	3200	3240
(2)H	(2)H	(2)H	(2)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
12.8	14.4	16.4	17.7	19	21	23	26	29	30	33	36	40
1203	1364	1566	1733	1885	2057	2280	2539	2844	3016	3282	3525	3929
28-1/2"	30-1/2"	26-5/8"	24-5/8"	28-5/8"	30-5/8"	26-3/4"	30-3/4"	28-3/4"	30-3/4"	32-3/4"	36-3/4"	44-3/4"
1200	1360	1560	1730	1880	2050	2280	2530	2840	3010	3270	3520	3920
(2)H	(2)H	(2)H	(2)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		BEARING HEIGHT									
		2 1/2"	5"	7 1/2"							
		Concrete Slab Parameters									
		Normal Weight Concrete (145 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1	1	1	
		tc (in.)	2	2	2	2	2	2	2	2	
		Js (ft.)	3	3	3	3	3	3	3.5	4	
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
40	16	Wt(plf)	8.0	9.6	11.9	12.5	14.0	16.1	18.0	19.8	24
		W360(plf)	146	192	231	253	295	318	362	409	477
		N-ds	24-3/8"	32-3/8"	24-1/2"	28-1/2"	34-1/2"	36-1/2"	42-1/2"	34-5/8"	40-5/8"
		Ieff(in4)	218	286	344	376	440	474	540	610	710
		Bridging	(1)X+(3)H	(1)X+(3)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(3)H	(3)H	(3)H
	18	Wt(plf)	6.9	7.8	9.0	10.2	11.9	13.1	14.3	16.3	18.1
		W360(plf)	150	186	226	263	298	329	366	411	455
		N-ds	22-3/8"	28-3/8"	36-3/8"	42-3/8"	30-1/2"	34-1/2"	40-1/2"	44-1/2"	46-1/2"
		Ieff(in4)	224	277	337	391	444	490	546	612	678
		Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(3)H	(2)H	(2)H
	20	Wt(plf)	6.1	7.0	8.1	8.8	10.2	12.4	13.2	14.5	17.5
		W360(plf)	165	212	256	282	332	381	402	458	550
		N-ds	20-3/8"	26-3/8"	32-3/8"	38-3/8"	46-3/8"	32-1/2"	34-1/2"	40-1/2"	48-1/2"
		Ieff(in4)	246	315	382	420	495	567	598	682	820
		Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(3)H	(2)H
	22	Wt(plf)	6.4	6.8	7.7	8.6	9.7	11.2	12.4	13.2	16.3
		W360(plf)	196	235	285	323	365	412	455	490	612
		N-ds	20-3/8"	24-3/8"	30-3/8"	36-3/8"	40-3/8"	28-1/2"	32-1/2"	34-1/2"	44-1/2"
		Ieff(in4)	293	350	424	481	544	614	678	729	912
		Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(3)H	(2)H
	24	Wt(plf)	6.1	6.9	7.5	8.3	9.3	10.9	11.9	12.4	15.6
		W360(plf)	199	275	311	358	401	465	509	544	674
		N-ds	20-3/8"	24-3/8"	28-3/8"	32-3/8"	38-3/8"	26-1/2"	30-1/2"	32-1/2"	40-1/2"
		Ieff(in4)	297	410	464	533	598	692	758	810	1000
		Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(3)H	(2)H
	26	Wt(plf)	6.2	6.7	7.3	8.0	9.1	10.7	11.6	12.0	14.8
		W360(plf)	229	290	340	384	443	512	558	597	732
		N-ds	20-3/8"	22-3/8"	26-3/8"	30-3/8"	36-3/8"	24-1/2"	28-1/2"	30-1/2"	36-1/2"
		Ieff(in4)	342	432	506	572	660	763	831	889	1090
		Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(2)H	(2)H	(2)H	(2)H
	28	Wt(plf)	6.1	6.5	7.2	8.0	8.9	10.4	11.4	11.6	14.3
		W360(plf)	234	301	360	436	477	545	610	645	787
		N-ds	20-3/8"	20-3/8"	24-3/8"	30-3/8"	32-3/8"	22-1/2"	26-1/2"	28-1/2"	34-1/2"
		Ieff(in4)	348	449	537	650	710	812	909	960	1170
		Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(2)H	(2)H	(2)H	(2)H
	30	Wt(plf)	6.3	6.7	7.3	7.9	9.0	10.1	11.1	11.4	14.0
		W360(plf)	263	339	405	458	535	587	654	696	835
		N-ds	20-3/8"	20-3/8"	24-3/8"	28-3/8"	32-3/8"	22-1/2"	24-1/2"	26-1/2"	30-1/2"
		Ieff(in4)	391	504	603	682	797	874	975	1040	1240
		Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(2)H	(2)H	(2)H	(2)H
32	Wt(plf)	6.2	6.4	7.0	7.6	8.2	9.0	10.9	11.2	13.6	
	W360(plf)	292	342	412	481	543	594	681	738	881	
	N-ds	20-3/8"	20-3/8"	22-3/8"	26-3/8"	30-3/8"	32-3/8"	22-1/2"	24-1/2"	28-1/2"	
	Ieff(in4)	435	509	613	717	809	885	1010	1100	1310	
	Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(2)H	(2)H	(2)H	



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
BEARING HEIGHT	2 1/2"	5"	Concrete Slab Parameters									
Normal Weight Concrete (145 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	2	3	3	3	3
2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
25	28	33	33	36	40	44	49	52	56	63	68	71
588	649	777	832	928	1037	1133	1267	1415	1466	1623	1742	1777
50-5/8"	42-3/4"	52-3/4"	50-3/4"	60-3/4"	68-3/4"	78-3/4"	90-3/4"	80-3/4"	86-3/4"	100-3/4"	112-3/4"	112-3/4"
875	966	1160	1240	1380	1550	1690	1890	2110	2180	2420	2590	2650
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)X	(1)X	(1)X
20	24	28	31	33	36	41	45	48	54	57	63	66
561	642	760	870	910	1008	1135	1238	1366	1509	1543	1698	1744
42-5/8"	48-5/8"	46-3/4"	50-3/4"	50-3/4"	60-3/4"	68-3/4"	78-3/4"	68-3/4"	80-3/4"	86-3/4"	100-3/4"	100-3/4"
835	956	1130	1300	1360	1500	1690	1840	2040	2250	2300	2530	2600
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(2)X	(1)X	(1)X
20.0	22	25	27	31	33	37	41	43	48	52	54	62
681	730	850	921	1066	1115	1272	1399	1540	1654	1793	1829	2061
42-5/8"	44-5/8"	54-5/8"	38-3/4"	50-3/4"	50-3/4"	58-3/4"	68-3/4"	60-3/4"	68-3/4"	80-3/4"	80-3/4"	100-3/4"
1020	1090	1270	1370	1590	1660	1900	2080	2290	2460	2670	2720	3070
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)H	(1)X	(1)X	(1)X
18.9	21	23	25	28	33	34	38	42	45	48	54	56
758	828	901	1027	1165	1326	1372	1532	1798	1854	1962	2170	2205
38-5/8"	40-5/8"	46-5/8"	34-3/4"	42-3/4"	50-3/4"	48-3/4"	58-3/4"	60-3/4"	60-3/4"	68-3/4"	80-3/4"	80-3/4"
1130	1230	1340	1530	1740	1980	2040	2280	2680	2760	2920	3230	3290
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)X	(1)X	(1)X
17.8	20	22	25	27	30	33	38	39	44	45	50	55
818	903	1002	1198	1286	1417	1569	1790	1924	2123	2157	2327	2570
34-5/8"	36-5/8"	42-5/8"	34-3/4"	38-3/4"	42-3/4"	50-3/4"	58-3/4"	50-3/4"	60-3/4"	60-3/4"	68-3/4"	80-3/4"
1220	1350	1490	1780	1920	2110	2340	2670	2870	3160	3210	3470	3830
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)X	(1)X	(1)X
17.1	19.6	21	24	26	29	31	35	39	41	45	47	52
880	1038	1138	1280	1385	1536	1646	1862	2202	2233	2471	2513	2709
30-5/8"	36-5/8"	40-5/8"	40-5/8"	34-3/4"	38-3/4"	42-3/4"	48-3/4"	50-3/4"	50-3/4"	60-3/4"	60-3/4"	68-3/4"
1310	1550	1690	1910	2060	2290	2450	2770	3280	3330	3680	3740	4040
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)X	(1)X	(1)X
16.4	18.3	20	23	25	28	30	35	36	41	43	47	49
934	1076	1202	1375	1480	1629	1759	2109	2249	2521	2560	2840	2882
28-5/8"	34-5/8"	36-5/8"	36-5/8"	32-3/4"	34-3/4"	38-3/4"	48-3/4"	42-3/4"	50-3/4"	50-3/4"	60-3/4"	60-3/4"
1390	1600	1790	2050	2200	2430	2620	3140	3350	3760	3810	4230	4290
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
16.5	17.6	20	22	24	27	30	33	37	38	43	45	49
1046	1125	1241	1430	1568	1716	1967	2147	2507	2542	2856	2904	3217
28-5/8"	30-5/8"	34-5/8"	34-5/8"	30-3/4"	32-3/4"	38-3/4"	40-3/4"	42-3/4"	42-3/4"	50-3/4"	50-3/4"	60-3/4"
1560	1680	1850	2130	2340	2560	2930	3200	3740	3790	4250	4330	4790
(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
15.9	17.5	20	22	24	27	28	31	34	38	40	45	47
1091	1246	1374	1580	1734	1900	2036	2239	2517	2804	2846	3207	3253
26-5/8"	30-5/8"	34-5/8"	34-5/8"	30-3/4"	32-3/4"	34-3/4"	36-3/4"	36-3/4"	42-3/4"	42-3/4"	50-3/4"	50-3/4"
1630	1860	2050	2350	2580	2830	3030	3340	3750	4180	4240	4780	4850
(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
		BEARING HEIGHT										
		2 1/2"	5"	7 1/2"								
		Concrete Slab Parameters										
		Normal Weight Concrete (145 pcf) f'c = 4.0 ksi										
		hr (in.)	1	1	1	1	1	1	1	1		
		tc (in.)	2	2	2	2	2	2	2	2		
		Js (ft.)	3	3	3	3	3	3	3.5	4		
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot										
		TL	300	400	500	600	700	800	900	1000	1200	
45	18	Wt(plf)	8.3	9.7	10.9	12.3	13.6	15.2	17.4	18.7	22	
		W360(plf)	133	164	192	220	244	274	303	331	386	
		N-ds	28-3/8"	24-1/2"	26-1/2"	32-1/2"	36-1/2"	44-1/2"	48-1/2"	54-1/2"	44-5/8"	
		Ieff(in4)	282	348	407	466	519	581	643	701	819	
		Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(3)H
	20	Wt(plf)	7.8	8.9	10.6	11.8	13.0	14.6	16.3	17.6	21	
		W360(plf)	153	186	224	256	284	316	346	381	451	
		N-ds	26-3/8"	32-3/8"	24-1/2"	30-1/2"	34-1/2"	40-1/2"	44-1/2"	48-1/2"	40-5/8"	
		Ieff(in4)	324	394	474	544	601	671	734	808	956	
		Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(3)H
	22	Wt(plf)	7.3	8.3	9.4	10.6	12.5	13.8	15.5	16.5	20.0	
		W360(plf)	168	204	243	281	322	359	391	426	518	
		N-ds	24-3/8"	30-3/8"	38-3/8"	46-3/8"	32-1/2"	36-1/2"	40-1/2"	44-1/2"	38-5/8"	
		Ieff(in4)	357	434	514	596	683	761	829	903	1100	
		Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(3)H
	24	Wt(plf)	6.8	7.7	8.9	9.6	12.1	13.1	14.8	15.7	19.1	
		W360(plf)	179	221	269	299	362	401	435	471	572	
		N-ds	24-3/8"	28-3/8"	36-3/8"	40-3/8"	30-1/2"	34-1/2"	36-1/2"	40-1/2"	34-5/8"	
		Ieff(in4)	379	469	570	633	767	850	922	1000	1210	
		Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(3)H
	26	Wt(plf)	6.4	7.3	8.3	9.3	11.3	12.8	14.0	15.5	18.9	
		W360(plf)	189	242	295	331	398	440	477	547	664	
		N-ds	24-3/8"	26-3/8"	32-3/8"	38-3/8"	28-1/2"	32-1/2"	34-1/2"	40-1/2"	34-5/8"	
		Ieff(in4)	400	514	625	701	845	934	1010	1160	1410	
		Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(3)H
	28	Wt(plf)	6.5	7.1	8.0	9.2	10.7	12.3	13.5	14.8	17.9	
		W360(plf)	216	258	314	362	418	480	517	590	704	
		N-ds	24-3/8"	24-3/8"	30-3/8"	36-3/8"	24-1/2"	30-1/2"	30-1/2"	36-1/2"	30-5/8"	
		Ieff(in4)	458	548	665	768	887	1020	1100	1250	1490	
		Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(3)H
	30	Wt(plf)	6.4	7.3	7.8	8.9	10.8	11.8	13.1	14.4	16.8	
		W360(plf)	221	292	331	387	473	515	556	630	739	
		N-ds	24-3/8"	24-3/8"	28-3/8"	32-3/8"	24-1/2"	28-1/2"	28-1/2"	34-1/2"	38-1/2"	
		Ieff(in4)	469	619	701	821	1000	1090	1180	1340	1570	
		Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(2)H	(2)H	(2)H
	32	Wt(plf)	6.5	7.0	7.8	8.7	9.6	10.8	12.3	13.9	16.1	
		W360(plf)	236	299	370	425	477	540	606	667	776	
		N-ds	24-3/8"	24-3/8"	28-3/8"	32-3/8"	38-3/8"	42-3/8"	30-1/2"	30-1/2"	34-1/2"	
		Ieff(in4)	501	633	784	902	1010	1140	1290	1410	1650	
		Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(2)H	(2)H
	36	Wt(plf)	6.3	6.9	7.5	8.8	9.8	11.0	11.9	13.2	15.2	
		W360(plf)	258	332	397	489	538	603	673	731	878	
		N-ds	24-3/8"	24-3/8"	24-3/8"	30-3/8"	32-3/8"	24-1/2"	26-1/2"	26-1/2"	32-1/2"	
		Ieff(in4)	546	705	842	1040	1140	1280	1430	1550	1860	
		Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(2)H	(2)H



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
BEARING HEIGHT	2 1/2"	5"	Concrete Slab Parameters									
Normal Weight Concrete (145 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	2	3	3	3	3
2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
25	31	34	36	40	44	49	54	61	63	70	76	88
480	573	634	697	780	828	930	998	1192	1219	1339	1420	1610
54-5/8"	52-3/4"	60-3/4"	58-3/4"	66-3/4"	74-3/4"	88-3/4"	94-3/4"	96-3/4"	96-3/4"	110-3/4"	124-3/4"	150-3/4"
1020	1220	1350	1480	1650	1760	1970	2120	2530	2580	2840	3010	3410
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X
24	28	31	36	37	41	45	52	54	63	66	71	79
545	646	710	851	878	961	1051	1193	1309	1483	1523	1631	1785
48-5/8"	46-3/4"	52-3/4"	58-3/4"	56-3/4"	66-3/4"	74-3/4"	88-3/4"	76-3/4"	96-3/4"	96-3/4"	110-3/4"	124-3/4"
1160	1370	1510	1800	1860	2040	2230	2530	2780	3150	3230	3460	3790
(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(1)X
22	27	28	33	36	38	42	48	54	56	65	66	74
618	732	782	925	1026	1058	1190	1314	1560	1590	1817	1817	2003
44-5/8"	42-3/4"	46-3/4"	48-3/4"	58-3/4"	56-3/4"	66-3/4"	74-3/4"	76-3/4"	76-3/4"	96-3/4"	96-3/4"	110-3/4"
1310	1550	1660	1960	2180	2240	2520	2790	3310	3370	3850	3850	4250
(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)X	(1)X	(1)X
21	25	27	30	33	38	42	45	50	56	59	66	70
691	808	870	994	1096	1243	1398	1457	1679	1862	1906	2131	2188
40-5/8"	38-3/4"	42-3/4"	40-3/4"	48-3/4"	56-3/4"	66-3/4"	66-3/4"	66-3/4"	76-3/4"	76-3/4"	96-3/4"	96-3/4"
1470	1710	1840	2110	2320	2640	2970	3090	3560	3950	4040	4520	4640
(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)X	(1)X	(1)X
21	23	27	29	33	34	38	42	45	50	55	59	65
789	860	1007	1084	1267	1303	1458	1638	1791	1941	2148	2199	2462
40-5/8"	46-5/8"	42-3/4"	38-3/4"	48-3/4"	46-3/4"	56-3/4"	66-3/4"	56-3/4"	66-3/4"	76-3/4"	76-3/4"	96-3/4"
1670	1820	2140	2300	2690	2760	3090	3480	3800	4120	4560	4660	5220
(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(1)X	(1)X
19.6	22	25	27	30	33	38	39	45	50	52	56	59
840	933	1079	1198	1320	1456	1663	1715	2037	2210	2243	2445	2504
36-5/8"	42-5/8"	38-3/4"	38-3/4"	40-3/4"	48-3/4"	56-3/4"	56-3/4"	56-3/4"	66-3/4"	66-3/4"	76-3/4"	76-3/4"
1780	1980	2290	2540	2800	3090	3530	3640	4320	4690	4760	5190	5310
(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(1)X
18.7	22	24	26	29	31	35	39	42	47	50	53	59
875	1052	1134	1265	1403	1497	1696	1933	2096	2334	2485	2523	2819
34-5/8"	42-5/8"	44-5/8"	34-3/4"	38-3/4"	40-3/4"	46-3/4"	56-3/4"	48-3/4"	56-3/4"	66-3/4"	66-3/4"	76-3/4"
1860	2230	2400	2680	2980	3170	3600	4100	4450	4950	5270	5350	5980
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)H	(1)X	(1)X	(1)X
18.7	21	23	26	28	31	36	38	43	47	50	55	59
976	1093	1200	1350	1464	1603	1925	1970	2330	2595	2633	2873	3139
34-5/8"	38-5/8"	40-5/8"	40-5/8"	34-3/4"	36-3/4"	46-3/4"	46-3/4"	48-3/4"	56-3/4"	56-3/4"	66-3/4"	76-3/4"
2070	2320	2550	2860	3100	3400	4080	4180	4940	5500	5580	6090	6660
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
17.7	20	22	24	27	28	33	37	40	44	45	50	53
1092	1205	1351	1520	1667	1779	2078	2351	2526	2856	2856	3170	3243
30-5/8"	34-5/8"	36-5/8"	30-3/4"	32-3/4"	34-3/4"	40-3/4"	46-3/4"	40-3/4"	48-3/4"	48-3/4"	56-3/4"	56-3/4"
2320	2560	2870	3220	3540	3770	4410	4990	5360	6060	6060	6720	6880
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)H	(1)X	(1)X	(1)X



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
		BEARING HEIGHT		2 1/2"		5"		7 1/2"				
		Concrete Slab Parameters										
		Normal Weight Concrete (145 pcf) f'c = 4.0 ksi										
		hr (in.)	1	1	1	1	1	1	1	1		
		tc (in.)	2	2	2	2	2	2	2	2		
		Js (ft.)	3	3	3	3	3	3	3.5	4		
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot										
		TL	300	400	500	600	700	800	900	1000	1200	
50	20	Wt(plf)	9.0	10.5	11.8	13.6	16.1	17.4	18.7	21	25	
		W360(plf)	128	163	187	219	253	271	289	322	389	
		N-ds	26-1/2"	26-1/2"	30-1/2"	36-1/2"	44-1/2"	48-1/2"	54-1/2"	40-5/8"	50-5/8"	
		leff(in4)	373	475	545	636	736	790	839	936	1130	
			Bridging	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(3)H
	22	Wt(plf)	8.4	10.2	11.4	13.0	14.5	16.3	17.6	19.9	24	
		W360(plf)	142	183	214	249	278	304	327	371	446	
		N-ds	28-3/8"	26-1/2"	28-1/2"	34-1/2"	40-1/2"	44-1/2"	48-1/2"	38-5/8"	46-5/8"	
		leff(in4)	412	533	621	724	808	885	950	1080	1300	
			Bridging	(1)X+(3)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(3)H
	24	Wt(plf)	8.0	9.4	10.5	11.8	13.7	15.5	17.6	18.5	23	
		W360(plf)	157	203	237	271	310	338	386	407	499	
N-ds		26-3/8"	36-3/8"	42-3/8"	52-3/8"	36-1/2"	40-1/2"	48-1/2"	46-1/2"	42-5/8"		
leff(in4)		456	590	689	789	903	984	1120	1180	1450		
		Bridging	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	
26	Wt(plf)	7.5	8.9	9.9	11.1	13.2	14.8	16.6	18.1	22		
	W360(plf)	168	220	259	296	342	371	419	467	553		
	N-ds	26-3/8"	32-3/8"	40-3/8"	48-3/8"	34-1/2"	36-1/2"	44-1/2"	46-1/2"	40-5/8"		
	leff(in4)	489	641	755	862	995	1080	1220	1360	1610		
		Bridging	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	
28	Wt(plf)	7.4	8.4	9.6	10.5	12.8	13.9	15.9	17.2	21		
	W360(plf)	191	235	279	311	372	415	453	498	606		
	N-ds	26-3/8"	30-3/8"	38-3/8"	42-3/8"	32-1/2"	36-1/2"	40-1/2"	42-1/2"	36-5/8"		
	leff(in4)	555	683	812	906	1080	1210	1320	1450	1760		
		Bridging	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	
30	Wt(plf)	6.9	7.8	9.2	11.0	12.3	14.1	15.0	16.7	19.6		
	W360(plf)	198	245	303	350	402	459	485	539	644		
	N-ds	26-3/8"	28-3/8"	36-3/8"	26-1/2"	30-1/2"	34-1/2"	36-1/2"	38-1/2"	34-5/8"		
	leff(in4)	575	713	883	1020	1170	1330	1410	1570	1880		
		Bridging	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	
32	Wt(plf)	6.9	7.6	8.6	10.0	11.8	12.9	14.7	16.3	19.5		
	W360(plf)	222	260	317	379	429	475	516	598	718		
	N-ds	26-3/8"	26-3/8"	32-3/8"	40-3/8"	28-1/2"	32-1/2"	34-1/2"	38-1/2"	34-5/8"		
	leff(in4)	646	758	922	1100	1250	1380	1500	1740	2090		
		Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	
36	Wt(plf)	6.9	7.6	8.5	9.5	10.7	12.3	14.1	15.0	17.8		
	W360(plf)	249	298	362	418	472	527	600	652	766		
	N-ds	26-3/8"	26-3/8"	30-3/8"	36-3/8"	40-3/8"	28-1/2"	30-1/2"	32-1/2"	28-5/8"		
	leff(in4)	725	868	1050	1220	1370	1530	1750	1900	2230		
		Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(3)H	
40	Wt(plf)	6.8	7.5	9.0	10.3	11.3	12.8	13.7	14.4	16.9		
	W360(plf)	257	325	414	482	540	620	680	728	856		
	N-ds	26-3/8"	26-3/8"	28-3/8"	32-3/8"	26-1/2"	26-1/2"	28-1/2"	30-1/2"	26-5/8"		
	leff(in4)	748	947	1200	1400	1570	1800	1980	2120	2490		
		Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(3)H	(3)H	



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
BEARING HEIGHT		2 1/2"	5"									
Concrete Slab Parameters												
Normal Weight Concrete (145 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
30	34	39	40	45	49	54	60	67	70	75	88	89
505	560	636	689	748	817	878	985	1155	1204	1287	1464	1464
52-3/4"	60-3/4"	68-3/4"	64-3/4"	72-3/4"	86-3/4"	92-3/4"	108-3/4"	108-3/4"	108-3/4"	122-3/4"	148-3/4"	148-3/4"
1470	1630	1850	2000	2180	2380	2560	2870	3360	3500	3740	4260	4260
(3)H	(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X	(2)X
27	31	36	39	41	45	51	60	62	70	71	79	88
541	615	708	806	834	906	1030	1184	1292	1441	1449	1588	1755
58-5/8"	52-3/4"	60-3/4"	66-3/4"	64-3/4"	72-3/4"	86-3/4"	108-3/4"	94-3/4"	108-3/4"	108-3/4"	122-3/4"	148-3/4"
1580	1790	2060	2340	2430	2640	3000	3440	3760	4190	4220	4620	5110
(3)H	(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X	(2)X
25	31	33	36	41	42	50	54	58	66	71	75	80
606	726	760	877	982	1011	1196	1256	1400	1580	1706	1755	1870
54-5/8"	52-3/4"	52-3/4"	56-3/4"	64-3/4"	64-3/4"	86-3/4"	86-3/4"	80-3/4"	94-3/4"	108-3/4"	108-3/4"	122-3/4"
1760	2110	2210	2550	2860	2940	3480	3660	4070	4600	4960	5110	5440
(3)H	(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X
24	28	33	33	38	42	48	54	56	61	66	74	76
662	775	884	926	1051	1174	1301	1461	1579	1682	1843	2035	2035
50-5/8"	46-3/4"	52-3/4"	46-3/4"	54-3/4"	64-3/4"	72-3/4"	86-3/4"	74-3/4"	80-3/4"	94-3/4"	108-3/4"	108-3/4"
1930	2260	2570	2690	3060	3420	3790	4250	4590	4890	5360	5920	5920
(3)H	(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X
23	27	31	33	38	39	44	50	56	59	66	70	76
718	842	928	1061	1204	1236	1385	1539	1805	1868	2110	2166	2331
46-5/8"	42-3/4"	46-3/4"	46-3/4"	54-3/4"	54-3/4"	64-3/4"	72-3/4"	74-3/4"	74-3/4"	94-3/4"	94-3/4"	108-3/4"
2090	2450	2700	3090	3500	3600	4030	4480	5250	5440	6140	6300	6780
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X
22	25	27	33	35	38	42	48	50	56	61	66	70
774	884	965	1202	1236	1376	1548	1717	1844	2064	2190	2387	2452
42-5/8"	48-5/8"	42-3/4"	46-3/4"	46-3/4"	54-3/4"	64-3/4"	72-3/4"	64-3/4"	74-3/4"	80-3/4"	94-3/4"	94-3/4"
2250	2570	2810	3500	3600	4000	4500	4990	5370	6000	6370	6950	7130
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X
22	25	29	31	35	36	41	46	51	53	60	66	71
868	949	1116	1229	1386	1420	1613	1809	2064	2115	2377	2514	2747
42-5/8"	36-3/4"	42-3/4"	40-3/4"	46-3/4"	46-3/4"	54-3/4"	64-3/4"	64-3/4"	64-3/4"	74-3/4"	80-3/4"	94-3/4"
2520	2760	3250	3580	4030	4130	4690	5260	6000	6150	6920	7310	7990
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)X	(1)X	(1)X
21	23	26	30	32	36	38	43	48	50	56	61	65
978	1087	1191	1418	1543	1737	1781	2025	2357	2412	2650	2899	2972
36-5/8"	40-5/8"	44-5/8"	38-3/4"	40-3/4"	46-3/4"	46-3/4"	54-3/4"	56-3/4"	56-3/4"	64-3/4"	74-3/4"	74-3/4"
2840	3160	3460	4130	4490	5060	5180	5890	6860	7020	7710	8430	8650
(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)X	(1)X	(1)X
20	22	24	27	30	32	37	43	45	50	53	57	65
1083	1201	1320	1483	1691	1735	2085	2402	2545	2850	2927	3135	3520
34-5/8"	36-5/8"	34-3/4"	32-3/4"	38-3/4"	36-3/4"	46-3/4"	54-3/4"	48-3/4"	56-3/4"	56-3/4"	64-3/4"	74-3/4"
3150	3490	3840	4310	4920	5050	6070	6990	7400	8290	8520	9120	10240
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)X	(1)X	(1)X



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		Concrete Slab Parameters									
		Normal Weight Concrete (145 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1	1	1	
		tc (in.)	2	2	2	2	2	2	2	2	
		Js (ft.)	3	3	3	3	3	3	3.5	4	
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
55	24	Wt(plf)	9.5	10.7	12.2	13.6	16.3	17.6	19.1	22	26
		W360(plf)	147	174	210	234	271	291	313	364	424
		N-ds	28-1/2"	28-1/2"	32-1/2"	36-1/2"	44-1/2"	48-1/2"	52-1/2"	44-5/8"	50-5/8"
		leff(in4)	569	674	812	906	1050	1130	1210	1410	1640
		Bridging	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(2)H
	26	Wt(plf)	8.9	10.0	12.0	13.1	14.6	17.6	19.2	21	25
		W360(plf)	157	188	233	258	289	340	366	404	472
		N-ds	30-3/8"	38-3/8"	30-1/2"	34-1/2"	40-1/2"	48-1/2"	52-1/2"	40-5/8"	46-5/8"
		leff(in4)	609	726	902	1000	1120	1320	1420	1570	1830
		Bridging	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H
	28	Wt(plf)	8.5	9.8	11.2	12.6	13.9	16.6	18.2	20	24
		W360(plf)	167	206	245	282	314	365	396	445	514
		N-ds	28-3/8"	36-3/8"	28-1/2"	32-1/2"	36-1/2"	44-1/2"	46-1/2"	38-5/8"	42-5/8"
		leff(in4)	647	800	947	1090	1220	1410	1530	1720	1990
		Bridging	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H
	30	Wt(plf)	8.2	9.3	10.4	11.6	13.4	16.0	17.2	19.0	23
		W360(plf)	180	220	260	298	339	391	420	470	556
		N-ds	28-3/8"	32-3/8"	40-3/8"	48-3/8"	34-1/2"	40-1/2"	42-1/2"	46-1/2"	40-5/8"
		leff(in4)	696	852	1010	1150	1310	1510	1630	1820	2150
		Bridging	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H
	32	Wt(plf)	7.9	9.2	10.3	11.5	13.4	15.2	17.2	19.0	23
		W360(plf)	188	248	293	335	382	415	474	531	628
		N-ds	28-3/8"	32-3/8"	40-3/8"	48-3/8"	34-1/2"	36-1/2"	42-1/2"	46-1/2"	40-5/8"
		leff(in4)	730	960	1130	1300	1480	1610	1840	2060	2430
		Bridging	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H
	34	Wt(plf)	7.8	8.7	9.8	11.9	13.0	15.0	16.0	17.8	21
		W360(plf)	211	257	307	365	404	464	493	551	660
		N-ds	28-3/8"	30-3/8"	38-3/8"	28-1/2"	32-1/2"	36-1/2"	40-1/2"	42-1/2"	36-5/8"
		leff(in4)	815	995	1190	1410	1570	1800	1910	2130	2560
		Bridging	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H
	36	Wt(plf)	7.8	9.3	10.9	12.4	13.6	15.5	17.0	19.3	21
		W360(plf)	213	287	336	398	440	501	540	635	700
		N-ds	28-3/8"	30-3/8"	36-3/8"	28-1/2"	28-1/2"	28-5/8"	28-5/8"	30-5/8"	34-5/8"
		leff(in4)	824	1110	1300	1540	1700	1940	2090	2460	2710
		Bridging	(1)X+(3)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(3)H
	40	Wt(plf)	7.5	8.5	9.8	10.5	12.3	14.3	15.3	17.4	20
		W360(plf)	232	298	369	408	486	554	591	689	771
		N-ds	28-3/8"	28-3/8"	32-3/8"	38-3/8"	28-1/2"	30-1/2"	32-1/2"	38-1/2"	30-5/8"
		leff(in4)	897	1160	1430	1580	1880	2140	2290	2670	2990
		Bridging	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H
	44	Wt(plf)	7.9	8.4	9.7	10.8	12.5	13.4	14.8	16.3	19.4
		W360(plf)	276	332	406	469	536	585	655	722	856
		N-ds	28-3/8"	28-3/8"	30-3/8"	28-1/2"	28-1/2"	28-1/2"	30-1/2"	28-5/8"	28-5/8"
		leff(in4)	1070	1290	1570	1810	2080	2270	2540	2800	3310
Bridging		(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(2)H	



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength													
BEARING HEIGHT	2 1/2"	5"	7 1/2"	Concrete Slab Parameters									
Normal Weight Concrete (145 pcf) f'c = 4.0 ksi													
1.5	1.5	1.5	2	2	2	2	2	2	3	3	3	3	3
2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15	
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot													
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500	
31	36	39	41	45	50	60	62	70	75	88	89	92	
540	621	682	733	798	886	1037	1073	1262	1360	1571	1585	1628	
52-3/4"	60-3/4"	68-3/4"	60-3/4"	70-3/4"	82-3/4"	104-3/4"	104-3/4"	106-3/4"	120-3/4"	146-3/4"	146-3/4"	146-3/4"	
2090	2410	2640	2840	3090	3430	4020	4150	4890	5270	6080	6140	6310	
(3)H	(3)H	(3)H	(3)H	(3)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X	(2)X	
28	33	36	41	45	50	53	62	66	71	79	89	92	
578	660	735	854	930	1032	1087	1251	1367	1487	1650	1846	1895	
46-3/4"	52-3/4"	60-3/4"	60-3/4"	70-3/4"	82-3/4"	82-3/4"	104-3/4"	92-3/4"	106-3/4"	120-3/4"	146-3/4"	146-3/4"	
2240	2550	2840	3310	3600	4000	4210	4850	5290	5760	6390	7150	7340	
(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X	
28	33	36	38	42	46	53	58	66	66	75	80	92	
665	759	846	904	1010	1096	1251	1326	1570	1590	1777	1911	2178	
46-3/4"	52-3/4"	60-3/4"	52-3/4"	60-3/4"	70-3/4"	82-3/4"	90-3/4"	92-3/4"	92-3/4"	106-3/4"	120-3/4"	146-3/4"	
2580	2940	3280	3500	3910	4240	4850	5140	6080	6160	6880	7400	8577	
(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X	
27	30	33	38	42	44	50	56	61	66	75	76	84	
716	790	875	1028	1149	1174	1307	1467	1636	1805	2018	2034	2223	
42-3/4"	46-3/4"	52-3/4"	52-3/4"	60-3/4"	60-3/4"	70-3/4"	82-3/4"	78-3/4"	92-3/4"	106-3/4"	106-3/4"	120-3/4"	
2770	3060	3390	3980	4450	4550	5060	5680	6340	6990	7810	7880	8610	
(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X	
26	30	33	35	39	44	50	56	59	66	71	76	80	
757	891	987	1048	1188	1322	1473	1653	1784	2030	2106	2288	2339	
38-3/4"	46-3/4"	52-3/4"	46-3/4"	52-3/4"	60-3/4"	70-3/4"	82-3/4"	72-3/4"	92-3/4"	92-3/4"	106-3/4"	106-3/4"	
2930	3450	3820	4060	4600	5120	5700	6400	6910	7860	8160	8860	9060	
(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X	
24	27	31	35	39	40	45	50	56	61	70	71	76	
788	912	1006	1169	1325	1336	1519	1667	1942	2074	2348	2365	2550	
44-5/8"	42-3/4"	46-3/4"	46-3/4"	52-3/4"	52-3/4"	60-3/4"	70-3/4"	72-3/4"	78-3/4"	92-3/4"	92-3/4"	106-3/4"	
3050	3530	3900	4530	5130	5170	5880	6460	7520	8030	9090	9160	9870	
(3)H	(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X	
24	28	31	34	35	40	44	48	52	56	61	70	71	
884	974	1114	1293	1303	1478	1657	1815	1964	2168	2315	2614	2614	
36-3/4"	38-3/4"	46-3/4"	46-3/4"	46-3/4"	52-3/4"	60-3/4"	70-3/4"	62-3/4"	72-3/4"	78-3/4"	92-3/4"	92-3/4"	
3420	3770	4310	5010	5050	5720	6420	7030	7610	8390	8970	10120	10120	
(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X	
23	26	30	33	37	38	43	48	51	56	64	67	76	
991	1087	1262	1408	1588	1619	1843	2072	2193	2423	2742	2857	3195	
40-5/8"	44-5/8"	42-3/4"	40-3/4"	46-3/4"	46-3/4"	52-3/4"	60-3/4"	54-3/4"	62-3/4"	72-3/4"	78-3/4"	92-3/4"	
3840	4210	4890	5450	6150	6270	7140	8020	8490	9380	10620	11060	12370	
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X	
22	24	27	30	33	37	42	45	50	53	57	65	66	
1064	1186	1303	1521	1656	1867	2121	2212	2553	2634	2847	3217	3217	
38-5/8"	34-3/4"	36-3/4"	38-3/4"	40-3/4"	46-3/4"	52-3/4"	52-3/4"	54-3/4"	54-3/4"	62-3/4"	72-3/4"	72-3/4"	
4120	4590	5040	5890	6410	7230	8210	8560	9880	10200	11020	12460	12460	
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)X	(1)X	(1)X	



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		BEARING HEIGHT		2 1/2"		5"		7 1/2"			
		Concrete Slab Parameters									
		Normal Weight Concrete (145 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1	1	1.5	
		tc (in.)	2	2	2	2	2	2	2	2	
		Js (ft.)	3	3	3	3	3	3	3.5	4	
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
60	24	Wt(plf)	10.9	12.6	14.4	16.5	18.9	20	24	25	30
		W360(plf)	128	158	185	211	242	252	288	314	379
		N-ds	30-1/2"	30-1/2"	36-1/2"	42-1/2"	52-1/2"	56-1/2"	48-5/8"	50-5/8"	52-3/4"
		leff(in4)	643	793	932	1060	1220	1270	1450	1580	1910
		Bridging	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H
	26	Wt(plf)	10.4	12.3	13.8	15.5	17.5	19.1	22	24	30
		W360(plf)	141	174	205	230	263	283	319	351	443
		N-ds	36-3/8"	30-1/2"	34-1/2"	40-1/2"	48-1/2"	52-1/2"	44-5/8"	46-5/8"	52-3/4"
		leff(in4)	711	877	1030	1160	1320	1420	1600	1760	2230
		Bridging	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H
	28	Wt(plf)	9.7	11.1	12.5	15.5	16.6	19.3	21	23	27
		W360(plf)	152	189	218	265	282	326	351	383	466
		N-ds	32-3/8"	30-1/2"	32-1/2"	40-1/2"	44-1/2"	52-1/2"	40-5/8"	42-5/8"	56-5/8"
		leff(in4)	765	950	1100	1330	1420	1640	1760	1930	2340
		Bridging	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H
	30	Wt(plf)	9.5	10.8	12.0	13.8	16.6	18.3	20	22	26
		W360(plf)	161	206	236	277	322	350	379	416	505
		N-ds	30-3/8"	30-1/2"	30-1/2"	36-1/2"	44-1/2"	46-1/2"	52-1/2"	40-5/8"	52-5/8"
		leff(in4)	808	1030	1190	1390	1620	1760	1910	2090	2540
		Bridging	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H
	32	Wt(plf)	9.5	10.4	11.6	13.4	16.0	17.3	19.0	21	26
		W360(plf)	181	217	254	297	343	368	402	449	571
		N-ds	30-3/8"	30-1/2"	30-1/2"	34-1/2"	40-1/2"	42-1/2"	46-1/2"	36-5/8"	52-5/8"
		leff(in4)	912	1090	1270	1490	1720	1850	2020	2260	2870
		Bridging	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H
	36	Wt(plf)	8.5	9.7	11.6	13.2	15.1	16.7	18.5	21.0	23
		W360(plf)	197	242	303	341	402	437	475	536	627
		N-ds	30-3/8"	32-3/8"	30-1/2"	30-1/2"	36-1/2"	38-1/2"	30-5/8"	34-5/8"	46-5/8"
		leff(in4)	988	1210	1520	1710	2020	2200	2390	2690	3150
		Bridging	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H
	40	Wt(plf)	8.7	10.0	11.5	13.0	14.7	17.1	18.7	19.6	22
		W360(plf)	221	274	331	391	444	511	550	601	721
		N-ds	30-3/8"	30-3/8"	38-3/8"	30-1/2"	30-1/2"	30-5/8"	30-5/8"	30-5/8"	42-5/8"
		leff(in4)	1110	1380	1670	1970	2230	2570	2770	3020	3630
		Bridging	(1)X+(3)H	(1)X+(3)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(3)H
	44	Wt(plf)	9.0	9.9	12.2	14.1	15.1	16.4	18.0	19.6	23
		W360(plf)	242	304	384	439	506	566	610	672	825
		N-ds	30-3/8"	30-3/8"	30-1/2"	30-1/2"	30-1/2"	32-1/2"	30-5/8"	30-5/8"	38-5/8"
		leff(in4)	1220	1530	1930	2210	2540	2850	3070	3380	4150
		Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(3)H	(3)H	(3)H
	48	Wt(plf)	8.0	9.1	10.6	11.9	13.5	15.3	16.8	18.4	20
		W360(plf)	252	326	404	454	535	608	655	757	833
		N-ds	30-3/8"	30-3/8"	32-3/8"	38-3/8"	30-1/2"	30-1/2"	32-1/2"	38-1/2"	46-1/2"
		leff(in4)	1270	1640	2030	2280	2690	3060	3290	3810	4190
		Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
BEARING HEIGHT		2 1/2"	5"									
Concrete Slab Parameters												
Normal Weight Concrete (145 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	3.5	3.5	3.5
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
36	39	43	49	53	58	67	74	87	88	94		
472	518	567	659	704	770	870	966	1177	1196	1373		
60-3/4"	68-3/4"	74-3/4"	82-3/4"	88-3/4"	104-3/4"	118-3/4"	134-3/4"	144-3/4"	144-3/4"	144-3/4"		
2370	2610	2850	3310	3540	3870	4380	4860	5920	6010	6900		
(3)H	(3)H	(3)H	(3)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X		
34	39	43	49	50	58	62	70	75	88	92	95	
532	605	663	769	789	899	950	1062	1205	1394	1568	1612	
60-3/4"	68-3/4"	74-3/4"	82-3/4"	82-3/4"	104-3/4"	104-3/4"	118-3/4"	118-3/4"	144-3/4"	144-3/4"	144-3/4"	
2670	3040	3330	3870	3970	4520	4780	5340	6060	7010	7880	8110	
(3)H	(3)H	(3)H	(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X	
31	36	41	45	50	52	61	69	71	79	92	93	96
560	646	725	819	910	935	1080	1227	1304	1449	1802	1820	1870
52-3/4"	60-3/4"	66-3/4"	68-3/4"	82-3/4"	82-3/4"	104-3/4"	118-3/4"	104-3/4"	118-3/4"	144-3/4"	144-3/4"	144-3/4"
2820	3250	3640	4120	4580	4700	5430	6170	6560	7280	9060	9150	9400
(3)H	(3)H	(3)H	(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X	(2)X
31	36	41	42	46	52	56	65	71	79	80	93	94
639	737	827	882	958	1066	1136	1304	1485	1650	1790	2069	2087
52-3/4"	60-3/4"	66-3/4"	60-3/4"	68-3/4"	82-3/4"	88-3/4"	104-3/4"	104-3/4"	118-3/4"	118-3/4"	144-3/4"	144-3/4"
3210	3710	4160	4430	4810	5360	5710	6560	7470	8290	9000	10400	10490
(3)H	(3)H	(3)H	(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X	(2)X
30	33	38	42	47	48	56	66	67	75	79	85	96
673	757	861	995	1082	1108	1265	1475	1559	1744	1927	2083	2394
56-5/8"	52-3/4"	58-3/4"	60-3/4"	68-3/4"	68-3/4"	82-3/4"	104-3/4"	90-3/4"	104-3/4"	104-3/4"	118-3/4"	144-3/4"
3380	3810	4330	5000	5440	5570	6360	7420	7840	8770	9690	10470	12040
(3)H	(3)H	(3)H	(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X	(2)X
27	31	33	38	43	44	50	56	61	67	71	76	84
779	861	954	1116	1248	1276	1424	1598	1773	1957	2155	2347	2595
42-3/4"	46-3/4"	52-3/4"	52-3/4"	60-3/4"	60-3/4"	68-3/4"	82-3/4"	76-3/4"	90-3/4"	90-3/4"	104-3/4"	118-3/4"
3920	4330	4800	5610	6280	6420	7160	8030	8910	9840	10830	11800	13050
(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X
26	29	33	35	40	44	46	54	59	62	70	72	80
883	982	1153	1219	1383	1539	1585	1900	2066	2159	2587	2606	2905
38-3/4"	42-3/4"	52-3/4"	46-3/4"	52-3/4"	60-3/4"	60-3/4"	82-3/4"	70-3/4"	76-3/4"	90-3/4"	90-3/4"	104-3/4"
4440	4940	5800	6130	6950	7740	7970	9550	10390	10860	13010	13100	14600
(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X
26	29	34	37	38	42	48	54	55	63	66	74	75
997	1102	1282	1477	1488	1685	1922	2128	2218	2513	2764	3124	3144
44-5/8"	38-3/4"	44-3/4"	46-3/4"	46-3/4"	52-3/4"	60-3/4"	68-3/4"	60-3/4"	70-3/4"	76-3/4"	90-3/4"	90-3/4"
5010	5540	6450	7420	7480	8470	9660	10700	11150	12630	13900	15700	15810
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X
24	27	30	33	37	39	45	51	56	57	66	67	77
1058	1163	1349	1502	1695	1729	2000	2244	2553	2577	3059	3078	3609
40-5/8"	44-5/8"	42-3/4"	40-3/4"	46-3/4"	46-3/4"	52-3/4"	60-3/4"	60-3/4"	60-3/4"	70-3/4"	70-3/4"	90-3/4"
5320	5850	6780	7550	8520	8690	10050	11280	12840	12960	15380	15480	18140
(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		BEARING HEIGHT		2 1/2"	5"	7 1/2"					
		Concrete Slab Parameters									
		Normal Weight Concrete (145 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1	1	1.5	
		tc (in.)	2	2	2	2	2	2	2	2	
		Js (ft.)	3	3	3	3	3	3	3.5	4	
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
65	30	Wt(plf)	10.6	12.4	14.2	16.4	17.9	21	23	25	31
		W360(plf)	146	181	213	255	274	317	333	371	461
		N-ds	36-3/8"	34-1/2"	34-1/2"	44-1/2"	48-1/2"	40-5/8"	44-5/8"	46-5/8"	52-3/4"
		Ieff(in4)	936	1160	1360	1630	1750	2020	2130	2370	2950
		Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X
	32	Wt(plf)	10.2	11.7	14.0	15.6	18.1	19.9	22	25	28
		W360(plf)	156	195	241	271	313	339	367	426	475
		N-ds	34-3/8"	42-3/8"	34-1/2"	40-1/2"	46-1/2"	52-1/2"	40-5/8"	48-5/8"	56-5/8"
		Ieff(in4)	998	1240	1540	1730	2000	2170	2350	2720	3040
		Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X	(3)X
	34	Wt(plf)	10.3	11.5	13.7	15.1	16.9	18.9	21	24	28
		W360(plf)	175	208	255	286	324	357	385	447	541
		N-ds	34-3/8"	40-3/8"	34-1/2"	36-1/2"	44-1/2"	46-1/2"	38-5/8"	42-5/8"	46-3/4"
		Ieff(in4)	1120	1330	1630	1830	2070	2280	2460	2850	3460
		Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X
	36	Wt(plf)	10.1	11.5	13.2	14.9	16.0	18.9	20	23	26
		W360(plf)	181	232	270	319	339	398	429	473	565
		N-ds	34-3/8"	40-3/8"	34-1/2"	36-1/2"	40-1/2"	46-1/2"	38-5/8"	40-5/8"	52-5/8"
		Ieff(in4)	1150	1480	1730	2040	2170	2550	2750	3020	3610
		Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X
	38	Wt(plf)	9.6	10.8	13.0	14.6	16.2	18.0	19.7	22	27
		W360(plf)	198	237	283	333	375	409	446	498	634
		N-ds	34-3/8"	34-1/2"	34-1/2"	34-1/2"	40-1/2"	42-1/2"	34-5/8"	36-5/8"	42-3/4"
		Ieff(in4)	1270	1520	1810	2130	2400	2620	2850	3190	4050
		Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X
	40	Wt(plf)	9.3	10.8	12.7	14.0	15.6	18.3	20.0	22	25
		W360(plf)	202	249	308	346	391	455	500	554	647
		N-ds	34-3/8"	36-3/8"	46-3/8"	34-1/2"	34-1/2"	34-5/8"	34-5/8"	38-5/8"	48-5/8"
		Ieff(in4)	1290	1590	1970	2210	2500	2910	3200	3540	4140
		Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X	(3)X
	44	Wt(plf)	9.1	10.7	11.8	14.2	16.2	17.8	18.9	20	24
		W360(plf)	227	282	335	398	452	513	547	604	728
		N-ds	34-3/8"	34-3/8"	40-3/8"	34-1/2"	34-1/2"	38-1/2"	42-1/2"	46-1/2"	44-5/8"
		Ieff(in4)	1450	1800	2140	2540	2890	3280	3500	3860	4650
		Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X	(3)X	(3)X	(3)X
	48	Wt(plf)	9.4	11.4	13.8	14.8	15.9	18.1	19.6	21	26
		W360(plf)	248	311	381	446	498	569	615	679	837
		N-ds	34-3/8"	34-3/8"	34-1/2"	34-1/2"	34-1/2"	34-1/2"	38-1/2"	34-3/4"	34-3/4"
		Ieff(in4)	1580	1990	2440	2850	3190	3640	3930	4340	5350
		Bridging	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X
	52	Wt(plf)	9.5	10.3	11.5	13.1	15.1	17.2	17.8	18.7	22
		W360(plf)	259	325	400	455	535	610	641	698	846
		N-ds	34-3/8"	34-3/8"	36-3/8"	34-1/2"	34-1/2"	34-1/2"	34-1/2"	38-1/2"	38-5/8"
		Ieff(in4)	1660	2070	2550	2910	3420	3900	4100	4460	5410
		Bridging	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
BEARING HEIGHT	2 1/2"	5"	Concrete Slab Parameters									
Normal Weight Concrete (145 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	3.5	3.5	3.5
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
36	41	45	50	52	60	67	75	79	89	93		
573	643	704	811	833	954	1059	1177	1284	1445	1618		
60-3/4"	66-3/4"	74-3/4"	78-3/4"	78-3/4"	100-3/4"	116-3/4"	130-3/4"	116-3/4"	142-3/4"	142-3/4"		
3660	4110	4500	5180	5330	6100	6770	7520	8210	9240	10340		
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X		
32	36	41	45	52	56	62	70	78	88	92	93	
581	659	739	835	943	997	1120	1253	1451	1633	1826	1844	
66-5/8"	60-3/4"	66-3/4"	66-3/4"	78-3/4"	86-3/4"	100-3/4"	116-3/4"	116-3/4"	142-3/4"	142-3/4"	142-3/4"	
3710	4210	4730	5340	6030	6370	7160	8010	9270	10440	11670	11790	
(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(3)X	(2)X	(2)X	(2)X	
33	38	42	47	52	54	63	70	75	80	93	96	97
663	754	845	949	1058	1087	1258	1407	1524	1649	2044	2102	2120
52-3/4"	58-3/4"	66-3/4"	66-3/4"	78-3/4"	78-3/4"	100-3/4"	116-3/4"	102-3/4"	116-3/4"	142-3/4"	142-3/4"	142-3/4"
4230	4820	5400	6070	6760	6950	8040	9000	9740	10540	13070	13430	13550
(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X
32	36	38	43	48	54	58	66	74	75	84	93	97
726	823	851	982	1084	1210	1289	1460	1695	1718	2028	2292	2355
66-5/8"	60-3/4"	58-3/4"	60-3/4"	66-3/4"	78-3/4"	86-3/4"	100-3/4"	102-3/4"	102-3/4"	116-3/4"	142-3/4"	142-3/4"
4640	5260	5440	6280	6930	7740	8240	9330	10840	10980	12960	14650	15050
(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X
31	35	39	44	49	51	57	66	71	76	85	88	97
745	843	958	1099	1199	1229	1382	1615	1738	1897	2236	2293	2598
46-3/4"	50-3/4"	58-3/4"	60-3/4"	66-3/4"	66-3/4"	78-3/4"	100-3/4"	88-3/4"	102-3/4"	116-3/4"	116-3/4"	142-3/4"
4760	5390	6120	7020	7660	7860	8830	10320	11110	12130	14300	14660	16600
(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X
30	33	38	40	44	50	57	61	67	75	80	84	88
806	909	1035	1094	1218	1350	1518	1628	1860	2081	2286	2472	2533
56-5/8"	52-3/4"	58-3/4"	52-3/4"	60-3/4"	66-3/4"	78-3/4"	86-3/4"	88-3/4"	102-3/4"	102-3/4"	116-3/4"	116-3/4"
5150	5810	6610	6990	7790	8630	9700	10400	11890	13300	14610	15800	16190
(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X
28	31	35	40	41	46	51	59	62	71	72	80	86
904	984	1113	1295	1323	1476	1627	1868	2016	2285	2438	2718	2937
52-5/8"	46-3/4"	50-3/4"	52-3/4"	52-3/4"	60-3/4"	66-3/4"	78-3/4"	74-3/4"	88-3/4"	88-3/4"	102-3/4"	116-3/4"
5780	6290	7110	8280	8460	9440	10400	11940	12890	14600	15580	17380	18770
(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X
29	32	37	38	44	46	52	56	63	66	74	78	83
1016	1114	1331	1375	1580	1612	1827	1984	2312	2422	2881	2948	3218
38-3/4"	40-3/4"	50-3/4"	46-3/4"	52-3/4"	52-3/4"	60-3/4"	66-3/4"	68-3/4"	74-3/4"	88-3/4"	88-3/4"	102-3/4"
6500	7120	8510	8790	10100	10300	11680	12680	14780	15480	18420	18850	20570
(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X
26	29	33	37	39	43	49	56	57	65	69	77	78
1044	1154	1343	1549	1581	1789	2013	2266	2348	2662	2917	3298	3318
36-3/4"	38-3/4"	44-3/4"	46-3/4"	46-3/4"	52-3/4"	60-3/4"	66-3/4"	60-3/4"	68-3/4"	74-3/4"	88-3/4"	88-3/4"
6670	7380	8580	9900	10110	11440	12870	14490	15010	17010	18650	21080	21210
(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		BEARING HEIGHT									
		2 1/2"	5"	7 1/2"							
		Concrete Slab Parameters									
		Normal Weight Concrete (145 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1	1	1.5	
		tc (in.)	2	2	2	2	2	2	2	2.5	
		Js (ft.)	3	3	3	3	3	3	3.5	4	
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
70	32	Wt(plf)	11.4	13.5	15.8	18.5	19.8	22	25	27	31
		W360(plf)	141	184	219	255	272	303	328	359	442
		N-ds	38-3/8"	36-1/2"	38-1/2"	46-1/2"	52-1/2"	44-5/8"	46-5/8"	52-5/8"	52-3/4"
		leff(in4)	1130	1470	1750	2040	2170	2420	2620	2870	3530
		Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X
	34	Wt(plf)	11.0	13.0	15.3	17.1	18.4	22	24	27	32
		W360(plf)	150	195	232	263	283	324	349	405	505
		N-ds	36-3/8"	36-1/2"	36-1/2"	42-1/2"	46-1/2"	40-5/8"	42-5/8"	52-5/8"	66-5/8"
		leff(in4)	1200	1550	1850	2100	2260	2590	2790	3230	4030
		Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X
	36	Wt(plf)	11.1	12.8	14.3	16.0	18.4	20	23	26	31
		W360(plf)	168	206	242	273	316	342	385	430	554
		N-ds	36-3/8"	36-1/2"	36-1/2"	40-1/2"	46-1/2"	52-1/2"	42-5/8"	48-5/8"	52-3/4"
		leff(in4)	1340	1640	1930	2180	2520	2730	3070	3430	4430
		Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X
	38	Wt(plf)	10.8	12.4	13.8	16.7	18.4	22	23	24	29
		W360(plf)	175	219	254	310	336	396	416	450	564
		N-ds	36-3/8"	36-1/2"	36-1/2"	38-1/2"	36-5/8"	38-5/8"	42-5/8"	44-5/8"	46-3/4"
		leff(in4)	1400	1750	2030	2470	2680	3160	3320	3590	4500
		Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X	(3)X	(3)X	(3)X
	40	Wt(plf)	10.7	12.1	13.9	15.3	17.4	19.3	21	24	29
		W360(plf)	192	228	280	313	359	392	427	496	621
		N-ds	36-3/8"	40-3/8"	36-1/2"	36-1/2"	42-1/2"	46-1/2"	36-5/8"	44-5/8"	46-3/4"
		leff(in4)	1530	1820	2230	2500	2860	3130	3410	3960	4960
		Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X	(3)X
	44	Wt(plf)	10.3	11.4	13.1	14.8	16.6	18.6	21	24	28
		W360(plf)	211	254	313	353	402	439	483	562	701
		N-ds	36-3/8"	38-3/8"	48-3/8"	36-1/2"	38-1/2"	36-5/8"	36-5/8"	42-5/8"	42-3/4"
leff(in4)		1690	2030	2500	2820	3210	3500	3850	4490	5600	
Bridging		(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X	(3)X	
48	Wt(plf)	10.0	11.1	13.1	15.2	17.1	18.2	20.0	22	25	
	W360(plf)	230	284	339	402	456	487	560	626	727	
	N-ds	36-3/8"	36-3/8"	36-1/2"	36-1/2"	36-1/2"	38-1/2"	46-1/2"	38-5/8"	36-3/4"	
	leff(in4)	1840	2270	2710	3210	3640	3890	4470	5000	5800	
	Bridging	(4)X	(4)X	(4)X	(4)X	(3)X	(3)X	(3)X	(3)X	(3)X	
52	Wt(plf)	10.2	13.1	14.1	15.3	17.4	19.6	22	23	27	
	W360(plf)	251	320	381	441	503	577	631	699	859	
	N-ds	36-3/8"	36-3/8"	36-1/2"	36-1/2"	36-1/2"	38-1/2"	36-5/8"	36-5/8"	36-3/4"	
	leff(in4)	2010	2560	3040	3520	4010	4610	5040	5580	6860	
	Bridging	(4)X	(4)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	
56	Wt(plf)	12.2	12.8	14.0	15.4	16.6	17.8	18.8	21	25	
	W360(plf)	310	334	404	475	530	595	635	706	894	
	N-ds	36-3/8"	36-3/8"	38-3/8"	36-1/2"	36-1/2"	36-1/2"	38-1/2"	36-5/8"	34-3/4"	
	leff(in4)	2480	2670	3220	3790	4230	4750	5070	5630	7130	
	Bridging	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
BEARING HEIGHT		2 1/2"	5"	7 1/2"								
Concrete Slab Parameters												
Normal Weight Concrete (145 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	2	3	3	3	3
2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	3.5	3.5
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
39	43	49	52	60	62	74	84	88	92			
563	619	693	748	858	882	1051	1183	1292	1346			
68-3/4"	74-3/4"	84-3/4"	76-3/4"	98-3/4"	98-3/4"	130-3/4"	158-3/4"	140-3/4"	140-3/4"			
4500	4940	5530	5980	6850	7040	8390	9450	10310	10740			
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X			
36	42	47	52	57	63	71	80	89	94	97		
585	670	730	841	890	991	1112	1238	1451	1511	1674		
60-3/4"	66-3/4"	74-3/4"	76-3/4"	84-3/4"	98-3/4"	114-3/4"	130-3/4"	140-3/4"	140-3/4"	140-3/4"	140-3/4"	
4670	5350	5830	6710	7110	7910	8870	9880	11580	12060	13370		
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(3)X	(2)X	(2)X		
36	41	45	52	54	62	66	75	80	92	94		
653	734	804	938	965	1106	1156	1296	1457	1684	1830		
60-3/4"	66-3/4"	74-3/4"	76-3/4"	76-3/4"	98-3/4"	98-3/4"	114-3/4"	114-3/4"	140-3/4"	140-3/4"	140-3/4"	
5210	5860	6420	7490	7700	8830	9230	10350	11630	13440	14610		
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X		
33	38	43	47	52	56	65	71	79	84	93	97	
658	750	840	943	1051	1113	1281	1400	1612	1672	2023	2080	
52-3/4"	58-3/4"	66-3/4"	66-3/4"	76-3/4"	84-3/4"	98-3/4"	114-3/4"	114-3/4"	114-3/4"	140-3/4"	140-3/4"	
5260	5990	6710	7530	8390	8890	10230	11180	12870	13350	16150	16600	
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	
33	38	43	48	54	56	66	75	76	84	94	97	102
725	826	925	1053	1177	1206	1411	1583	1661	1839	2222	2284	2358
52-3/4"	58-3/4"	66-3/4"	66-3/4"	76-3/4"	76-3/4"	98-3/4"	114-3/4"	100-3/4"	114-3/4"	140-3/4"	140-3/4"	140-3/4"
5790	6590	7390	8410	9390	9630	11270	12640	13260	14680	17740	18240	18830
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X
31	35	40	45	50	55	59	67	71	80	85	89	102
788	893	1014	1161	1288	1416	1494	1711	1833	2045	2351	2411	2798
46-3/4"	50-3/4"	58-3/4"	60-3/4"	66-3/4"	76-3/4"	76-3/4"	98-3/4"	86-3/4"	100-3/4"	114-3/4"	114-3/4"	140-3/4"
6290	7130	8100	9270	10280	11300	11930	13660	14640	16320	18770	19250	22340
(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X
30	35	40	42	46	51	57	62	71	72	81	86	89
870	1043	1185	1243	1387	1518	1707	1834	2137	2163	2549	2756	2826
42-3/4"	50-3/4"	58-3/4"	52-3/4"	60-3/4"	66-3/4"	76-3/4"	84-3/4"	86-3/4"	86-3/4"	100-3/4"	114-3/4"	114-3/4"
6940	8330	9460	9920	11070	12120	13630	14640	17060	17270	20350	22000	22560
(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X
31	35	38	44	46	52	55	63	66	75	78	83	88
964	1119	1247	1466	1497	1685	1834	2082	2241	2532	2733	2986	3229
38-3/4"	44-3/4"	50-3/4"	52-3/4"	52-3/4"	60-3/4"	66-3/4"	76-3/4"	72-3/4"	86-3/4"	86-3/4"	100-3/4"	114-3/4"
7700	8930	9950	11700	11950	13450	14640	16620	17890	20210	21820	23840	25780
(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X
29	32	37	39	44	46	52	58	66	69	77	79	85
1058	1163	1393	1454	1646	1684	1893	2102	2439	2556	3031	3052	3385
38-3/4"	40-3/4"	50-3/4"	46-3/4"	52-3/4"	52-3/4"	60-3/4"	66-3/4"	68-3/4"	72-3/4"	86-3/4"	86-3/4"	100-3/4"
8450	9290	11120	11610	13140	13450	15110	16780	19480	20410	24190	24360	27030
(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
		BEARING HEIGHT		2 1/2"	5"	7 1/2"						
		Concrete Slab Parameters										
		Normal Weight Concrete (145 pcf) f'c = 4.0 ksi										
		hr (in.)	1	1	1	1	1	1	1.5	1.5	1.5	
		tc (in.)	2	2	2	2	2	2	2.5	2.5	2.5	
		Js (ft.)	3	3	3	3	3	3	3	3.5	4	
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot										
		TL	300	400	500	600	700	800	900	1000	1200	
75	34	Wt(plf)	12.4	14.7	16.4	19.0	22	25	27	30	35	
		W360(plf)	140	180	204	237	267	304	344	389	450	
		N-ds	40-3/8"	38-1/2"	38-1/2"	38-5/8"	40-5/8"	48-5/8"	58-5/8"	64-5/8"	76-5/8"	
		leff(in4)	1370	1770	2000	2320	2620	2990	3380	3820	4420	
		Bridging	(5)X	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	(3)X	
		38	Wt(plf)	11.7	13.4	15.3	17.6	20.0	23	24	28	32
			W360(plf)	160	198	234	270	310	336	382	444	510
			N-ds	38-3/8"	38-1/2"	38-1/2"	42-1/2"	52-1/2"	40-5/8"	50-5/8"	56-5/8"	66-5/8"
			leff(in4)	1570	1940	2300	2650	3040	3300	3750	4360	5010
		Bridging	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X	
		40	Wt(plf)	11.8	13.9	15.5	17.4	19.3	22	25	27	33
			W360(plf)	168	218	258	293	320	366	421	465	563
			N-ds	38-3/8"	38-1/2"	38-1/2"	42-1/2"	46-1/2"	40-5/8"	50-5/8"	52-5/8"	66-5/8"
			leff(in4)	1650	2140	2540	2880	3150	3590	4140	4570	5530
		Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X	
		42	Wt(plf)	11.5	12.9	14.8	16.4	19.4	22	23	26	32
			W360(plf)	184	225	268	302	355	387	438	510	617
			N-ds	38-3/8"	38-1/2"	38-1/2"	38-1/2"	38-5/8"	38-5/8"	46-5/8"	52-5/8"	66-5/8"
			leff(in4)	1800	2210	2630	2960	3490	3800	4300	5000	6060
		Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X	
		44	Wt(plf)	11.0	13.2	15.6	17.8	18.8	22	24	27	30
			W360(plf)	189	240	283	341	364	428	483	537	617
			N-ds	38-3/8"	38-1/2"	38-1/2"	38-1/2"	42-1/2"	38-5/8"	44-5/8"	48-5/8"	56-5/8"
			leff(in4)	1850	2350	2780	3350	3570	4200	4750	5270	6060
		Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X	(3)X	
		48	Wt(plf)	10.8	12.4	13.8	15.7	18.5	20	23	25	29
			W360(plf)	205	264	304	360	418	460	532	580	685
			N-ds	38-3/8"	40-3/8"	38-1/2"	38-1/2"	42-1/2"	38-5/8"	42-5/8"	44-5/8"	52-5/8"
			leff(in4)	2010	2590	2990	3530	4110	4510	5220	5700	6720
		Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X	(3)X	(3)X	
		52	Wt(plf)	10.2	11.6	14.0	16.8	18.2	19.2	21	23	27
			W360(plf)	218	282	339	411	463	494	573	635	741
			N-ds	38-3/8"	38-3/8"	38-1/2"	38-1/2"	38-1/2"	42-1/2"	38-5/8"	40-5/8"	48-5/8"
			leff(in4)	2140	2770	3330	4040	4550	4850	5620	6230	7280
		Bridging	(4)X	(4)X	(4)X	(4)X	(3)X	(3)X	(3)X	(3)X	(3)X	
		56	Wt(plf)	12.2	13.5	14.8	17.0	19.0	21	23	24	29
			W360(plf)	256	319	377	446	507	555	623	689	820
			N-ds	38-3/8"	38-3/8"	38-1/2"	38-1/2"	38-1/2"	38-1/2"	34-5/8"	38-5/8"	34-3/4"
			leff(in4)	2520	3130	3700	4380	4980	5450	6110	6760	8050
		Bridging	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	
		60	Wt(plf)	12.4	13.3	14.6	16.0	17.2	18.8	21	23	27
			W360(plf)	289	338	404	467	524	593	675	754	893
	N-ds		38-3/8"	38-3/8"	40-3/8"	38-1/2"	38-1/2"	38-1/2"	34-5/8"	36-5/8"	44-5/8"	
	leff(in4)		2840	3320	3960	4590	5140	5820	6630	7400	8770	
	Bridging	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X		



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
BEARING HEIGHT		2 1/2"	5"									
Concrete Slab Parameters												
Normal Weight Concrete (145 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	3.5	3.5	3.5
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
40	45	51	59	61	67	75	88	92				
527	578	644	762	786	865	964	1119	1212				
66-3/4"	74-3/4"	84-3/4"	96-3/4"	96-3/4"	112-3/4"	126-3/4"	156-3/4"	138-3/4"				
5180	5680	6330	7480	7720	8490	9460	10990	11910				
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X				
38	43	50	52	61	63	71	80	92	93			
603	677	800	849	975	1002	1124	1252	1499	1523			
58-3/4"	66-3/4"	84-3/4"	74-3/4"	96-3/4"	96-3/4"	112-3/4"	126-3/4"	138-3/4"	138-3/4"			
5920	6640	7850	8340	9580	9840	11040	12300	14720	14960			
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X			
38	43	48	54	59	66	75	81	93	97	102		
665	746	827	952	1007	1132	1272	1382	1652	1706	1894		
58-3/4"	66-3/4"	74-3/4"	74-3/4"	82-3/4"	96-3/4"	112-3/4"	126-3/4"	138-3/4"	138-3/4"	138-3/4"		
6530	7330	8120	9350	9890	11120	12490	13570	16220	16750	18600		
(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X		
36	42	47	52	54	63	67	75	84	93	97		
715	818	894	1026	1056	1212	1267	1421	1625	1838	2027		
60-3/4"	66-3/4"	74-3/4"	74-3/4"	74-3/4"	96-3/4"	96-3/4"	112-3/4"	110-3/4"	138-3/4"	138-3/4"		
7020	8040	8780	10080	10370	11910	12440	13950	15960	18050	19900		
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X		
35	40	44	48	54	58	66	75	80	92	94	97	
722	822	917	1030	1151	1218	1382	1551	1731	2003	2167	2228	
50-3/4"	58-3/4"	66-3/4"	66-3/4"	74-3/4"	82-3/4"	96-3/4"	112-3/4"	110-3/4"	138-3/4"	138-3/4"	138-3/4"	
7090	8070	9010	10120	11300	11960	13570	15230	17000	19670	21270	21880	
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	
35	40	44	47	52	57	63	72	80	86	89	102	104
848	964	1076	1132	1240	1383	1489	1690	1940	2102	2294	2664	2687
50-3/4"	58-3/4"	66-3/4"	60-3/4"	66-3/4"	74-3/4"	82-3/4"	96-3/4"	98-3/4"	110-3/4"	110-3/4"	138-3/4"	138-3/4"
8320	9470	10570	11120	12180	13580	14620	16600	19050	20640	22530	26160	26380
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X
32	36	40	46	48	53	60	71	72	81	88	89	103
875	991	1126	1304	1337	1463	1660	1951	2028	2263	2636	2658	3087
46-3/4"	50-3/4"	58-3/4"	60-3/4"	60-3/4"	66-3/4"	74-3/4"	96-3/4"	84-3/4"	98-3/4"	110-3/4"	110-3/4"	138-3/4"
8590	9730	11060	12810	13130	14360	16300	19160	19920	22220	25880	26100	30310
(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X
33	38	42	46	52	55	63	66	75	78	83	89	94
970	1159	1315	1394	1571	1699	1931	2030	2350	2414	2780	3008	3099
40-3/4"	50-3/4"	58-3/4"	52-3/4"	60-3/4"	66-3/4"	74-3/4"	82-3/4"	84-3/4"	84-3/4"	98-3/4"	110-3/4"	110-3/4"
9520	11380	12910	13690	15420	16680	18960	19940	23080	23700	27290	29540	30430
(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X
30	34	38	44	46	52	57	66	69	78	79	86	95
986	1149	1299	1521	1558	1740	1935	2197	2356	2663	2820	3130	3464
38-3/4"	44-3/4"	50-3/4"	52-3/4"	52-3/4"	60-3/4"	66-3/4"	74-3/4"	72-3/4"	84-3/4"	84-3/4"	98-3/4"	110-3/4"
9690	11280	12750	14940	15300	17080	19000	21580	23140	26150	27690	30740	34020
(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		BEARING HEIGHT									
		2 1/2"	5"	7 1/2"							
		Concrete Slab Parameters									
		Normal Weight Concrete (145 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1.5	1.5	1.5	1.5
		tc (in.)	2	2	2	2	2	2	2.5	2.5	2.5
		Js (ft.)	3	3	3	3	3	3	3	3.5	4
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
80	38	Wt(plf)	13.4	15.4	17.8	21	22	25	28	31	36
		W360(plf)	151	186	225	261	274	314	357	405	470
		N-ds	42-3/8"	40-1/2"	42-1/2"	40-5/8"	40-5/8"	52-5/8"	56-5/8"	52-3/4"	60-3/4"
		Ieff(in4)	1800	2220	2680	3110	3260	3740	4260	4830	5600
		Bridging	(5)X	(5)X	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X
	40	Wt(plf)	12.8	14.7	17.0	19.6	23	24	26	30	36
		W360(plf)	158	193	233	270	310	332	369	440	519
		N-ds	40-3/8"	40-1/2"	40-1/2"	40-5/8"	42-5/8"	50-5/8"	54-5/8"	64-5/8"	60-3/4"
		Ieff(in4)	1880	2300	2770	3220	3690	3950	4400	5250	6180
		Bridging	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X	(4)X
	42	Wt(plf)	13.0	14.7	16.9	19.1	21	24	27	29	36
		W360(plf)	173	211	253	291	314	360	411	451	569
		N-ds	40-3/8"	40-1/2"	40-1/2"	46-1/2"	40-5/8"	48-5/8"	52-5/8"	46-3/4"	60-3/4"
		Ieff(in4)	2060	2520	3020	3470	3740	4290	4900	5380	6790
		Bridging	(5)X	(5)X	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X	(3)X
	44	Wt(plf)	12.3	14.0	16.0	19.0	21	22	25	27	32
		W360(plf)	176	219	260	304	348	370	418	461	558
		N-ds	40-3/8"	40-1/2"	40-1/2"	42-1/2"	52-1/2"	62-1/2"	50-5/8"	52-5/8"	66-5/8"
		Ieff(in4)	2100	2610	3090	3620	4140	4410	4980	5490	6650
		Bridging	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X	(3)X
	46	Wt(plf)	11.7	14.2	16.1	18.1	19.5	22	25	28	34
		W360(plf)	181	238	282	321	346	387	454	508	617
		N-ds	40-3/8"	40-1/2"	40-1/2"	42-1/2"	46-1/2"	40-5/8"	50-5/8"	42-3/4"	52-3/4"
		Ieff(in4)	2160	2830	3360	3830	4120	4610	5410	6050	7350
		Bridging	(5)X	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	(3)X
	48	Wt(plf)	11.7	14.1	16.3	17.9	20.0	22	25	29	33
		W360(plf)	196	246	293	333	384	424	477	566	668
		N-ds	40-3/8"	40-1/2"	40-1/2"	40-1/2"	46-1/2"	42-5/8"	36-3/4"	42-3/4"	52-3/4"
		Ieff(in4)	2340	2930	3500	3970	4570	5050	5690	6740	7960
		Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X	(3)X
	52	Wt(plf)	12.7	14.3	15.8	18.6	22	23	25	28	32
		W360(plf)	218	275	321	370	433	475	531	615	720
		N-ds	40-3/8"	42-3/8"	40-1/2"	40-1/2"	42-1/2"	38-5/8"	40-5/8"	38-3/4"	44-3/4"
		Ieff(in4)	2600	3280	3830	4410	5160	5670	6330	7330	8580
		Bridging	(4)X	(4)X	(4)X	(4)X	(3)X	(3)X	(3)X	(3)X	(3)X
	56	Wt(plf)	12.6	14.2	15.6	17.6	18.4	21	23	25	30
		W360(plf)	231	299	347	413	441	524	583	645	763
		N-ds	40-3/8"	40-3/8"	40-1/2"	40-1/2"	40-1/2"	38-5/8"	42-5/8"	36-3/4"	42-3/4"
		Ieff(in4)	2750	3570	4130	4920	5260	6250	6950	7690	9100
		Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X
60	Wt(plf)	12.5	13.9	16.0	18.4	21	22	24	27	32	
	W360(plf)	242	315	376	451	524	567	637	708	832	
	N-ds	40-3/8"	40-3/8"	40-1/2"	40-1/2"	40-1/2"	34-5/8"	38-5/8"	34-3/4"	38-3/4"	
	Ieff(in4)	2880	3760	4480	5370	6240	6760	7590	8430	9920	
	Bridging	(4)X	(4)X	(4)X	(4)X	(3)X	(3)X	(3)X	(3)X	(3)X	



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
BEARING HEIGHT		2 1/2"	5"	7 1/2"								
Concrete Slab Parameters												
Normal Weight Concrete (145 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
3	3	3	3	3	3.5	3.5	3.5	3.5	3.5	3.5	4	4
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
41	50	52	61	67	71	80	92	96				
562	679	700	830	914	981	1095	1272	1359				
66-3/4"	84-3/4"	84-3/4"	94-3/4"	110-3/4"	110-3/4"	124-3/4"	154-3/4"	136-3/4"				
6700	8090	8340	9890	10900	11700	13050	15160	16190				
(4)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X				
41	46	52	56	63	70	79	89	93				
621	682	772	844	941	1083	1209	1369	1471				
66-3/4"	74-3/4"	84-3/4"	80-3/4"	94-3/4"	110-3/4"	124-3/4"	154-3/4"	136-3/4"				
7390	8130	9210	10060	11220	12900	14400	16320	17530				
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X				
41	47	52	55	64	67	75	84	94	98			
681	759	848	898	1033	1104	1241	1377	1612	1661			
66-3/4"	74-3/4"	84-3/4"	74-3/4"	94-3/4"	94-3/4"	110-3/4"	124-3/4"	136-3/4"	136-3/4"			
8110	9040	10110	10700	12310	13150	14780	16410	19210	19800			
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X			
38	43	49	54	58	66	75	80	93	97			
684	768	852	980	1037	1205	1354	1470	1757	1811			
58-3/4"	66-3/4"	74-3/4"	74-3/4"	80-3/4"	94-3/4"	110-3/4"	124-3/4"	136-3/4"	136-3/4"			
8160	9160	10160	11680	12360	14360	16140	17520	20940	21590			
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X			
38	43	49	55	59	67	75	81	86	97	103		
744	835	927	1064	1127	1309	1471	1597	1704	1966	2033		
58-3/4"	66-3/4"	74-3/4"	74-3/4"	80-3/4"	94-3/4"	110-3/4"	124-3/4"	110-3/4"	136-3/4"	136-3/4"		
8860	9950	11040	12690	13440	15600	17530	19030	20300	23430	24220		
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X		
38	43	47	51	56	61	67	76	84	94	97		
804	903	988	1056	1180	1296	1439	1615	1840	2086	2148		
58-3/4"	66-3/4"	74-3/4"	66-3/4"	74-3/4"	80-3/4"	94-3/4"	110-3/4"	110-3/4"	136-3/4"	136-3/4"		
9590	10760	11780	12590	14060	15450	17140	19240	21930	24860	25590		
(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X		
38	42	47	52	58	59	69	78	82	87	97	102	103
866	984	1103	1237	1395	1445	1705	1907	2011	2182	2476	2618	2639
50-3/4"	58-3/4"	66-3/4"	66-3/4"	74-3/4"	74-3/4"	94-3/4"	110-3/4"	96-3/4"	110-3/4"	136-3/4"	136-3/4"	136-3/4"
10320	11720	13150	14750	16620	17230	20320	22720	23960	26000	29510	31200	31450
(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X
36	40	42	48	54	60	63	72	81	85	90	103	105
960	1093	1120	1299	1423	1646	1731	1968	2251	2311	2505	2974	2997
50-3/4"	58-3/4"	58-3/4"	60-3/4"	66-3/4"	74-3/4"	80-3/4"	94-3/4"	96-3/4"	96-3/4"	110-3/4"	136-3/4"	136-3/4"
11440	13030	13350	15480	16960	19620	20630	23450	26830	27540	29850	35440	35710
(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X
36	40	45	52	53	56	64	70	78	83	85	93	103
1009	1140	1297	1511	1524	1689	1921	2059	2372	2595	2618	2955	3360
44-3/4"	50-3/4"	58-3/4"	60-3/4"	60-3/4"	66-3/4"	74-3/4"	80-3/4"	82-3/4"	96-3/4"	96-3/4"	110-3/4"	136-3/4"
12020	13590	15450	18010	18160	20130	22890	24530	28270	30930	31200	35220	40040
(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		BEARING HEIGHT		2 1/2"		5"		7 1/2"			
		Concrete Slab Parameters									
		Normal Weight Concrete (145 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1.5	1.5	1.5	1.5
		tc (in.)	2	2	2	2	2	2.5	2.5	2.5	2.5
		Js (ft.)	3	3	3	3	3	3	3	3.5	4
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
90	44	Wt(plf)	14.7	17.1	21	22	25	28	32	36	42
		W360(plf)	149	188	234	251	278	334	368	429	486
		N-ds	46-3/8"	46-1/2"	46-1/2"	46-5/8"	46-5/8"	56-5/8"	52-3/4"	60-3/4"	66-3/4"
		leff(in4)	2530	3190	3980	4250	4710	5670	6250	7280	8240
		Bridging	(5)X	(5)X	(5)X	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X
	46	Wt(plf)	14.6	17.0	19.1	22	24	26	31	33	41
		W360(plf)	162	205	234	273	303	341	401	427	529
		N-ds	46-3/8"	46-1/2"	46-1/2"	46-5/8"	46-5/8"	54-5/8"	52-3/4"	52-3/4"	66-3/4"
		leff(in4)	2760	3470	3970	4640	5130	5790	6810	7250	8980
		Bridging	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X
	48	Wt(plf)	14.5	16.7	19.2	22	23	27	29	34	39
		W360(plf)	169	209	254	293	308	375	401	463	531
		N-ds	46-3/8"	46-1/2"	46-1/2"	46-5/8"	46-5/8"	52-5/8"	46-3/4"	52-3/4"	58-3/4"
		leff(in4)	2860	3550	4310	4980	5230	6370	6800	7860	9010
		Bridging	(5)X	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X
	50	Wt(plf)	13.7	16.5	18.0	20.0	23	25	29	33	38
		W360(plf)	172	226	255	294	337	382	433	501	574
		N-ds	46-3/8"	46-1/2"	46-1/2"	46-1/2"	46-5/8"	48-5/8"	46-3/4"	52-3/4"	58-3/4"
		leff(in4)	2930	3840	4330	5000	5720	6480	7350	8500	9740
		Bridging	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X
	52	Wt(plf)	13.8	15.7	17.9	20.0	22	25	28	31	38
		W360(plf)	186	228	274	316	339	406	442	494	618
		N-ds	46-3/8"	46-1/2"	46-1/2"	46-1/2"	52-1/2"	50-5/8"	42-3/4"	46-3/4"	58-3/4"
		leff(in4)	3150	3870	4650	5360	5750	6890	7510	8380	10480
		Bridging	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X	(4)X
	56	Wt(plf)	13.6	15.4	17.6	19.3	23	25	27	31	36
		W360(plf)	199	248	296	338	397	447	478	567	646
		N-ds	46-3/8"	48-3/8"	46-1/2"	46-1/2"	46-5/8"	44-5/8"	38-3/4"	46-3/4"	50-3/4"
leff(in4)		3380	4210	5010	5730	6740	7580	8110	9620	10960	
Bridging		(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	
60	Wt(plf)	13.5	15.1	17.7	21	24	25	29	31	38	
	W360(plf)	216	266	321	376	437	493	558	619	753	
	N-ds	46-3/8"	46-3/8"	46-1/2"	46-1/2"	46-1/2"	40-5/8"	38-3/4"	40-3/4"	50-3/4"	
	leff(in4)	3660	4520	5440	6380	7410	8360	9470	10500	12780	
	Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X	(3)X	
66	Wt(plf)	13.4	16.9	19.3	21	25	28	30	34	37	
	W360(plf)	241	311	368	417	491	564	613	711	821	
	N-ds	46-3/8"	46-3/8"	46-1/2"	46-1/2"	46-1/2"	34-3/4"	34-3/4"	38-3/4"	44-3/4"	
	leff(in4)	4090	5280	6250	7070	8340	9570	10400	12070	13940	
	Bridging	(4)X	(4)X	(4)X	(4)X	(3)X	(3)X	(3)X	(3)X	(3)X	
72	Wt(plf)	16.9	18.0	19.4	21	23	24	26	29	33	
	W360(plf)	289	347	404	456	521	581	676	740	866	
	N-ds	46-3/8"	46-3/8"	48-3/8"	46-1/2"	46-1/2"	34-5/8"	40-5/8"	36-3/4"	40-3/4"	
	leff(in4)	4900	5890	6860	7740	8830	9860	11480	12560	14700	
	Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X	



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
BEARING HEIGHT		2 1/2"	5"	7 1/2"								
Concrete Slab Parameters												
Normal Weight Concrete (145 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
3	3	3	3	3	3.5	3.5	3.5	3.5	3.5	3.5	4	4
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
47	53	63	71	72	80	94						
578	646	757	868	879	1006	1171						
74-3/4"	84-3/4"	102-3/4"	106-3/4"	106-3/4"	120-3/4"	150-3/4"						
9800	10970	12850	14730	14910	17080	19860						
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X						
46	52	57	63	71	80	92	94					
621	704	750	860	958	1096	1275	1297					
74-3/4"	84-3/4"	88-3/4"	90-3/4"	106-3/4"	120-3/4"	150-3/4"	150-3/4"					
10530	11950	12720	14600	16250	18590	21630	22010					
(4)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X					
45	53	59	66	72	76	93	97					
641	764	825	956	1039	1112	1383	1431					
66-3/4"	84-3/4"	88-3/4"	90-3/4"	106-3/4"	106-3/4"	150-3/4"	150-3/4"					
10880	12960	14000	16220	17620	18870	23460	24280					
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X					
43	49	55	63	67	75	81	94	98				
684	760	852	1008	1045	1201	1307	1519	1610				
66-3/4"	74-3/4"	84-3/4"	90-3/4"	90-3/4"	106-3/4"	120-3/4"	150-3/4"	132-3/4"				
11600	12900	14450	17110	17720	20390	22180	25780	27330				
(4)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X				
43	49	55	62	67	76	85	95	98				
736	818	917	1020	1125	1293	1438	1635	1731				
66-3/4"	74-3/4"	84-3/4"	80-3/4"	90-3/4"	106-3/4"	120-3/4"	150-3/4"	132-3/4"				
12480	13890	15560	17320	19080	21940	24400	27740	29380				
(4)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X				
41	46	51	58	63	72	77	86	97	103			
775	879	966	1106	1183	1374	1508	1674	1981	2051			
58-3/4"	66-3/4"	74-3/4"	74-3/4"	80-3/4"	90-3/4"	106-3/4"	120-3/4"	132-3/4"	132-3/4"			
13150	14920	16400	18770	20080	23320	25580	28410	33620	34810			
(4)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X			
43	48	52	59	60	71	75	81	89	98	103		
901	1011	1110	1281	1293	1556	1613	1769	1995	2267	2344		
58-3/4"	66-3/4"	74-3/4"	74-3/4"	74-3/4"	90-3/4"	90-3/4"	106-3/4"	104-3/4"	132-3/4"	132-3/4"		
15280	17160	18840	21730	21950	26410	27370	30010	33850	38460	39780		
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X		
43	49	53	59	66	67	77	83	89	95	104	110	
985	1128	1251	1414	1593	1646	1934	2122	2234	2446	2786	2934	
50-3/4"	58-3/4"	66-3/4"	66-3/4"	74-3/4"	74-3/4"	90-3/4"	106-3/4"	92-3/4"	104-3/4"	132-3/4"	132-3/4"	
16710	19150	21230	24000	27030	27940	32820	36000	37910	41500	47270	49780	
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	
40	45	47	52	58	62	69	78	86	91	97	107	114
1099	1248	1281	1460	1616	1823	1969	2231	2527	2606	2827	3306	3409
50-3/4"	58-3/4"	58-3/4"	60-3/4"	66-3/4"	74-3/4"	80-3/4"	90-3/4"	92-3/4"	92-3/4"	104-3/4"	132-3/4"	132-3/4"
18650	21180	21740	24770	27430	30930	33400	37860	42880	44230	47960	56100	57840
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		BEARING HEIGHT									
		2 1/2"	5"	7 1/2"							
		Concrete Slab Parameters									
		Normal Weight Concrete (145 pcf) f'c = 5.0 ksi									
		hr (in.)	1	1	1	1	1	1.5	1.5	1.5	1.5
		tc (in.)	2	2	2	2	2.5	2.5	2.5	2.5	3
		Js (ft.)	3	3	3	3	3	3	3	3.5	4
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
100	50	Wt(plf)	16.4	18.7	22	25	27	33	36	37	46
		W360(plf)	157	190	235	264	298	365	399	402	513
		N-ds	52-3/8"	50-1/2"	52-1/2"	50-5/8"	44-3/4"	52-3/4"	60-3/4"	60-3/4"	74-3/4"
		Ieff(in4)	3670	4430	5480	6150	6930	8490	9290	9370	11950
		Bridging	(5)X	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X
	52	Wt(plf)	15.9	18.6	21	24	27	29	34	37	43
		W360(plf)	160	205	237	267	317	343	393	434	521
		N-ds	50-3/8"	50-1/2"	50-1/2"	56-1/2"	48-5/8"	46-3/4"	52-3/4"	60-3/4"	66-3/4"
		Ieff(in4)	3730	4780	5520	6220	7380	7980	9160	10100	12130
		Bridging	(5)X	(5)X	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X
	54	Wt(plf)	16.0	18.0	21	25	27	30	34	38	44
		W360(plf)	172	206	255	298	330	374	414	476	567
		N-ds	50-3/8"	50-1/2"	50-1/2"	56-1/2"	44-5/8"	56-5/8"	52-3/4"	58-3/4"	66-3/4"
		Ieff(in4)	4010	4800	5940	6950	7670	8710	9640	11080	13210
		Bridging	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X
	56	Wt(plf)	15.6	18.1	20.0	23	26	29	33	37	43
		W360(plf)	175	221	253	293	344	380	436	500	600
		N-ds	50-3/8"	50-1/2"	50-1/2"	52-1/2"	44-5/8"	52-5/8"	66-5/8"	60-3/4"	66-3/4"
		Ieff(in4)	4070	5140	5890	6820	8010	8850	10160	11640	13970
		Bridging	(5)X	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X
	58	Wt(plf)	15.3	18.1	20.0	23	26	28	32	35	41
		W360(plf)	179	236	271	313	368	400	444	488	590
		N-ds	50-3/8"	50-1/2"	50-1/2"	52-1/2"	44-5/8"	42-3/4"	46-3/4"	52-3/4"	58-3/4"
		Ieff(in4)	4160	5500	6300	7290	8560	9310	10320	11360	13740
		Bridging	(5)X	(5)X	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X
	60	Wt(plf)	15.4	17.5	21	25	26	30	33	37	43
		W360(plf)	191	237	295	346	381	439	472	539	645
		N-ds	50-3/8"	50-1/2"	50-1/2"	52-1/2"	44-5/8"	42-3/4"	44-3/4"	50-3/4"	58-3/4"
Ieff(in4)		4440	5520	6860	8060	8860	10220	10980	12530	15010	
Bridging		(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X	
66	Wt(plf)	14.4	18.2	21	24	28	31	34	37	42	
	W360(plf)	214	271	332	386	442	507	546	599	768	
	N-ds	50-3/8"	52-3/8"	50-1/2"	50-1/2"	44-3/4"	38-3/4"	40-3/4"	44-3/4"	58-3/4"	
	Ieff(in4)	4980	6310	7730	8980	10280	11800	12710	13940	17890	
	Bridging	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X	(3)X	(3)X	(3)X	
72	Wt(plf)	17.2	19.2	21	24	25	27	29	32	39	
	W360(plf)	229	302	362	417	468	536	566	627	792	
	N-ds	50-3/8"	50-3/8"	50-1/2"	50-1/2"	46-1/2"	44-5/8"	48-5/8"	42-3/4"	50-3/4"	
	Ieff(in4)	5330	7020	8440	9710	10890	12470	13190	14590	18440	
	Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	
80	Wt(plf)	19.1	19.6	21	23	24	27	31	34	39	
	W360(plf)	351	351	386	468	518	574	663	728	882	
	N-ds	50-3/8"	50-3/8"	52-3/8"	50-1/2"	44-1/2"	38-3/4"	38-3/4"	38-3/4"	44-3/4"	
	Ieff(in4)	8160	8160	8990	10900	12050	13350	15430	16940	20530	
	Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X	



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
BEARING HEIGHT		2 1/2"	5"									
Concrete Slab Parameters												
Normal Weight Concrete (145 pcf) f'c = 5.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
3	3	3	3	3	3.5	3.5	3.5	3.5	3.5	3.5	4	4
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
51	61	68	71	80	89							
587	689	761	815	902	1050							
84-3/4"	102-3/4"	112-3/4"	102-3/4"	116-3/4"	146-3/4"							
13670	16040	17720	18960	20990	24430							
(4)X	(4)X	(4)X	(3)X	(3)X	(3)X							
53	57	66	71	80	93	95						
643	686	786	878	973	1182	1183						
84-3/4"	88-3/4"	102-3/4"	102-3/4"	116-3/4"	146-3/4"	146-3/4"						
14970	15980	18290	20440	22640	27520	27550						
(4)X	(4)X	(3)X	(3)X	(3)X	(3)X	(3)X						
49	55	63	71	80	81	94						
637	715	825	944	1045	1092	1272						
74-3/4"	84-3/4"	102-3/4"	102-3/4"	116-3/4"	116-3/4"	146-3/4"						
14830	16640	19210	21970	24330	25420	29600						
(4)X	(4)X	(4)X	(3)X	(3)X	(3)X	(3)X						
48	55	64	67	76	81	94						
673	766	885	942	1050	1170	1362						
74-3/4"	84-3/4"	102-3/4"	90-3/4"	102-3/4"	116-3/4"	146-3/4"						
15660	17830	20590	21920	24450	27230	31710						
(4)X	(4)X	(4)X	(3)X	(3)X	(3)X	(3)X						
49	56	62	68	76	85	95	102					
729	818	890	1006	1122	1277	1455	1538					
74-3/4"	84-3/4"	88-3/4"	90-3/4"	102-3/4"	116-3/4"	146-3/4"	146-3/4"					
16980	19050	20730	23420	26120	29730	33860	35800					
(4)X	(4)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X					
46	55	62	67	75	77	94	97					
728	872	949	1072	1196	1245	1549	1604					
66-3/4"	84-3/4"	88-3/4"	90-3/4"	102-3/4"	102-3/4"	146-3/4"	146-3/4"					
16940	20290	22090	24950	27830	28980	36060	37330					
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X					
49	55	60	66	74	79	87	97	102				
891	988	1093	1198	1350	1513	1675	1908	2019				
66-3/4"	74-3/4"	84-3/4"	80-3/4"	90-3/4"	102-3/4"	116-3/4"	146-3/4"	126-3/4"				
20730	22990	25440	27900	31410	35220	38990	44410	46990				
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X				
44	50	56	62	69	74	83	91	106	107			
915	1041	1144	1317	1413	1600	1793	1982	2349	2398			
58-3/4"	66-3/4"	74-3/4"	74-3/4"	80-3/4"	90-3/4"	102-3/4"	116-3/4"	126-3/4"	126-3/4"			
21290	24220	26630	30660	32900	37240	41740	46130	54670	55820			
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X			
42	47	55	59	64	70	79	87	96	99	114	116	
1001	1139	1304	1440	1588	1745	1981	2207	2488	2514	2991	3036	
50-3/4"	58-3/4"	66-3/4"	66-3/4"	74-3/4"	80-3/4"	90-3/4"	102-3/4"	100-3/4"	100-3/4"	126-3/4"	126-3/4"	
23300	26520	30350	33520	36960	40630	46110	51360	57910	58510	69620	70670	
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		BEARING HEIGHT		2 1/2"		5"		7 1/2"			
		Concrete Slab Parameters									
		Normal Weight Concrete (145 pcf) f'c = 5.0 ksi									
		hr (in.)	1	1	1	1	1	1.5	1.5	1.5	
		tc (in.)	2	2	2	2	2.5	2.5	2.5	3	
		Js (ft.)	3	3	3	3	3	3	3.5	4	
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
110	56	Wt(plf)	17.7	21	24	27	31	34	37	42	48
		W360(plf)	160	196	231	273	310	343	387	438	499
		N-ds	56-3/8"	56-1/2"	56-1/2"	56-3/4"	48-3/4"	52-3/4"	60-3/4"	66-3/4"	74-3/4"
		leff(in4)	4970	6080	7150	8450	9610	10620	11970	13550	15470
			Bridging	(5)X	(5)X	(5)X	(5)X	(5)X	(5)X	(5)X	(4)X
	58	Wt(plf)	17.3	20.0	23	26	30	33	37	42	48
		W360(plf)	162	210	244	272	327	361	413	468	534
		N-ds	56-3/8"	56-1/2"	56-1/2"	60-1/2"	52-5/8"	66-5/8"	60-3/4"	66-3/4"	74-3/4"
		leff(in4)	5000	6510	7560	8410	10130	11180	12810	14500	16550
			Bridging	(5)X	(5)X	(5)X	(5)X	(5)X	(5)X	(5)X	(4)X
	60	Wt(plf)	17.3	19.6	25	27	29	35	40	41	49
		W360(plf)	172	209	267	298	331	399	458	474	578
N-ds		56-3/8"	56-1/2"	56-1/2"	60-1/2"	48-5/8"	50-3/4"	58-3/4"	58-3/4"	74-3/4"	
leff(in4)		5340	6480	8270	9230	10240	12350	14180	14700	17920	
		Bridging	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X	
62	Wt(plf)	17.4	19.7	22	24	29	33	35	39	45	
	W360(plf)	184	223	259	292	352	410	428	491	569	
	N-ds	56-3/8"	56-1/2"	56-1/2"	56-1/2"	48-5/8"	66-5/8"	52-3/4"	58-3/4"	66-3/4"	
	leff(in4)	5690	6910	8020	9060	10900	12690	13260	15200	17640	
		Bridging	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X	
64	Wt(plf)	17.1	20.0	22	25	29	31	35	39	46	
	W360(plf)	184	237	275	311	374	399	455	521	604	
	N-ds	56-3/8"	56-1/2"	56-1/2"	56-1/2"	48-5/8"	56-5/8"	52-3/4"	58-3/4"	66-3/4"	
	leff(in4)	5690	7340	8520	9630	11580	12350	14080	16140	18720	
		Bridging	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X	
66	Wt(plf)	16.4	19.6	24	26	30	34	38	42	46	
	W360(plf)	193	236	298	338	383	443	504	575	649	
	N-ds	56-3/8"	56-1/2"	56-1/2"	56-1/2"	48-3/4"	44-3/4"	50-3/4"	58-3/4"	66-3/4"	
	leff(in4)	5990	7310	9230	10470	11860	13710	15610	17830	20100	
		Bridging	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	
72	Wt(plf)	18.1	20.0	25	29	32	35	37	41	49	
	W360(plf)	210	263	331	392	438	502	544	620	730	
	N-ds	56-3/8"	56-3/8"	56-1/2"	56-1/2"	48-3/4"	42-3/4"	44-3/4"	50-3/4"	58-3/4"	
	leff(in4)	6500	8150	10250	12140	13560	15550	16860	19200	22600	
		Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X	
80	Wt(plf)	19.3	21	23	25	27	30	33	36	44	
	W360(plf)	272	300	365	425	472	532	588	646	832	
	N-ds	56-3/8"	56-3/8"	56-1/2"	56-1/2"	52-1/2"	48-5/8"	42-3/4"	44-3/4"	58-3/4"	
	leff(in4)	8420	9290	11310	13150	14620	16490	18230	20010	25770	
		Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	
88	Wt(plf)	25	25	27	29	31	33	35	38	42	
	W360(plf)	332	332	417	484	543	590	678	745	896	
	N-ds	56-3/8"	56-3/8"	56-1/2"	56-1/2"	48-1/2"	42-3/4"	42-3/4"	42-3/4"	50-3/4"	
	leff(in4)	10280	10280	12930	15010	16820	18280	20990	23080	27770	
		Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
BEARING HEIGHT		2 1/2"	5"	7 1/2"								
Concrete Slab Parameters												
Normal Weight Concrete (145 pcf) f'c = 5.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
3	3	3	3	3	3.5	3.5	3.5	3.5	3.5	3.5	4	4
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
57	64	72	81	90	94							
600	673	751	854	961	1030							
88-3/4"	102-3/4"	112-3/4"	112-3/4"	142-3/4"	142-3/4"							
18600	20830	23260	26460	29780	31910							
(4)X	(4)X	(4)X	(4)X	(4)X	(4)X							
55	65	72	81	94	95							
622	720	804	914	1054	1102							
84-3/4"	102-3/4"	112-3/4"	112-3/4"	142-3/4"	142-3/4"							
19260	22300	24890	28310	32640	34130							
(4)X	(4)X	(4)X	(3)X	(3)X	(3)X							
55	64	71	76	81	94							
663	768	858	914	987	1175							
84-3/4"	102-3/4"	112-3/4"	100-3/4"	112-3/4"	142-3/4"							
20550	23790	26570	28310	30570	36410							
(4)X	(4)X	(3)X	(3)X	(3)X	(3)X							
55	60	68	76	82	94	98						
706	753	850	972	1050	1250	1297						
84-3/4"	88-3/4"	102-3/4"	100-3/4"	112-3/4"	142-3/4"	142-3/4"						
21870	23320	26340	30130	32530	38740	40170						
(4)X	(4)X	(3)X	(3)X	(3)X	(3)X	(3)X						
56	61	68	77	86	96	99						
750	799	903	1032	1140	1327	1376						
84-3/4"	88-3/4"	102-3/4"	100-3/4"	112-3/4"	142-3/4"	142-3/4"						
23220	24760	27980	31980	35300	41110	42640						
(4)X	(4)X	(3)X	(3)X	(3)X	(3)X	(3)X						
53	60	67	75	84	85	98						
739	836	957	1094	1207	1256	1457						
74-3/4"	84-3/4"	102-3/4"	100-3/4"	112-3/4"	112-3/4"	142-3/4"						
22890	25890	29650	33880	37400	38910	45150						
(4)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X						
55	63	69	74	83	84	102	105					
886	1004	1075	1215	1346	1396	1747	1789					
74-3/4"	84-3/4"	88-3/4"	90-3/4"	100-3/4"	100-3/4"	142-3/4"	142-3/4"					
27440	31090	33300	37640	41680	43240	54130	55430					
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X					
50	56	63	70	75	84	92	107	108				
964	1061	1200	1314	1450	1655	1833	2137	2220				
66-3/4"	74-3/4"	84-3/4"	80-3/4"	90-3/4"	100-3/4"	112-3/4"	142-3/4"	122-3/4"				
29860	32880	37170	40710	44930	51280	56780	66200	68770				
(4)X	(4)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X				
49	56	59	68	70	79	88	97	107	115			
1050	1188	1291	1486	1559	1798	2006	2228	2575	2689			
58-3/4"	66-3/4"	74-3/4"	74-3/4"	80-3/4"	90-3/4"	100-3/4"	112-3/4"	122-3/4"	122-3/4"			
32540	36800	40000	46050	48280	55690	62140	69030	79760	83290			
(4)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X			



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		BEARING HEIGHT									
		2 1/2"	5"	7 1/2"							
		Concrete Slab Parameters									
		Normal Weight Concrete (145 pcf) f'c = 5.0 ksi									
		hr (in.)	1	1	1	1	1.5	1.5	1.5	1.5	
		tc (in.)	2	2	2	2	2.5	2.5	2.5	3	
		Js (ft.)	3	3	3	3	3	3	3.5	4	
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	
		1200									
120	72	Wt(plf)	19.5	22	27	31	34	39	43	44	56
		W360(plf)	192	234	297	342	387	455	515	527	666
		N-ds	60-3/8"	60-1/2"	60-1/2"	60-1/2"	46-3/4"	50-3/4"	58-3/4"	58-3/4"	74-3/4"
		Ieff(in4)	7730	9430	11940	13760	15550	18310	20720	21200	26800
		Bridging	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X	(4)X
	74	Wt(plf)	19.6	22	25	27	32	37	39	44	49
		W360(plf)	202	247	288	326	397	468	486	555	634
		N-ds	60-3/8"	60-1/2"	60-1/2"	60-1/2"	46-3/4"	50-3/4"	50-3/4"	58-3/4"	66-3/4"
		Ieff(in4)	8140	9930	11570	13120	15990	18820	19540	22310	25510
		Bridging	(5)X	(5)X	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X
	76	Wt(plf)	20.0	22	25	27	30	33	37	43	48
		W360(plf)	213	260	302	343	405	434	497	575	656
		N-ds	60-3/8"	60-1/2"	60-1/2"	60-1/2"	52-5/8"	46-3/4"	50-3/4"	58-3/4"	66-3/4"
		Ieff(in4)	8560	10440	12160	13790	16280	17460	19970	23150	26400
		Bridging	(5)X	(5)X	(5)X	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X
	78	Wt(plf)	19.2	24	29	33	34	40	46	49	53
		W360(plf)	203	278	332	383	424	492	565	639	722
		N-ds	60-3/8"	60-1/2"	60-1/2"	60-1/2"	46-3/4"	46-3/4"	50-3/4"	58-3/4"	66-3/4"
		Ieff(in4)	8150	11190	13350	15400	17070	19780	22710	25710	29020
		Bridging	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X
	80	Wt(plf)	19.2	23	28	32	34	38	42	49	53
		W360(plf)	212	268	345	379	445	504	575	670	756
		N-ds	60-3/8"	62-3/8"	60-1/2"	60-1/2"	46-3/4"	46-3/4"	50-3/4"	58-3/4"	66-3/4"
		Ieff(in4)	8540	10780	13880	15220	17880	20270	23140	26940	30400
Bridging		(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	
82	Wt(plf)	19.3	22	25	30	33	37	41	43	53	
	W360(plf)	222	278	324	389	461	497	594	614	791	
	N-ds	60-3/8"	62-3/8"	60-1/2"	60-1/2"	46-3/4"	46-3/4"	50-3/4"	50-3/4"	66-3/4"	
	Ieff(in4)	8940	11170	13040	15640	18530	20010	23890	24690	31800	
	Bridging	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X	(4)X	
84	Wt(plf)	20.0	22	24	31	34	36	41	42	50	
	W360(plf)	232	290	335	410	481	514	620	633	799	
	N-ds	60-3/8"	62-3/8"	60-1/2"	60-1/2"	46-3/4"	46-3/4"	50-3/4"	50-3/4"	66-3/4"	
	Ieff(in4)	9340	11670	13470	16500	19350	20670	24950	25460	32120	
	Bridging	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	
88	Wt(plf)	25	26	30	33	40	42	44	47	57	
	W360(plf)	260	307	384	422	514	587	636	717	849	
	N-ds	60-3/8"	60-3/8"	60-1/2"	60-1/2"	46-3/4"	46-3/4"	46-3/4"	50-3/4"	58-3/4"	
	Ieff(in4)	10460	12340	15430	16980	20680	23610	25600	28850	34130	
	Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	
96	Wt(plf)	30	30	31	33	34	36	38	41	52	
	W360(plf)	416	416	416	488	546	615	671	724	954	
	N-ds	60-1/2"	60-1/2"	60-1/2"	60-1/2"	46-3/4"	46-3/4"	46-3/4"	46-3/4"	58-3/4"	
	Ieff(in4)	16730	16730	16730	19640	21950	24750	26990	29130	38360	
	Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
BEARING HEIGHT	2 1/2"	5"	Concrete Slab Parameters									
Normal Weight Concrete (145 pcf) f'c = 5.0 ksi												
1.5	1.5	1.5	2	2	2	2	3	3	3	3	3	3
3	3	3	3	3	3.5	3.5	3.5	4	4	4	4	4
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
60	67	76	81	88	98							
754	864	967	1022	1123	1310							
84-3/4"	102-3/4"	112-3/4"	100-3/4"	112-3/4"	136-3/4"							
30330	34760	38880	41130	45180	52690							
(4)X	(4)X	(4)X	(4)X	(3)X	(3)X							
58	63	72	78	87	98	104						
776	836	946	1054	1164	1378	1435						
84-3/4"	88-3/4"	102-3/4"	100-3/4"	112-3/4"	136-3/4"	136-3/4"						
31220	33610	38050	42380	46800	55430	57710						
(4)X	(4)X	(4)X	(4)X	(4)X	(3)X	(3)X						
57	64	73	79	88	99	105						
804	878	994	1107	1222	1447	1507						
84-3/4"	88-3/4"	102-3/4"	100-3/4"	112-3/4"	136-3/4"	136-3/4"						
32330	35310	39980	44520	49160	58220	60610						
(4)X	(4)X	(4)X	(4)X	(4)X	(3)X	(3)X						
60	72	77	83	92	93	105						
817	973	1079	1204	1329	1380	1593						
74-3/4"	88-3/4"	102-3/4"	100-3/4"	112-3/4"	112-3/4"	136-3/4"						
32880	39120	43410	48430	53470	55520	64090						
(4)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X						
57	65	76	83	84	90	104						
839	951	1115	1261	1275	1417	1654						
74-3/4"	84-3/4"	102-3/4"	100-3/4"	100-3/4"	112-3/4"	136-3/4"						
33750	38240	44830	50720	51260	56990	66530						
(4)X	(4)X	(4)X	(3)X	(3)X	(3)X	(3)X						
57	62	72	77	84	90	104	107					
878	972	1142	1203	1333	1481	1729	1784					
74-3/4"	84-3/4"	102-3/4"	90-3/4"	100-3/4"	112-3/4"	136-3/4"	118-3/4"					
35290	39100	45930	48390	53600	59560	69540	71740					
(4)X	(4)X	(4)X	(4)X	(3)X	(3)X	(3)X	(3)X					
57	62	65	75	83	91	104	107					
916	1015	1067	1230	1369	1545	1804	1860					
74-3/4"	84-3/4"	88-3/4"	90-3/4"	100-3/4"	112-3/4"	136-3/4"	118-3/4"					
36860	40820	42910	49490	55080	62160	72570	74830					
(4)X	(4)X	(4)X	(4)X	(4)X	(3)X	(3)X	(3)X					
64	71	74	83	88	91	103	113					
971	1165	1227	1410	1541	1606	1786	2077					
66-3/4"	84-3/4"	88-3/4"	90-3/4"	100-3/4"	100-3/4"	112-3/4"	118-3/4"					
39040	46850	49340	56710	61970	64590	71830	83550					
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X					
56	60	68	75	83	88	98	109	116				
1075	1170	1325	1445	1622	1811	2015	2328	2483				
66-3/4"	74-3/4"	84-3/4"	80-3/4"	90-3/4"	100-3/4"	112-3/4"	118-3/4"	118-3/4"				
43240	47050	53300	58110	65250	72840	81050	93620	99850				
(4)X	(4)X	(4)X	(4)X	(3)X	(3)X	(3)X	(3)X	(2)X				



DESIGN GUIDE LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS

CJ-SERIES

Normal Weight Concrete



SJI COMPOSITE STEEL JOIST BRIDGING TABLES

The following tables may be used as a guide to determine the size and number of rows of bridging. These bridging tables only apply to uniformly loaded composite steel joists with parallel chords.

The top chords are considered as laterally supported by the structural deck and slab.

The tables are applicable for normal weight concrete with a unit weight of 145 pcf (2350 kg/m³) and lightweight concrete with a unit weight of 110 pcf (1800 kg/m³) and based on a steel yield strength of 50 ksi (345 MPa). Concrete strength listed in the bridging tables can vary from 3 – 5 ksi (20.7 – 34.5 MPa), with the higher concrete strength required for longer joist spans.

The first row of figures for each joist depth, denoted as "**P_{br}**", lbs (N) gives the nominal horizontal force to resist the top chord. See Section 104.5(e) for more information. Use 1/4 of the **P_{br}** force shown in the tables to calculate the bolted

diagonal horizontal force.

The second row lists the minimum bolted diagonal bridging size for the joist spacing indicated.

The third row lists the minimum horizontal bridging size for the joist spacing indicated.

The fourth row denoted as "**I_{Non-comp eff}**" lists the non-composite moment of inertia for the joist that will allow the Specifying Professional to determine the deflection under non-composite loading.

A description of the terms and abbreviations used in the bridging tables is provided below:

P_{br} = Nominal horizontal top chord force, lbs (N)

I_{Non-comp eff} = Non-composite moment of inertia, in.⁴ (mm⁴)

At least one row of top and bottom chord bridging is required



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		Concrete Slab Parameters									
		Normal Weight Concrete (145 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1	1	1	
		tc (in.)	2	2	2	2	2	2	2	2	
Js (ft.)	3	3	3	3	3	3	3	3.5	4		
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
20	10	Pbr(lbs)	350	350	350	350	350	350	350	350	500
		X mat'l size									
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	21	21	24	27	30	31	33	35	45
	12	Pbr(lbs)	300	300	300	300	300	300	300	300	450
		X mat'l size									
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	30	30	34	37	38	43	45	47	60
	14	Pbr(lbs)	300	300	300	300	300	300	300	400	400
		X mat'l size									
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	41	41	41	47	50	52	55	68	75
	16	Pbr(lbs)	250	250	250	250	250	300	400	400	450
		X mat'l size									
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	53	53	53	61	61	68	77	83	100
	18	Pbr(lbs)	250	250	250	250	250	250	250	250	250
		X mat'l size									
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	68	68	68	68	79	79	85	93	98
	20	Pbr(lbs)	250	250	250	250	250	250	250	250	350
		X mat'l size									
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	82	82	82	82	95	95	102	110	138
24	Pbr(lbs)	200	200	200	200	200	200	200	250	300	
	X mat'l size										
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
	I non-comp eff	111	111	111	111	128	128	138	149	187	
28	Pbr(lbs)	200	200	200	200	200	200	200	200	300	
	X mat'l size										
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
	I non-comp eff	139	139	139	139	161	161	173	187	236	
32	Pbr(lbs)	200	200	200	200	200	200	250	300	300	
	X mat'l size										
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
	I non-comp eff	166	166	166	166	166	200	223	236	281	



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

DESIGN GUIDE LRFD NORMAL WEIGHT BRIDGING TABLES

Based on a 50 ksi Maximum Yield Strength												
Concrete Slab Parameters												
Normal Weight Concrete (145 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
500	600	600	750	750	750	1050	1050	1050	1050	1250	1250	1250
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.125H	L1.5x0.109H	L1.5x0.138H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
46	53	56	64	66	70	83	91	91	94	103	105	108
450	450	550	550	650	650	700	750	950	950	950	950	1150
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.109H	L1.25x0.125H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
62	66	75	77	90	92	102	108	121	126	132	138	154
500	500	550	600	650	750	750	900	900	1100	1100	1100	1200
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.109H	L1.25x0.125H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
88	92	98	113	119	130	138	161	161	180	189	199	210
450	550	600	700	700	700	800	800	1000	1000	1000	1100	1250
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.5x0.123H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
105	122	134	152	160	165	189	203	228	237	249	277	290
250	350	350	350	450	450	550	550	550	600	750	750	750
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
107	132	144	149	167	173	204	216	230	247	287	299	314
350	400	400	450	500	500	600	600	600	700	700	700	850
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
147	166	180	194	216	239	262	280	288	323	336	349	397
300	350	350	350	450	450	550	550	550	600	600	600	750
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
200	225	245	264	294	325	357	381	393	441	459	477	544
300	350	350	350	400	450	500	500	500	600	600	600	700
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
251	282	308	332	370	410	450	481	497	557	580	604	690
350	350	400	450	450	500	500	500	600	600	700	700	700
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
320	337	392	434	466	495	538	575	641	667	755	790	828



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		Concrete Slab Parameters									
		Normal Weight Concrete (145 pcf) f _c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1	1	1	1
		tc (in.)	2	2	2	2	2	2	2	2	2
Js (ft.)	3	3	3	3	3	3	3	3	3.5	4	
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
25	10	Pbr(lbs)	200	350	350	350	350	350	550	550	550
		X mat'l size									
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	25	30	33	35	38	39	50	52	56
	12	Pbr(lbs)	350	350	350	350	350	350	350	500	500
		X mat'l size									
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	36	39	42	47	50	54	55	71	75
	14	Pbr(lbs)	300	300	300	300	300	450	450	450	550
		X mat'l size									
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	42	48	53	60	63	81	84	91	106
	16	Pbr(lbs)	300	300	300	300	300	350	450	450	450
		X mat'l size									
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	54	63	67	74	78	91	105	110	118
	18	Pbr(lbs)	300	300	300	300	300	300	300	300	300
		X mat'l size									
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	71	71	82	88	97	108	112	115	123
	20	Pbr(lbs)	250	250	250	250	250	250	250	250	250
		X mat'l size									
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	87	87	100	108	118	125	132	137	146
	24	Pbr(lbs)	250	250	250	250	250	250	250	250	250
		X mat'l size									
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	121	121	121	140	151	166	175	185	192
28	Pbr(lbs)	200	200	200	200	200	250	250	300	350	
	X mat'l size										
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
	I non-comp eff	157	157	157	182	196	212	241	266	320	
32	Pbr(lbs)	200	200	200	200	200	200	250	300	300	
	X mat'l size										
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
	I non-comp eff	193	193	193	224	241	260	289	328	366	



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
Concrete Slab Parameters												
Normal Weight Concrete (145 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
650	650	800	800	900	1100	1100	1350	1350	1500	1650	1650	1950
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.5x0.109H	L1.5x0.109H	L1.5x0.155H	L1.75x0.155H	L1.75x0.17H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
61	67	75	81	88	101	104	121	121	135	150	150	169
500	600	600	700	700	800	1050	1050	1050	1250	1250	1400	1400
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.5x0.138H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
77	88	93	109	113	122	146	150	150	171	177	196	206
550	650	700	750	850	850	950	1150	1150	1150	1300	1450	1450
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.5x0.109H	L1.5x0.109H	L1.5x0.138H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
109	131	139	150	159	165	189	215	220	228	251	274	287
500	650	650	700	750	750	900	900	1100	1100	1100	1200	1350
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.125H	L1.5x0.109H	L1.5x0.138H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
138	161	171	189	202	208	236	247	283	290	299	331	349
350	400	500	500	600	600	650	850	850	850	1000	1000	1150
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
143	165	190	196	233	240	266	312	327	340	375	384	422
300	400	450	450	550	550	600	700	800	800	950	950	1050
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
170	196	229	234	277	287	306	339	385	404	463	463	505
300	350	400	400	400	500	500	600	700	700	850	850	950
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
229	268	312	321	340	390	416	480	544	571	628	657	717
350	400	450	500	550	550	550	600	750	750	750	750	850
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
349	391	432	479	524	544	583	630	745	781	823	823	913
350	350	400	450	500	500	500	550	600	700	700	700	700
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
430	464	533	572	647	672	721	779	845	967	1020	1020	1070



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		Concrete Slab Parameters									
		Normal Weight Concrete (145 pcf) f _c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1	1	1	
		tc (in.)	2	2	2	2	2	2	2	2	
Js (ft.)	3	3	3	3	3	3	3	3.5	4		
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
30	12	Pbr(lbs)	350	350	350	350	350	350	500	500	500
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X					
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	41	49	52	56	60	62	81	83	87
	14	Pbr(lbs)	350	350	350	350	500	500	500	500	600
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X					
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	54	62	68	73	94	100	103	108	128
	16	Pbr(lbs)	300	300	300	350	450	450	550	550	650
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X						
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	65	76	85	93	113	122	142	146	176
	18	Pbr(lbs)	300	300	300	300	300	300	300	350	450
		X mat'l size									
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	83	90	104	109	117	125	129	145	176
	20	Pbr(lbs)	300	300	300	300	300	300	300	300	400
		X mat'l size									
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	89	103	121	128	141	150	155	160	214
	24	Pbr(lbs)	250	250	250	250	250	250	250	250	350
		X mat'l size									
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	127	146	158	173	183	201	206	214	280
	26	Pbr(lbs)	250	250	250	250	250	250	250	250	300
		X mat'l size									
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	147	147	170	189	212	224	233	240	289
	28	Pbr(lbs)	250	250	250	250	250	250	250	250	300
		X mat'l size									
H mat'l size		L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
I non-comp eff		168	168	194	209	230	243	256	274	331	
32	Pbr(lbs)	200	200	200	200	200	250	250	300	350	
	X mat'l size										
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
	I non-comp eff	211	211	244	263	289	322	355	400	469	



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
Concrete Slab Parameters												
Normal Weight Concrete (145 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
600	650	750	1100	1100	1100	1300	1300	1650	1650	1900	1900	2100
L1.25x0.109H	L1.25x0.125H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L1.75x0.17H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H	L2x0.163X	L2.5x0.187X	L2.5x0.187X
99	107	123	157	162	166	191	200	228	237	258	264	291
700	750	850	1000	1000	1000	1250	1250	1400	1550	1650	1650	1800
L1.25x0.125H	L1.5x0.109H	L1.5x0.123H	L1.75x0.155H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H	L2x0.163X	L2.5x0.187X	L2.5x0.187X
148	159	178	203	207	213	251	261	280	312	324	338	355
700	800	800	950	950	1150	1150	1300	1450	1550	1550	1700	1850
L1.25x0.109H	L1.5x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L1.75x0.17H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H	L2x0.163X	L2.5x0.187X	L2.5x0.187X
188	215	223	255	266	299	309	352	373	404	426	447	494
450	500	650	650	650	700	900	1100	1100	1250	1250	1350	1450
L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H	L2x0.163X	L2.5x0.187X	L2.5x0.187X
184	216	251	260	280	302	353	403	418	460	480	510	558
400	500	500	600	650	700	850	850	1050	1050	1150	1300	1300
L1.25x0.109H	L1.25x0.109H	L1.25x0.125H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H	L2x0.163X	L2.5x0.187X	L2.5x0.187X
224	260	278	312	334	363	431	440	504	522	575	637	637
350	450	450	550	550	600	750	750	950	950	1050	1150	1150
L1.25x0.109H	L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H	L2x0.163X	L2.5x0.187X	L2.5x0.187X
298	344	375	422	449	483	596	596	686	705	776	852	882
350	400	450	500	550	550	750	750	900	900	1000	1100	1100
L1.25x0.109H	L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
334	390	425	474	506	563	663	695	765	801	875	957	996
350	400	400	500	500	550	700	700	850	850	950	1050	1050
L1.25x0.109H	L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
372	435	472	544	579	624	729	798	879	919	1010	1100	1140
350	450	450	500	550	550	550	600	750	750	750	850	850
L1.25x0.109H	L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
511	609	645	710	787	817	848	922	1110	1170	1200	1320	1370



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		Concrete Slab Parameters									
		Normal Weight Concrete (145 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1	1	1	
		tc (in.)	2	2	2	2	2	2	2	2	
Js (ft.)	3	3	3	3	3	3	3	3.5	4		
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
35	14	Pbr(lbs)	400	400	400	500	500	500	500	600	750
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X						
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	68	77	83	104	108	113	119	135	165
	16	Pbr(lbs)	350	350	350	350	500	500	500	550	600
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X					
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	78	87	97	103	134	144	146	171	188
	18	Pbr(lbs)	300	300	300	300	300	300	450	450	450
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X				
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	90	104	118	126	132	139	182	185	199
	20	Pbr(lbs)	300	300	300	300	300	300	350	450	450
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X				
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	112	130	142	152	161	170	186	226	237
	22	Pbr(lbs)	300	300	300	300	300	300	300	400	400
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X				
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	126	149	166	177	190	196	221	268	281
	24	Pbr(lbs)	250	250	250	250	250	250	300	400	400
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X						
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	150	166	187	205	219	227	255	304	327
	26	Pbr(lbs)	250	250	250	250	250	250	300	350	350
		X mat'l size									
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	175	188	207	230	246	265	291	343	373
	28	Pbr(lbs)	250	250	250	250	250	250	250	350	350
		X mat'l size									
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	174	217	238	265	276	295	326	386	421
	32	Pbr(lbs)	200	200	200	200	200	250	300	300	400
		X mat'l size									
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	222	257	277	304	339	374	456	477	553



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

DESIGN GUIDE LRFD NORMAL WEIGHT BRIDGING TABLES

Based on a 50 ksi Maximum Yield Strength												
Concrete Slab Parameters												
Normal Weight Concrete (145 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
800	900	900	1050	1300	1300	1450	1450	1750	1900	L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.125H	L1.5x0.109H	L1.5x0.123H	L1.75x0.155H	L1.75x0.17H	L2x0.163H	L2x0.176H	L2.5x0.187H	L2.5x0.187H	L2.5x0.212H			
177	200	206	234	270	270	303	315	349	375	414	439	459
700	800	850	1000	1000	1000	1200	1350	1350	1500	L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.5x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
214	240	260	297	305	315	353	397	412	440	468	513	543
550	650	700	750	950	950	1150	1150	1300	1450	L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.125H	L1.5x0.109H	L1.5x0.138H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
229	272	291	310	366	378	450	471	507	540	586	630	696
500	650	650	700	900	900	1100	1100	1200	1350	L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.125H	L1.5x0.109H	L1.5x0.138H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
277	327	351	380	445	458	543	565	606	678	706	776	793
500	600	600	700	850	850	1050	1050	1150	1300	L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.125H	L1.5x0.109H	L1.5x0.123H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
329	384	413	447	531	543	644	664	742	788	865	909	951
450	550	550	650	700	800	1000	1000	1100	1200	L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.5x0.123H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
381	445	475	534	577	634	744	771	850	944	983	1090	1090
450	550	550	600	650	800	950	950	1050	1150	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.109H	L1.25x0.125H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
434	522	538	601	652	745	846	875	968	1060	1110	1210	1280
400	500	500	600	650	750	900	900	1000	1100	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.109H	L1.25x0.125H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
488	582	602	669	722	827	952	980	1080	1190	1230	1340	1410
400	450	500	550	550	600	650	800	900	900	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
593	678	770	829	892	970	1060	1230	1340	1390	1530	1650	1820



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		Concrete Slab Parameters									
		Normal Weight Concrete (145 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1	1	1	1
		tc (in.)	2	2	2	2	2	2	2	2	2
		Js (ft.)	3	3	3	3	3	3	3	3.5	4
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
40	16	Pbr(lbs)	400	400	500	500	500	600	650	750	850
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X					
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H	L1.25x0.109H
		I non-comp eff	99	115	138	144	155	176	193	221	251
	18	Pbr(lbs)	350	350	350	350	450	450	450	550	600
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X					
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	110	125	139	150	182	191	200	230	247
	20	Pbr(lbs)	300	300	300	300	350	450	450	450	550
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X				
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	123	143	158	165	190	232	238	249	297
	22	Pbr(lbs)	300	300	300	300	350	450	450	450	500
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X				
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	150	167	185	197	223	270	283	290	350
	24	Pbr(lbs)	300	300	300	300	300	400	400	400	500
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X				
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	163	199	213	229	257	315	331	338	407
	26	Pbr(lbs)	250	250	250	250	300	400	400	400	450
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X				
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	191	222	243	260	296	361	379	389	467
	28	Pbr(lbs)	250	250	250	250	300	350	350	350	450
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X				
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	205	242	270	300	332	403	429	439	526
30	Pbr(lbs)	250	250	250	250	300	350	350	350	400	
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X					
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
	I non-comp eff	234	277	309	331	380	450	479	491	584	
32	Pbr(lbs)	250	250	250	250	250	250	350	350	400	
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X				
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
	I non-comp eff	265	294	331	363	388	430	522	541	644	



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LFRD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
Concrete Slab Parameters												
Normal Weight Concrete (145 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
900	1050	1250	1250	1250	1400	1550	1700	2000	2200	2500	2500	2900
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.5x0.109H	L1.5x0.123H	L1.5x0.17H	L1.75x0.155H	L1.75x0.17H	L2x0.163H	L2x0.205H	L2.5x0.187H	L2.5x0.187H	L2.5x0.25H			
268	306	364	364	380	425	462	500	560	594	668	692	757
700	800	1000	1000	1200	1200	1350	1500	1750	1900	1900	2100	2400
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.5x0.109H	L1.5x0.138H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.212H			
281	319	389	402	451	472	528	574	632	698	703	771	834
650	700	800	950	950	1150	1300	1300	1550	1650	1650	1800	1950
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.5x0.109H	L1.5x0.109H	L1.5x0.17H	L1.75x0.155H	L1.75x0.17H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
352	371	428	475	505	567	639	664	740	796	829	880	972
650	650	750	900	900	1100	1200	1200	1350	1600	1600	1750	1900
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.125H	L1.5x0.109H	L1.5x0.17H	L1.75x0.155H	L1.75x0.17H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
416	446	496	564	597	696	747	784	871	958	980	1080	1140
600	650	750	850	850	1050	1050	1150	1300	1400	1500	1650	1800
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.125H	L1.5x0.109H	L1.5x0.155H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
480	516	583	676	698	803	836	942	1000	1100	1150	1250	1370
550	600	650	750	800	1000	1000	1100	1200	1300	1450	1550	1700
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.125H	L1.5x0.109H	L1.5x0.138H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
546	608	658	737	797	920	948	1060	1190	1240	1360	1440	1560
550	550	600	700	800	950	950	1050	1150	1250	1350	1500	1650
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.5x0.138H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
614	656	738	836	899	1030	1070	1230	1310	1440	1520	1680	1760
500	500	600	700	750	900	900	1000	1100	1200	1300	1450	1550
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.5x0.123H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
703	725	810	923	1010	1150	1230	1350	1510	1570	1740	1840	2030
500	500	550	650	700	850	850	950	1050	1150	1250	1350	1500
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.5x0.123H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
769	821	918	1050	1140	1300	1340	1490	1630	1780	1870	2090	2190



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		Concrete Slab Parameters									
		Normal Weight Concrete (145 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1	1	1	1
		tc (in.)	2	2	2	2	2	2	2	2	2
		Js (ft.)	3	3	3	3	3	3	3	3.5	4
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
45	18	Pbr(lbs)	450	500	500	500	500	500	600	600	700
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X			
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	135	159	174	186	196	205	238	244	293
	20	Pbr(lbs)	400	400	450	450	450	450	550	550	700
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X			
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	158	177	212	228	238	288	297	359	
	22	Pbr(lbs)	350	350	350	350	450	450	550	550	650
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X			
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	177	198	216	228	283	299	341	352	431
	24	Pbr(lbs)	300	300	300	300	400	400	500	500	600
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X			
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	190	214	237	249	333	349	399	409	501
	26	Pbr(lbs)	300	300	300	300	400	400	500	500	600
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X			
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	211	245	271	305	382	400	457	483	592
	28	Pbr(lbs)	250	250	250	300	400	400	450	450	550
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X			
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	245	273	304	346	423	455	516	547	662
30	Pbr(lbs)	250	250	250	300	350	350	450	450	500	
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X				
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
	I non-comp eff	264	313	335	385	485	509	577	610	708	
32	Pbr(lbs)	250	250	250	250	300	300	350	400	500	
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X				
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
	I non-comp eff	290	337	380	409	460	513	593	673	780	
36	Pbr(lbs)	250	250	250	250	300	350	350	400	400	
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X					
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
	I non-comp eff	337	398	444	526	597	665	708	798	900	



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LFRD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
Concrete Slab Parameters												
Normal Weight Concrete (145 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
850	1000	1000	1250	1400	1400	1550	1800	1950	2150	2450	2450	2850
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.5x0.109H	L1.5x0.109H	L1.5x0.138H	L1.75x0.155H	L2x0.163H	L2x0.163H	L2x0.187H	L2.5x0.187H	L2.5x0.187H	L2.5x0.25H			
342	403	419	472	528	537	596	663	731	772	865	891	1020
750	1000	1000	1200	1300	1300	1450	1700	1900	2050	2350	2350	2700
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.125H	L1.5x0.109H	L1.5x0.138H	L1.75x0.155H	L1.75x0.17H	L2x0.163H	L2x0.187H	L2.5x0.187H	L2.5x0.187H	L2.5x0.23H			
400	489	506	594	640	665	724	830	882	974	1060	1090	1240
750	950	950	1150	1150	1250	1400	1650	1800	1950	2250	2250	2600
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.125H	L1.5x0.109H	L1.5x0.123H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2x0.176H	L2.5x0.187H	L2.5x0.187H	L2.5x0.23H			
477	583	599	698	730	786	873	983	1090	1140	1300	1300	1480
700	900	900	1100	1100	1200	1350	1550	1700	1850	2150	2150	2450
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.5x0.109H	L1.5x0.123H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.212H			
562	680	701	807	841	947	1050	1160	1260	1380	1500	1580	1730
650	750	850	1050	1050	1150	1150	1250	1500	1650	1800	2050	2050
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.5x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L1.75x0.17H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
633	707	829	927	995	1070	1120	1250	1370	1490	1640	1780	1870
600	700	800	800	1000	1000	1100	1200	1450	1550	1700	1700	1950
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.5x0.109H	L1.5x0.109H	L1.5x0.155H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
713	806	936	966	1110	1160	1310	1400	1610	1740	1830	1920	2080
550	650	700	800	950	950	1050	1150	1350	1500	1500	1650	1900
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.5x0.109H	L1.5x0.109H	L1.5x0.138H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
787	926	995	1080	1240	1280	1440	1610	1770	1960	2010	2120	2400
550	650	700	800	900	1000	1100	1200	1300	1450	1550	1800	1800
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.125H	L1.5x0.109H	L1.5x0.155H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
895	1020	1110	1250	1370	1510	1740	1820	2020	2230	2350	2610	2740
500	550	650	700	850	850	950	1050	1200	1350	1350	1450	1650
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.5x0.123H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
1050	1170	1340	1460	1670	1720	1970	2190	2400	2690	2690	2960	3190



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
		Concrete Slab Parameters										
		Normal Weight Concrete (145 pcf) f'c = 4.0 ksi										
		hr (in.)	1	1	1	1	1	1	1	1		
		tc (in.)	2	2	2	2	2	2	2	2		
	Js (ft.)	3	3	3	3	3	3	3	3.5	4		
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot										
		TL	300	400	500	600	700	800	900	1000	1200	
50	20	Pbr(lbs)	500	500	500	500	550	550	550	700	750	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X			
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	184	212	228	245	288	298	364	359	400	
	22	Pbr(lbs)	400	450	450	450	450	550	550	650	700	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X			
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	206	249	271	292	306	352	364	432	479	
	24	Pbr(lbs)	350	350	350	350	450	500	500	600	700	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X			
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	231	267	289	271	307	359	410	437	482	561
	26	Pbr(lbs)	350	350	350	350	400	500	500	550	650	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X			
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	250	290	316	336	413	472	500	538	648	
	28	Pbr(lbs)	300	300	300	300	400	400	500	500	600	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X		
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	275	325	356	375	468	493	565	605	741	
	30	Pbr(lbs)	250	250	300	400	400	450	450	550	600	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X			
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	299	338	400	489	526	615	633	713	826	
	32	Pbr(lbs)	250	250	250	300	350	350	450	450	550	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X			
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	340	373	413	480	583	613	700	769	908	
36	Pbr(lbs)	250	250	250	250	300	350	400	450	500		
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X					
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
	I non-comp eff	405	451	502	573	639	735	857	915	1070		
40	Pbr(lbs)	200	200	250	300	300	400	400	400	450		
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X						
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
	I non-comp eff	450	523	657	742	826	968	1020	1050	1260		



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

DESIGN GUIDE LRFD NORMAL WEIGHT BRIDGING TABLES

Based on a 50 ksi Maximum Yield Strength												
Concrete Slab Parameters												
Normal Weight Concrete (145 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
1000	1000	1200	1350	1500	1500	1750	1950	2100	2400	2400	2800	2800
									L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.5x0.109H	L1.5x0.109H	L1.5x0.17H	L1.75x0.155H	L2x0.163H	L2x0.163H	L2x0.232H	L2.5x0.187H	L2.5x0.212H				
506	526	616	665	725	751	837	924	1010	1100	1130	1300	1300
800	950	1150	1150	1300	1450	1700	1850	2000	2300	2300	2650	2650
									L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.5x0.109H	L1.5x0.109H	L1.5x0.155H	L1.75x0.155H	L1.75x0.17H	L2x0.163H	L2x0.219H	L2.5x0.187H	L2.5x0.187H				
539	621	731	758	818	892	1020	1140	1200	1350	1350	1530	1600
800	900	1100	1100	1250	1350	1500	1750	1900	2200	2200	2550	2550
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.125H	L1.5x0.109H	L1.5x0.155H	L1.75x0.155H	L1.75x0.17H	L2x0.163H	L2x0.187H	L2.5x0.187H	L2.5x0.187H	L2.5x0.25H			
634	748	843	882	987	1060	1170	1310	1400	1580	1640	1800	1860
750	900	1050	1050	1200	1300	1550	1700	1850	2100	2100	2450	2450
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.125H	L1.5x0.109H	L1.5x0.138H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2x0.205H	L2.5x0.187H	L2.5x0.187H	L2.5x0.25H			
729	855	999	999	1130	1250	1410	1560	1650	1800	1880	2140	2140
700	850	1000	1000	1150	1250	1350	1600	1750	2050	2050	2350	2350
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.125H	L1.5x0.109H	L1.5x0.138H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2x0.176H	L2.5x0.187H	L2.5x0.187H	L2.5x0.23H			
828	972	1120	1170	1320	1400	1530	1750	1930	2090	2210	2420	2510
700	750	800	1000	1100	1100	1200	1400	1550	1700	1950	1950	2250
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.5x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L1.75x0.17H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
934	1030	1120	1350	1450	1520	1690	1910	2030	2230	2450	2560	2800
650	800	950	950	1050	1150	1250	1350	1500	1600	1850	2150	2150
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.5x0.109H	L1.5x0.123H	L1.5x0.17H	L1.75x0.155H	L1.75x0.17H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
1060	1200	1430	1480	1650	1760	1940	2130	2320	2440	2770	3060	3210
550	650	800	850	950	1050	1150	1250	1400	1500	1750	1750	2000
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.125H	L1.5x0.109H	L1.5x0.155H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
1240	1410	1600	1810	2000	2230	2330	2580	2860	3010	3360	3520	3840
550	600	650	800	800	900	1000	1150	1300	1400	1600	1600	1850
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.125H	L1.5x0.109H	L1.5x0.155H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
1520	1670	1820	2080	2230	2380	2740	3180	3350	3700	3990	4130	4730



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		Concrete Slab Parameters									
		Normal Weight Concrete (145 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1	1	1	
		tc (in.)	2	2	2	2	2	2	2	2	
Js (ft.)	3	3	3	3	3	3	3	3.5	4		
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
55	24	Pbr(lbs)	450	450	450	450	550	550	550	650	750
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	282	310	341	359	423	438	469	541	620
	26	Pbr(lbs)	400	400	450	450	450	500	550	650	700
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	304	336	394	414	434	495	518	554	626
	28	Pbr(lbs)	350	400	400	400	400	500	500	600	700
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	328	382	394	469	495	584	626	717	815
	30	Pbr(lbs)	350	350	350	350	400	450	500	550	650
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	365	410	448	478	555	653	700	769	917
	32	Pbr(lbs)	300	300	300	300	400	450	500	550	650
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	398	467	510	545	633	725	799	877	1050
	34	Pbr(lbs)	300	300	300	350	350	450	450	500	550
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	449	506	557	663	696	819	843	956	1110
36	Pbr(lbs)	300	300	400	400	450	500	600	650	650	
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X				
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H	
	I non-comp eff	474	587	699	799	872	1010	1120	1250	1310	
40	Pbr(lbs)	250	250	300	300	350	400	400	450	550	
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X		
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
	I non-comp eff	527	617	725	765	912	1060	1140	1280	1480	
44	Pbr(lbs)	300	300	300	300	350	350	400	450	550	
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X			
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
	I non-comp eff	674	763	864	979	1140	1210	1320	1490	1780	



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

DESIGN GUIDE LRFD NORMAL WEIGHT BRIDGING TABLES

Based on a 50 ksi Maximum Yield Strength												
Concrete Slab Parameters												
Normal Weight Concrete (145 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
950	1150	1150	1250	1400	1550	1800	1950	2250	2250	2600	2600	2950
									L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.5x0.109H	L1.5x0.123H	L1.5x0.155H	L1.75x0.155H	L2x0.163H	L2x0.163H	L2x0.232H	L2.5x0.187H	L2.5x0.212H				
749	883	915	988	1080	1170	1380	1460	1640	1690	1950	1950	2120
900	1100	1100	1200	1350	1450	1750	1900	2150	2150	2500	2500	2850
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.5x0.109H	L1.5x0.123H	L1.5x0.155H	L1.75x0.155H	L2x0.163H	L2x0.163H	L2x0.219H	L2.5x0.187H	L2.5x0.212H	L2.5x0.25H			
857	1000	1050	1170	1280	1390	1570	1730	1890	1950	2220	2320	2530
850	1100	1050	1150	1300	1400	1650	1800	2100	2100	2400	2400	2750
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.5x0.109H	L1.5x0.123H	L1.5x0.138H	L1.75x0.155H	L1.75x0.17H	L2x0.163H	L2x0.219H	L2.5x0.187H	L2.5x0.212H	L2.5x0.25H			
1000	1000	1230	1320	1470	1570	1840	1950	2210	2210	2520	2600	2970
850	1000	1000	1150	1250	1350	1600	1750	2000	2000	2300	2300	2650
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.5x0.109H	L1.5x0.109H	L1.5x0.138H	L1.75x0.155H	L1.75x0.17H	L2x0.163H	L2x0.205H	L2.5x0.187H	L2.5x0.187H	L2.5x0.23H			
1130	1300	1350	1530	1700	1780	2040	2240	2460	2570	2920	2920	3280
800	950	950	1100	1200	1300	1550	1700	1950	1950	2250	2250	2550
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.125H	L1.5x0.109H	L1.5x0.138H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2x0.205H	L2.5x0.187H	L2.5x0.187H	L2.5x0.23H			
1250	1480	1550	1660	1860	2040	2330	2570	2790	2940	3230	3350	3630
700	750	950	1050	1150	1150	1350	1500	1600	1850	2150	2150	2150
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.5x0.109H	L1.5x0.123H	L1.75x0.155H	L1.75x0.155H	L1.75x0.17H	L2x0.176H	L2.5x0.187H	L2.5x0.187H	L2.5x0.212H			
1300	1460	1680	1880	2110	2110	2430	2650	2910	3200	3670	3670	3810
750	800	900	1000	1000	1100	1200	1300	1550	1550	1800	2050	2050
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.125H	L1.5x0.109H	L1.5x0.123H	L1.75x0.155H	L1.75x0.155H	L1.75x0.17H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
1540	1670	1890	2120	2120	2370	2590	2810	3130	3280	3600	4130	4130
650	750	850	950	1050	1100	1200	1350	1450	1650	1900	1900	2200
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.5x0.109H	L1.5x0.109H	L1.5x0.17H	L1.75x0.155H	L1.75x0.17H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
1760	2000	2260	2490	2780	2900	3220	3570	3750	4190	4800	4870	5520
550	650	800	800	850	950	1050	1250	1350	1550	1550	1800	1800
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.125H	L1.5x0.109H	L1.5x0.138H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
1940	2210	2530	2720	3000	3340	3690	4100	4520	4880	5060	5790	5790



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
		Concrete Slab Parameters										
		Normal Weight Concrete (145 pcf) f _c = 4.0 ksi										
		hr (in.)	1	1	1	1	1	1	1	1.5		
		tc (in.)	2	2	2	2	2	2	2	2		
Js (ft.)	3	3	3	3	3	3	3	3.5	4			
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot										
		TL	300	400	500	600	700	800	900	1000	1200	
60	24	Pbr(lbs)	550	550	550	600	600	600	650	700	950	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	327	369	401	440	469	476	555	589	749	
	26	Pbr(lbs)	500	500	500	500	500	550	650	700	900	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	361	423	460	486	518	555	641	683	889	
	28	Pbr(lbs)	400	400	400	500	500	550	600	650	800	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	388	438	470	568	585	648	732	778	950	
	30	Pbr(lbs)	400	400	400	400	500	500	550	650	800	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	428	493	530	571	675	726	795	877	1070	
	32	Pbr(lbs)	400	400	400	400	450	500	550	600	750	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	488	541	589	635	748	801	880	982	1220	
	36	Pbr(lbs)	350	350	350	450	450	500	550	650	650	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	547	617	731	849	924	1040	1160	1320	1400	
	40	Pbr(lbs)	300	350	400	400	450	550	600	600	600	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	643	761	890	1020	1170	1390	1500	1560	1690	
	44	Pbr(lbs)	350	350	450	550	500	500	550	600	750	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	784	914	1160	1370	1470	1570	1740	1890	2260	
	48	Pbr(lbs)	250	250	300	350	350	400	450	450	450	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	805	954	1130	1260	1440	1660	1830	1990	2070	



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

DESIGN GUIDE LRFD NORMAL WEIGHT BRIDGING TABLES

Based on a 50 ksi Maximum Yield Strength												
Concrete Slab Parameters												
Normal Weight Concrete (145 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	3.5	3.5	3.5
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
1150	1150	1300	1450	1700	1700	2000	2300	2700	2700	3400		
								L1.75x0.155X	L2x0.163X	L2x0.163X		
L1.5x0.109H	L1.5x0.138H	L1.75x0.155H	L1.75x0.17H	L2x0.163H	L2x0.163H	L2.5x0.187H	L2.5x0.187H					
883	915	1010	1120	1250	1290	1500	1690	1950	1950	2240		
900	1100	1250	1400	1500	1650	1950	2250	2250	2550	2900	3250	
									L2x0.163X	L2.5x0.187X	L2.5x0.187X	
L1.5x0.109H	L1.5x0.123H	L1.5x0.17H	L1.75x0.155H	L2x0.163H	L2x0.163H	L2x0.25H	L2.5x0.187H	L2.5x0.212H				
924	1090	1200	1330	1400	1540	1730	1950	2010	2320	2530	2680	
900	1100	1200	1350	1450	1550	1700	2150	2150	2450	2800	2800	3150
									L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.5x0.109H	L1.5x0.123H	L1.5x0.17H	L1.75x0.155H	L2x0.163H	L2x0.163H	L2x0.219H	L2.5x0.187H	L2.5x0.212H				
1040	1230	1370	1500	1640	1730	1930	2300	2300	2610	2980	2980	3150
850	1050	1150	1300	1400	1500	1650	2050	2050	2400	2400	2700	2700
									L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.5x0.109H	L1.5x0.123H	L1.5x0.155H	L1.75x0.155H	L2x0.163H	L2x0.163H	L2x0.205H	L2.5x0.187H	L2.5x0.212H				
1200	1420	1590	1700	1830	2000	2150	2570	2670	3030	3030	3460	3460
900	1000	1100	1250	1350	1450	1700	2000	2000	2300	2600	2600	2900
									L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.5x0.109H	L1.5x0.109H	L1.5x0.155H	L1.75x0.155H	L2x0.163H	L2x0.163H	L2x0.219H	L2.5x0.187H	L2.5x0.187H				
1400	1550	1750	1950	2090	2210	2580	2950	2950	3370	3640	3770	4220
750	950	950	1050	1150	1250	1500	1600	1850	1850	2150	2150	2400
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.125H	L1.5x0.109H	L1.5x0.123H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2x0.187H	L2.5x0.187H	L2.5x0.187H	L2.5x0.212H			
1640	1900	1980	2240	2490	2610	3000	3300	3620	3790	4150	4320	4840
700	850	850	950	1050	1150	1250	1350	1700	1700	2000	2000	2250
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.5x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L1.75x0.17H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
1970	2280	2450	2640	2950	3230	3410	3880	4450	4510	5160	5160	5810
750	900	1000	1100	1100	1150	1400	1600	1600	1850	1850	2100	2100
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.125H	L1.5x0.109H	L1.5x0.138H	L1.75x0.155H	L1.75x0.155H	L1.75x0.17H	L2x0.176H	L2.5x0.187H	L2.5x0.187H	L2.5x0.212H			
2430	2830	3220	3540	3540	3930	4580	5130	5130	5870	5960	6760	6760
600	700	750	850	950	1000	1200	1300	1500	1500	1750	1750	1950
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.5x0.109H	L1.5x0.109H	L1.5x0.155H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
2530	2880	3250	3590	4010	4190	4920	5420	6080	6080	6960	6960	8020



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		Concrete Slab Parameters									
		Normal Weight Concrete (145 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1	1	1.5	
		tc (in.)	2	2	2	2	2	2	2	2	
Js (ft.)	3	3	3	3	3	3	3	3.5	4		
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
65	30	Pbr(lbs)	450	500	500	500	500	600	600	700	850
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	486	570	620	676	699	846	866	970	1200
	32	Pbr(lbs)	450	450	500	500	500	550	650	700	800
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	536	610	708	750	832	910	1050	1160	1260
	34	Pbr(lbs)	450	450	450	450	450	550	550	650	800
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	606	672	778	826	875	999	1080	1220	1510
	36	Pbr(lbs)	400	400	450	450	450	500	550	600	700
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	649	754	852	928	954	1120	1210	1340	1570
	38	Pbr(lbs)	350	350	450	450	450	500	550	600	750
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	692	769	922	1010	1070	1210	1310	1470	1840
	40	Pbr(lbs)	350	350	400	400	450	500	600	650	700
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	732	830	980	1080	1190	1390	1570	1700	1880
44	Pbr(lbs)	350	350	350	450	500	500	500	500	650	
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
	H mat'l size										
	I non-comp eff	852	1020	1120	1380	1570	1700	1760	1840	2210	
48	Pbr(lbs)	350	400	500	500	500	550	600	650	800	
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
	H mat'l size										
	I non-comp eff	999	1260	1550	1690	1810	2080	2250	2450	2980	
52	Pbr(lbs)	300	300	300	350	400	500	450	450	500	
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
	H mat'l size										
	I non-comp eff	1090	1270	1450	1660	1960	2240	2260	2350	2730	



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
Concrete Slab Parameters												
Normal Weight Concrete (145 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	3.5	3.5	3.5
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
1050	1200	1300	1400	1550	1700	1850	2100	2450	2450	2750		
L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2.5x0.187X		
1420	1590	1740	1900	2010	2240	2440	2750	3030	3180	3460		
950	1000	1150	1250	1500	1650	1750	2050	2350	2350	2650	2650	
L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	
1460	1630	1820	2000	2300	2470	2710	3070	3480	3650	3980	3980	
1000	1100	1200	1300	1450	1550	1700	1950	2250	2250	2550	2850	2850
L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
1770	1990	2220	2380	2620	2780	3090	3490	3840	3960	4540	4820	4820
850	950	1050	1150	1400	1500	1650	1900	2200	2200	2500	2500	2750
L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
1870	2080	2240	2500	2830	3140	3340	3800	4330	4330	4860	5120	5440
900	1050	1150	1250	1350	1450	1600	1800	2100	2100	2400	2650	2650
L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
2130	2390	2680	2930	3170	3360	3700	4260	4670	4850	5440	5770	6100
800	900	1000	1100	1200	1400	1550	1750	1750	2050	2300	2300	2600
L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
2230	2470	2790	2970	3260	3740	4120	4530	4740	5400	5850	6060	6420
750	850	950	1000	1100	1200	1300	1650	1650	1900	1900	2150	2150
L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
2620	2860	3210	3600	3780	4160	4540	5430	5510	6320	6320	7110	7370
850	950	1050	1050	1250	1350	1550	1550	1800	1800	2050	2250	2250
L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
3390	3730	4250	4250	4980	5220	5930	6150	7050	7160	8120	8580	8970
600	750	800	900	1000	1050	1150	1450	1450	1700	1700	1900	1900
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
3210	3710	4240	4730	4950	5500	6100	7190	7190	8240	8380	9500	9500



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		Concrete Slab Parameters									
		Normal Weight Concrete (145 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1	1	1.5	
		tc (in.)	2	2	2	2	2	2	2	2.5	
Js (ft.)	3	3	3	3	3	3	3	3.5	4		
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
70	32	Pbr(lbs)	500	500	500	550	550	600	700	750	850
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	611	712	779	883	911	992	1110	1190	1380
	34	Pbr(lbs)	450	450	500	500	500	600	650	700	900
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	654	760	858	911	944	1100	1230	1350	1660
	36	Pbr(lbs)	450	450	450	450	500	550	600	700	800
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	734	829	903	957	1060	1160	1310	1490	1760
	38	Pbr(lbs)	450	450	450	500	550	650	650	650	800
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	789	903	979	1170	1300	1540	1570	1620	1900
	40	Pbr(lbs)	400	400	400	400	450	500	550	650	750
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	845	936	1090	1150	1270	1400	1560	1800	2110
	44	Pbr(lbs)	350	350	350	400	400	500	550	600	700
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	973	1090	1220	1350	1490	1690	1910	2120	2490
48	Pbr(lbs)	350	350	400	450	500	500	500	550	650	
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
	H mat'l size										
	I non-comp eff	1100	1260	1480	1760	1960	2030	2200	2460	2780	
52	Pbr(lbs)	350	500	450	450	550	550	700	700	750	
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
	H mat'l size										
	I non-comp eff	1270	1690	1880	2060	2360	2660	3040	3190	3630	
56	Pbr(lbs)	450	450	450	450	450	450	450	500	600	
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
	H mat'l size										
	I non-comp eff	1710	1800	2060	2290	2460	2640	2730	3050	3640	



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
Concrete Slab Parameters												
Normal Weight Concrete (145 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	3.5	3.5	3.5
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
1050	1150	1300	1500	1650	1800	2050	2050	2400	2700			
L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X			
1690	1860	2070	2310	2570	2720	3160	3300	3660	3990			
1000	1250	1350	1450	1600	1750	2000	2300	2300	2600	2900		
L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2.5x0.187X		
1850	2220	2390	2620	2810	3090	3500	3970	4170	4540	4820		
950	1100	1200	1400	1550	1700	1950	2250	2250	2550	2550		
L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2.5x0.187X		
2090	2340	2560	2960	3150	3490	3810	4340	4490	5130	5130		
950	1050	1150	1250	1350	1500	1850	1850	2150	2450	2450	2750	
L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	
2230	2520	2800	3010	3310	3560	4270	4420	5030	5460	5760	6120	
900	1000	1100	1300	1450	1550	1800	2100	2100	2350	2350	2650	3000
L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
2480	2800	3110	3540	3920	4130	4760	5420	5420	6080	6420	6830	7410
850	950	1050	1150	1350	1350	1700	1700	1950	2200	2200	2450	2800
L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
2880	3230	3620	3970	4570	4770	5470	5790	6360	7160	7410	7860	9040
800	900	1000	1050	1150	1250	1400	1600	1850	1850	2100	2100	2300
L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
3320	3850	4310	4530	4980	5440	5990	6610	7590	7590	8540	8850	9400
950	1000	1000	1200	1300	1500	1500	1750	1750	1950	2200	2200	2200
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
4220	4750	5010	5880	6160	7010	7270	8330	8480	9610	10160	10620	11030
650	800	850	950	1050	1150	1200	1400	1650	1650	1850	1850	2050
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
4080	4780	5520	5780	6420	6780	7480	8390	9620	9790	11100	11100	12280



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		Concrete Slab Parameters									
		Normal Weight Concrete (145 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1	1.5	1.5	1.5
		tc (in.)	2	2	2	2	2	2	2.5	2.5	2.5
Js (ft.)	3	3	3	3	3	3	3	3.5	4		
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
75	34	Pbr(lbs)	550	550	550	600	600	700	700	800	950
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	755	877	934	1040	1140	1320	1360	1480	1740
	38	Pbr(lbs)	450	450	450	500	500	600	700	750	850
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	870	987	1080	1210	1300	1510	1620	1800	2100
	40	Pbr(lbs)	450	450	450	450	500	550	650	700	850
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	937	1100	1200	1270	1400	1600	1800	1950	2340
	42	Pbr(lbs)	400	400	450	450	500	600	650	700	800
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	1010	1140	1280	1360	1610	1810	1940	2160	2580
	44	Pbr(lbs)	400	450	550	550	550	600	650	800	800
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	1060	1310	1550	1720	1780	2080	2240	2560	2730
	48	Pbr(lbs)	400	400	400	400	450	500	600	600	750
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	1200	1410	1530	1660	1950	2180	2470	2660	3160
52	Pbr(lbs)	350	350	400	500	500	500	550	600	700	
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
	H mat'l size										
	I non-comp eff	1300	1520	1870	2290	2400	2490	2790	3040	3580	
56	Pbr(lbs)	450	450	450	500	550	650	650	650	800	
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
	H mat'l size										
	I non-comp eff	1720	2010	2250	2640	2970	3380	3530	3720	4490	
60	Pbr(lbs)	450	450	450	450	450	450	500	550	650	
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
	H mat'l size										
	I non-comp eff	1960	2200	2480	2730	2930	3150	3510	3840	4560	



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
Concrete Slab Parameters												
Normal Weight Concrete (145 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	3.5	3.5	3.5
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
1150	1250	1350	1500	1650	1750	2050	2350	2650				
L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X				
2080	2270	2480	2740	2930	3190	3600	4170	4550				
1050	1200	1300	1400	1500	1650	1900	2200	2500	2500			
L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X			
2520	2810	3140	3320	3700	3920	4430	5040	5770	5770			
1050	1150	1350	1500	1600	1850	2150	2150	2400	2700	3050		
L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2.5x0.187X		
2810	3120	3550	3930	4190	4770	5440	5620	6430	6840	7430		
900	1100	1200	1300	1450	1550	1800	2050	2350	2350	2600		
L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X		
2880	3450	3720	4090	4350	4830	5280	6020	6760	7130	7590		
950	1050	1150	1250	1400	1500	1750	1900	2000	2250	2250	2550	
L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	
3250	3640	3990	4320	4790	5110	5820	7630	6850	7850	7850	8360	
900	1000	1100	1200	1300	1400	1600	1900	2150	2150	2350	2700	2700
L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
3870	4340	4760	5010	5480	6030	6660	7630	8600	8900	9450	10880	10880
750	850	950	1100	1200	1350	1550	1750	1750	2000	2250	2250	2550
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
4040	4540	5090	5880	6230	6760	7700	8970	8970	10110	11120	11120	12800
900	950	1050	1250	1450	1450	1650	1650	1900	2100	2100	2100	2400
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
5120	5840	6490	7180	8170	8490	9730	9900	11220	11870	12410	12890	13930
700	800	850	1000	1100	1200	1400	1600	1600	1850	1850	2050	2300
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
4980	5700	6370	7410	7820	8630	9690	11110	11310	12830	12830	14190	15930



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		Concrete Slab Parameters									
		Normal Weight Concrete (145 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1.5	1.5	1.5	1.5
		tc (in.)	2	2	2	2	2	2	2.5	2.5	2.5
	Js (ft.)	3	3	3	3	3	3	3	3.5	4	
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
80	38	Pbr(lbs)	550	550	550	600	600	650	750	800	950
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	1010	1140	1270	1410	1440	1590	1800	1980	2340
	40	Pbr(lbs)	500	500	550	550	650	650	650	700	950
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	1050	1190	1360	1510	1760	1800	1860	2080	2610
	42	Pbr(lbs)	500	500	500	500	550	600	700	750	900
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	1160	1310	1440	1550	1670	1900	2160	2340	2880
	44	Pbr(lbs)	500	500	500	600	550	550	650	700	800
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	1220	1400	1540	1840	1930	1970	2190	2380	2850
	46	Pbr(lbs)	450	450	450	450	450	550	600	700	850
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	1250	1530	1680	1790	1860	2180	2400	2740	3320
	48	Pbr(lbs)	400	500	500	500	500	600	700	850	850
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	1360	1660	1910	2060	2220	2480	2810	3360	3620
52	Pbr(lbs)	500	500	500	600	700	700	700	800	900	
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
	H mat'l size										
	I non-comp eff	1670	1970	2170	2590	3080	3240	3380	3800	4350	
56	Pbr(lbs)	450	450	450	450	450	500	500	600	750	
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
	H mat'l size										
	I non-comp eff	1840	2200	2420	2690	2790	3250	3370	3820	4560	
60	Pbr(lbs)	450	450	500	550	650	650	650	700	850	
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
	H mat'l size										
	I non-comp eff	1980	2390	2820	3280	3890	4070	4280	4710	5660	



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

DESIGN GUIDE LRFD NORMAL WEIGHT BRIDGING TABLES

Based on a 50 ksi Maximum Yield Strength												
Concrete Slab Parameters												
Normal Weight Concrete (145 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
3	3	3	3	3	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
1100	1300	1400	1550	1700	1950	2250	2550	2850				
L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X				
2630	3140	3320	3710	4050	4440	5050	5780	6140				
1050	1150	1350	1500	1650	1900	2150	2150	2450				
L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X				
2920	3200	3700	3980	4370	4950	5630	5900	6440				
1000	1200	1350	1450	1600	1800	2100	2400	2400	2650			
L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L2x0.163X	L2x0.163X			
3230	3730	4100	4360	4840	5290	6040	6770	7140	7600			
1000	1100	1300	1400	1550	1750	2050	2050	2300	2550			
L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L2x0.163X	L2x0.163X			
3420	3810	4340	4800	5120	5840	6650	6870	7880	8390			
950	1050	1250	1350	1500	1700	1950	1950	2250	2500	2850		
L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X		
3750	4170	4750	5260	5620	6400	7300	7540	8190	9210	10000		
950	1050	1100	1350	1450	1650	1650	1900	2150	2150	2400		
L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X		
4080	4540	4910	5500	6050	6680	6990	7970	8940	9440	10060		
1050	1150	1250	1350	1550	1550	1800	2050	2300	2300	2300	2600	2600
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
5090	5650	6260	6810	7750	7750	9030	10170	10780	11190	11860	12880	12880
850	900	1000	1200	1300	1450	1450	1700	1950	2150	2150	2450	2450
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
5290	5930	6220	7260	7890	8990	9130	10470	11800	12510	12990	14960	14960
950	1000	1100	1400	1400	1600	1600	1850	2050	2050	2050	2300	2300
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
6370	7060	7900	9430	9430	9790	11230	12300	13710	14340	14340	16100	17150



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		Concrete Slab Parameters									
		Normal Weight Concrete (145 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1.5	1.5	1.5	
		tc (in.)	2	2	2	2	2	2.5	2.5	2.5	
		Js (ft.)	3	3	3	3	3	3	3.5	4	
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
90	44	Pbr(lbs)	600	600	650	650	650	700	750	900	1000
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	1490	1720	2010	2090	2200	2450	2680	3180	3570
	46	Pbr(lbs)	600	600	600	650	650	650	750	900	1000
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	1630	1880	2020	2290	2410	2480	2940	3330	3910
	48	Pbr(lbs)	550	550	550	550	550	650	700	850	950
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	1730	1980	2210	2380	2440	2850	3090	3640	4110
	50	Pbr(lbs)	500	550	500	500	600	650	700	850	950
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	1760	2150	2240	2430	2780	3010	3350	3960	4460
	52	Pbr(lbs)	500	500	500	500	500	600	650	800	900
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	1900	2160	2400	2590	2720	3090	3540	4100	4830
	56	Pbr(lbs)	500	500	500	500	550	600	650	750	850
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	2120	2450	2710	2920	3400	3670	3970	4750	5340
	60	Pbr(lbs)	450	450	500	650	650	650	750	800	1000
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	2350	2700	3200	3940	4340	4530	5100	5650	6830
66	Pbr(lbs)	450	600	650	650	800	850	950	1000	1000	
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1.25x0.109X	
	H mat'l size										
	I non-comp eff	2710	3570	4160	4530	5490	6100	6660	7500	8140	
72	Pbr(lbs)	650	650	650	650	650	650	650	700	800	
	X mat'l size	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	
	H mat'l size										
	I non-comp eff	3640	4200	4700	5120	5590	5850	6430	7000	8020	



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
Concrete Slab Parameters												
Normal Weight Concrete (145 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
3	3	3	3	3	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
1250	1350	1600	1800	1800	2100	2400						
L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X						
4120	4530	5350	6060	6060	6900	7900						
1100	1300	1400	1550	1750	2050	2300	2300					
L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X					
4290	4970	5340	5870	6660	7570	8680	8680					
1150	1250	1500	1700	1700	2000	2250	2500					
L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X					
4800	5420	6160	7020	7270	8010	9490	10110					
1050	1200	1350	1450	1650	1950	1950	2200	2450				
L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X				
4970	5670	6280	6980	7640	8720	9010	10330	11010				
1000	1200	1300	1600	1600	1850	2100	2100	2350				
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X				
5380	6140	6800	7930	8290	9450	10610	11200	11950				
950	1100	1250	1350	1550	1750	1750	2000	2250	2550			
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2x0.163X			
5990	6930	7570	8340	9220	10580	11000	12350	13920	15120			
1050	1150	1250	1450	1450	1700	1900	1900	2100	2100	2400		
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X		
7590	8410	9150	10430	10430	12160	13140	13700	15100	16010	17390		
1200	1400	1400	1600	1850	1850	2050	2050	2300	2450	2450	2800	
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X	
9490	10890	11520	13010	14750	14750	16800	17570	18930	20320	21710	23470	
950	1000	1100	1200	1400	1400	1600	1850	2050	2300	2300	2450	2800
L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
9710	10790	11400	12580	14150	14870	16540	18760	20790	22400	23340	25710	27790



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		Concrete Slab Parameters									
		Normal Weight Concrete (145 pcf) f'c = 5.0 ksi									
		hr (in.)	1	1	1	1	1	1.5	1.5	1.5	1.5
		tc (in.)	2	2	2	2	2.5	2.5	2.5	2.5	3
Js (ft.)	3	3	3	3	3	3	3	3	3.5	4	
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
100	50	Pbr(lbs)	600	600	600	650	700	850	850	850	1050
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	2150	2410	2620	3020	3280	3970	4150	4150	5110
	52	Pbr(lbs)	600	600	600	600	650	700	850	850	1050
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	2250	2610	2840	3020	3370	3650	4300	4500	5400
	54	Pbr(lbs)	600	600	600	750	750	750	800	900	1100
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	2430	2710	3070	3810	3930	4180	4640	5240	6140
	56	Pbr(lbs)	550	550	550	550	600	700	700	800	1000
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	2510	2920	3160	3420	3800	4380	4700	5000	6280
	58	Pbr(lbs)	550	550	550	550	600	650	750	750	950
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	2620	3130	3390	3670	4080	4430	5130	5370	6470
	60	Pbr(lbs)	550	550	600	700	700	750	850	950	1100
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	2800	3230	3960	4570	4710	5330	5880	6570	7650
66	Pbr(lbs)	450	600	650	650	800	850	950	1000	1000	
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1.25x0.109X	
	H mat'l size										
	I non-comp eff	3090	4040	4800	5290	6170	6990	7600	8230	9250	
72	Pbr(lbs)	650	650	650	650	650	650	650	700	850	
	X mat'l size	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	
	H mat'l size										
	I non-comp eff	3890	4780	5420	5950	6260	6740	6960	7630	9420	
80	Pbr(lbs)	650	650	650	650	650	700	800	850	1000	
	X mat'l size	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	
	H mat'l size										
	I non-comp eff	5670	5670	6080	6940	7260	8030	9240	10120	11920	



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
Concrete Slab Parameters												
Normal Weight Concrete (145 pcf) f'c = 5.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
3	3	3	3	3	3.5	3.5	3.5	3.5	3.5	3.5	4	4
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
1150	1350	1500	1700	2000	2000							
L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X							
5590	6620	7000	7940	9030	9490							
1200	1350	1650	1650	1950	2200	2200						
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X						
6420	6910	8320	8620	9800	11240	11240						
1200	1300	1400	1600	1900	1900	2150						
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X						
6660	7380	8210	9320	10600	10600	12160						
1050	1250	1350	1600	1850	1850	2050	2300					
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X					
6800	7950	8850	9700	11060	11430	13110	14000					
1100	1250	1550	1550	1800	2000	2000	2550					
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X					
7710	8540	9970	10420	11890	13350	14090	16350					
1100	1200	1500	1500	1750	1750	1950	2200					
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X					
8010	9150	10680	11160	12740	12740	14310	16130					
1200	1400	1400	1600	1850	1850	2050	2050	2300				
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X				
10780	12120	12730	14150	16050	16050	18460	19570	21260				
950	1100	1200	1400	1600	1600	1850	2050	2300	2450			
L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X			
10430	12160	13240	15110	16800	17640	19880	21940	25270	26120			
1000	1100	1400	1400	1400	1600	1850	2050	2300	2300	2800	2800	
L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X	
12640	14150	16910	17600	18490	20570	23340	25880	29070	29070	34640	34640	



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		Concrete Slab Parameters									
		Normal Weight Concrete (145 pcf) f'c = 5.0 ksi									
		hr (in.)	1	1	1	1	1	1.5	1.5	1.5	1.5
		tc (in.)	2	2	2	2	2	2.5	2.5	2.5	3
Js (ft.)	3	3	3	3	3	3	3	3.5	4	4	
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
110	56	Pbr(lbs)	600	600	650	650	800	800	800	900	1100
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	2930	3310	3780	4140	4800	5020	5250	5890	6820
	58	Pbr(lbs)	600	600	600	600	700	700	800	900	1050
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	3030	3560	3870	4090	4850	5060	5640	6320	7330
	60	Pbr(lbs)	600	600	700	700	700	850	950	1050	1150
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	3240	3650	4590	4880	5050	6200	6960	7300	8290
	62	Pbr(lbs)	600	600	600	600	700	700	750	850	1000
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X
		H mat'l size									
		I non-comp eff	3460	3900	4260	4550	5400	5790	6170	6960	8160
	64	Pbr(lbs)	550	550	550	550	650	650	750	800	1000
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X
		H mat'l size									
		I non-comp eff	3550	4160	4540	4850	5750	5920	6580	7420	8700
	66	Pbr(lbs)	500	600	650	650	800	900	950	1050	1050
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X
		H mat'l size									
		I non-comp eff	3640	4410	5320	5730	6670	7590	8380	9310	9750
72	Pbr(lbs)	650	650	800	850	1000	1000	1000	1100	1400	
	X mat'l size	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	
	H mat'l size										
	I non-comp eff	4480	5250	6650	7760	8710	9490	9850	11000	13200	
80	Pbr(lbs)	650	650	650	650	650	650	700	800	950	
	X mat'l size	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	
	H mat'l size										
	I non-comp eff	5750	6170	7040	7750	8100	8620	9450	10440	12930	
88	Pbr(lbs)	950	950	950	950	950	950	950	1000	1000	
	X mat'l size	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	
	H mat'l size										
	I non-comp eff	7890	7890	9450	10560	11230	11840	12810	13960	15370	



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
Concrete Slab Parameters												
Normal Weight Concrete (145 pcf) f'c = 5.0 ksi												
1.5	1.5	1.5	2	2	2	2	3	3	3	3	3	3
3	3	3	3	3	3.5	3.5	3.5	3.5	3.5	3.5	4	4
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
1300	1400	1600	1850	1850	2150							
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X							
8070	8880	10070	11460	12040	13150							
1250	1350	1600	1850	2050	2050							
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X							
8570	9540	10830	12330	14140	14140							
1250	1350	1550	1800	1800	2000							
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X							
9190	10230	11610	12800	13220	15170							
1200	1300	1500	1750	1750	1950	2200						
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X						
9820	10510	11990	13690	14140	16230	17340						
1150	1250	1450	1700	1900	1900	2150						
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X						
10470	11210	12800	14600	16400	17310	18500						
1250	1450	1450	1650	1850	1850	2100						
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X						
11240	12820	13620	15550	17460	17460	19710						
1400	1600	1850	1850	2050	2050	2300	2450					
L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X					
14520	16650	18270	19250	21330	21330	25530	26380					
1100	1200	1400	1600	1600	1850	2050	2300	2450				
L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2x0.163X				
15090	16440	18760	20880	21920	24700	27280	31440	32510				
1200	1400	1400	1600	1600	1850	2050	2300	2300	2800			
L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X			
18040	20560	21410	24560	25050	28430	31540	35420	37760	42250			



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		Concrete Slab Parameters									
		Normal Weight Concrete (145 pcf) f'c = 5.0 ksi									
		hr (in.)	1	1	1	1	1.5	1.5	1.5	1.5	1.5
		tc (in.)	2	2	2	2	2.5	2.5	2.5	2.5	3
Js (ft.)	3	3	3	3	3	3	3.5	4	4		
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
120	72	Pbr(lbs)	650	650	700	850	950	1000	1000	1000	1400
		X mat'l size	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X
		H mat'l size									
		I non-comp eff	5060	5780	7000	8420	9150	10510	11140	11140	14610
	74	Pbr(lbs)	650	650	650	650	800	850	950	1000	1100
		X mat'l size	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X
		H mat'l size									
		I non-comp eff	5340	6100	6720	7230	8750	10110	10590	11770	13050
	76	Pbr(lbs)	650	650	650	650	650	700	800	950	1000
		X mat'l size	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X
		H mat'l size									
		I non-comp eff	5630	6430	7080	7620	8140	8890	10010	11800	13000
	78	Pbr(lbs)	650	800	950	1000	1000	1200	1400	1400	1400
		X mat'l size	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X
		H mat'l size									
		I non-comp eff	5530	7450	9010	10270	10710	12710	14540	15580	16480
	80	Pbr(lbs)	650	700	850	1000	1000	1000	1100	1400	1400
		X mat'l size	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X
		H mat'l size									
		I non-comp eff	5810	7080	9140	10370	11250	12210	13640	16380	17320
	82	Pbr(lbs)	650	650	700	850	950	1000	1000	1100	1400
		X mat'l size	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X
		H mat'l size									
		I non-comp eff	6090	7110	8180	10090	11330	12340	13590	14310	18180
84	Pbr(lbs)	650	650	650	950	950	950	1000	1000	1100	
	X mat'l size	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	
	H mat'l size										
	I non-comp eff	6380	7450	8180	10970	11870	12390	14250	14250	16750	
88	Pbr(lbs)	950	950	1000	1100	1400	1400	1400	1400	1850	
	X mat'l size	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	
	H mat'l size										
	I non-comp eff	8000	9110	11070	12260	14860	16410	17140	18390	22560	
96	Pbr(lbs)	1000	1000	1000	1000	1000	1000	1000	1000	1400	
	X mat'l size	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	
	H mat'l size										
	I non-comp eff	12330	12330	12330	13900	14690	15950	16670	17310	23240	



NORMAL WEIGHT CONCRETE

DESIGN GUIDE LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
Concrete Slab Parameters												
Normal Weight Concrete (145 pcf) f'c = 5.0 ksi												
1.5	1.5	1.5	2	2	2	2	3	3	3	3	3	3
3	3	3	3	3	3	3.5	3.5	3.5	4	4	4	4
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
1400	1400	1600	1850	2050	2050							
L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X							
15350	16320	18630	20200	22290	23640							
1200	1400	1600	1600	1850	2050	2300						
L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X						
14880	16500	18940	19690	22120	24990	27150						
1100	1400	1600	1600	1850	2050	2300						
L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X						
14870	17410	19980	20770	23330	26360	28650						
1600	2050	2050	2050	2300	2300	2450						
L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L1.75x0.155X						
18630	22800	24110	25210	28310	28310	31200						
1400	1600	1850	2050	2050	2050	2300						
L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L1.75x0.155X						
18030	20670	23910	26520	26520	27540	31740						
1400	1400	1600	1850	2050	2050	2300	2300					
L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L1.75x0.155X	L2x0.163X					
18920	19880	23230	25110	27840	28920	33330	33330					
1400	1400	1400	1600	1850	2050	2300	2300					
L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L1.75x0.155X	L2x0.163X					
19830	20840	21210	24350	27450	30330	34950	34950					
2050	2050	2050	2300	2300	2450	2800	2800					
L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2x0.163X					
25240	28230	28900	32830	34460	35510	39850	42820					
1400	1400	1600	1850	2050	2050	2300	2300	2800				
L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X				
24580	25610	29370	32270	36090	37750	42400	45210	50610				





**DESIGN GUIDE
LRFD WEIGHT TABLE FOR
COMPOSITE STEEL JOISTS**

CJ-SERIES

Light Weight Concrete



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LRFD LIGHT WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

DESIGN GUIDE LRFD
LIGHT WEIGHT TABLES

Based on a 50 ksi Maximum Yield Strength											
		Concrete Slab Parameters									
		Light Weight Concrete (110 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1	1	1	
		tc (in.)	2	2	2	2	2	2	2	2	
		Js (ft.)	3	3	3	3	3	3	3.5	4	
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
20	10	Wt(plf)	5.0	5.2	5.6	6.2	6.7	7.2	7.6	8.1	10.4
		W360(plf)	238	238	285	327	387	420	447	507	610
		N-ds	12-3/8"	12-3/8"	14-3/8"	18-3/8"	22-3/8"	24-3/8"	26-3/8"	30-3/8"	22-1/2"
		leff(in4)	44	44	53	61	72	78	83	94	114
		Bridging	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H
	12	Wt(plf)	5.1	5.3	5.7	6.2	6.4	7.1	7.5	7.8	9.9
		W360(plf)	306	306	367	406	421	500	542	586	702
		N-ds	12-3/8"	12-3/8"	14-3/8"	16-3/8"	18-3/8"	22-3/8"	24-3/8"	26-3/8"	18-1/2"
		leff(in4)	57	57	68	76	78	93	101	109	131
		Bridging	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H
	14	Wt(plf)	5.1	5.3	5.4	5.9	6.3	6.4	7.0	8.4	9.5
		W360(plf)	385	385	385	463	513	533	583	673	793
		N-ds	12-3/8"	12-3/8"	12-3/8"	14-3/8"	16-3/8"	18-3/8"	20-3/8"	12-1/2"	16-1/2"
		leff(in4)	72	72	72	86	95	99	109	125	148
		Bridging	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)H
	16	Wt(plf)	5.2	5.3	5.5	5.9	6.2	6.8	7.9	8.1	9.9
		W360(plf)	476	476	476	573	573	644	689	766	940
		N-ds	12-3/8"	12-3/8"	12-3/8"	14-3/8"	14-3/8"	16-3/8"	10-1/2"	12-1/2"	14-1/2"
		leff(in4)	89	89	89	107	107	120	128	143	175
		Bridging	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H
	18	Wt(plf)	5.2	5.2	5.3	5.3	5.7	5.8	6.1	6.5	6.9
		W360(plf)	605	605	605	605	732	732	812	938	1031
		N-ds	12-3/8"	12-3/8"	12-3/8"	12-3/8"	14-3/8"	14-3/8"	16-3/8"	20-3/8"	22-3/8"
		leff(in4)	113	113	113	113	136	136	151	175	192
		Bridging	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H
	20	Wt(plf)	5.3	5.3	5.3	5.4	5.4	5.7	6.1	6.1	7.5
		W360(plf)	701	701	701	701	847	847	939	1003	1251
		N-ds	12-3/8"	12-3/8"	12-3/8"	12-3/8"	14-3/8"	14-3/8"	16-3/8"	16-3/8"	12-1/2"
leff(in4)		130	130	130	130	158	158	175	187	233	
Bridging		(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	
24	Wt(plf)	5.4	5.4	5.4	5.5	5.9	5.9	5.8	6.2	8.0	
	W360(plf)	881	881	881	881	1062	1062	1175	1258	1570	
	N-ds	12-3/8"	12-3/8"	12-3/8"	12-3/8"	14-3/8"	14-3/8"	16-3/8"	16-3/8"	12-1/2"	
	leff(in4)	164	164	164	164	198	198	219	234	292	
	Bridging	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	
28	Wt(plf)	5.7	5.7	5.7	5.8	6.2	6.2	6.4	6.4	8.2	
	W360(plf)	1043	1043	1043	1043	1252	1252	1382	1481	1852	
	N-ds	12-3/8"	12-3/8"	12-3/8"	12-3/8"	14-3/8"	14-3/8"	16-3/8"	16-3/8"	12-1/2"	
	leff(in4)	194	194	194	194	233	233	257	276	345	
	Bridging	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	
32	Wt(plf)	5.9	5.9	5.9	6.0	6.0	6.1	6.6	7.7	7.8	
	W360(plf)	1183	1183	1183	1183	1183	1446	1622	1679	2092	
	N-ds	12-3/8"	12-3/8"	12-3/8"	12-3/8"	12-3/8"	14-3/8"	16-3/8"	10-1/2"	12-1/2"	
	leff(in4)	220	220	220	220	220	269	302	313	390	
	Bridging	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LRFD LIGHT WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
BEARING HEIGHT	2 1/2"	5"	7 1/2"									
Concrete Slab Parameters												
Light Weight Concrete (110 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
11.0	12.5	13.2	15.3	15.9	16.9	20.0	22	22	23	26	28	29
776	884	956	1103	1145	1218	1428	1516	1680	1797	1984	2057	2156
24-1/2"	26-1/2"	30-1/2"	20-5/8"	24-5/8"	24-5/8"	24-3/4"	26-3/4"	22-3/4"	26-3/4"	30-3/4"	32-3/4"	36-3/4"
144	165	178	205	213	227	266	282	313	335	369	383	402
(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
10.6	11.3	12.9	13.2	15.3	16.3	17.3	19.8	21	22	24	24	25
858	961	1098	1198	1298	1417	1509	1697	1938	2056	2202	2202	2337
20-1/2"	24-1/2"	26-1/2"	28-1/2"	18-5/8"	24-5/8"	24-5/8"	30-5/8"	20-3/4"	22-3/4"	26-3/4"	26-3/4"	30-3/4"
160	179	205	223	242	264	281	316	361	383	410	410	435
(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
10.4	11.7	12.3	13.6	14.4	16.5	17.6	18.2	20	23	24	25	27
1021	1163	1240	1384	1488	1656	1816	1914	2249	2459	2615	2809	2875
18-1/2"	22-1/2"	22-1/2"	16-5/8"	16-5/8"	20-5/8"	24-5/8"	26-5/8"	18-3/4"	20-3/4"	22-3/4"	26-3/4"	26-3/4"
190	217	231	258	277	308	338	356	419	458	487	523	535
(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
10.6	12.0	13.2	14.6	15.0	16.0	18.2	19.1	21	23	24	26	27
1180	1358	1482	1735	1850	1935	2176	2407	2815	2978	3170	3488	3557
16-1/2"	18-1/2"	14-5/8"	16-5/8"	18-5/8"	18-5/8"	16-3/4"	18-3/4"	18-3/4"	20-3/4"	22-3/4"	26-3/4"	26-3/4"
220	253	276	323	345	360	405	448	524	554	590	650	662
(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
7.6	9.2	10.3	10.5	11.7	12.3	14.2	15.4	16.5	17.8	20	21	23
1365	1534	1754	1910	2058	2190	2478	2727	3089	3310	3669	3906	4200
26-3/8"	18-1/2"	22-1/2"	22-1/2"	24-1/2"	26-1/2"	18-5/8"	24-5/8"	24-5/8"	28-5/8"	20-3/4"	22-3/4"	26-3/4"
254	286	327	356	383	408	461	508	575	616	683	727	782
(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
8.0	9.6	10.4	11.0	12.1	13.3	14.9	15.7	16.4	18.4	19	20	23
1549	1701	1917	2138	2320	2608	2795	3062	3392	3695	3906	4139	4572
16-1/2"	16-1/2"	20-1/2"	18-1/2"	14-5/8"	16-5/8"	18-5/8"	22-5/8"	24-5/8"	16-3/4"	18-3/4"	20-3/4"	22-3/4"
288	317	357	398	432	486	520	570	632	688	727	771	851
(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
8.1	9.6	10.4	11.1	12.3	13.5	14.8	15.6	16.3	18.2	18.9	20	23
1884	2075	2335	2588	2816	3164	3401	3720	4063	4443	4692	4970	5514
16-1/2"	16-1/2"	20-1/2"	18-1/2"	14-5/8"	16-5/8"	18-5/8"	22-5/8"	24-5/8"	16-3/4"	18-3/4"	20-3/4"	22-3/4"
351	386	435	482	524	589	633	693	757	827	874	925	1030
(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
8.7	9.7	10.5	11.2	12.4	13.5	15.0	15.6	16.4	18.3	19.0	20	23
2169	2396	2690	2966	3237	3633	3918	4275	4620	5069	5346	5658	6305
16-1/2"	16-1/2"	20-1/2"	18-1/2"	14-5/8"	16-5/8"	18-5/8"	22-5/8"	24-5/8"	16-3/4"	18-3/4"	20-3/4"	22-3/4"
404	446	501	552	603	677	729	796	860	944	995	1050	1170
(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
9.4	9.7	11.3	12.4	13.3	13.9	14.8	15.5	17.5	18.2	20	21	22
2500	2666	3093	3449	3698	3913	4350	4736	5306	5588	6180	6554	6961
16-1/2"	16-1/2"	18-1/2"	14-5/8"	14-5/8"	16-5/8"	18-5/8"	22-5/8"	16-3/4"	16-3/4"	18-3/4"	20-3/4"	22-3/4"
466	496	576	642	689	729	810	882	988	1040	1150	1220	1300
(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X

DESIGN GUIDE LRFD LIGHT WEIGHT TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LRFD LIGHT WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

DESIGN GUIDE LRFD LIGHT WEIGHT TABLES

Based on a 50 ksi Maximum Yield Strength											
		BEARING HEIGHT									
		2 1/2"	5"	7 1/2"							
		Concrete Slab Parameters									
		Light Weight Concrete (110 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1	1	1	
		tc (in.)	2	2	2	2	2	2	2	2	
		Js (ft.)	3	3	3	3	3	3	3.5	4	
Joist Span	Joist Depth	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
(ft.)	(in.)	TL	300	400	500	600	700	800	900	1000	1200
25	10	Wt(plf)	5.5	6.2	7.0	7.8	8.5	9.1	11.1	12.3	13.7
		W360(plf)	162	205	243	272	310	326	375	418	493
		N-ds	14-3/8"	20-3/8"	24-3/8"	28-3/8"	32-3/8"	36-3/8"	24-1/2"	28-1/2"	34-1/2"
		Ieff(in4)	59	75	88	99	113	119	136	152	179
	Bridging	(1)X+(1)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H
	12	Wt(plf)	5.6	6.2	6.6	7.4	8.0	9.0	9.4	11.9	12.6
		W360(plf)	204	226	258	305	341	387	407	485	536
		N-ds	14-3/8"	16-3/8"	20-3/8"	24-3/8"	28-3/8"	32-3/8"	36-3/8"	24-1/2"	28-1/2"
		Ieff(in4)	74	82	94	111	124	141	148	176	195
	Bridging	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H
	14	Wt(plf)	5.3	6.0	6.4	7.1	7.6	9.5	10.0	10.6	12.7
		W360(plf)	210	254	293	349	379	445	475	546	631
		N-ds	14-3/8"	14-3/8"	18-3/8"	22-3/8"	24-3/8"	16-1/2"	18-1/2"	22-1/2"	24-1/2"
		Ieff(in4)	77	92	107	127	138	162	173	199	229
	Bridging	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H
	16	Wt(plf)	5.6	6.0	6.5	6.9	7.5	8.5	10.2	10.6	11.4
		W360(plf)	257	311	345	394	428	504	547	595	681
		N-ds	14-3/8"	14-3/8"	16-3/8"	20-3/8"	22-3/8"	26-3/8"	16-1/2"	18-1/2"	22-1/2"
		Ieff(in4)	94	113	125	143	156	183	199	216	248
	Bridging	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H
	18	Wt(plf)	5.3	5.3	5.6	6.0	6.4	7.0	7.4	7.8	8.6
		W360(plf)	332	332	403	448	513	609	650	694	802
		N-ds	14-3/8"	14-3/8"	14-3/8"	16-3/8"	20-3/8"	24-3/8"	26-3/8"	28-3/8"	32-3/8"
		Ieff(in4)	121	121	147	163	187	221	236	252	292
	Bridging	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H
	20	Wt(plf)	5.4	5.4	5.7	6.0	6.5	6.8	7.2	7.6	8.2
		W360(plf)	393	393	477	530	608	662	720	780	886
		N-ds	14-3/8"	14-3/8"	14-3/8"	16-3/8"	20-3/8"	22-3/8"	24-3/8"	26-3/8"	30-3/8"
Ieff(in4)		143	143	174	193	221	241	262	284	322	
Bridging	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	
24	Wt(plf)	5.6	5.6	5.6	6.0	6.3	6.7	7.1	7.5	7.6	
	W360(plf)	517	517	517	627	696	797	867	953	1026	
	N-ds	14-3/8"	14-3/8"	14-3/8"	14-3/8"	16-3/8"	20-3/8"	22-3/8"	24-3/8"	26-3/8"	
	Ieff(in4)	188	188	188	228	253	290	315	347	373	
Bridging	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	
28	Wt(plf)	5.6	5.7	5.8	5.8	6.0	6.4	7.2	7.9	9.7	
	W360(plf)	637	637	637	771	854	906	1015	1132	1365	
	N-ds	14-3/8"	14-3/8"	14-3/8"	14-3/8"	16-3/8"	16-3/8"	18-3/8"	14-1/2"	16-1/2"	
	Ieff(in4)	232	232	232	280	311	330	369	412	496	
Bridging	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	
32	Wt(plf)	5.9	5.9	6.0	6.0	6.2	6.6	7.1	8.0	8.7	
	W360(plf)	749	749	749	903	999	1062	1179	1328	1554	
	N-ds	14-3/8"	14-3/8"	14-3/8"	14-3/8"	16-3/8"	16-3/8"	18-3/8"	14-1/2"	16-1/2"	
	Ieff(in4)	272	272	272	329	363	386	429	483	565	
Bridging	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LRFD LIGHT WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
BEARING HEIGHT	2 1/2"	5"	7 1/2"									
Concrete Slab Parameters												
Light Weight Concrete (145 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
14.6	15.9	18.7	19.1	21	24	26	28	30	32	35	39	39
666	712	837	903	985	1091	1198	1269	1469	1575	1695	1878	1878
36-1/2"	40-1/2"	34-5/8"	32-5/8"	36-5/8"	32-3/4"	38-3/4"	44-3/4"	38-3/4"	40-3/4"	48-3/4"	56-3/4"	56-3/4"
242	259	305	329	358	397	436	462	534	573	616	683	683
(2)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
13.1	15.6	16.3	18.3	20	22	25	26	27	30	32	35	35
698	800	851	986	1049	1157	1290	1344	1547	1700	1785	1967	1967
32-1/2"	36-1/2"	40-1/2"	30-5/8"	32-5/8"	36-5/8"	32-3/4"	34-3/4"	34-3/4"	38-3/4"	42-3/4"	48-3/4"	48-3/4"
254	291	310	359	381	421	469	489	563	618	649	715	715
(2)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
13.0	15.0	17.1	18.1	19.4	20.0	23	26	26	28	31	32	34
796	912	1025	1149	1230	1309	1456	1609	1742	1912	2074	2118	2228
28-1/2"	22-5/8"	26-5/8"	24-5/8"	30-5/8"	34-5/8"	28-3/4"	32-3/4"	28-3/4"	34-3/4"	36-3/4"	36-3/4"	40-3/4"
290	332	373	418	447	476	530	585	634	696	754	770	810
(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
12.5	14.7	15.9	17.2	18.7	20.0	22	23	25	26	28	30	33
859	991	1104	1232	1393	1474	1622	1749	1942	2073	2165	2336	2529
24-1/2"	26-1/2"	22-5/8"	22-5/8"	26-5/8"	30-5/8"	24-3/4"	28-3/4"	24-3/4"	28-3/4"	30-3/4"	32-3/4"	36-3/4"
313	360	402	448	507	536	590	636	706	754	787	850	920
(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
9.1	10.8	12.7	13.2	15.1	15.8	18.3	21	22	24	26	27	30
1017	1172	1323	1445	1575	1665	1915	2128	2456	2538	2717	2846	3068
36-3/8"	26-1/2"	30-1/2"	30-1/2"	22-5/8"	24-5/8"	28-5/8"	24-3/4"	24-3/4"	24-3/4"	28-3/4"	30-3/4"	32-3/4"
370	426	481	526	573	606	696	774	893	923	988	1040	1120
(2)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
9.2	10.7	12.1	12.6	14.5	15.3	17.1	19	21	23	25	26	29
1123	1282	1417	1535	1746	1834	2074	2261	2638	2848	2945	3154	3377
32-3/8"	24-1/2"	26-1/2"	26-1/2"	20-5/8"	22-5/8"	24-5/8"	30-5/8"	22-3/4"	24-3/4"	24-3/4"	28-3/4"	30-3/4"
408	466	515	558	635	667	754	822	959	1040	1070	1150	1230
(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
8.9	10.3	12.2	12.7	13.6	15.5	16.7	19	21	23	25	26	29
1333	1564	1808	1942	2044	2329	2489	2880	3327	3588	3725	3987	4281
30-3/8"	24-1/2"	26-1/2"	26-1/2"	26-1/2"	22-5/8"	24-5/8"	30-5/8"	22-3/4"	24-3/4"	24-3/4"	28-3/4"	30-3/4"
485	569	657	706	743	847	905	1050	1210	1300	1350	1450	1560
(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
10.6	11.8	12.8	14.0	15.3	15.8	17.0	18.4	22	23	24	24	27
1697	1881	2113	2362	2609	2749	3058	3290	3839	4101	4428	4428	4855
20-1/2"	20-1/2"	18-5/8"	16-5/8"	20-5/8"	20-5/8"	24-5/8"	24-5/8"	20-3/4"	22-3/4"	24-3/4"	24-3/4"	26-3/4"
617	684	768	859	949	1000	1110	1200	1400	1490	1610	1610	1770
(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
10.7	11.4	12.8	13.6	15.4	15.9	16.9	18.4	20	23	24	24	26
1953	2130	2432	2670	2993	3151	3497	3765	4202	4678	5041	5041	5379
20-1/2"	20-1/2"	18-5/8"	16-5/8"	20-5/8"	20-5/8"	24-5/8"	24-5/8"	20-3/4"	22-3/4"	24-3/4"	24-3/4"	28-3/4"
710	775	884	971	1090	1150	1270	1370	1530	1700	1830	1830	1960
(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X

DESIGN GUIDE LRFD
LIGHT WEIGHT TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LRFD LIGHT WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

DESIGN GUIDE LRFD LIGHT WEIGHT TABLES

Based on a 50 ksi Maximum Yield Strength											
		BEARING HEIGHT		2 1/2"	5"	7 1/2"					
		Concrete Slab Parameters									
		Light Weight Concrete (110 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1	1	1	1
		tc (in.)	2	2	2	2	2	2	2	2	2
		Js (ft.)	3	3	3	3	3	3	3.5	4	
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
30	12	Wt(plf)	6.1	7.2	7.9	8.7	10.1	11.4	13.5	14.0	15.5
		W360(plf)	148	194	218	249	291	316	359	390	444
		N-ds	18-3/8"	24-3/8"	28-3/8"	32-3/8"	40-3/8"	46-3/8"	32-1/2"	34-1/2"	40-1/2"
		Ieff(in4)	93	122	137	157	183	198	226	245	279
	Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(2)H	(2)H	(2)H	(2)H	
	14	Wt(plf)	6.2	6.9	7.7	8.4	10.5	11.3	12.3	13.1	15.4
		W360(plf)	175	218	253	284	334	371	387	433	525
		N-ds	16-3/8"	22-3/8"	26-3/8"	30-3/8"	22-1/2"	24-1/2"	26-1/2"	30-1/2"	36-1/2"
		Ieff(in4)	110	137	159	179	210	233	243	272	330
	Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	
	16	Wt(plf)	6.0	6.8	7.4	8.4	9.9	11.2	12.5	13.1	16.0
		W360(plf)	190	242	287	311	360	406	461	492	590
		N-ds	16-3/8"	20-3/8"	24-3/8"	26-3/8"	18-1/2"	22-1/2"	24-1/2"	26-1/2"	22-5/8"
		Ieff(in4)	120	152	180	195	226	255	290	309	370
	Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	
	18	Wt(plf)	5.6	5.8	6.6	7.0	7.6	8.2	8.6	9.6	11.5
		W360(plf)	240	267	334	364	409	467	492	565	648
		N-ds	16-3/8"	16-3/8"	22-3/8"	24-3/8"	28-3/8"	32-3/8"	36-3/8"	40-3/8"	28-1/2"
		Ieff(in4)	151	168	210	229	257	293	309	355	407
	Bridging	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	
	20	Wt(plf)	5.3	5.7	6.3	6.7	7.4	8.1	8.3	8.7	11.2
		W360(plf)	237	288	368	402	467	525	561	602	750
		N-ds	16-3/8"	16-3/8"	20-3/8"	22-3/8"	26-3/8"	30-3/8"	32-3/8"	36-3/8"	26-1/2"
		Ieff(in4)	149	181	231	252	294	330	353	378	471
	Bridging	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	
	24	Wt(plf)	5.5	5.9	6.1	6.6	7.0	7.7	7.8	8.1	10.3
		W360(plf)	320	390	434	498	543	631	664	720	872
		N-ds	16-3/8"	16-3/8"	16-3/8"	20-3/8"	22-3/8"	26-3/8"	28-3/8"	30-3/8"	22-1/2"
Ieff(in4)		201	245	273	313	341	397	418	452	548	
Bridging	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H		
26	Wt(plf)	5.6	5.7	6.0	6.4	7.1	7.3	7.6	7.9	9.4	
	W360(plf)	363	363	442	514	615	669	714	762	912	
	N-ds	16-3/8"	16-3/8"	16-3/8"	18-3/8"	22-3/8"	24-3/8"	26-3/8"	28-3/8"	32-3/8"	
	Ieff(in4)	228	228	278	323	386	421	449	479	573	
Bridging	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H		
28	Wt(plf)	5.8	5.8	6.2	6.5	6.7	7.1	7.5	8.0	9.4	
	W360(plf)	407	407	494	550	630	686	746	848	1015	
	N-ds	16-3/8"	16-3/8"	16-3/8"	16-3/8"	20-3/8"	22-3/8"	24-3/8"	28-3/8"	32-3/8"	
	Ieff(in4)	256	256	311	345	396	431	469	533	638	
Bridging	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H		
32	Wt(plf)	5.8	5.9	6.0	6.2	6.6	7.3	7.8	8.8	10.8	
	W360(plf)	492	492	597	662	757	838	924	1024	1198	
	N-ds	16-3/8"	16-3/8"	16-3/8"	16-3/8"	20-3/8"	22-3/8"	24-3/8"	16-1/2"	18-1/2"	
	Ieff(in4)	309	309	375	416	476	527	581	643	753	
Bridging	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)H		



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LRFD LIGHT WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
BEARING HEIGHT	2 1/2"	5"	7 1/2"									
Concrete Slab Parameters												
Light Weight Concrete (110 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
17.9	19.4	22	24	27	28	34	34	38	40	43	45	48
625	689	764	878	970	1032	1214	1214	1498	1524	1645	1687	1766
48-1/2"	52-1/2"	42-5/8"	44-5/8"	36-3/4"	42-3/4"	54-3/4"	54-3/4"	54-3/4"	54-3/4"	64-3/4"	64-3/4"	72-3/4"
393	433	480	552	610	648	763	763	942	958	1030	1060	1110
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
17.4	19.3	21.0	25	25	27	30	31	35	36	40	43	45
671	774	864	1012	1068	1127	1237	1305	1567	1599	1771	1910	1942
28-5/8"	34-5/8"	38-5/8"	30-3/4"	34-3/4"	36-3/4"	42-3/4"	46-3/4"	46-3/4"	46-3/4"	54-3/4"	64-3/4"	64-3/4"
422	486	543	636	671	708	777	820	985	1000	1110	1200	1220
(2)H	(2)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
16.9	18.6	21	23	23	26	28	31	33	37	37	41	43
758	829	948	1113	1121	1240	1372	1490	1722	1892	1892	2105	2143
26-5/8"	28-5/8"	34-5/8"	26-3/4"	26-3/4"	30-3/4"	36-3/4"	40-3/4"	38-3/4"	46-3/4"	46-3/4"	54-3/4"	54-3/4"
477	521	596	699	704	779	862	936	1080	1190	1190	1320	1350
(2)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
11.6	14.3	16.9	17.9	20	21	24	28	29	32	35	36	41
803	925	1088	1220	1340	1376	1593	1739	1978	2132	2315	2361	2622
32-1/2"	36-1/2"	30-5/8"	32-5/8"	36-5/8"	36-5/8"	34-3/4"	36-3/4"	36-3/4"	38-3/4"	46-3/4"	46-3/4"	54-3/4"
505	581	684	766	842	865	1000	1090	1240	1340	1450	1480	1650
(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
11.5	13.7	15.3	17.1	18.6	20	23	25	28	29	32	34	37
907	1041	1187	1356	1473	1614	1805	1895	2201	2340	2524	2571	2799
30-1/2"	34-1/2"	38-1/2"	28-5/8"	30-5/8"	36-5/8"	30-3/4"	34-3/4"	32-3/4"	36-3/4"	38-3/4"	38-3/4"	46-3/4"
570	654	746	852	925	1010	1130	1190	1380	1470	1590	1620	1760
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
11.0	12.9	14.3	15.9	17.0	18.5	21	23	26	27	30	33	33
1102	1246	1404	1586	1707	1843	2054	2226	2597	2731	2950	3200	3200
26-1/2"	30-1/2"	32-1/2"	24-5/8"	24-5/8"	28-5/8"	24-3/4"	26-3/4"	26-3/4"	28-3/4"	30-3/4"	34-3/4"	34-3/4"
693	783	882	997	1070	1160	1290	1400	1630	1720	1850	2010	2010
(2)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
10.6	12.7	14.0	15.5	16.5	17.9	21	23	25	26	29	31	33
1158	1342	1497	1676	1801	1935	2302	2494	2700	2898	3114	3357	3577
24-1/2"	28-1/2"	30-1/2"	22-5/8"	24-5/8"	24-5/8"	24-3/4"	26-3/4"	24-3/4"	26-3/4"	28-3/4"	30-3/4"	34-3/4"
728	844	940	1050	1130	1220	1450	1570	1700	1820	1960	2110	2250
(2)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
10.5	12.7	13.7	15.5	16.7	18.0	21	23	25	27	29	31	33
1225	1417	1570	1849	1986	2135	2376	2754	2974	3191	3432	3702	3943
24-1/2"	26-1/2"	28-1/2"	22-5/8"	24-5/8"	24-5/8"	22-3/4"	26-3/4"	24-3/4"	26-3/4"	28-3/4"	30-3/4"	34-3/4"
770	890	987	1160	1250	1340	1490	1730	1870	2010	2160	2330	2480
(2)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
11.6	13.4	14.2	15.7	17.2	18.1	19.1	21	24	26	27	30	31
1494	1740	1909	2117	2404	2546	2713	2947	3489	3739	3929	4258	4523
22-1/2"	18-5/8"	20-5/8"	20-5/8"	24-5/8"	26-5/8"	28-5/8"	30-5/8"	24-3/4"	26-3/4"	28-3/4"	30-3/4"	34-3/4"
939	1090	1200	1330	1510	1600	1700	1850	2190	2350	2470	2680	2840
(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X

 DESIGN GUIDE LRFD
LIGHT WEIGHT TABLES


LIGHT WEIGHT CONCRETE

DESIGN GUIDE LRFD LIGHT WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
BEARING HEIGHT		2 1/2"	5"	7 1/2"							
Joist Span (ft.)	Joist Depth (in.)	Concrete Slab Parameters									
		Light Weight Concrete (110 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1	1	1	
		tc (in.)	2	2	2	2	2	2	2	2	
	Js (ft.)	3	3	3	3	3	3	3	3.5	4	
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot											
		TL	300	400	500	600	700	800	900	1000	1200
35	14	Wt(plf)	6.9	8.0	8.8	10.1	12.7	13.6	14.7	16.2	20.0
		W360(plf)	148	182	208	244	275	302	335	372	448
		N-ds	22-3/8"	28-3/8"	32-3/8"	40-3/8"	28-1/2"	32-1/2"	36-1/2"	40-1/2"	34-5/8"
		leff(in4)	148	182	208	244	275	301	334	371	447
		Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(3)H	(2)H	(2)H
	16	Wt(plf)	6.9	7.8	8.7	10.1	12.0	13.1	13.7	16.3	18.3
		W360(plf)	162	193	232	262	304	346	361	421	488
		N-ds	20-3/8"	24-3/8"	30-3/8"	36-3/8"	24-1/2"	30-1/2"	32-1/2"	36-1/2"	42-1/2"
		leff(in4)	162	193	232	261	303	345	360	421	487
		Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(3)H	(2)H	(2)H
	18	Wt(plf)	5.9	6.6	7.3	8.1	8.8	9.6	11.6	12.2	14.3
		W360(plf)	170	213	261	298	327	362	417	446	533
		N-ds	18-3/8"	22-3/8"	28-3/8"	32-3/8"	38-3/8"	44-3/8"	30-1/2"	32-1/2"	40-1/2"
		leff(in4)	170	213	261	298	327	361	416	445	531
		Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(2)H	(2)H	(2)H
	20	Wt(plf)	5.9	6.6	7.1	7.7	8.6	9.3	10.0	11.7	12.6
		W360(plf)	206	258	301	338	381	421	448	518	583
		N-ds	18-3/8"	22-3/8"	26-3/8"	30-3/8"	36-3/8"	40-3/8"	42-3/8"	30-1/2"	34-1/2"
		leff(in4)	205	258	300	338	381	420	447	517	581
		Bridging	(1)X+(1)H	(1)X+(1)H	(1)X+(1)H	(1)X+(1)H	(1)X+(1)H	(2)H	(2)H	(2)H	(2)H
	22	Wt(plf)	5.8	6.4	7.1	7.5	8.3	8.7	9.7	11.3	12.4
		W360(plf)	219	280	334	376	429	452	509	586	657
		N-ds	18-3/8"	20-3/8"	24-3/8"	28-3/8"	32-3/8"	36-3/8"	40-3/8"	28-1/2"	32-1/2"
		leff(in4)	218	280	333	375	428	451	508	585	655
		Bridging	(1)X+(1)H	(1)X+(1)H	(1)X+(1)H	(1)X+(1)H	(1)X+(1)H	(2)H	(2)H	(2)H	(2)H
	24	Wt(plf)	5.9	6.2	6.9	7.3	8.0	8.4	9.4	10.8	12.0
		W360(plf)	255	297	356	415	467	499	558	628	730
		N-ds	18-3/8"	18-3/8"	22-3/8"	26-3/8"	30-3/8"	32-3/8"	38-3/8"	24-1/2"	30-1/2"
		leff(in4)	254	296	355	414	466	498	557	627	728
		Bridging	(1)X+(1)H	(1)X+(1)H	(1)X+(1)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H
	26	Wt(plf)	6.0	6.2	6.7	7.1	7.7	8.5	9.2	10.5	11.6
		W360(plf)	292	325	374	444	500	571	613	676	795
		N-ds	18-3/8"	18-3/8"	20-3/8"	24-3/8"	28-3/8"	32-3/8"	36-3/8"	22-1/2"	28-1/2"
		leff(in4)	291	324	373	444	499	570	612	674	793
		Bridging	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H
	28	Wt(plf)	5.8	6.4	6.8	7.2	7.6	8.2	9.0	10.3	11.4
		W360(plf)	270	367	422	502	536	602	656	731	863
		N-ds	18-3/8"	18-3/8"	20-3/8"	24-3/8"	26-3/8"	30-3/8"	32-3/8"	22-1/2"	26-1/2"
		leff(in4)	270	366	421	501	535	601	655	730	861
		Bridging	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H
	32	Wt(plf)	5.9	6.0	6.3	6.7	7.3	7.9	9.4	10.0	11.9
		W360(plf)	334	407	452	519	616	669	781	851	976
		N-ds	18-3/8"	18-3/8"	18-3/8"	20-3/8"	24-3/8"	26-3/8"	18-1/2"	20-1/2"	22-1/2"
		leff(in4)	333	406	451	518	614	667	779	849	974
		Bridging	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H

DESIGN GUIDE LRFD LIGHT WEIGHT TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LRFD LIGHT WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
BEARING HEIGHT	2 1/2"	5"	7 1/2"									
Concrete Slab Parameters												
Light Weight Concrete (110 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
21	24	25	28	29	33	36	41	42	47	51	53	57
579	671	719	841	898	1013	1130	1248	1387	1494	1616	1640	1695
36-5/8"	46-5/8"	50-5/8"	38-3/4"	44-3/4"	52-3/4"	62-3/4"	70-3/4"	62-3/4"	70-3/4"	80-3/4"	80-3/4"	86-3/4"
578	669	717	839	896	1010	1130	1250	1380	1490	1610	1640	1690
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)X	(1)X	(1)X
20	23	24	25	28	29	34	38	39	42	46	48	53
616	735	787	881	974	1036	1177	1321	1451	1569	1670	1698	1866
34-5/8"	40-5/8"	46-5/8"	48-5/8"	38-3/4"	44-3/4"	52-3/4"	60-3/4"	52-3/4"	62-3/4"	70-3/4"	70-3/4"	80-3/4"
615	734	785	879	972	1030	1170	1320	1450	1570	1670	1690	1860
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)H	(2)H	(1)H	(1)X	(1)X	(1)X
15.7	19.0	21	22	25	27	30	33	38	40	44	45	50
658	795	868	970	1079	1156	1277	1389	1663	1699	1864	1895	2030
44-1/2"	38-5/8"	40-5/8"	42-5/8"	34-3/4"	38-3/4"	44-3/4"	52-3/4"	52-3/4"	52-3/4"	62-3/4"	62-3/4"	70-3/4"
657	794	866	968	1080	1150	1270	1390	1660	1700	1860	1890	2030
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
14.8	17.8	19.5	21	24	26	29	33	35	39	41	45	47
747	888	978	1113	1227	1307	1453	1674	1817	2036	2064	2273	2313
40-1/2"	34-5/8"	36-5/8"	38-5/8"	32-3/4"	34-3/4"	38-3/4"	52-3/4"	44-3/4"	52-3/4"	52-3/4"	62-3/4"	62-3/4"
746	886	976	1110	1220	1300	1450	1670	1810	2030	2060	2270	2310
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
14.2	16.9	18.1	20	23	24	28	31	32	36	40	42	45
831	980	1056	1221	1373	1454	1603	1809	1953	2172	2422	2459	2669
36-1/2"	30-5/8"	34-5/8"	34-5/8"	30-3/4"	32-3/4"	34-3/4"	44-3/4"	36-3/4"	44-3/4"	52-3/4"	52-3/4"	62-3/4"
829	978	1050	1220	1370	1450	1600	1810	1950	2170	2420	2450	2660
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
13.8	16.2	17.3	19	22	23	28	29	31	36	37	42	43
907	1064	1142	1301	1475	1595	1852	1975	2123	2500	2533	2833	2833
34-1/2"	28-5/8"	30-5/8"	30-5/8"	26-3/4"	30-3/4"	34-3/4"	38-3/4"	32-3/4"	44-3/4"	44-3/4"	52-3/4"	52-3/4"
906	1060	1140	1300	1470	1590	1850	1970	2120	2490	2530	2830	2830
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
13.4	15.8	17.4	19.2	21	22	27	28	31	34	36	39	43
980	1140	1299	1476	1628	1684	1984	2104	2402	2589	2831	2912	3211
32-1/2"	26-5/8"	30-5/8"	30-5/8"	34-5/8"	26-3/4"	32-3/4"	34-3/4"	32-3/4"	36-3/4"	44-3/4"	44-3/4"	52-3/4"
978	1140	1300	1470	1620	1680	1980	2100	2400	2580	2830	2910	3200
(2)H	(2)H	(2)H	(2)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
13.6	15.0	16.7	18.5	20	23	26	27	30	33	34	38	40
1098	1194	1365	1543	1681	1885	2108	2223	2513	2730	2890	3206	3255
32-1/2"	32-1/2"	28-5/8"	28-5/8"	30-5/8"	26-3/4"	30-3/4"	32-3/4"	30-3/4"	32-3/4"	36-3/4"	44-3/4"	44-3/4"
1100	1190	1360	1540	1680	1880	2100	2220	2510	2720	2880	3200	3250
(2)H	(2)H	(2)H	(2)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
12.8	14.4	15.9	17.7	19	21	23	26	29	30	33	36	38
1212	1374	1488	1745	1897	2070	2294	2552	2748	3024	3287	3528	3582
28-1/2"	30-1/2"	24-5/8"	24-5/8"	28-5/8"	30-5/8"	26-3/4"	30-3/4"	30-3/4"	30-3/4"	32-3/4"	36-3/4"	36-3/4"
1210	1370	1480	1740	1890	2070	2290	2550	2740	3020	3280	3520	3570
(2)H	(2)H	(2)H	(2)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X

DESIGN GUIDE LRFD
LIGHT WEIGHT TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LRFD LIGHT WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

		Based on a 50 ksi Maximum Yield Strength									
		BEARING HEIGHT									
		2 1/2"	5"	7 1/2"							
		Concrete Slab Parameters									
		Light Weight Concrete (110 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1	1	1	1
		tc (in.)	2	2	2	2	2	2	2	2	2
		Js (ft.)	3	3	3	3	3	3	3	3.5	4
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
40	16	Wt(plf)	7.7	9.3	11.0	12.5	14.0	16.1	18.0	19.8	24
		W360(plf)	139	181	213	237	274	295	332	376	437
		N-ds	24-3/8"	32-3/8"	40-3/8"	28-1/2"	34-1/2"	36-1/2"	42-1/2"	34-5/8"	40-5/8"
		leff(in4)	207	270	317	353	409	439	495	560	651
		Bridging	(1)X+(3)H	(1)X+(3)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(3)H	(3)H	(3)H
	18	Wt(plf)	6.6	7.5	8.7	9.9	11.9	13.1	14.3	16.3	18.1
		W360(plf)	144	176	212	244	281	308	341	383	425
		N-ds	22-3/8"	28-3/8"	36-3/8"	44-3/8"	30-1/2"	34-1/2"	40-1/2"	44-1/2"	46-1/2"
		leff(in4)	214	262	316	363	418	459	508	571	633
		Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(3)H	(2)H	(2)H
	20	Wt(plf)	6.1	7.0	8.1	8.8	10.2	12.4	13.2	14.5	17.5
		W360(plf)	160	203	245	269	314	358	377	429	515
		N-ds	20-3/8"	26-3/8"	32-3/8"	38-3/8"	46-3/8"	32-1/2"	34-1/2"	40-1/2"	48-1/2"
		leff(in4)	238	303	365	400	468	533	561	639	767
		Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(3)H	(2)H
	22	Wt(plf)	6.4	6.8	7.7	8.6	9.7	11.2	12.4	13.2	16.3
		W360(plf)	190	227	273	308	347	390	428	462	575
		N-ds	20-3/8"	24-3/8"	30-3/8"	36-3/8"	40-3/8"	28-1/2"	32-1/2"	34-1/2"	44-1/2"
		leff(in4)	283	338	407	459	517	581	638	689	856
		Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(3)H	(2)H
	24	Wt(plf)	6.1	6.9	7.5	8.3	9.3	10.9	11.9	12.4	15.6
		W360(plf)	194	266	299	343	383	441	481	515	636
		N-ds	20-3/8"	24-3/8"	28-3/8"	32-3/8"	38-3/8"	26-1/2"	30-1/2"	32-1/2"	40-1/2"
		leff(in4)	288	396	446	510	570	656	716	767	947
		Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(3)H	(2)H
	26	Wt(plf)	6.2	6.7	7.3	8.0	9.1	10.7	11.6	12.0	14.8
		W360(plf)	223	281	328	369	424	487	529	568	694
		N-ds	20-3/8"	22-3/8"	26-3/8"	30-3/8"	36-3/8"	24-1/2"	28-1/2"	30-1/2"	36-1/2"
		leff(in4)	333	418	488	550	631	725	788	845	1030
		Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(2)H	(2)H	(2)H	(2)H
	28	Wt(plf)	6.1	6.5	7.2	8.0	8.9	10.4	11.4	11.6	14.3
		W360(plf)	228	293	349	420	457	521	580	615	748
		N-ds	20-3/8"	20-3/8"	24-3/8"	30-3/8"	32-3/8"	22-1/2"	26-1/2"	28-1/2"	34-1/2"
		leff(in4)	339	436	519	625	681	776	864	916	1110
		Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(2)H	(2)H	(2)H	(2)H
	30	Wt(plf)	6.3	6.7	7.3	7.9	9.0	10.1	11.1	11.4	14.0
		W360(plf)	256	329	392	441	514	562	624	665	797
		N-ds	20-3/8"	20-3/8"	24-3/8"	28-3/8"	32-3/8"	22-1/2"	24-1/2"	26-1/2"	30-1/2"
		leff(in4)	382	490	584	657	765	837	930	991	1190
		Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(2)H	(2)H	(2)H	(2)H
32	Wt(plf)	6.2	6.4	7.0	7.6	8.2	9.0	10.9	11.2	13.6	
	W360(plf)	286	333	400	465	523	571	652	707	843	
	N-ds	20-3/8"	20-3/8"	22-3/8"	26-3/8"	30-3/8"	32-3/8"	22-1/2"	24-1/2"	28-1/2"	
	leff(in4)	425	496	595	693	780	850	971	1050	1260	
	Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(2)H	(2)H	(2)H	

DESIGN GUIDE LRFD LIGHT WEIGHT TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LRFD LIGHT WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
BEARING HEIGHT	2 1/2"	5"	7 1/2"									
Concrete Slab Parameters												
Light Weight Concrete (110 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
24	28	29	33	36	37	42	46	52	54	63	64	71
563	657	705	842	938	964	1085	1177	1425	1442	1629	1629	1779
46-5/8"	42-3/4"	46-3/4"	50-3/4"	60-3/4"	58-3/4"	68-3/4"	78-3/4"	80-3/4"	80-3/4"	100-3/4"	100-3/4"	112-3/4"
839	979	1050	1250	1400	1440	1620	1750	2120	2150	2430	2430	2650
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)X	(1)X	(1)X
20	24	27	28	33	36	38	43	48	54	55	59	66
567	648	727	809	919	1015	1057	1185	1374	1514	1514	1574	1744
42-5/8"	48-5/8"	42-3/4"	42-3/4"	50-3/4"	60-3/4"	58-3/4"	68-3/4"	68-3/4"	80-3/4"	80-3/4"	86-3/4"	100-3/4"
844	965	1080	1210	1370	1510	1570	1770	2050	2260	2260	2340	2600
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(2)X	(1)X	(1)X
18.9	22	24	27	30	33	37	41	43	48	52	54	58
643	736	806	929	1023	1123	1281	1408	1548	1660	1795	1831	1905
38-5/8"	44-5/8"	50-5/8"	38-3/4"	42-3/4"	50-3/4"	58-3/4"	68-3/4"	60-3/4"	68-3/4"	80-3/4"	80-3/4"	86-3/4"
958	1100	1200	1380	1520	1670	1910	2100	2310	2470	2670	2730	2840
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(2)H	(1)X	(1)X	(1)X
17.8	21	23	25	27	30	34	38	39	45	48	54	56
707	834	907	1035	1111	1223	1382	1542	1663	1860	1965	2169	2204
34-5/8"	40-5/8"	46-5/8"	34-3/4"	38-3/4"	42-3/4"	48-3/4"	58-3/4"	50-3/4"	60-3/4"	68-3/4"	80-3/4"	80-3/4"
1050	1240	1350	1540	1650	1820	2060	2300	2480	2770	2930	3230	3280
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)X	(1)X	(1)X
17.8	20	22	24	26	29	33	35	39	42	45	50	52
824	909	1008	1123	1215	1346	1577	1631	1930	1986	2161	2327	2363
34-5/8"	36-5/8"	42-5/8"	40-5/8"	34-3/4"	38-3/4"	50-3/4"	48-3/4"	50-3/4"	50-3/4"	60-3/4"	68-3/4"	68-3/4"
1230	1350	1500	1670	1810	2010	2350	2430	2880	2960	3220	3470	3520
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)X	(1)X	(1)X
17.1	18.5	20	23	25	29	31	35	36	41	45	47	52
885	965	1067	1223	1315	1544	1655	1871	2001	2237	2471	2514	2706
30-5/8"	34-5/8"	36-5/8"	36-5/8"	32-3/4"	38-3/4"	42-3/4"	48-3/4"	42-3/4"	50-3/4"	60-3/4"	60-3/4"	68-3/4"
1320	1440	1590	1820	1960	2300	2470	2790	2980	3330	3680	3740	4030
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)X	(1)X	(1)X
16.4	18.3	20	23	25	28	30	32	36	41	43	47	49
940	1082	1208	1382	1487	1637	1768	1931	2255	2523	2562	2837	2879
28-5/8"	34-5/8"	36-5/8"	36-5/8"	32-3/4"	34-3/4"	38-3/4"	40-3/4"	42-3/4"	50-3/4"	50-3/4"	60-3/4"	60-3/4"
1400	1610	1800	2060	2220	2440	2630	2880	3360	3760	3820	4230	4290
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)H	(1)X	(1)X	(1)X
15.9	17.6	20	22	24	27	28	33	34	38	43	45	49
991	1131	1247	1437	1576	1724	1850	2156	2290	2546	2856	2903	3211
26-5/8"	30-5/8"	34-5/8"	34-5/8"	30-3/4"	32-3/4"	34-3/4"	40-3/4"	36-3/4"	42-3/4"	50-3/4"	50-3/4"	60-3/4"
1480	1690	1860	2140	2350	2570	2760	3210	3410	3790	4250	4330	4780
(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
15.9	16.8	20	22	23	26	28	31	34	38	40	45	47
1096	1172	1379	1587	1619	1805	2044	2248	2523	2806	2849	3203	3249
26-5/8"	28-5/8"	34-5/8"	34-5/8"	26-3/4"	30-3/4"	34-3/4"	36-3/4"	36-3/4"	42-3/4"	42-3/4"	50-3/4"	50-3/4"
1630	1750	2050	2360	2410	2690	3040	3350	3760	4180	4240	4770	4840
(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X

DESIGN GUIDE LRFD
LIGHT WEIGHT TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LRFD LIGHT WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

DESIGN GUIDE LRFD LIGHT WEIGHT TABLES

Based on a 50 ksi Maximum Yield Strength											
BEARING HEIGHT		2 1/2"	5"								
		Concrete Slab Parameters									
		Light Weight Concrete (110 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1	1	1	
		tc (in.)	2	2	2	2	2	2	2	2	
		Js (ft.)	3	3	3	3	3	3	3.5	4	
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
45	18	Wt(plf)	8.0	9.2	10.9	12.3	13.6	15.2	17.4	18.7	22
		W360(plf)	127	153	181	206	228	254	280	306	357
		N-ds	28-3/8"	36-3/8"	26-1/2"	32-1/2"	36-1/2"	44-1/2"	48-1/2"	54-1/2"	44-5/8"
		leff(in4)	269	325	385	438	484	538	593	649	757
		Bridging	(1)X+(3)H	(1)X+(3)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(3)H
	20	Wt(plf)	7.5	8.6	9.7	11.0	12.1	14.6	16.3	17.6	21
		W360(plf)	145	175	205	232	259	294	321	354	418
		N-ds	26-3/8"	32-3/8"	40-3/8"	48-3/8"	56-3/8"	40-1/2"	44-1/2"	48-1/2"	40-5/8"
		leff(in4)	308	372	435	493	549	625	681	751	886
		Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(3)H
	22	Wt(plf)	7.0	7.9	9.1	10.3	12.5	13.8	15.5	16.5	20.0
		W360(plf)	160	193	227	261	303	336	364	398	482
		N-ds	24-3/8"	30-3/8"	38-3/8"	46-3/8"	32-1/2"	36-1/2"	40-1/2"	44-1/2"	38-5/8"
		leff(in4)	340	410	482	553	643	712	772	843	1020
		Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(3)H
	24	Wt(plf)	6.8	7.7	8.9	9.6	12.1	13.1	14.8	15.7	19.1
		W360(plf)	173	213	257	284	341	376	407	442	535
		N-ds	24-3/8"	28-3/8"	36-3/8"	40-3/8"	30-1/2"	34-1/2"	36-1/2"	40-1/2"	34-5/8"
		leff(in4)	366	451	544	602	724	798	863	938	1130
		Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(3)H
	26	Wt(plf)	6.4	7.3	8.3	9.3	11.3	12.8	14.0	15.5	18.9
		W360(plf)	183	234	282	315	377	415	448	514	621
		N-ds	24-3/8"	26-3/8"	32-3/8"	38-3/8"	28-1/2"	32-1/2"	34-1/2"	40-1/2"	34-5/8"
		leff(in4)	388	496	599	669	800	880	951	1090	1320
Bridging		(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(3)H	
28	Wt(plf)	6.5	7.1	8.0	9.2	10.7	12.3	13.5	14.8	17.9	
	W360(plf)	209	250	301	346	398	454	488	556	663	
	N-ds	24-3/8"	24-3/8"	30-3/8"	36-3/8"	24-1/2"	30-1/2"	30-1/2"	36-1/2"	30-5/8"	
	leff(in4)	444	530	639	734	844	962	1030	1180	1410	
	Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(3)H	
30	Wt(plf)	6.4	7.3	7.8	8.9	10.8	11.8	13.1	14.4	16.8	
	W360(plf)	215	282	319	371	450	489	526	596	698	
	N-ds	24-3/8"	24-3/8"	28-3/8"	32-3/8"	24-1/2"	28-1/2"	28-1/2"	34-1/2"	38-1/2"	
	leff(in4)	456	599	676	787	955	1040	1120	1260	1480	
	Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(2)H	(2)H	(2)H	
32	Wt(plf)	6.5	7.0	7.8	8.7	9.6	10.8	12.3	13.9	16.1	
	W360(plf)	230	290	356	408	456	514	574	633	736	
	N-ds	24-3/8"	24-3/8"	28-3/8"	32-3/8"	38-3/8"	42-3/8"	30-1/2"	30-1/2"	34-1/2"	
	leff(in4)	488	614	756	865	968	1090	1220	1340	1560	
	Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(2)H	(2)H	
36	Wt(plf)	6.3	6.9	7.5	8.8	9.8	11.0	11.9	13.2	15.2	
	W360(plf)	252	323	385	471	517	577	642	699	837	
	N-ds	24-3/8"	24-3/8"	24-3/8"	30-3/8"	32-3/8"	24-1/2"	26-1/2"	26-1/2"	32-1/2"	
	leff(in4)	534	686	816	999	1100	1220	1360	1480	1780	
	Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(2)H	(2)H	



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LRFD LIGHT WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
BEARING HEIGHT	2 1/2"	5"	7 1/2"	Concrete Slab Parameters								
Light Weight Concrete (110 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	2	3	3	3	3
3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
25	31	31	36	40	41	49	52	56	63	70	71	79
477	576	584	701	783	791	933	981	1107	1222	1340	1340	1463
52-5/8"	52-3/4"	52-3/4"	58-3/4"	66-3/4"	66-3/4"	88-3/4"	88-3/4"	82-3/4"	96-3/4"	110-3/4"	110-3/4"	124-3/4"
1010	1220	1240	1490	1660	1680	1980	2080	2350	2590	2840	2840	3100
(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X
23	27	31	33	37	41	45	52	54	58	66	71	75
548	615	712	779	882	963	1054	1196	1313	1371	1523	1628	1676
48-5/8"	42-3/4"	52-3/4"	48-3/4"	56-3/4"	66-3/4"	74-3/4"	88-3/4"	76-3/4"	82-3/4"	96-3/4"	110-3/4"	110-3/4"
1160	1300	1510	1650	1870	2040	2240	2540	2780	2910	3230	3450	3550
(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(1)X
22	27	28	33	34	38	42	48	50	56	61	66	74
621	734	784	928	956	1062	1194	1318	1439	1592	1672	1814	1996
44-5/8"	42-3/4"	46-3/4"	48-3/4"	46-3/4"	56-3/4"	66-3/4"	74-3/4"	66-3/4"	76-3/4"	82-3/4"	96-3/4"	110-3/4"
1320	1560	1660	1970	2030	2250	2530	2800	3050	3380	3550	3850	4230
(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)X	(1)X	(1)X
21	25	27	30	33	38	39	45	50	56	59	62	70
694	810	872	997	1098	1245	1289	1461	1681	1862	1905	1957	2181
40-5/8"	38-3/4"	42-3/4"	40-3/4"	48-3/4"	56-3/4"	56-3/4"	66-3/4"	66-3/4"	76-3/4"	76-3/4"	82-3/4"	96-3/4"
1470	1720	1850	2120	2330	2640	2730	3100	3570	3950	4040	4150	4630
(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)X	(1)X	(1)X
20	23	25	29	30	34	38	42	45	50	55	59	61
739	862	948	1088	1161	1305	1460	1640	1794	1942	2145	2196	2257
36-5/8"	46-5/8"	38-3/4"	38-3/4"	40-3/4"	46-3/4"	56-3/4"	66-3/4"	56-3/4"	66-3/4"	76-3/4"	76-3/4"	82-3/4"
1570	1830	2010	2310	2460	2770	3100	3480	3810	4120	4550	4660	4790
(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(1)X	(1)X
19.6	22	24	27	30	33	36	39	45	47	52	56	59
842	935	1008	1144	1322	1457	1535	1718	2038	2078	2241	2439	2498
36-5/8"	42-5/8"	44-5/8"	44-5/8"	40-3/4"	48-3/4"	46-3/4"	56-3/4"	56-3/4"	56-3/4"	66-3/4"	76-3/4"	76-3/4"
1790	1980	2140	2430	2800	3090	3260	3640	4320	4410	4750	5170	5300
(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(1)X
18.7	21	24	26	29	31	35	39	42	47	49	53	59
877	982	1135	1267	1406	1499	1698	1934	2098	2333	2366	2519	2808
34-5/8"	38-5/8"	44-5/8"	34-3/4"	38-3/4"	40-3/4"	46-3/4"	56-3/4"	48-3/4"	56-3/4"	56-3/4"	66-3/4"	76-3/4"
1860	2080	2410	2690	2980	3180	3600	4100	4450	4950	5020	5340	5960
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)H	(1)X	(1)X	(1)X
17.9	21	23	26	28	31	36	38	43	45	50	55	56
914	1095	1202	1352	1467	1606	1926	1973	2331	2374	2630	2866	2866
30-5/8"	38-5/8"	40-5/8"	40-5/8"	34-3/4"	36-3/4"	46-3/4"	46-3/4"	48-3/4"	48-3/4"	56-3/4"	66-3/4"	66-3/4"
1940	2320	2550	2870	3110	3410	4080	4180	4940	5040	5580	6080	6080
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)H	(1)H	(1)X	(1)X	(1)X
17.0	20	22	24	27	28	32	37	40	44	45	50	53
1024	1206	1352	1522	1669	1781	1961	2350	2527	2853	2853	3161	3235
28-5/8"	34-5/8"	36-5/8"	30-3/4"	32-3/4"	34-3/4"	36-3/4"	46-3/4"	40-3/4"	48-3/4"	48-3/4"	56-3/4"	56-3/4"
2170	2560	2870	3230	3540	3780	4160	4980	5360	6050	6050	6700	6860
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)H	(1)X	(1)X	(1)X

DESIGN GUIDE LRFD
LIGHT WEIGHT TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LRFD LIGHT WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		BEARING HEIGHT									
		2 1/2"	5"	7 1/2"							
		Concrete Slab Parameters									
		Light Weight Concrete (110 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1	1	1	
		tc (in.)	2	2	2	2	2	2	2	2	
		Js (ft.)	3	3	3	3	3	3	3.5	4	
Joist Span	Joist Depth	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
(ft.)	(in.)	TL	300	400	500	600	700	800	900	1000	1200
50	20	Wt(plf)	8.7	10.5	11.8	13.6	15.3	17.4	18.7	21	25
		W360(plf)	122	155	177	204	227	251	265	297	356
		N-ds	30-3/8"	26-1/2"	30-1/2"	36-1/2"	44-1/2"	48-1/2"	54-1/2"	40-5/8"	50-5/8"
		leff(in4)	354	451	514	594	662	729	772	863	1040
		Bridging	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(2)H	(3)H	(3)H	(3)H
	22	Wt(plf)	8.2	9.6	10.7	13.0	14.5	16.3	17.6	19.9	24
		W360(plf)	135	171	197	233	259	282	302	343	411
		N-ds	28-3/8"	38-3/8"	46-3/8"	34-1/2"	40-1/2"	44-1/2"	48-1/2"	38-5/8"	46-5/8"
		leff(in4)	393	498	574	679	753	821	878	999	1200
		Bridging	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H
	24	Wt(plf)	7.7	9.1	10.2	11.5	13.7	15.5	17.6	18.5	23
		W360(plf)	150	191	221	251	290	315	357	378	462
		N-ds	26-3/8"	36-3/8"	42-3/8"	52-3/8"	36-1/2"	40-1/2"	48-1/2"	46-1/2"	42-5/8"
		leff(in4)	435	556	644	731	845	917	1040	1100	1340
		Bridging	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H
	26	Wt(plf)	7.2	8.6	9.6	11.1	13.2	14.8	16.6	18.1	22
		W360(plf)	160	208	242	280	321	348	390	434	513
		N-ds	26-3/8"	32-3/8"	40-3/8"	48-3/8"	34-1/2"	36-1/2"	44-1/2"	46-1/2"	40-5/8"
		leff(in4)	467	604	705	815	934	1010	1130	1260	1490
		Bridging	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H
	28	Wt(plf)	7.4	8.1	9.2	10.5	12.8	13.9	15.9	17.2	21
		W360(plf)	184	222	262	296	351	389	423	466	566
		N-ds	26-3/8"	30-3/8"	38-3/8"	42-3/8"	32-1/2"	36-1/2"	40-1/2"	42-1/2"	36-5/8"
		leff(in4)	536	647	762	860	1020	1130	1230	1360	1650
		Bridging	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H
	30	Wt(plf)	6.9	7.8	9.2	11.0	12.3	14.1	15.0	16.7	19.6
		W360(plf)	191	236	290	333	380	431	455	506	604
		N-ds	26-3/8"	28-3/8"	36-3/8"	26-1/2"	30-1/2"	34-1/2"	36-1/2"	38-1/2"	34-5/8"
leff(in4)		557	687	844	970	1110	1250	1320	1470	1760	
Bridging		(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	
32	Wt(plf)	6.9	7.6	8.6	10.0	11.8	12.9	14.7	16.3	19.5	
	W360(plf)	215	251	304	361	407	448	485	562	673	
	N-ds	26-3/8"	26-3/8"	32-3/8"	40-3/8"	28-1/2"	32-1/2"	34-1/2"	38-1/2"	34-5/8"	
	leff(in4)	626	731	884	1050	1180	1300	1410	1630	1960	
	Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	
36	Wt(plf)	6.9	7.6	8.5	9.5	10.7	12.3	14.1	15.0	17.8	
	W360(plf)	242	289	348	401	451	501	568	618	725	
	N-ds	26-3/8"	26-3/8"	30-3/8"	36-3/8"	40-3/8"	28-1/2"	30-1/2"	32-1/2"	28-5/8"	
	leff(in4)	705	840	1010	1170	1310	1460	1650	1800	2110	
	Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(3)H	
40	Wt(plf)	6.8	7.5	9.0	10.3	11.3	12.8	13.7	14.4	16.9	
	W360(plf)	251	316	400	464	518	591	646	693	814	
	N-ds	26-3/8"	26-3/8"	28-3/8"	32-3/8"	26-1/2"	26-1/2"	28-1/2"	30-1/2"	26-5/8"	
	leff(in4)	731	920	1160	1350	1510	1720	1880	2020	2370	
	Bridging	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(3)H	(3)H	

DESIGN GUIDE LRFD LIGHT WEIGHT TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LRFD LIGHT WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
BEARING HEIGHT		2 1/2"	5"									
Concrete Slab Parameters												
Light Weight Concrete (110 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
30	34	36	40	44	49	54	60	63	70	75	88	89
505	559	590	689	732	816	879	985	1080	1203	1285	1457	1457
52-3/4"	60-3/4"	60-3/4"	64-3/4"	72-3/4"	86-3/4"	92-3/4"	108-3/4"	94-3/4"	108-3/4"	122-3/4"	148-3/4"	148-3/4"
1470	1630	1720	2000	2130	2370	2560	2860	3140	3500	3740	4240	4240
(3)H	(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X	(2)X
27	31	36	37	41	45	51	56	62	66	71	79	88
530	615	707	762	833	905	1029	1092	1290	1343	1447	1583	1744
42-3/4"	52-3/4"	60-3/4"	54-3/4"	64-3/4"	72-3/4"	86-3/4"	92-3/4"	94-3/4"	94-3/4"	108-3/4"	122-3/4"	148-3/4"
1540	1790	2060	2220	2420	2630	2990	3180	3750	3910	4210	4610	5070
(3)H	(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X	(2)X
25	28	33	36	38	42	48	53	58	66	66	75	80
606	667	760	877	905	1010	1119	1255	1398	1577	1587	1749	1861
54-5/8"	46-3/4"	52-3/4"	56-3/4"	54-3/4"	64-3/4"	72-3/4"	86-3/4"	80-3/4"	94-3/4"	94-3/4"	108-3/4"	122-3/4"
1760	1940	2210	2550	2630	2940	3250	3650	4070	4590	4620	5090	5410
(3)H	(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X
24	27	33	33	38	42	48	53	56	61	66	74	76
662	734	883	926	1049	1171	1298	1457	1576	1680	1838	2026	2026
50-5/8"	42-3/4"	52-3/4"	46-3/4"	54-3/4"	64-3/4"	72-3/4"	86-3/4"	74-3/4"	80-3/4"	94-3/4"	108-3/4"	108-3/4"
1930	2140	2570	2690	3050	3410	3780	4240	4580	4890	5350	5890	5890
(3)H	(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X
23	27	30	33	35	39	44	50	56	59	62	70	76
718	841	913	1059	1091	1235	1383	1536	1800	1865	1931	2157	2318
46-5/8"	42-3/4"	56-5/8"	46-3/4"	46-3/4"	54-3/4"	64-3/4"	72-3/4"	74-3/4"	74-3/4"	80-3/4"	94-3/4"	108-3/4"
2090	2450	2660	3080	3170	3590	4020	4470	5240	5430	5620	6280	6740
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X
22	25	27	31	35	38	41	45	50	56	59	66	70
774	883	964	1096	1234	1372	1437	1611	1840	2058	2119	2376	2439
42-5/8"	48-5/8"	42-3/4"	40-3/4"	46-3/4"	54-3/4"	54-3/4"	64-3/4"	64-3/4"	74-3/4"	74-3/4"	94-3/4"	94-3/4"
2250	2570	2800	3190	3590	3990	4180	4690	5350	5990	6170	6910	7100
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X
22	25	29	31	35	36	41	46	48	53	60	66	71
867	948	1114	1227	1382	1418	1610	1805	1933	2111	2370	2504	2731
42-5/8"	36-3/4"	42-3/4"	40-3/4"	46-3/4"	46-3/4"	54-3/4"	64-3/4"	56-3/4"	64-3/4"	74-3/4"	80-3/4"	94-3/4"
2520	2760	3240	3570	4020	4120	4690	5250	5620	6140	6890	7290	7950
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)X	(1)X	(1)X
21	23	26	28	31	34	38	43	48	50	56	61	65
976	1086	1189	1326	1453	1576	1778	2021	2349	2408	2642	2886	2959
36-5/8"	40-5/8"	44-5/8"	34-3/4"	36-3/4"	40-3/4"	46-3/4"	54-3/4"	56-3/4"	56-3/4"	64-3/4"	74-3/4"	74-3/4"
2840	3160	3460	3860	4230	4590	5170	5880	6840	7010	7690	8400	8610
(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)X	(1)X	(1)X
20	22	24	27	29	32	37	40	45	50	53	57	61
1082	1199	1318	1481	1582	1733	2080	2161	2538	2841	2920	3123	3200
34-5/8"	36-5/8"	34-3/4"	32-3/4"	34-3/4"	36-3/4"	46-3/4"	46-3/4"	48-3/4"	56-3/4"	56-3/4"	64-3/4"	64-3/4"
3150	3490	3830	4310	4600	5040	6050	6290	7390	8270	8500	9090	9310
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)X	(1)X	(1)X

DESIGN GUIDE LRFD
LIGHT WEIGHT TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LRFD LIGHT WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

DESIGN GUIDE LRFD LIGHT WEIGHT TABLES

Based on a 50 ksi Maximum Yield Strength											
		BEARING HEIGHT		2 1/2"	5"	7 1/2"					
		Concrete Slab Parameters									
		Light Weight Concrete (110 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1	1	1	
		tc (in.)	2	2	2	2	2	2	2	2	
		Js (ft.)	3	3	3	3	3	3	3.5	4	
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
55	24	Wt(plf)	9.2	10.7	12.2	13.6	15.4	17.6	19.1	22	26
		W360(plf)	139	165	197	219	244	269	288	335	389
		N-ds	32-3/8"	28-1/2"	32-1/2"	36-1/2"	44-1/2"	48-1/2"	52-1/2"	44-5/8"	50-5/8"
		Ieff(in4)	538	640	764	847	945	1040	1120	1300	1510
	Bridging		(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(2)H	(3)H
	26	Wt(plf)	8.6	9.6	11.2	13.1	14.6	17.6	19.2	21	25
		W360(plf)	150	177	215	242	269	314	337	373	435
		N-ds	30-3/8"	38-3/8"	48-3/8"	34-1/2"	40-1/2"	48-1/2"	52-1/2"	40-5/8"	46-5/8"
		Ieff(in4)	579	686	831	939	1040	1220	1300	1450	1680
	Bridging		(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H
	28	Wt(plf)	8.2	9.1	10.3	12.6	13.9	16.6	18.2	20	24
		W360(plf)	159	193	224	265	294	339	367	413	476
N-ds		28-3/8"	36-3/8"	42-3/8"	32-1/2"	36-1/2"	44-1/2"	46-1/2"	38-5/8"	42-5/8"	
Ieff(in4)		617	748	867	1030	1140	1310	1420	1600	1840	
Bridging		(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	
30	Wt(plf)	7.6	8.7	10.1	11.6	13.4	16.0	17.2	19.0	23	
	W360(plf)	170	205	244	281	318	365	391	438	517	
	N-ds	28-3/8"	32-3/8"	40-3/8"	48-3/8"	34-1/2"	40-1/2"	42-1/2"	46-1/2"	40-5/8"	
	Ieff(in4)	656	795	945	1090	1230	1410	1510	1700	2000	
Bridging		(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	
32	Wt(plf)	7.7	8.9	10.0	11.5	13.4	15.2	17.2	19.0	23	
	W360(plf)	181	235	275	317	359	389	441	495	584	
	N-ds	28-3/8"	32-3/8"	40-3/8"	48-3/8"	34-1/2"	36-1/2"	42-1/2"	46-1/2"	40-5/8"	
	Ieff(in4)	699	910	1070	1230	1390	1510	1710	1920	2260	
Bridging		(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	
34	Wt(plf)	7.6	8.4	9.8	11.9	13.0	15.0	16.0	17.8	21	
	W360(plf)	202	244	293	346	382	435	461	516	617	
	N-ds	28-3/8"	30-3/8"	38-3/8"	28-1/2"	32-1/2"	36-1/2"	40-1/2"	42-1/2"	36-5/8"	
	Ieff(in4)	781	947	1130	1340	1480	1690	1790	2000	2390	
Bridging		(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	
36	Wt(plf)	7.8	9.3	10.9	12.4	13.6	15.5	17.0	19.3	21	
	W360(plf)	206	276	321	378	417	473	508	596	657	
	N-ds	28-3/8"	30-3/8"	36-3/8"	28-1/2"	28-1/2"	28-5/8"	28-5/8"	30-5/8"	34-5/8"	
	Ieff(in4)	799	1070	1240	1460	1610	1830	1970	2310	2550	
Bridging		(1)X+(3)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(3)H	
40	Wt(plf)	7.2	8.2	9.2	10.5	12.3	14.3	15.3	17.4	20	
	W360(plf)	223	284	344	390	462	524	557	649	728	
	N-ds	28-3/8"	28-3/8"	32-3/8"	38-3/8"	28-1/2"	30-1/2"	32-1/2"	38-1/2"	30-5/8"	
	Ieff(in4)	864	1100	1330	1510	1790	2030	2160	2510	2820	
Bridging		(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	
44	Wt(plf)	7.9	8.4	9.7	10.8	12.5	13.4	14.8	16.3	19.4	
	W360(plf)	269	322	391	450	512	557	621	686	812	
	N-ds	28-3/8"	28-3/8"	30-3/8"	28-1/2"	28-1/2"	28-1/2"	30-1/2"	28-5/8"	28-5/8"	
	Ieff(in4)	1040	1250	1510	1740	1980	2160	2410	2660	3150	
Bridging		(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(2)H	



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LRFD LIGHT WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
BEARING HEIGHT		2 1/2"	5"	7 1/2"								
Concrete Slab Parameters												
Light Weight Concrete (110 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	2	3	3	3	3
3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
31	36	39	41	45	50	55	62	70	75	79	89	92
538	619	678	731	795	882	954	1068	1255	1352	1413	1576	1618
52-3/4"	60-3/4"	68-3/4"	60-3/4"	70-3/4"	82-3/4"	90-3/4"	104-3/4"	106-3/4"	120-3/4"	120-3/4"	146-3/4"	146-3/4"
2080	2400	2630	2830	3080	3410	3690	4140	4860	5240	5470	6100	6270
(3)H	(3)H	(3)H	(3)H	(3)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X	(2)X
28	33	36	41	42	47	53	62	66	71	79	80	92
577	657	731	850	876	948	1083	1245	1360	1479	1641	1656	1881
46-3/4"	52-3/4"	60-3/4"	60-3/4"	60-3/4"	70-3/4"	82-3/4"	104-3/4"	92-3/4"	106-3/4"	120-3/4"	120-3/4"	146-3/4"
2230	2550	2830	3290	3390	3670	4190	4820	5270	5730	6350	6410	7280
(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X
27	33	36	38	42	46	53	58	66	66	75	80	84
628	756	841	901	1006	1090	1245	1320	1560	1582	1767	1900	1945
42-3/4"	52-3/4"	60-3/4"	52-3/4"	60-3/4"	70-3/4"	82-3/4"	90-3/4"	92-3/4"	92-3/4"	106-3/4"	120-3/4"	120-3/4"
2430	2930	3260	3490	3900	4220	4820	5110	6040	6130	6840	7360	8577
(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X
27	30	33	38	40	44	50	56	61	66	71	76	84
714	788	872	1023	1052	1169	1302	1460	1628	1795	1865	2023	2208
42-3/4"	46-3/4"	52-3/4"	52-3/4"	52-3/4"	60-3/4"	70-3/4"	82-3/4"	78-3/4"	92-3/4"	92-3/4"	106-3/4"	120-3/4"
2760	3050	3380	3960	4070	4530	5040	5650	6310	6950	7220	7840	8550
(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X
26	29	33	35	39	44	50	56	59	62	71	76	80
755	838	981	1044	1183	1315	1465	1644	1775	1853	2095	2274	2324
38-3/4"	42-3/4"	52-3/4"	46-3/4"	52-3/4"	60-3/4"	70-3/4"	82-3/4"	72-3/4"	78-3/4"	92-3/4"	106-3/4"	106-3/4"
2920	3250	3800	4040	4580	5090	5670	6360	6870	7180	8110	8800	9000
(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X
24	27	31	35	39	40	45	50	56	60	70	71	76
786	908	1002	1164	1318	1330	1513	1660	1931	2000	2334	2353	2532
44-5/8"	42-3/4"	46-3/4"	46-3/4"	52-3/4"	52-3/4"	60-3/4"	70-3/4"	72-3/4"	72-3/4"	92-3/4"	92-3/4"	106-3/4"
3040	3520	3880	4510	5110	5150	5860	6430	7480	7750	9040	9110	9810
(3)H	(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X
23	28	29	34	37	40	44	48	52	56	61	70	71
835	971	1048	1286	1298	1471	1648	1806	1956	2157	2304	2599	2599
34-3/4"	38-3/4"	42-3/4"	46-3/4"	46-3/4"	52-3/4"	60-3/4"	70-3/4"	62-3/4"	72-3/4"	78-3/4"	92-3/4"	92-3/4"
3230	3760	4060	4980	5030	5700	6380	6990	7570	8350	8920	10060	10060
(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X
22	26	28	32	37	38	43	48	51	56	64	66	76
920	1083	1177	1324	1580	1612	1835	2061	2184	2412	2728	2747	3173
36-5/8"	44-5/8"	38-3/4"	36-3/4"	46-3/4"	46-3/4"	52-3/4"	60-3/4"	54-3/4"	62-3/4"	72-3/4"	72-3/4"	92-3/4"
3560	4190	4560	5130	6120	6240	7110	7980	8460	9340	10570	10640	12290
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X
22	24	27	29	32	37	40	45	50	53	57	65	66
1060	1181	1298	1420	1556	1857	1933	2202	2540	2623	2834	3200	3200
38-5/8"	34-3/4"	36-3/4"	34-3/4"	36-3/4"	46-3/4"	46-3/4"	52-3/4"	54-3/4"	54-3/4"	62-3/4"	72-3/4"	72-3/4"
4100	4570	5030	5500	6030	7190	7490	8530	9830	10160	10980	12390	12390
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(1)H	(1)X	(1)X	(1)X

DESIGN GUIDE LRFD
LIGHT WEIGHT TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LRFD LIGHT WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

 DESIGN GUIDE LRFD
LIGHT WEIGHT TABLES

Based on a 50 ksi Maximum Yield Strength												
		BEARING HEIGHT		2 1/2"	5"	7 1/2"						
		Concrete Slab Parameters										
		Light Weight Concrete (110 pcf) f'c = 4.0 ksi										
		hr (in.)	1	1	1	1	1	1	1	1.5		
		tc (in.)	2	2	2	2	2	2	2	3.25		
		Js (ft.)	3	3	3	3	3	3	3	4		
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot										
		TL	300	400	500	600	700	800	900	1000	1200	
60	24	Wt(plf)	10.6	12.6	14.4	16.2	18.6	20	24	25	30	
		W360(plf)	121	149	173	194	220	231	262	287	398	
		N-ds	38-3/8"	30-1/2"	36-1/2"	44-1/2"	54-1/2"	56-1/2"	48-5/8"	50-5/8"	52-3/4"	
		Ieff(in4)	607	748	871	976	1110	1160	1310	1440	2000	
	Bridging		(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(3)H	
	26	Wt(plf)	10.0	11.3	12.9	14.5	17.5	19.1	22	24	27	
		W360(plf)	134	162	187	208	243	260	292	321	422	
		N-ds	30-1/2"	30-1/2"	34-1/2"	40-1/2"	48-1/2"	52-1/2"	44-5/8"	46-5/8"	56-5/8"	
		Ieff(in4)	671	812	941	1050	1220	1310	1470	1620	2120	
	Bridging		(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(3)H	
	28	Wt(plf)	9.4	11.1	12.5	14.5	16.6	19.3	21	23	27	
		W360(plf)	144	179	205	240	262	300	322	353	486	
N-ds		32-3/8"	30-1/2"	32-1/2"	40-1/2"	44-1/2"	52-1/2"	40-5/8"	42-5/8"	56-5/8"		
Ieff(in4)		724	901	1030	1210	1320	1510	1620	1770	2450		
Bridging		(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(3)H		
30	Wt(plf)	8.8	10.3	11.4	13.8	16.6	18.3	20	22	26		
	W360(plf)	152	192	218	260	300	324	349	385	526		
	N-ds	30-3/8"	40-3/8"	48-3/8"	36-1/2"	44-1/2"	46-1/2"	52-1/2"	40-5/8"	52-5/8"		
	Ieff(in4)	763	963	1100	1310	1510	1630	1760	1930	2650		
Bridging		(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(3)H		
32	Wt(plf)	9.2	10.1	11.6	13.4	16.0	17.3	19.0	21	25		
	W360(plf)	173	205	240	279	320	343	373	417	560		
	N-ds	30-3/8"	38-3/8"	30-1/2"	34-1/2"	40-1/2"	42-1/2"	46-1/2"	36-5/8"	48-5/8"		
	Ieff(in4)	868	1030	1210	1400	1610	1720	1870	2100	2810		
Bridging		(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(3)H		
36	Wt(plf)	8.2	9.7	11.6	13.2	15.1	16.7	18.5	21.0	23		
	W360(plf)	188	232	288	322	377	409	443	501	649		
	N-ds	30-3/8"	32-3/8"	30-1/2"	30-1/2"	36-1/2"	38-1/2"	30-5/8"	34-5/8"	46-5/8"		
	Ieff(in4)	947	1160	1450	1620	1890	2060	2230	2520	3270		
Bridging		(1)X+(3)H	(1)X+(3)H	(1)X+(3)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H		
40	Wt(plf)	8.7	10.0	11.5	13.0	14.7	17.1	18.7	19.6	22		
	W360(plf)	214	263	317	372	420	481	516	565	745		
	N-ds	30-3/8"	30-3/8"	38-3/8"	30-1/2"	30-1/2"	30-5/8"	30-5/8"	30-5/8"	42-5/8"		
	Ieff(in4)	1080	1320	1590	1870	2110	2420	2600	2840	3740		
Bridging		(1)X+(3)H	(1)X+(3)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(3)H		
44	Wt(plf)	9.0	9.9	12.2	14.1	15.1	16.4	18.0	19.6	23		
	W360(plf)	235	293	368	420	480	535	576	635	849		
	N-ds	30-3/8"	30-3/8"	30-1/2"	30-1/2"	30-1/2"	32-1/2"	30-5/8"	30-5/8"	38-5/8"		
	Ieff(in4)	1180	1470	1850	2110	2420	2690	2890	3190	4270		
Bridging		(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H	(3)H	(3)H	(2)H		
48	Wt(plf)	8.0	9.1	10.6	11.9	13.5	15.3	16.8	18.4	20		
	W360(plf)	246	315	389	435	510	577	620	716	854		
	N-ds	30-3/8"	30-3/8"	32-3/8"	38-3/8"	30-1/2"	30-1/2"	32-1/2"	38-1/2"	46-1/2"		
	Ieff(in4)	1240	1590	1960	2190	2560	2900	3120	3600	4290		
Bridging		(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(1)X+(2)H	(3)H	(3)H		



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LRFD LIGHT WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
BEARING HEIGHT	2 1/2"	5"	7 1/2"									
Concrete Slab Parameters												
Light Weight Concrete (110 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.5	3.5	3.5
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
36	39	43	49	52	58	67	74	75	88	92		
469	515	563	654	688	763	863	959	1027	1185	1261		
60-3/4"	68-3/4"	74-3/4"	82-3/4"	88-3/4"	104-3/4"	118-3/4"	134-3/4"	118-3/4"	144-3/4"	144-3/4"		
2360	2590	2830	3290	3460	3840	4340	4820	5160	5960	6340		
(3)H	(3)H	(3)H	(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X		
34	36	41	45	50	54	62	70	75	88	89	93	
527	557	624	706	784	826	943	1055	1195	1380	1429	1487	
60-3/4"	60-3/4"	66-3/4"	68-3/4"	82-3/4"	88-3/4"	104-3/4"	118-3/4"	118-3/4"	144-3/4"	144-3/4"	144-3/4"	
2650	2800	3140	3550	3940	4150	4740	5300	6010	6940	7190	7470	
(3)H	(3)H	(3)H	(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X	
31	36	41	45	50	52	61	69	71	79	89	93	96
557	641	719	813	903	928	1070	1216	1294	1437	1643	1709	1759
52-3/4"	60-3/4"	66-3/4"	68-3/4"	82-3/4"	82-3/4"	104-3/4"	118-3/4"	104-3/4"	118-3/4"	144-3/4"	144-3/4"	144-3/4"
2800	3220	3610	4090	4540	4660	5380	6110	6510	7220	8260	8590	8840
(3)H	(3)H	(3)H	(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X	(2)X
31	36	38	42	46	52	56	65	71	75	80	93	94
635	731	757	876	951	1057	1128	1294	1472	1535	1687	1944	1967
52-3/4"	60-3/4"	58-3/4"	60-3/4"	68-3/4"	82-3/4"	88-3/4"	104-3/4"	104-3/4"	104-3/4"	118-3/4"	144-3/4"	144-3/4"
3190	3670	3810	4400	4780	5320	5670	6510	7400	7720	8480	9770	9890
(3)H	(3)H	(3)H	(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X	(2)X
30	33	38	42	44	48	56	66	67	75	79	85	96
668	752	855	988	1012	1100	1256	1462	1547	1729	1821	1968	2255
56-5/8"	52-3/4"	58-3/4"	60-3/4"	60-3/4"	68-3/4"	82-3/4"	104-3/4"	90-3/4"	104-3/4"	104-3/4"	118-3/4"	144-3/4"
3360	3780	4300	4970	5090	5530	6310	7350	7780	8690	9160	9900	11340
(3)H	(3)H	(3)H	(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X	(2)X
27	31	33	38	40	44	50	56	61	67	71	76	84
774	855	947	1108	1139	1267	1414	1586	1760	1942	2048	2229	2461
42-3/4"	46-3/4"	52-3/4"	52-3/4"	52-3/4"	60-3/4"	68-3/4"	82-3/4"	76-3/4"	90-3/4"	90-3/4"	104-3/4"	118-3/4"
3890	4300	4760	5570	5730	6370	7110	7980	8850	9760	10290	11210	12380
(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X
25	29	31	35	40	41	46	52	59	62	70	72	80
830	976	1045	1211	1372	1403	1575	1756	2050	2144	2462	2486	2767
36-3/4"	42-3/4"	46-3/4"	46-3/4"	52-3/4"	52-3/4"	60-3/4"	68-3/4"	70-3/4"	76-3/4"	90-3/4"	90-3/4"	104-3/4"
4170	4910	5250	6090	6900	7050	7920	8830	10310	10780	12380	12500	13910
(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X
25	29	32	35	38	42	48	52	55	63	66	74	75
938	1096	1201	1332	1479	1673	1908	1973	2203	2495	2644	2982	3008
40-5/8"	38-3/4"	40-3/4"	40-3/4"	46-3/4"	52-3/4"	60-3/4"	60-3/4"	60-3/4"	70-3/4"	76-3/4"	90-3/4"	90-3/4"
4720	5510	6040	6700	7440	8410	9590	9920	11080	12540	13290	14990	15120
(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X
24	27	29	32	37	39	45	51	53	57	66	67	77
1052	1156	1257	1409	1683	1718	1987	2229	2366	2561	2935	2960	3459
40-5/8"	44-5/8"	38-3/4"	36-3/4"	46-3/4"	46-3/4"	52-3/4"	60-3/4"	54-3/4"	60-3/4"	70-3/4"	70-3/4"	90-3/4"
5290	5810	6320	7090	8460	8640	9990	11210	11900	12880	14760	14880	17390
(3)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)H	(2)X	(2)X	(2)X

DESIGN GUIDE LRFD LIGHT WEIGHT TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LRFD LIGHT WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

 DESIGN GUIDE LRFD
LIGHT WEIGHT TABLES

Based on a 50 ksi Maximum Yield Strength											
		BEARING HEIGHT		2 1/2"	5"	7 1/2"					
		Concrete Slab Parameters									
		Light Weight Concrete (110 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1	1	1.5	
		tc (in.)	2	2	2	2	2	2	2	3.25	
		Js (ft.)	3	3	3	3	3	3	3.5	4	
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
65	30	Wt(plf)	10.0	11.5	13.2	15.7	17.9	21	23	25	31
		W360(plf)	138	168	195	229	253	291	304	340	481
		N-ds	36-3/8"	34-1/2"	34-1/2"	44-1/2"	48-1/2"	40-5/8"	44-5/8"	46-5/8"	52-3/4"
		Ieff(in4)	885	1070	1240	1470	1620	1940	2170	3070	
		Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X
	32	Wt(plf)	9.8	11.3	14.0	15.6	18.1	19.9	22	25	28
		W360(plf)	148	183	226	253	290	312	337	391	494
		N-ds	34-3/8"	34-1/2"	34-1/2"	40-1/2"	46-1/2"	52-1/2"	40-5/8"	48-5/8"	56-5/8"
		Ieff(in4)	947	1170	1450	1620	1850	2000	2160	2500	3160
		Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X	(3)X
	34	Wt(plf)	9.9	10.9	12.7	14.3	16.9	18.9	21	24	27
		W360(plf)	166	196	235	261	301	331	355	412	533
		N-ds	34-3/8"	34-1/2"	34-1/2"	36-1/2"	44-1/2"	46-1/2"	38-5/8"	42-5/8"	42-3/4"
		Ieff(in4)	1060	1250	1500	1670	1930	2120	2270	2630	3410
		Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X
	36	Wt(plf)	9.1	10.8	12.4	14.9	16.0	18.9	20	23	26
		W360(plf)	170	216	249	299	317	369	396	438	585
		N-ds	34-3/8"	40-3/8"	34-1/2"	36-1/2"	40-1/2"	46-1/2"	38-5/8"	40-5/8"	52-5/8"
		Ieff(in4)	1090	1380	1590	1910	2020	2360	2530	2800	3740
		Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X
	38	Wt(plf)	9.3	10.5	11.7	13.8	16.2	18.0	19.7	22	26
		W360(plf)	189	224	259	305	351	382	413	463	617
		N-ds	34-3/8"	38-3/8"	46-3/8"	34-1/2"	40-1/2"	42-1/2"	34-5/8"	36-5/8"	38-3/4"
		Ieff(in4)	1210	1430	1660	1950	2240	2440	2640	2960	3950
		Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X
	40	Wt(plf)	9.0	10.4	12.7	14.0	15.6	18.3	20.0	22	25
		W360(plf)	193	236	293	327	367	424	465	516	669
		N-ds	34-3/8"	36-3/8"	46-3/8"	34-1/2"	34-1/2"	34-5/8"	34-5/8"	38-5/8"	48-5/8"
		Ieff(in4)	1240	1510	1870	2090	2350	2710	2970	3300	4270
		Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X	(3)X
	44	Wt(plf)	8.8	10.7	11.8	14.2	16.2	17.8	18.9	20	23
		W360(plf)	217	271	320	377	427	481	512	565	712
		N-ds	34-3/8"	34-3/8"	40-3/8"	34-1/2"	34-1/2"	38-1/2"	42-1/2"	46-1/2"	40-5/8"
		Ieff(in4)	1390	1730	2050	2410	2730	3070	3270	3610	4550
		Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X	(3)X	(3)X	(3)X
	48	Wt(plf)	9.4	11.4	13.8	14.8	15.9	18.1	19.6	21	26
		W360(plf)	240	300	366	425	473	537	579	640	860
		N-ds	34-3/8"	34-3/8"	34-1/2"	34-1/2"	34-1/2"	34-1/2"	38-1/2"	34-3/4"	34-3/4"
		Ieff(in4)	1540	1920	2340	2720	3020	3440	3700	4090	5500
		Bridging	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X
	52	Wt(plf)	9.5	10.3	11.5	13.1	15.1	17.2	17.8	18.7	22
		W360(plf)	252	314	384	435	509	578	606	660	868
		N-ds	34-3/8"	34-3/8"	36-3/8"	34-1/2"	34-1/2"	34-1/2"	34-1/2"	38-1/2"	38-5/8"
		Ieff(in4)	1610	2010	2450	2780	3260	3690	3870	4220	5550
		Bridging	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LRFD LIGHT WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
BEARING HEIGHT	2 1/2"	5"	7 1/2"									
Concrete Slab Parameters												
Light Weight Concrete (110 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.5	3.5	3.5
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
36	41	45	50	52	60	63	71	79	89	93		
567	637	696	802	825	943	979	1095	1270	1428	1515		
60-3/4"	66-3/4"	74-3/4"	78-3/4"	78-3/4"	100-3/4"	100-3/4"	116-3/4"	116-3/4"	142-3/4"	142-3/4"		
3620	4070	4450	5130	5270	6030	6260	7000	8120	9130	9690		
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X		
32	36	41	45	52	56	62	70	74	80	92	93	
576	653	732	827	933	986	1108	1240	1347	1457	1711	1733	
66-5/8"	60-3/4"	66-3/4"	66-3/4"	78-3/4"	86-3/4"	100-3/4"	116-3/4"	102-3/4"	116-3/4"	142-3/4"	142-3/4"	
3680	4170	4680	5290	5960	6310	7080	7920	8610	9310	10940	11080	
(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	
33	38	42	44	48	54	63	66	75	80	93	96	97
656	747	836	886	965	1076	1243	1297	1508	1632	1916	1974	1997
52-3/4"	58-3/4"	66-3/4"	60-3/4"	66-3/4"	78-3/4"	100-3/4"	100-3/4"	102-3/4"	116-3/4"	142-3/4"	142-3/4"	142-3/4"
4200	4770	5340	5660	6170	6880	7950	8290	9640	10430	12250	12620	12760
(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X
32	36	38	43	48	54	58	66	74	75	84	93	97
719	814	844	973	1074	1197	1276	1445	1676	1701	1913	2156	2219
66-5/8"	60-3/4"	58-3/4"	60-3/4"	66-3/4"	78-3/4"	86-3/4"	100-3/4"	102-3/4"	102-3/4"	116-3/4"	142-3/4"	142-3/4"
4590	5210	5390	6220	6860	7650	8160	9230	10710	10880	12230	13780	14190
(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X
31	35	39	44	46	51	57	66	71	76	85	88	97
739	836	948	1088	1115	1218	1369	1597	1721	1878	2110	2168	2449
46-3/4"	50-3/4"	58-3/4"	60-3/4"	60-3/4"	66-3/4"	78-3/4"	100-3/4"	88-3/4"	102-3/4"	116-3/4"	116-3/4"	142-3/4"
4730	5340	6060	6960	7130	7780	8750	10210	11000	12000	13490	13860	15650
(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X
29	33	38	40	44	50	57	61	67	71	80	84	88
756	901	1024	1085	1207	1337	1503	1612	1840	1914	2165	2340	2402
52-5/8"	52-3/4"	58-3/4"	52-3/4"	60-3/4"	66-3/4"	78-3/4"	86-3/4"	88-3/4"	88-3/4"	102-3/4"	116-3/4"	116-3/4"
4840	5760	6540	6930	7720	8550	9610	10310	11760	12230	13840	14960	15350
(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X
27	31	35	40	41	46	51	59	62	71	72	80	86
841	975	1102	1283	1312	1463	1612	1851	1998	2262	2321	2585	2792
48-5/8"	46-3/4"	50-3/4"	52-3/4"	52-3/4"	60-3/4"	66-3/4"	78-3/4"	74-3/4"	88-3/4"	88-3/4"	102-3/4"	116-3/4"
5380	6230	7050	8200	8390	9350	10300	11830	12770	14460	14840	16520	17840
(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X
28	32	35	38	44	46	52	56	63	66	74	78	83
950	1106	1198	1364	1566	1599	1812	1968	2291	2401	2746	2814	3070
34-3/4"	40-3/4"	44-3/4"	46-3/4"	52-3/4"	52-3/4"	60-3/4"	66-3/4"	68-3/4"	74-3/4"	88-3/4"	88-3/4"	102-3/4"
6070	7070	7660	8720	10010	10220	11580	12580	14650	15350	17550	17990	19620
(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X
25	29	32	37	39	43	49	56	57	65	69	77	78
982	1145	1258	1535	1569	1774	1996	2246	2330	2639	2796	3155	3181
34-3/4"	38-3/4"	40-3/4"	46-3/4"	46-3/4"	52-3/4"	60-3/4"	66-3/4"	60-3/4"	68-3/4"	74-3/4"	88-3/4"	88-3/4"
6280	7320	8040	9810	10030	11340	12760	14360	14890	16870	17870	20170	20330
(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X

DESIGN GUIDE LRFD LIGHT WEIGHT TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LRFD LIGHT WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		BEARING HEIGHT									
		2 1/2"	5"	7 1/2"							
		Concrete Slab Parameters									
		Light Weight Concrete (110 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1	1	1.5	
		tc (in.)	2	2	2	2	2	2	2	3.25	
		Js (ft.)	3	3	3	3	3	3	3.5	4	
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
70	32	Wt(plf)	11.2	13.3	15.5	17.8	19.3	22	25	27	31
		W360(plf)	134	172	203	230	247	277	299	329	437
		N-ds	38-3/8"	36-1/2"	40-1/2"	48-1/2"	52-1/2"	44-5/8"	46-5/8"	52-5/8"	52-3/4"
		Ieff(in4)	1070	1370	1620	1840	1970	2210	2390	2620	3490
		Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X
	34	Wt(plf)	10.7	12.6	15.0	16.9	18.4	22	24	27	32
		W360(plf)	143	182	215	242	262	298	320	370	499
		N-ds	36-3/8"	48-3/8"	36-1/2"	44-1/2"	46-1/2"	40-5/8"	42-5/8"	52-5/8"	66-5/8"
		Ieff(in4)	1140	1460	1720	1930	2090	2380	2550	2950	3980
		Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X
	36	Wt(plf)	10.8	12.4	14.3	16.0	18.4	20	23	26	31
		W360(plf)	159	193	228	255	292	315	352	395	547
N-ds		36-3/8"	46-3/8"	36-1/2"	40-1/2"	46-1/2"	52-1/2"	42-5/8"	48-5/8"	52-3/4"	
Ieff(in4)		1270	1540	1820	2030	2330	2520	2810	3150	4370	
Bridging		(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	
38	Wt(plf)	10.0	12.0	13.8	16.7	18.4	22	23	24	29	
	W360(plf)	165	206	240	289	313	366	383	416	557	
	N-ds	36-3/8"	42-3/8"	36-1/2"	38-1/2"	36-5/8"	38-5/8"	42-5/8"	44-5/8"	46-3/4"	
	Ieff(in4)	1320	1650	1910	2310	2500	2920	3060	3320	4450	
	Bridging	(5)X	(4)X	(4)X	(4)X	(4)X	(3)X	(3)X	(3)X	(3)X	
40	Wt(plf)	10.1	11.4	13.9	15.3	17.4	19.3	21	24	28	
	W360(plf)	182	214	264	294	334	363	394	458	582	
	N-ds	36-3/8"	36-1/2"	36-1/2"	36-1/2"	42-1/2"	46-1/2"	36-5/8"	44-5/8"	42-3/4"	
	Ieff(in4)	1450	1710	2110	2350	2670	2900	3150	3660	4650	
	Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X	(3)X	
44	Wt(plf)	9.6	11.0	13.1	14.8	16.6	18.6	21	24	26	
	W360(plf)	201	240	297	333	376	409	449	522	652	
	N-ds	36-3/8"	38-3/8"	48-3/8"	36-1/2"	38-1/2"	36-5/8"	36-5/8"	42-5/8"	38-3/4"	
	Ieff(in4)	1610	1920	2370	2660	3000	3270	3580	4170	5200	
	Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X	(3)X	
48	Wt(plf)	9.6	11.1	13.1	15.2	17.1	18.2	20.0	22	25	
	W360(plf)	220	272	323	380	429	457	521	584	720	
	N-ds	36-3/8"	36-3/8"	36-1/2"	36-1/2"	36-1/2"	38-1/2"	46-1/2"	38-5/8"	36-3/4"	
	Ieff(in4)	1760	2170	2580	3040	3430	3650	4160	4660	5740	
	Bridging	(4)X	(4)X	(4)X	(4)X	(3)X	(3)X	(3)X	(3)X	(3)X	
52	Wt(plf)	10.2	13.1	14.1	15.3	17.4	19.6	22	23	26	
	W360(plf)	243	309	365	420	476	543	594	657	804	
	N-ds	36-3/8"	36-3/8"	36-1/2"	36-1/2"	36-1/2"	38-1/2"	36-5/8"	36-5/8"	34-3/4"	
	Ieff(in4)	1940	2460	2910	3350	3800	4340	4740	5240	6420	
	Bridging	(4)X	(4)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	
56	Wt(plf)	12.2	12.8	14.0	15.4	16.6	17.8	18.8	21	25	
	W360(plf)	300	323	388	453	504	562	598	666	885	
	N-ds	36-3/8"	36-3/8"	38-3/8"	36-1/2"	36-1/2"	36-1/2"	38-1/2"	36-5/8"	34-3/4"	
	Ieff(in4)	2400	2580	3100	3620	4020	4490	4780	5310	7060	
	Bridging	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	

DESIGN GUIDE LRFD LIGHT WEIGHT TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LRFD LIGHT WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
BEARING HEIGHT		2 1/2"	5"	7 1/2"								
Concrete Slab Parameters												
Light Weight Concrete (110 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	2	3	3	3	3
3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.5	3.5
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
36	41	49	52	60	62	70	79	88	92			
515	579	683	740	846	870	976	1087	1273	1328			
60-3/4"	66-3/4"	84-3/4"	76-3/4"	98-3/4"	98-3/4"	114-3/4"	130-3/4"	140-3/4"	140-3/4"			
4110	4620	5450	5910	6750	6950	7790	8680	10170	10610			
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X			
36	42	47	52	57	63	71	80	81	94	97		
579	662	721	831	880	978	1097	1222	1292	1490	1567		
60-3/4"	66-3/4"	74-3/4"	76-3/4"	84-3/4"	98-3/4"	114-3/4"	130-3/4"	114-3/4"	140-3/4"	140-3/4"	140-3/4"	
4620	5280	5760	6630	7020	7810	8760	9750	10310	11900	12510		
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(3)X	(2)X	(2)X		
36	41	45	48	54	58	66	75	80	92	94		
645	724	794	854	953	1007	1142	1280	1438	1660	1716		
60-3/4"	66-3/4"	74-3/4"	66-3/4"	76-3/4"	84-3/4"	98-3/4"	114-3/4"	114-3/4"	140-3/4"	140-3/4"	140-3/4"	
5150	5780	6340	6820	7610	8040	9120	10220	11480	13250	13700		
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X		
33	38	43	47	52	54	65	71	75	84	93	97	
651	741	830	932	1038	1068	1265	1383	1493	1652	1897	1954	
52-3/4"	58-3/4"	66-3/4"	66-3/4"	76-3/4"	76-3/4"	98-3/4"	114-3/4"	100-3/4"	114-3/4"	140-3/4"	140-3/4"	140-3/4"
5200	5920	6630	7440	8290	8520	10100	11040	11920	13190	15140	15600	
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	
33	38	43	46	50	56	66	70	76	84	94	97	102
717	816	914	978	1069	1191	1393	1453	1641	1816	2084	2148	2222
52-3/4"	58-3/4"	66-3/4"	60-3/4"	66-3/4"	76-3/4"	98-3/4"	98-3/4"	100-3/4"	114-3/4"	140-3/4"	140-3/4"	140-3/4"
5720	6510	7290	7810	8540	9510	11120	11600	13100	14500	16640	17150	17740
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X
31	35	40	45	50	52	59	67	71	80	85	89	102
781	883	1003	1148	1273	1286	1478	1690	1813	2021	2221	2283	2640
46-3/4"	50-3/4"	58-3/4"	60-3/4"	66-3/4"	66-3/4"	76-3/4"	98-3/4"	86-3/4"	100-3/4"	114-3/4"	114-3/4"	140-3/4"
6230	7050	8000	9160	10160	10270	11800	13490	14470	16130	17730	18220	21070
(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X
30	35	37	42	46	51	57	61	71	72	81	86	89
862	1031	1062	1230	1372	1501	1687	1753	2112	2140	2419	2614	2685
42-3/4"	50-3/4"	50-3/4"	52-3/4"	60-3/4"	66-3/4"	76-3/4"	76-3/4"	86-3/4"	86-3/4"	100-3/4"	114-3/4"	114-3/4"
6880	8230	8480	9820	10950	11980	13470	14000	16860	17080	19310	20870	21430
(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X
31	35	38	44	46	52	55	63	64	75	78	83	88
956	1108	1234	1451	1483	1668	1815	2060	2140	2503	2604	2842	3073
38-3/4"	44-3/4"	50-3/4"	52-3/4"	52-3/4"	60-3/4"	66-3/4"	76-3/4"	68-3/4"	86-3/4"	86-3/4"	100-3/4"	114-3/4"
7630	8850	9850	11580	11840	13310	14490	16450	17080	19990	20790	22690	24530
(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X
28	32	35	39	44	46	52	58	66	69	77	79	85
990	1153	1254	1441	1630	1669	1876	2082	2415	2531	2893	2920	3235
36-3/4"	40-3/4"	44-3/4"	46-3/4"	52-3/4"	52-3/4"	60-3/4"	66-3/4"	68-3/4"	72-3/4"	86-3/4"	86-3/4"	100-3/4"
7900	9200	10010	11500	13010	13320	14970	16620	19280	20210	23100	23310	25830
(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X

DESIGN GUIDE LRFD
LIGHT WEIGHT TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LRFD LIGHT WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

DESIGN GUIDE LRFD LIGHT WEIGHT TABLES

Based on a 50 ksi Maximum Yield Strength											
		BEARING HEIGHT									
		2 1/2"	5"	7 1/2"							
		Concrete Slab Parameters									
		Light Weight Concrete (110 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1	1.5	1.5	1.5
		tc (in.)	2	2	2	2	2	2	3.25	3.25	3.25
		Js (ft.)	3	3	3	3	3	3	3	3.5	4
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
75	34	Wt(plf)	11.6	14.3	16.0	18.6	22	25	26	30	35
		W360(plf)	131	168	188	217	245	278	323	383	443
		N-ds	40-3/8"	38-1/2"	38-1/2"	46-1/2"	40-5/8"	48-5/8"	54-5/8"	64-5/8"	76-5/8"
		Ieff(in4)	1280	1650	1840	2130	2410	2730	3170	3760	4350
		Bridging	(5)X	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	(3)X
	38	Wt(plf)	11.4	13.2	15.0	16.9	20.0	23	24	26	32
		W360(plf)	152	186	218	245	286	309	377	416	503
		N-ds	38-3/8"	38-1/2"	38-1/2"	44-1/2"	52-1/2"	40-5/8"	50-5/8"	52-5/8"	66-5/8"
		Ieff(in4)	1490	1830	2140	2400	2800	3030	3700	4090	4940
		Bridging	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X	(3)X
	40	Wt(plf)	11.2	13.3	15.3	17.1	19.3	22	25	27	33
		W360(plf)	159	203	240	270	297	337	415	459	554
		N-ds	38-3/8"	48-3/8"	38-1/2"	44-1/2"	46-1/2"	40-5/8"	50-5/8"	52-5/8"	66-5/8"
		Ieff(in4)	1560	1990	2360	2650	2920	3310	4080	4500	5440
		Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X
	42	Wt(plf)	11.1	12.6	14.6	16.4	19.4	22	23	25	30
		W360(plf)	174	212	250	282	330	358	432	474	558
		N-ds	38-3/8"	46-3/8"	38-1/2"	38-1/2"	38-5/8"	38-5/8"	46-5/8"	48-5/8"	56-5/8"
		Ieff(in4)	1710	2080	2450	2770	3240	3520	4240	4650	5480
		Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X
	44	Wt(plf)	10.7	13.2	15.6	17.8	18.8	22	23	27	30
		W360(plf)	180	228	268	319	340	396	453	530	608
		N-ds	38-3/8"	38-1/2"	38-1/2"	38-1/2"	42-1/2"	38-5/8"	40-5/8"	48-5/8"	56-5/8"
		Ieff(in4)	1760	2240	2630	3130	3330	3890	4450	5210	5970
		Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X	(3)X
	48	Wt(plf)	10.5	12.1	13.5	15.7	18.5	20	23	25	29
		W360(plf)	196	249	286	338	390	427	525	573	676
		N-ds	38-3/8"	40-3/8"	48-3/8"	38-1/2"	42-1/2"	38-5/8"	42-5/8"	44-5/8"	52-5/8"
Ieff(in4)		1920	2450	2800	3320	3830	4200	5150	5630	6640	
Bridging		(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X	(3)X	(3)X	
52	Wt(plf)	10.2	11.6	14.0	16.8	18.2	19.2	21	23	27	
	W360(plf)	211	270	323	389	435	462	566	627	733	
	N-ds	38-3/8"	38-3/8"	38-1/2"	38-1/2"	38-1/2"	42-1/2"	38-5/8"	40-5/8"	48-5/8"	
	Ieff(in4)	2070	2650	3170	3820	4270	4540	5550	6160	7190	
	Bridging	(4)X	(4)X	(4)X	(4)X	(3)X	(3)X	(3)X	(3)X	(3)X	
56	Wt(plf)	12.2	13.5	14.8	17.0	19.0	21	23	24	29	
	W360(plf)	248	306	360	424	479	524	616	682	811	
	N-ds	38-3/8"	38-3/8"	38-1/2"	38-1/2"	38-1/2"	38-1/2"	34-5/8"	38-5/8"	34-3/4"	
	Ieff(in4)	2440	3010	3530	4160	4710	5140	6050	6690	7960	
	Bridging	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	
60	Wt(plf)	12.4	13.3	14.6	16.0	17.2	18.8	21	23	26	
	W360(plf)	280	326	387	445	496	558	667	746	836	
	N-ds	38-3/8"	38-3/8"	40-3/8"	38-1/2"	38-1/2"	38-1/2"	34-5/8"	36-5/8"	40-5/8"	
	Ieff(in4)	2750	3200	3800	4370	4870	5480	6550	7320	8210	
	Bridging	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LRFD LIGHT WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
BEARING HEIGHT		2 1/2"	5"	7 1/2"								
Concrete Slab Parameters												
Light Weight Concrete (110 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	2	3	3	3	3
3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.5	3.5
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
40	45	50	59	61	67	75	88	92				
520	570	635	750	775	852	949	1101	1194				
66-3/4"	74-3/4"	84-3/4"	96-3/4"	96-3/4"	112-3/4"	126-3/4"	156-3/4"	138-3/4"				
5110	5600	6230	7370	7610	8360	9320	10810	11720				
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X				
38	42	47	52	57	63	71	80	92	93			
595	668	728	838	888	988	1108	1234	1475	1500			
58-3/4"	66-3/4"	74-3/4"	74-3/4"	82-3/4"	96-3/4"	112-3/4"	126-3/4"	138-3/4"	138-3/4"			
5850	6550	7150	8220	8720	9700	10880	12120	14480	14730			
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X			
38	43	48	54	57	66	75	81	85	97	102		
656	736	815	938	964	1115	1253	1361	1463	1680	1774		
58-3/4"	66-3/4"	74-3/4"	74-3/4"	74-3/4"	96-3/4"	112-3/4"	126-3/4"	110-3/4"	138-3/4"	138-3/4"		
6440	7230	8000	9210	9460	10950	12310	13370	14360	16490	17420		
(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X		
36	42	44	49	54	59	67	75	84	93	97		
705	807	830	933	1041	1101	1250	1402	1602	1809	1900		
60-3/4"	66-3/4"	66-3/4"	66-3/4"	74-3/4"	82-3/4"	96-3/4"	112-3/4"	110-3/4"	138-3/4"	138-3/4"		
6920	7920	8150	9160	10230	10810	12270	13760	15730	17760	18660		
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X		
35	40	44	48	54	56	66	75	76	84	94	97	
714	811	905	1017	1135	1164	1363	1529	1601	1772	2034	2096	
50-3/4"	58-3/4"	66-3/4"	66-3/4"	74-3/4"	74-3/4"	96-3/4"	112-3/4"	98-3/4"	110-3/4"	138-3/4"	138-3/4"	
7010	7970	8890	9990	11150	11430	13380	15010	15720	17400	19970	20580	
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	
35	40	42	47	52	57	63	72	80	86	89	102	104
837	951	977	1119	1224	1364	1470	1668	1913	2073	2167	2508	2536
50-3/4"	58-3/4"	58-3/4"	60-3/4"	66-3/4"	74-3/4"	82-3/4"	96-3/4"	98-3/4"	110-3/4"	110-3/4"	138-3/4"	138-3/4"
8220	9340	9590	10980	12020	13400	14430	16380	18790	20360	21280	24620	24900
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X
32	36	40	46	48	53	60	71	72	81	88	89	103
865	979	1112	1288	1322	1445	1639	1925	2003	2234	2493	2521	2917
46-3/4"	50-3/4"	58-3/4"	60-3/4"	60-3/4"	66-3/4"	74-3/4"	96-3/4"	84-3/4"	98-3/4"	110-3/4"	110-3/4"	138-3/4"
8490	9610	10920	12650	12980	14190	16100	18900	19670	21930	24480	24750	28650
(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X
33	38	40	46	52	53	63	64	75	78	83	89	94
960	1145	1174	1379	1552	1566	1907	1936	2320	2385	2641	2857	2948
40-3/4"	50-3/4"	50-3/4"	52-3/4"	60-3/4"	60-3/4"	74-3/4"	74-3/4"	84-3/4"	84-3/4"	98-3/4"	110-3/4"	110-3/4"
9420	11250	11530	13540	15240	15380	18720	19010	22780	23420	25930	28050	28950
(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X
30	34	38	44	46	52	57	66	69	78	79	86	95
977	1137	1284	1504	1542	1720	1914	2172	2330	2631	2693	2985	3300
38-3/4"	44-3/4"	50-3/4"	52-3/4"	52-3/4"	60-3/4"	66-3/4"	74-3/4"	72-3/4"	84-3/4"	84-3/4"	98-3/4"	110-3/4"
9590	11160	12610	14770	15140	16890	18790	21330	22870	25840	26450	29320	32410
(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X

DESIGN GUIDE LRFD
LIGHT WEIGHT TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LRFD LIGHT WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

DESIGN GUIDE LRFD LIGHT WEIGHT TABLES

Based on a 50 ksi Maximum Yield Strength											
		BEARING HEIGHT									
		2 1/2"	5"	7 1/2"							
		Concrete Slab Parameters									
		Light Weight Concrete (110 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1.5	1.5	1.5	1.5
		tc (in.)	2	2	2	2	2	3.25	3.25	3.25	3.25
		Js (ft.)	3	3	3	3	3	3	3	3.5	4
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
80	38	Wt(plf)	12.6	14.6	17.4	20	22	24	28	31	36
		W360(plf)	141	172	207	236	249	308	351	398	462
		N-ds	42-3/8"	40-1/2"	42-1/2"	52-1/2"	40-5/8"	48-5/8"	56-5/8"	52-3/4"	60-3/4"
		Ieff(in4)	1680	2050	2470	2810	2970	3670	4190	4750	5500
		Bridging	(5)X	(5)X	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X
	40	Wt(plf)	12.4	14.2	16.3	19.6	23	24	26	29	36
		W360(plf)	149	180	213	251	286	338	364	405	510
		N-ds	40-3/8"	40-1/2"	40-1/2"	40-5/8"	42-5/8"	44-5/8"	54-5/8"	46-3/4"	60-3/4"
		Ieff(in4)	1770	2140	2530	2990	3400	4030	4330	4830	6070
		Bridging	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X	(4)X
	42	Wt(plf)	12.3	14.3	16.4	18.7	21	23	27	29	34
		W360(plf)	162	197	234	266	290	353	404	444	512
N-ds		40-3/8"	40-1/2"	40-1/2"	46-1/2"	40-5/8"	44-5/8"	52-5/8"	46-3/4"	52-3/4"	
Ieff(in4)		1930	2350	2780	3170	3460	4210	4820	5300	6100	
Bridging		(5)X	(5)X	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X	(3)X	
44	Wt(plf)	11.6	13.3	16.0	19.0	21	22	25	27	32	
	W360(plf)	166	203	244	284	321	382	411	454	549	
	N-ds	40-3/8"	40-1/2"	40-1/2"	42-1/2"	52-1/2"	62-1/2"	50-5/8"	52-5/8"	66-5/8"	
	Ieff(in4)	1980	2420	2900	3380	3830	4560	4900	5410	6550	
	Bridging	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X	(3)X	
46	Wt(plf)	11.4	13.4	15.4	17.3	19.5	22	25	28	34	
	W360(plf)	173	221	259	292	321	399	447	500	607	
	N-ds	40-3/8"	40-1/2"	40-1/2"	44-1/2"	46-1/2"	40-5/8"	50-5/8"	42-3/4"	52-3/4"	
	Ieff(in4)	2060	2640	3090	3480	3830	4750	5320	5960	7240	
	Bridging	(5)X	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	(3)X	
48	Wt(plf)	11.4	14.1	16.3	17.9	20.0	22	25	29	33	
	W360(plf)	187	234	277	312	356	436	471	550	657	
	N-ds	40-3/8"	40-1/2"	40-1/2"	40-1/2"	46-1/2"	42-5/8"	36-3/4"	38-3/4"	52-3/4"	
	Ieff(in4)	2230	2780	3300	3720	4250	5200	5610	6560	7830	
	Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X	(3)X	
52	Wt(plf)	12.7	14.3	15.8	18.6	22	23	25	27	32	
	W360(plf)	210	262	304	349	407	488	524	574	709	
	N-ds	40-3/8"	42-3/8"	40-1/2"	40-1/2"	42-1/2"	38-5/8"	40-5/8"	36-3/4"	44-3/4"	
	Ieff(in4)	2500	3130	3620	4160	4850	5820	6240	6840	8450	
	Bridging	(4)X	(4)X	(4)X	(4)X	(3)X	(3)X	(3)X	(3)X	(3)X	
56	Wt(plf)	12.6	14.2	15.6	17.6	18.4	20	23	25	30	
	W360(plf)	222	286	330	389	414	498	575	637	753	
	N-ds	40-3/8"	40-3/8"	40-1/2"	40-1/2"	40-1/2"	34-5/8"	42-5/8"	36-3/4"	42-3/4"	
	Ieff(in4)	2650	3410	3930	4640	4940	5930	6850	7590	8970	
	Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X	
60	Wt(plf)	12.5	13.9	16.0	18.4	21	22	24	27	32	
	W360(plf)	234	303	359	428	495	581	629	699	822	
	N-ds	40-3/8"	40-3/8"	40-1/2"	40-1/2"	40-1/2"	34-5/8"	38-5/8"	34-3/4"	38-3/4"	
	Ieff(in4)	2790	3610	4280	5090	5900	6920	7500	8330	9800	
	Bridging	(4)X	(4)X	(4)X	(4)X	(3)X	(3)X	(3)X	(3)X	(3)X	



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LRFD LIGHT WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
BEARING HEIGHT	2 1/2"	5"	7 1/2"	Concrete Slab Parameters								
Light Weight Concrete (110 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
3.25	3.25	3.25	3.25	3.25	3.5	3.5	3.5	3.5	3.5	3.5	4	4
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
41	50	52	61	63	71	80	92	94				
532	639	661	783	806	912	1019	1179	1243				
66-3/4"	84-3/4"	84-3/4"	94-3/4"	94-3/4"	110-3/4"	124-3/4"	154-3/4"	136-3/4"				
6340	7620	7870	9330	9610	10870	12140	14050	14810				
(4)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X				
41	46	52	56	63	70	79	89	93				
587	645	729	799	890	1007	1124	1271	1370				
66-3/4"	74-3/4"	84-3/4"	80-3/4"	94-3/4"	110-3/4"	124-3/4"	154-3/4"	136-3/4"				
7000	7680	8690	9530	10600	12000	13400	15140	16320				
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X				
41	47	52	55	64	67	75	84	94	98			
644	718	801	852	977	1031	1159	1287	1501	1552			
66-3/4"	74-3/4"	84-3/4"	74-3/4"	94-3/4"	94-3/4"	110-3/4"	124-3/4"	136-3/4"	136-3/4"			
7680	8550	9550	10150	11640	12290	13810	15330	17890	18500			
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X			
38	43	49	54	58	66	75	80	93	97			
650	729	809	930	985	1126	1266	1375	1637	1693			
58-3/4"	66-3/4"	74-3/4"	74-3/4"	80-3/4"	94-3/4"	110-3/4"	124-3/4"	136-3/4"	136-3/4"			
7750	8690	9640	11080	11740	13420	15090	16380	19510	20180			
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X			
38	43	49	55	57	67	75	81	86	97	103		
707	793	879	1011	1038	1224	1376	1494	1598	1838	1906		
58-3/4"	66-3/4"	74-3/4"	74-3/4"	74-3/4"	94-3/4"	110-3/4"	124-3/4"	110-3/4"	136-3/4"	136-3/4"		
8420	9450	10480	12040	12370	14590	16400	17810	19050	21910	22710		
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X		
38	43	45	51	56	61	67	76	84	94	97		
765	858	883	1007	1123	1218	1352	1517	1727	1953	2016		
58-3/4"	66-3/4"	66-3/4"	66-3/4"	74-3/4"	80-3/4"	94-3/4"	110-3/4"	110-3/4"	136-3/4"	136-3/4"		
9120	10220	10520	12000	13380	14520	16110	18080	20590	23270	24020		
(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X		
38	42	47	52	58	59	69	78	82	87	97	102	103
828	939	1051	1181	1328	1363	1604	1793	1895	2056	2327	2478	2503
50-3/4"	58-3/4"	66-3/4"	66-3/4"	74-3/4"	74-3/4"	94-3/4"	110-3/4"	96-3/4"	110-3/4"	136-3/4"	136-3/4"	136-3/4"
9860	11190	12530	14070	15830	16250	19110	21370	22590	24500	27730	29530	29830
(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X
36	40	42	48	54	60	63	72	81	85	90	103	105
918	1044	1072	1244	1361	1554	1638	1860	2125	2188	2370	2818	2846
50-3/4"	58-3/4"	58-3/4"	60-3/4"	66-3/4"	74-3/4"	80-3/4"	94-3/4"	96-3/4"	96-3/4"	110-3/4"	136-3/4"	136-3/4"
10940	12440	12780	14830	16220	18520	19520	22170	25330	26070	28240	33580	33920
(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X
36	40	45	52	53	56	64	70	78	83	85	93	103
969	1094	1243	1449	1463	1604	1823	1957	2250	2460	2488	2818	3195
44-3/4"	50-3/4"	58-3/4"	60-3/4"	60-3/4"	66-3/4"	74-3/4"	80-3/4"	82-3/4"	96-3/4"	96-3/4"	110-3/4"	136-3/4"
11550	13040	14810	17270	17440	19110	21730	23320	26810	29320	29650	33580	38070
(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X

DESIGN GUIDE LRFD
LIGHT WEIGHT TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LRFD LIGHT WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

DESIGN GUIDE LRFD LIGHT WEIGHT TABLES

Based on a 50 ksi Maximum Yield Strength											
		BEARING HEIGHT									
		2 1/2"	5"	7 1/2"							
		Concrete Slab Parameters									
		Light Weight Concrete (110 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1.5	1.5	1.5	1.5
		tc (in.)	2	2	2	2	2	3.25	3.25	3.25	3.25
		Js (ft.)	3	3	3	3	3	3	3	3.5	4
Joist Span	Joist Depth	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
(ft.)	(in.)	TL	300	400	500	600	700	800	900	1000	1200
90	44	Wt(plf)	13.9	16.4	20	21	24	27	32	36	41
		W360(plf)	140	174	213	226	251	312	361	420	476
		N-ds	46-3/8"	46-1/2"	46-1/2"	46-5/8"	46-5/8"	52-5/8"	52-3/4"	60-3/4"	66-3/4"
		leff(in4)	2370	2950	3610	3840	4270	5300	6120	7130	8070
		Bridging	(5)X	(5)X	(5)X	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X
	46	Wt(plf)	13.9	16.3	18.3	21	24	26	29	33	41
		W360(plf)	152	189	214	248	272	335	363	419	518
		N-ds	46-3/8"	46-1/2"	46-1/2"	52-1/2"	60-1/2"	54-5/8"	46-3/4"	52-3/4"	66-3/4"
		leff(in4)	2590	3210	3640	4200	4610	5690	6150	7120	8790
		Bridging	(5)X	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X
	48	Wt(plf)	13.4	16.0	18.5	21	23	27	29	34	39
		W360(plf)	158	194	233	265	284	369	393	455	521
		N-ds	46-3/8"	46-1/2"	46-1/2"	46-5/8"	46-5/8"	52-5/8"	46-3/4"	52-3/4"	58-3/4"
		leff(in4)	2680	3300	3950	4500	4820	6260	6670	7720	8840
		Bridging	(5)X	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X
	50	Wt(plf)	13.0	15.4	18.0	20.0	23	25	28	33	38
		W360(plf)	163	209	239	274	311	376	404	492	563
		N-ds	46-3/8"	46-1/2"	46-1/2"	46-1/2"	46-5/8"	48-5/8"	42-3/4"	52-3/4"	58-3/4"
		leff(in4)	2760	3540	4060	4640	5280	6380	6850	8340	9550
		Bridging	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X
	52	Wt(plf)	13.2	15.0	17.2	19.9	22	25	28	31	38
		W360(plf)	175	213	253	291	313	399	435	486	606
		N-ds	46-3/8"	46-1/2"	46-1/2"	46-1/2"	52-1/2"	50-5/8"	42-3/4"	46-3/4"	58-3/4"
		leff(in4)	2980	3610	4280	4940	5320	6770	7370	8240	10280
		Bridging	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X	(4)X
	56	Wt(plf)	13.6	15.4	17.6	19.3	23	25	27	30	36
		W360(plf)	191	236	278	316	368	440	470	528	635
		N-ds	46-3/8"	48-3/8"	46-1/2"	46-1/2"	46-5/8"	44-5/8"	38-3/4"	42-3/4"	50-3/4"
		leff(in4)	3240	4000	4720	5350	6250	7460	7980	8960	10770
		Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X
	60	Wt(plf)	13.5	15.1	17.7	21	24	25	28	31	38
		W360(plf)	207	254	304	355	409	486	519	609	740
		N-ds	46-3/8"	46-3/8"	46-1/2"	46-1/2"	46-1/2"	40-5/8"	36-3/4"	40-3/4"	50-3/4"
		leff(in4)	3520	4310	5150	6020	6940	8240	8810	10330	12560
		Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X	(3)X
	66	Wt(plf)	13.4	16.9	19.3	21	25	28	30	34	37
		W360(plf)	232	298	351	395	464	557	605	701	809
		N-ds	46-3/8"	46-3/8"	46-1/2"	46-1/2"	46-1/2"	30-3/4"	32-3/4"	38-3/4"	44-3/4"
		leff(in4)	3940	5060	5960	6700	7880	9460	10260	11900	13730
		Bridging	(4)X	(4)X	(4)X	(4)X	(3)X	(3)X	(3)X	(3)X	(3)X
	72	Wt(plf)	16.9	18.0	19.4	21	23	24	25	29	33
		W360(plf)	279	334	387	434	493	574	622	730	853
		N-ds	46-3/8"	46-3/8"	48-3/8"	46-1/2"	46-1/2"	34-5/8"	38-5/8"	36-3/4"	40-3/4"
		leff(in4)	4740	5670	6570	7370	8360	9740	10550	12390	14480
Bridging		(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X	



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LRFD LIGHT WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
BEARING HEIGHT			2 1/2"	5"	7 1/2"							
Concrete Slab Parameters												
Light Weight Concrete (110 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
3.25	3.25	3.25	3.25	3.25	3.5	3.5	3.5	3.5	3.5	3.5	4	4
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
47	53	63	71	72	80	94						
544	609	710	815	827	932	1082						
74-3/4"	84-3/4"	102-3/4"	106-3/4"	106-3/4"	120-3/4"	150-3/4"						
9240	10330	12050	13830	14040	15810	18350						
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X						
46	52	57	63	71	80	92	94					
585	663	707	811	901	1015	1178	1204					
74-3/4"	84-3/4"	88-3/4"	90-3/4"	106-3/4"	120-3/4"	150-3/4"	150-3/4"					
9930	11250	11990	13760	15290	17230	20000	20430					
(4)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X					
45	53	59	66	72	76	93	97					
607	719	778	901	978	1035	1279	1329					
66-3/4"	84-3/4"	88-3/4"	90-3/4"	106-3/4"	106-3/4"	150-3/4"	150-3/4"					
10290	12210	13200	15290	16590	17560	21700	22540					
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X					
43	49	55	63	67	75	81	94	98				
647	719	805	951	988	1119	1218	1412	1501				
66-3/4"	74-3/4"	84-3/4"	90-3/4"	90-3/4"	106-3/4"	120-3/4"	150-3/4"	132-3/4"				
10980	12200	13650	16130	16760	18980	20670	23960	25470				
(4)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X				
43	49	55	62	67	76	85	95	98				
696	774	867	967	1063	1204	1341	1520	1614				
66-3/4"	74-3/4"	84-3/4"	80-3/4"	90-3/4"	106-3/4"	120-3/4"	150-3/4"	132-3/4"				
11820	13140	14710	16410	18040	20440	22750	25790	27390				
(4)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X				
41	46	51	58	63	72	77	86	97	103			
737	835	918	1051	1124	1287	1412	1568	1849	1921			
58-3/4"	66-3/4"	74-3/4"	74-3/4"	80-3/4"	90-3/4"	106-3/4"	120-3/4"	132-3/4"	132-3/4"			
12510	14180	15570	17830	19070	21840	23960	26610	31380	32590			
(4)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X			
43	48	52	59	60	71	75	81	89	98	103		
858	962	1055	1218	1232	1459	1519	1665	1876	2125	2204		
58-3/4"	66-3/4"	74-3/4"	74-3/4"	74-3/4"	90-3/4"	90-3/4"	106-3/4"	104-3/4"	132-3/4"	132-3/4"		
14550	16320	17910	20660	20910	24760	25770	28250	31830	36060	37400		
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X		
43	49	53	59	66	67	77	83	89	95	104	110	
943	1080	1195	1352	1521	1558	1825	2001	2112	2310	2624	2781	
50-3/4"	58-3/4"	66-3/4"	66-3/4"	74-3/4"	74-3/4"	90-3/4"	106-3/4"	92-3/4"	104-3/4"	132-3/4"	132-3/4"	
16010	18320	20280	22940	25810	26430	30960	33950	35830	39200	44520	47190	
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	(2)X	
40	45	47	52	58	62	69	78	86	91	97	107	114
1053	1194	1229	1400	1549	1727	1868	2116	2393	2475	2683	3141	3245
50-3/4"	58-3/4"	58-3/4"	60-3/4"	66-3/4"	74-3/4"	80-3/4"	90-3/4"	92-3/4"	92-3/4"	104-3/4"	132-3/4"	132-3/4"
17870	20270	20850	23760	26290	29300	31700	35900	40610	42000	45520	53300	55060
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X

DESIGN GUIDE LRFD
LIGHT WEIGHT TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LRFD LIGHT WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

DESIGN GUIDE LRFD LIGHT WEIGHT TABLES

Based on a 50 ksi Maximum Yield Strength											
		BEARING HEIGHT									
		2 1/2"	5"	7 1/2"							
		Concrete Slab Parameters									
		Light Weight Concrete (110 pcf) f'c = 5.0 ksi									
		hr (in.)	1	1	1	1	1	1.5	1.5	1.5	1.5
		tc (in.)	2	2	2	2	2.5	3.25	3.25	3.25	3.25
		Js (ft.)	3	3	3	3	3	3	3	3.5	4
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
100	50	Wt(plf)	15.6	18.7	22	25	27	33	34	37	46
		W360(plf)	148	178	218	240	275	358	358	403	480
		N-ds	52-3/8"	50-1/2"	52-1/2"	50-5/8"	44-3/4"	52-3/4"	52-3/4"	60-3/4"	74-3/4"
		Ieff(in4)	3420	4150	5070	5580	6400	8330	8330	9380	11180
		Bridging	(6)X	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X
	52	Wt(plf)	15.4	18.1	21	24	26	29	34	37	43
		W360(plf)	151	191	218	246	288	336	386	425	490
		N-ds	50-3/8"	50-1/2"	50-1/2"	56-1/2"	48-5/8"	46-3/4"	52-3/4"	60-3/4"	66-3/4"
		Ieff(in4)	3520	4440	5080	5740	6710	7820	8980	9880	11400
		Bridging	(6)X	(6)X	(6)X	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X
	54	Wt(plf)	15.2	17.2	21	25	27	30	34	38	44
		W360(plf)	162	191	238	277	306	367	405	466	533
N-ds		50-3/8"	50-1/2"	50-1/2"	56-1/2"	44-5/8"	56-5/8"	52-3/4"	58-3/4"	66-3/4"	
Ieff(in4)		3760	4450	5530	6440	7120	8540	9430	10840	12420	
Bridging		(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	
56	Wt(plf)	14.8	17.3	19.2	23	26	29	33	34	43	
	W360(plf)	164	205	232	271	319	373	427	448	564	
	N-ds	50-3/8"	50-1/2"	50-1/2"	52-1/2"	44-5/8"	52-5/8"	66-5/8"	52-3/4"	66-3/4"	
	Ieff(in4)	3830	4770	5410	6320	7420	8690	9930	10420	13130	
	Bridging	(5)X	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X	
58	Wt(plf)	14.5	17.3	19.4	22	25	28	32	35	41	
	W360(plf)	169	219	249	284	336	393	436	478	558	
	N-ds	50-3/8"	50-1/2"	50-1/2"	52-1/2"	44-5/8"	42-3/4"	46-3/4"	52-3/4"	58-3/4"	
	Ieff(in4)	3930	5100	5790	6610	7830	9140	10140	11140	12980	
	Bridging	(5)X	(5)X	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	
60	Wt(plf)	14.7	16.7	21	25	26	30	33	37	43	
	W360(plf)	180	221	276	322	355	431	463	528	610	
	N-ds	50-3/8"	50-1/2"	50-1/2"	52-1/2"	44-5/8"	42-3/4"	44-3/4"	50-3/4"	58-3/4"	
	Ieff(in4)	4190	5140	6430	7510	8270	10040	10770	12290	14190	
	Bridging	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X	
66	Wt(plf)	14.4	18.2	21	24	28	30	34	37	42	
	W360(plf)	205	258	313	361	415	471	537	589	727	
	N-ds	50-3/8"	52-3/8"	50-1/2"	50-1/2"	44-3/4"	34-3/4"	40-3/4"	44-3/4"	58-3/4"	
	Ieff(in4)	4770	6000	7300	8410	9670	10960	12490	13710	16930	
	Bridging	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X	(3)X	(3)X	(3)X	
72	Wt(plf)	17.2	19.2	21	24	25	27	29	32	39	
	W360(plf)	221	288	344	393	441	500	556	616	753	
	N-ds	50-3/8"	50-3/8"	50-1/2"	50-1/2"	46-1/2"	40-5/8"	48-5/8"	42-3/4"	50-3/4"	
	Ieff(in4)	5140	6710	8000	9140	10270	11630	12950	14340	17540	
	Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	
80	Wt(plf)	19.1	19.6	21	23	24	27	31	34	39	
	W360(plf)	336	336	369	443	491	566	652	717	845	
	N-ds	50-3/8"	50-3/8"	52-3/8"	50-1/2"	44-1/2"	34-3/4"	34-3/4"	38-3/4"	44-3/4"	
	Ieff(in4)	7820	7820	8580	10320	11420	13170	15190	16690	19660	
	Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X	



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LRFD LIGHT WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
BEARING HEIGHT		2 1/2"	5"	7 1/2"								
Concrete Slab Parameters												
Light Weight Concrete (110 pcf) f'c = 5.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
3.25	3.25	3.25	3.25	3.25	3.5	3.5	3.5	3.5	3.5	3.5	4	4
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
51	61	64	71	80	89							
551	644	667	765	846	966							
84-3/4"	102-3/4"	102-3/4"	102-3/4"	116-3/4"	146-3/4"							
12830	15000	15540	17800	19690	22480							
(4)X	(4)X	(4)X	(3)X	(3)X	(3)X							
53	57	66	71	80	93	95						
604	645	738	825	913	1093	1095						
84-3/4"	88-3/4"	102-3/4"	102-3/4"	116-3/4"	146-3/4"	146-3/4"						
14050	15020	17180	19200	21240	25440	25480						
(4)X	(4)X	(3)X	(3)X	(3)X	(3)X	(3)X						
49	55	63	71	80	81	94						
601	673	775	887	981	1013	1177						
74-3/4"	84-3/4"	102-3/4"	102-3/4"	116-3/4"	116-3/4"	146-3/4"						
13980	15670	18030	20640	22840	23580	27390						
(4)X	(4)X	(4)X	(3)X	(3)X	(3)X	(3)X						
48	55	64	67	76	81	94						
635	722	830	889	990	1085	1261						
74-3/4"	84-3/4"	102-3/4"	90-3/4"	102-3/4"	116-3/4"	146-3/4"						
14770	16800	19330	20680	23040	25270	29350						
(4)X	(4)X	(4)X	(3)X	(3)X	(3)X	(3)X						
49	56	62	68	76	85	95	102					
688	771	841	950	1058	1186	1347	1431					
74-3/4"	84-3/4"	88-3/4"	90-3/4"	102-3/4"	116-3/4"	146-3/4"	146-3/4"					
16020	17950	19570	22100	24620	27610	31360	33310					
(4)X	(4)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X					
46	55	62	67	75	77	94	97					
690	822	896	1012	1127	1161	1435	1492					
66-3/4"	84-3/4"	88-3/4"	90-3/4"	102-3/4"	102-3/4"	146-3/4"	146-3/4"					
16050	19130	20860	23550	26240	27030	33410	34730					
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X					
49	55	60	66	74	79	87	97	102				
845	937	1035	1138	1279	1414	1566	1778	1887				
66-3/4"	74-3/4"	84-3/4"	80-3/4"	90-3/4"	102-3/4"	116-3/4"	146-3/4"	126-3/4"				
19680	21820	24090	26490	29780	32900	36440	41380	43920				
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X				
44	50	56	62	69	74	83	91	106	107			
871	991	1088	1254	1346	1503	1685	1862	2199	2252			
58-3/4"	66-3/4"	74-3/4"	74-3/4"	80-3/4"	90-3/4"	102-3/4"	116-3/4"	126-3/4"	126-3/4"			
20280	23060	25330	29180	31330	34980	39220	43340	51190	52420			
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X			
42	47	55	59	64	70	79	87	96	99	114	116	
959	1091	1247	1378	1516	1651	1873	2085	2350	2381	2834	2885	
50-3/4"	58-3/4"	66-3/4"	66-3/4"	74-3/4"	80-3/4"	90-3/4"	102-3/4"	100-3/4"	100-3/4"	126-3/4"	126-3/4"	
22330	25380	29040	32080	35300	38430	43590	48540	54690	55410	65970	67150	
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X	(2)X	(2)X	(2)X	

DESIGN GUIDE LRFD
LIGHT WEIGHT TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LRFD LIGHT WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

 DESIGN GUIDE LRFD
LIGHT WEIGHT TABLES

Based on a 50 ksi Maximum Yield Strength											
		BEARING HEIGHT									
		2 1/2"	5"	7 1/2"							
		Concrete Slab Parameters									
		Light Weight Concrete (110 pcf) f'c = 5.0 ksi									
		hr (in.)	1	1	1	1	1	1.5	1.5	1.5	1.5
		tc (in.)	2	2	2	2	2.5	3.25	3.25	3.25	3.25
		Js (ft.)	3	3	3	3	3	3	3.5	4	4
Joist Span	Joist Depth	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
(ft.)	(in.)	TL	300	400	500	600	700	800	900	1000	1200
110	56	Wt(plf)	17.2	20	22	27	30	33	37	42	48
		W360(plf)	151	182	210	247	283	330	379	429	469
		N-ds	56-3/8"	56-1/2"	56-1/2"	56-5/8"	52-5/8"	66-5/8"	60-3/4"	66-3/4"	74-3/4"
		Ieff(in4)	4680	5650	6490	7670	8750	10230	11730	13280	14530
		Bridging	(5)X	(5)X	(5)X	(5)X	(5)X	(5)X	(5)X	(5)X	(4)X
	58	Wt(plf)	16.7	19.9	23	25	29	33	37	39	48
		W360(plf)	152	195	224	247	293	353	405	424	502
		N-ds	56-3/8"	56-1/2"	56-1/2"	60-1/2"	50-5/8"	66-5/8"	60-3/4"	58-3/4"	74-3/4"
		Ieff(in4)	4720	6050	6950	7660	9080	10950	12540	13140	15550
		Bridging	(5)X	(5)X	(5)X	(5)X	(5)X	(5)X	(5)X	(5)X	(4)X
	60	Wt(plf)	16.7	19.1	25	27	29	35	40	41	49
		W360(plf)	163	195	249	276	307	391	448	466	544
		N-ds	56-3/8"	56-1/2"	56-1/2"	60-1/2"	48-5/8"	50-3/4"	58-3/4"	58-3/4"	74-3/4"
		Ieff(in4)	5040	6050	7720	8550	9510	12100	13890	14430	16840
		Bridging	(5)X	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X
	62	Wt(plf)	16.8	19.1	21	24	29	31	35	39	45
		W360(plf)	173	208	239	271	327	369	420	481	537
		N-ds	56-3/8"	56-1/2"	56-1/2"	56-1/2"	48-5/8"	56-5/8"	52-3/4"	58-3/4"	66-3/4"
		Ieff(in4)	5370	6450	7410	8410	10130	11420	13010	14910	16640
		Bridging	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X	(4)X
	64	Wt(plf)	16.5	19.4	22	24	28	31	35	39	46
		W360(plf)	174	221	254	284	337	391	446	511	570
		N-ds	56-3/8"	56-1/2"	56-1/2"	56-1/2"	48-5/8"	56-5/8"	52-3/4"	58-3/4"	66-3/4"
		Ieff(in4)	5390	6850	7870	8810	10440	12120	13820	15830	17670
Bridging		(5)X	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X	
66	Wt(plf)	16.4	19.6	24	26	30	34	38	42	46	
	W360(plf)	184	224	280	315	358	435	495	565	613	
	N-ds	56-3/8"	56-1/2"	56-1/2"	56-1/2"	48-3/4"	44-3/4"	50-3/4"	58-3/4"	66-3/4"	
	Ieff(in4)	5710	6930	8660	9750	11100	13470	15330	17500	18980	
	Bridging	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	
72	Wt(plf)	18.1	20.0	25	29	32	35	37	41	49	
	W360(plf)	202	251	313	369	413	494	536	610	695	
	N-ds	56-3/8"	56-3/8"	56-1/2"	56-1/2"	48-3/4"	40-3/4"	44-3/4"	50-3/4"	58-3/4"	
	Ieff(in4)	6240	7760	9700	11420	12810	15300	16600	18890	21520	
	Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(3)X	
80	Wt(plf)	19.3	21	23	25	27	30	33	36	44	
	W360(plf)	261	287	346	399	445	523	579	636	790	
	N-ds	56-3/8"	56-3/8"	56-1/2"	56-1/2"	52-1/2"	48-5/8"	42-3/4"	44-3/4"	58-3/4"	
	Ieff(in4)	8080	8880	10720	12370	13770	16210	17940	19700	24480	
	Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	
88	Wt(plf)	25	25	27	29	31	33	35	38	42	
	W360(plf)	320	320	400	461	517	582	668	735	857	
	N-ds	56-3/8"	56-3/8"	56-1/2"	56-1/2"	48-1/2"	38-3/4"	38-3/4"	40-3/4"	50-3/4"	
	Ieff(in4)	9920	9920	12390	14290	16010	18040	20700	22770	26550	
	Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LRFD LIGHT WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
BEARING HEIGHT	2 1/2"	5"										
Concrete Slab Parameters												
Light Weight Concrete (110 pcf) f'c = 5.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
3.25	3.25	3.25	3.25	3.25	3.5	3.5	3.5	3.5	3.5	3.5	4	4
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
57	64	72	81	90	94							
565	631	705	803	900	953							
88-3/4"	102-3/4"	112-3/4"	112-3/4"	142-3/4"	142-3/4"							
17490	19560	21830	24870	27880	29520							
(4)X	(4)X	(4)X	(4)X	(4)X	(4)X							
55	65	72	81	94	95							
586	676	754	859	987	1019							
84-3/4"	102-3/4"	112-3/4"	112-3/4"	142-3/4"	142-3/4"							
18150	20940	23360	26610	30570	31580							
(4)X	(4)X	(4)X	(3)X	(3)X	(3)X							
55	64	71	76	81	94							
625	721	805	862	930	1088							
84-3/4"	102-3/4"	112-3/4"	100-3/4"	112-3/4"	142-3/4"							
19370	22350	24940	26710	28800	33700							
(4)X	(4)X	(3)X	(3)X	(3)X	(3)X							
55	60	68	76	82	94	98						
666	710	802	918	990	1158	1206						
84-3/4"	88-3/4"	102-3/4"	100-3/4"	112-3/4"	142-3/4"	142-3/4"						
20620	22010	24830	28430	30660	35870	37370						
(4)X	(4)X	(3)X	(3)X	(3)X	(3)X	(3)X						
56	61	68	77	86	96	99						
707	755	852	974	1075	1229	1281						
84-3/4"	88-3/4"	102-3/4"	100-3/4"	112-3/4"	142-3/4"	142-3/4"						
21900	23380	26380	30190	33290	38080	39680						
(4)X	(4)X	(3)X	(3)X	(3)X	(3)X	(3)X						
53	60	67	75	80	85	98						
700	791	902	1032	1069	1172	1357						
74-3/4"	84-3/4"	102-3/4"	100-3/4"	100-3/4"	112-3/4"	142-3/4"						
21700	24520	27960	31980	33110	36320	42040						
(4)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X						
55	63	69	74	83	84	102	105					
841	952	1021	1153	1275	1310	1630	1675					
74-3/4"	84-3/4"	88-3/4"	90-3/4"	100-3/4"	100-3/4"	142-3/4"	142-3/4"					
26060	29500	31630	35730	39510	40570	50490	51890					
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X					
50	56	63	70	75	84	92	107	108				
918	1010	1141	1253	1380	1556	1723	2004	2088				
66-3/4"	74-3/4"	84-3/4"	80-3/4"	90-3/4"	100-3/4"	112-3/4"	142-3/4"	122-3/4"				
28440	31300	35360	38820	42750	48200	53390	62100	64680				
(4)X	(4)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X				
49	56	59	68	70	79	88	97	107	115			
1006	1137	1235	1422	1491	1700	1897	2108	2427	2542			
58-3/4"	66-3/4"	74-3/4"	74-3/4"	80-3/4"	90-3/4"	100-3/4"	112-3/4"	122-3/4"	122-3/4"			
31170	35230	38250	44050	46190	52660	58760	65290	75190	78750			
(4)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X			

DESIGN GUIDE LRFD
LIGHT WEIGHT TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LRFD LIGHT WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		BEARING HEIGHT		2 1/2"	5"	7 1/2"					
		Concrete Slab Parameters									
		Light Weight Concrete (110 pcf) f'c = 5.0 ksi									
		hr (in.)	1	1	1	1	1.5	1.5	1.5	1.5	
		tc (in.)	2	2	2	2	3.25	3.25	3.25	3.25	
		Js (ft.)	3	3	3	3	3	3	3.5	4	
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	
120	72	Wt(plf)	19.5	22	27	31	34	39	43	44	
		W360(plf)	183	222	278	319	380	446	505	517	
		N-ds	60-3/8"	60-1/2"	60-1/2"	60-1/2"	40-3/4"	50-3/4"	58-3/4"	58-3/4"	74-3/4"
		Ieff(in4)	7380	8920	11180	12850	15290	17940	20300	20800	25290
		Bridging	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X	(4)X
	74	Wt(plf)	19.6	22	25	27	32	35	39	44	49
		W360(plf)	193	234	270	304	390	419	477	544	600
		N-ds	60-3/8"	60-1/2"	60-1/2"	60-1/2"	40-3/4"	44-3/4"	50-3/4"	58-3/4"	66-3/4"
		Ieff(in4)	7780	9390	10860	12220	15710	16840	19180	21890	24120
		Bridging	(5)X	(5)X	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X
	76	Wt(plf)	20.0	22	25	27	30	33	37	43	48
		W360(plf)	203	246	284	320	397	426	487	564	620
		N-ds	60-3/8"	60-1/2"	60-1/2"	60-1/2"	52-5/8"	46-3/4"	50-3/4"	58-3/4"	66-3/4"
		Ieff(in4)	8180	9880	11420	12850	15980	17120	19590	22700	24950
		Bridging	(5)X	(5)X	(5)X	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X
	78	Wt(plf)	19.2	24	29	33	34	40	46	49	53
		W360(plf)	194	264	314	360	418	483	555	628	684
		N-ds	60-3/8"	60-1/2"	60-1/2"	60-1/2"	40-3/4"	44-3/4"	50-3/4"	58-3/4"	66-3/4"
		Ieff(in4)	7810	10630	12630	14500	16810	19450	22330	25260	27520
		Bridging	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X
	80	Wt(plf)	19.2	23	28	32	34	38	42	49	53
		W360(plf)	204	255	326	358	438	495	565	658	717
		N-ds	60-3/8"	62-3/8"	60-1/2"	60-1/2"	40-3/4"	44-3/4"	50-3/4"	58-3/4"	66-3/4"
		Ieff(in4)	8190	10260	13120	14390	17610	19900	22730	26470	28840
		Bridging	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X
	82	Wt(plf)	19.3	22	25	30	33	37	41	43	53
		W360(plf)	213	264	306	366	453	489	583	604	750
		N-ds	60-3/8"	62-3/8"	60-1/2"	60-1/2"	40-3/4"	40-3/4"	50-3/4"	50-3/4"	66-3/4"
		Ieff(in4)	8580	10620	12330	14730	18240	19670	23450	24280	30170
		Bridging	(5)X	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X	(4)X
	84	Wt(plf)	20.0	22	24	31	33	36	39	42	47
		W360(plf)	223	276	316	387	447	505	554	622	696
		N-ds	60-3/8"	62-3/8"	60-1/2"	60-1/2"	40-3/4"	40-3/4"	44-3/4"	50-3/4"	58-3/4"
		Ieff(in4)	8960	11100	12720	15570	17960	20320	22280	25030	28000
		Bridging	(5)X	(5)X	(5)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X
	88	Wt(plf)	25	26	30	33	40	42	44	47	57
		W360(plf)	251	295	366	402	508	578	627	706	812
		N-ds	60-3/8"	60-3/8"	60-1/2"	60-1/2"	40-3/4"	40-3/4"	44-3/4"	50-3/4"	58-3/4"
		Ieff(in4)	10090	11850	14700	16160	20420	23260	25220	28400	32660
		Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X
	96	Wt(plf)	30	30	31	33	34	36	38	41	52
		W360(plf)	398	398	398	464	539	571	661	713	911
		N-ds	60-1/2"	60-1/2"	60-1/2"	60-1/2"	40-3/4"	40-3/4"	40-3/4"	44-3/4"	58-3/4"
		Ieff(in4)	16020	16020	16020	18670	21660	22970	26580	28690	36620
		Bridging	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X	(4)X

DESIGN GUIDE LRFD
LIGHT WEIGHT TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LRFD LIGHT WEIGHT TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
BEARING HEIGHT		2 1/2"	5"	7 1/2"								
Concrete Slab Parameters												
Light Weight Concrete (110 pcf) f'c = 5.0 ksi												
1.5	1.5	1.5	2	2	2	2	3	3	3	3	3	3
3.25	3.25	3.25	3.25	3.25	3.5	3.5	3.5	4	4	4	4	4
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
60	67	76	81	88	98							
712	813	909	966	1060	1215							
84-3/4"	102-3/4"	112-3/4"	100-3/4"	112-3/4"	136-3/4"							
28650	32700	36560	38860	42650	48860							
(4)X	(4)X	(4)X	(4)X	(3)X	(3)X							
58	63	72	78	87	98	104						
733	790	893	995	1098	1278	1338						
84-3/4"	88-3/4"	102-3/4"	100-3/4"	112-3/4"	136-3/4"	136-3/4"						
29470	31770	35930	40030	44160	51420	53800						
(4)X	(4)X	(4)X	(4)X	(4)X	(3)X	(3)X						
57	64	73	79	88	99	105						
758	830	939	1046	1154	1343	1405						
84-3/4"	88-3/4"	102-3/4"	100-3/4"	112-3/4"	136-3/4"	136-3/4"						
30510	33390	37760	42050	46400	54020	56530						
(4)X	(4)X	(4)X	(4)X	(4)X	(3)X	(3)X						
60	70	77	83	92	93	105						
777	890	1022	1139	1257	1292	1487						
74-3/4"	84-3/4"	102-3/4"	100-3/4"	112-3/4"	112-3/4"	136-3/4"						
31270	35790	41110	45830	50570	51960	59810						
(4)X	(3)X	(3)X	(3)X	(3)X	(3)X	(3)X						
57	65	76	83	84	90	104						
797	902	1055	1194	1209	1325	1544						
74-3/4"	84-3/4"	102-3/4"	100-3/4"	100-3/4"	112-3/4"	136-3/4"						
32060	36300	42420	48010	48610	53300	62100						
(4)X	(4)X	(4)X	(3)X	(3)X	(3)X	(3)X						
57	62	72	77	84	90	104	107					
834	922	1080	1143	1264	1386	1614	1671					
74-3/4"	84-3/4"	102-3/4"	90-3/4"	100-3/4"	112-3/4"	136-3/4"	118-3/4"					
33530	37080	43420	45960	50840	55740	64930	67190					
(4)X	(4)X	(4)X	(4)X	(3)X	(3)X	(3)X	(3)X					
57	62	65	75	83	91	104	107					
871	963	1012	1168	1298	1447	1686	1743					
74-3/4"	84-3/4"	88-3/4"	90-3/4"	100-3/4"	112-3/4"	136-3/4"	118-3/4"					
35020	38720	40710	46980	52220	58190	67790	70110					
(4)X	(4)X	(4)X	(4)X	(4)X	(3)X	(3)X	(3)X					
64	71	72	83	88	91	103	113					
930	1110	1125	1343	1464	1512	1683	1950					
66-3/4"	84-3/4"	84-3/4"	90-3/4"	100-3/4"	100-3/4"	112-3/4"	118-3/4"					
37400	44630	45250	54010	58900	60830	67690	78420					
(3)X	(3)X	(3)X	(3)X	(3)X	(3)X	(2)X	(2)X					
56	60	68	75	83	88	98	109	116				
1027	1116	1264	1381	1548	1707	1900	2187	2351				
66-3/4"	74-3/4"	84-3/4"	80-3/4"	90-3/4"	100-3/4"	112-3/4"	118-3/4"	118-3/4"				
41310	44900	50820	55530	62250	68640	76430	87980	94560				
(4)X	(4)X	(4)X	(4)X	(3)X	(3)X	(3)X	(3)X	(2)X				

DESIGN GUIDE LRFD
LIGHT WEIGHT TABLES





**DESIGN GUIDE
LRFD BRIDGING TABLE FOR
COMPOSITE STEEL JOISTS**

CJ-SERIES

Light Weight Concrete



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LT WT LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		Concrete Slab Parameters									
		Light Weight Concrete (110 pcf) $f_c = 4.0$ ksi									
		hr (in.)	1	1	1	1	1	1	1	1	
		tc (in.)	2	2	2	2	2	2	2	2	
Js (ft.)	3	3	3	3	3	3	3	3.5	4		
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
20	10	Pbr(lbs)	350	350	350	350	350	350	350	350	500
		X mat'l size									
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	21	21	24	27	30	31	33	35	45
	12	Pbr(lbs)	300	300	300	300	300	300	300	300	450
		X mat'l size									
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	30	30	34	37	38	43	45	47	60
	14	Pbr(lbs)	300	300	300	300	300	300	300	400	400
		X mat'l size									
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	41	41	41	47	50	52	55	68	75
	16	Pbr(lbs)	250	250	250	250	250	300	400	400	450
		X mat'l size									
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	53	53	53	61	61	68	77	83	100
	18	Pbr(lbs)	250	250	250	250	250	250	250	250	250
		X mat'l size									
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	68	68	68	68	79	79	85	93	98
	20	Pbr(lbs)	250	250	250	250	250	250	250	250	350
		X mat'l size									
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	82	82	82	82	95	95	102	110	138
24	Pbr(lbs)	200	200	200	200	200	200	200	250	300	
	X mat'l size										
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
	I non-comp eff	111	111	111	111	128	128	138	149	187	
28	Pbr(lbs)	200	200	200	200	200	200	200	200	300	
	X mat'l size										
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
	I non-comp eff	139	139	139	139	161	161	173	187	236	
32	Pbr(lbs)	200	200	200	200	200	200	250	300	300	
	X mat'l size										
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
	I non-comp eff	166	166	166	166	166	200	223	236	281	

DESIGN GUIDE LRFD LIGHT WEIGHT BRIDGING TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LT WT LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
Concrete Slab Parameters												
Light Weight Concrete (110 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
500	600	600	750	750	750	1050	1050	1050	1050	1250	1250	1250
L1.25x0.109H	L1.25x0.125H	L1.5x0.109H	L1.5x0.138H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H	L2x0.163X	L2.5x0.187X	L2.5x0.187X
45	52	54	63	64	68	83	86	86	91	103	105	108
450	450	550	550	650	650	700	750	950	950	950	950	950
L1.25x0.109H	L1.25x0.109H	L1.25x0.125H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H	L2x0.163X	L2.5x0.187X	L2.5x0.187X
60	64	75	77	88	92	98	108	121	126	132	132	138
500	500	550	600	650	750	750	750	900	1100	1100	1100	1200
L1.25x0.109H	L1.25x0.109H	L1.25x0.125H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H	L2x0.163X	L2.5x0.187X	L2.5x0.187X
84	92	98	108	116	130	138	143	161	180	189	199	210
450	550	600	700	700	700	800	800	1000	1000	1000	1100	1250
L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.5x0.123H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H	L2x0.163X	L2.5x0.187X	L2.5x0.187X
105	122	134	152	160	165	189	203	228	237	249	277	290
250	350	350	350	450	450	550	550	550	600	750	750	750
L1.25x0.109H	L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H	L2x0.163X	L2.5x0.187X	L2.5x0.187X
107	132	144	149	167	173	204	216	230	247	287	299	314
350	400	400	450	500	500	600	600	600	700	700	700	850
L1.25x0.109H	L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H	L2x0.163X	L2.5x0.187X	L2.5x0.187X
147	166	180	194	216	239	262	280	288	323	336	349	397
300	350	350	350	450	450	550	550	550	600	600	600	750
L1.25x0.109H	L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H	L2x0.163X	L2.5x0.187X	L2.5x0.187X
200	225	245	264	294	325	357	381	393	441	459	477	544
300	350	350	350	400	450	500	500	500	600	600	600	700
L1.25x0.109H	L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
251	282	308	332	370	410	450	481	497	557	580	604	690
350	350	400	450	450	500	500	500	600	600	700	700	700
L1.25x0.109H	L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
320	337	392	434	466	495	538	575	641	667	755	790	828

DESIGN GUIDE LRFD LIGHT WEIGHT BRIDGING TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LT WT LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
		Concrete Slab Parameters										
		Light Weight Concrete (110 pcf) f'c = 4.0 ksi										
		hr (in.)	1	1	1	1	1	1	1	1		
		tc (in.)	2	2	2	2	2	2	2	2		
Js (ft.)	3	3	3	3	3	3	3	3.5	4			
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot										
		TL	300	400	500	600	700	800	900	1000	1200	
25	10	Pbr(lbs)	200	350	350	350	350	350	550	550	550	
		X mat'l size										
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	25	30	33	35	38	39	50	52	56	
	12	Pbr(lbs)	350	350	350	350	350	350	350	500	500	
		X mat'l size										
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
		I non-comp eff	36	39	42	47	50	54	55	71	75	
	14	Pbr(lbs)	300	300	300	300	300	450	450	450	550	
		X mat'l size										
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
		I non-comp eff	42	48	53	60	63	81	84	91	106	
	16	Pbr(lbs)	300	300	300	300	300	350	450	450	450	
		X mat'l size										
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
		I non-comp eff	54	63	67	74	78	91	105	110	118	
	18	Pbr(lbs)	300	300	300	300	300	300	300	300	300	
		X mat'l size										
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
		I non-comp eff	71	71	82	88	97	108	112	115	123	
	20	Pbr(lbs)	250	250	250	250	250	250	250	250	250	
		X mat'l size										
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
		I non-comp eff	87	87	100	108	118	125	132	137	146	
24	Pbr(lbs)	250	250	250	250	250	250	250	250	250		
	X mat'l size											
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H		
	I non-comp eff	121	121	121	140	151	166	175	185	192		
28	Pbr(lbs)	200	200	200	200	200	250	250	300	350		
	X mat'l size											
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H		
	I non-comp eff	157	157	157	182	196	212	241	266	320		
32	Pbr(lbs)	200	200	200	200	200	200	250	300	300		
	X mat'l size											
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H		
	I non-comp eff	193	193	193	224	241	260	289	328	366		

DESIGN GUIDE LRFD LIGHT WEIGHT BRIDGING TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LT WT LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
Concrete Slab Parameters												
Light Weight Concrete (110 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
650	650	800	800	900	1100	1100	1100	1350	1500	1500	1650	1650
L1.25x0.109H	L1.25x0.125H	L1.5x0.109H	L1.5x0.155H	L1.75x0.155H	L1.75x0.17H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H	L2x0.163X	L2.5x0.187X	L2.5x0.187X
61	63	75	78	85	99	104	107	118	129	135	150	150
500	600	600	700	700	800	1050	1050	1050	1250	1250	1400	1400
L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.5x0.138H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H	L2x0.163X	L2.5x0.187X	L2.5x0.187X
77	88	91	105	109	122	143	146	150	171	177	196	196
550	650	700	750	850	850	950	1150	1150	1150	1300	1450	1450
L1.25x0.109H	L1.5x0.109H	L1.5x0.109H	L1.5x0.138H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H	L2x0.163X	L2.5x0.187X	L2.5x0.187X
109	128	139	150	165	165	189	215	215	228	251	265	274
500	600	650	700	750	750	900	900	1100	1100	1100	1200	1350
L1.25x0.109H	L1.25x0.125H	L1.5x0.109H	L1.5x0.138H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H	L2x0.163X	L2.5x0.187X	L2.5x0.187X
132	153	167	182	202	208	236	247	271	283	290	319	349
350	400	500	500	600	600	650	850	850	1000	1000	1000	1150
L1.25x0.109H	L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H	L2x0.163X	L2.5x0.187X	L2.5x0.187X
143	165	190	196	225	233	266	312	327	358	375	384	422
300	400	450	450	550	550	600	700	800	800	950	950	1050
L1.25x0.109H	L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H	L2x0.163X	L2.5x0.187X	L2.5x0.187X
170	196	222	229	270	277	306	339	385	404	443	463	505
300	350	400	400	400	500	500	600	700	700	850	850	950
L1.25x0.109H	L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H	L2x0.163X	L2.5x0.187X	L2.5x0.187X
229	268	312	321	340	390	416	480	544	571	628	657	717
350	400	450	500	550	550	550	600	750	750	750	750	850
L1.25x0.109H	L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
349	391	432	479	524	544	583	630	745	781	823	823	913
350	350	400	450	500	500	500	550	600	700	700	700	700
L1.25x0.109H	L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
430	464	533	572	647	672	721	779	845	967	1020	1020	1070

DESIGN GUIDE LRFD LIGHT WEIGHT BRIDGING TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LT WT LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		Concrete Slab Parameters									
		Light Weight Concrete (110 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1	1	1	
		tc (in.)	2	2	2	2	2	2	2	2	
Js (ft.)	3	3	3	3	3	3	3	3.5	4		
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
30	12	Pbr(lbs)	350	350	350	350	350	350	500	500	500
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X					
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	41	49	52	56	60	62	81	83	87
	14	Pbr(lbs)	350	350	350	350	500	500	500	500	600
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X					
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	54	62	68	73	94	100	103	108	128
	16	Pbr(lbs)	300	300	300	350	450	450	550	550	650
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X						
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	65	76	85	93	113	122	142	146	176
	18	Pbr(lbs)	300	300	300	300	300	300	300	350	450
		X mat'l size									
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	83	90	104	109	117	125	129	145	176
	20	Pbr(lbs)	300	300	300	300	300	300	300	300	400
		X mat'l size									
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	89	103	121	128	141	150	155	160	214
	24	Pbr(lbs)	250	250	250	250	250	250	250	250	350
		X mat'l size									
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	127	146	158	173	183	201	206	214	280
26	Pbr(lbs)	250	250	250	250	250	250	250	250	300	
	X mat'l size										
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
	I non-comp eff	147	147	170	189	212	224	233	240	289	
28	Pbr(lbs)	250	250	250	250	250	250	250	250	300	
	X mat'l size										
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
	I non-comp eff	168	168	194	209	230	243	256	274	331	
32	Pbr(lbs)	200	200	200	200	200	250	250	300	350	
	X mat'l size										
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
	I non-comp eff	211	211	244	263	289	322	355	400	469	

DESIGN GUIDE LRFD LIGHT WEIGHT BRIDGING TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LT WT LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
Concrete Slab Parameters												
Light Weight Concrete (110 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
600	650	750	850	1100	1100	1300	1300	1500	1650	1650	1900	1900
L1.25x0.109H	L1.25x0.125H	L1.5x0.109H	L1.5x0.155H	L1.75x0.155H	L1.75x0.17H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H	L2x0.163X	L2.5x0.187X	L2.5x0.187X
99	107	121	134	157	162	191	191	214	228	237	258	264
700	750	850	1000	1000	1000	1250	1250	1400	1550	1650	1650	1800
L1.25x0.125H	L1.5x0.109H	L1.5x0.123H	L1.75x0.155H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H	L2x0.163X	L2.5x0.187X	L2.5x0.187X
145	159	178	203	207	213	244	251	280	297	324	338	355
700	800	800	950	950	1150	1150	1300	1450	1550	1550	1700	1850
L1.25x0.109H	L1.5x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L1.75x0.17H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H	L2x0.163X	L2.5x0.187X	L2.5x0.187X
188	208	223	255	255	292	309	341	373	404	404	447	471
450	500	650	650	650	750	900	1100	1100	1250	1250	1350	1450
L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H	L2x0.163X	L2.5x0.187X	L2.5x0.187X
181	209	251	260	280	303	353	403	418	460	480	510	558
400	500	500	600	650	700	850	850	1050	1050	1150	1300	1300
L1.25x0.109H	L1.25x0.109H	L1.25x0.125H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H	L2x0.163X	L2.5x0.187X	L2.5x0.187X
218	253	278	312	334	363	431	440	504	522	575	609	637
350	450	450	550	550	600	750	750	950	950	1050	1150	1150
L1.25x0.109H	L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H	L2x0.163X	L2.5x0.187X	L2.5x0.187X
298	344	375	422	449	483	569	596	686	705	776	852	852
350	400	450	500	550	550	750	750	900	900	1000	1100	1100
L1.25x0.109H	L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
334	390	425	474	506	544	663	695	765	801	875	957	996
350	400	400	500	500	550	700	700	850	850	950	1050	1050
L1.25x0.109H	L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
372	435	472	544	579	624	729	798	879	919	1010	1100	1140
350	450	450	500	550	550	550	600	750	750	750	850	850
L1.25x0.109H	L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
511	609	645	710	787	817	848	922	1110	1170	1200	1320	1370

DESIGN GUIDE LRFD LIGHT WEIGHT BRIDGING TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LT WT LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		Concrete Slab Parameters									
		Light Weight Concrete (110 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1	1	1	
		tc (in.)	2	2	2	2	2	2	2	2	
Js (ft.)	3	3	3	3	3	3	3	3.5	4		
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
35	14	Pbr(lbs)	350	350	350	350	500	500	500	600	750
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X					
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	64	72	78	84	108	113	119	135	165
	16	Pbr(lbs)	350	350	350	350	500	500	500	550	600
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X					
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	78	87	97	103	134	144	146	171	188
	18	Pbr(lbs)	300	300	300	300	300	300	450	450	450
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X				
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	90	104	118	126	132	139	182	185	199
	20	Pbr(lbs)	300	300	300	300	300	300	350	450	450
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X				
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	112	130	142	152	161	170	186	226	237
	22	Pbr(lbs)	300	300	300	300	300	300	300	400	400
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X				
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	126	149	166	177	190	196	221	268	281
	24	Pbr(lbs)	250	250	250	250	250	250	300	400	400
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X						
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	150	166	187	205	219	227	255	304	327
	26	Pbr(lbs)	250	250	250	250	250	250	300	350	350
		X mat'l size									
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	175	188	207	230	246	265	291	343	373
28	Pbr(lbs)	250	250	250	250	250	250	250	350	350	
	X mat'l size										
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
	I non-comp eff	174	217	238	265	276	295	326	386	421	
32	Pbr(lbs)	200	200	200	200	200	250	300	300	400	
	X mat'l size										
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
	I non-comp eff	222	257	277	304	339	374	456	477	553	

DESIGN GUIDE LRFD LIGHT WEIGHT BRIDGING TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LT WT LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
Concrete Slab Parameters												
Light Weight Concrete (110 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	3	3	3	3	3	3
3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
800	900	900	1050	1050	1300	1300	1450	1600	1900	1900	2050	2250
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.125H	L1.5x0.109H	L1.5x0.123H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.212H			
171	195	200	228	234	270	282	315	336	375	391	414	439
700	800	850	850	1000	1000	1200	1350	1500	1500	1650	1800	1950
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.5x0.109H	L1.5x0.109H	L1.5x0.155H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
206	240	254	260	297	305	353	397	423	440	468	492	543
550	650	700	750	950	950	1150	1150	1300	1450	1550	1700	1850
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.125H	L1.5x0.109H	L1.5x0.138H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
222	272	291	310	366	378	433	450	507	540	586	617	667
500	650	650	700	900	900	1100	1100	1200	1350	1450	1600	1750
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.125H	L1.5x0.109H	L1.5x0.138H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
271	327	351	380	445	458	527	565	606	678	706	776	821
500	600	600	700	850	850	1050	1050	1150	1300	1400	1500	1500
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.125H	L1.5x0.109H	L1.5x0.123H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
320	384	398	447	531	543	622	664	710	788	865	909	951
450	550	550	650	800	800	1000	1000	1100	1200	1300	1450	1450
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.5x0.123H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
370	445	459	512	609	634	744	771	823	944	983	1090	1090
450	550	550	600	650	800	950	950	1050	1150	1150	1350	1350
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.109H	L1.25x0.125H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
423	505	538	601	652	715	846	875	968	1060	1110	1210	1280
400	500	500	600	650	750	900	900	1000	1100	1100	1200	1300
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.109H	L1.25x0.125H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
488	544	602	669	722	827	952	980	1080	1190	1230	1340	1410
400	450	500	550	550	600	650	800	900	900	1000	1100	1200
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
593	678	744	829	892	970	1060	1230	1340	1390	1530	1650	1720

DESIGN GUIDE LRFD LIGHT WEIGHT BRIDGING TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LT WT LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		Concrete Slab Parameters									
		Light Weight Concrete (110 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1	1	1	
		tc (in.)	2	2	2	2	2	2	2	2	
Js (ft.)	3	3	3	3	3	3	3	3.5	4		
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
40	16	Pbr(lbs)	400	400	400	500	500	600	650	750	850
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X					
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H	L1.25x0.109H
		I non-comp eff	95	110	119	144	155	176	193	221	251
	18	Pbr(lbs)	350	350	350	350	450	450	450	550	600
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X					
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	105	118	130	139	182	191	200	230	247
	20	Pbr(lbs)	300	300	300	300	350	450	450	450	550
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X				
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	123	143	158	165	190	232	238	249	297
	22	Pbr(lbs)	300	300	300	300	350	450	450	450	500
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X				
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	150	167	185	197	223	270	283	290	350
	24	Pbr(lbs)	300	300	300	300	300	400	400	400	500
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X				
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	163	199	213	229	257	315	331	338	407
	26	Pbr(lbs)	250	250	250	250	300	400	400	400	450
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X				
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H
		I non-comp eff	191	222	243	260	296	361	379	389	467
28	Pbr(lbs)	250	250	250	250	300	350	350	350	450	
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X					
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
	I non-comp eff	205	242	270	300	332	403	429	439	526	
30	Pbr(lbs)	250	250	250	250	300	350	350	350	400	
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X					
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
	I non-comp eff	234	277	309	331	380	450	479	491	584	
32	Pbr(lbs)	250	250	250	250	250	250	350	350	400	
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X				
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
	I non-comp eff	265	294	331	363	388	430	522	541	644	

DESIGN GUIDE LRFD LIGHT WEIGHT BRIDGING TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LT WT LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
Concrete Slab Parameters												
Light Weight Concrete (110 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	3	3	3	3	3	3
3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
900	1050	1050	1250	1250	1400	1550	1700	2000	2200	2500	2500	2900
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.5x0.109H	L1.5x0.123H	L1.5x0.138H	L1.75x0.155H	L1.75x0.17H	L2x0.163H	L2x0.205H	L2.5x0.187H	L2.5x0.187H	L2.5x0.25H			
261	306	314	364	380	409	453	481	560	589	668	668	757
700	800	1000	1000	1200	1200	1350	1500	1750	1900	1900	2100	2400
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.5x0.109H	L1.5x0.138H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.212H			
281	319	379	389	451	472	508	564	632	698	698	740	834
650	700	800	950	1150	1150	1300	1300	1550	1650	1650	1800	1950
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.5x0.109H	L1.5x0.109H	L1.5x0.17H	L1.75x0.155H	L1.75x0.17H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
341	371	416	475	545	567	639	664	740	796	829	880	934
650	650	750	900	900	1100	1200	1200	1350	1600	1600	1750	1900
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.125H	L1.5x0.109H	L1.5x0.17H	L1.75x0.155H	L1.75x0.17H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
401	446	496	564	582	669	747	784	836	958	980	1080	1140
600	650	750	800	850	1050	1050	1150	1300	1500	1500	1650	1800
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.125H	L1.5x0.109H	L1.5x0.155H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
480	516	583	625	676	779	836	898	1000	1100	1150	1250	1310
550	600	650	750	800	1000	1000	1100	1200	1300	1450	1550	1700
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.125H	L1.5x0.109H	L1.5x0.138H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
546	584	636	720	774	920	948	1060	1130	1240	1360	1440	1560
550	550	600	700	800	950	950	1050	1150	1250	1350	1500	1650
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.5x0.138H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
614	656	738	836	899	1030	1070	1180	1310	1440	1520	1680	1760
500	500	600	700	750	900	900	1000	1100	1200	1300	1450	1550
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.5x0.123H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
680	725	810	923	1010	1150	1180	1350	1440	1570	1740	1840	2030
500	500	550	650	700	850	850	950	1050	1150	1250	1350	1500
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.5x0.123H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
769	795	918	1050	1090	1260	1340	1490	1630	1780	1870	2090	2190

DESIGN GUIDE LRFD LIGHT WEIGHT BRIDGING TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LT WT LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		Concrete Slab Parameters									
		Light Weight Concrete (110 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1	1	1	
		tc (in.)	2	2	2	2	2	2	2	2	
Js (ft.)	3	3	3	3	3	3	3	3.5	4		
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
45	18	Pbr(lbs)	400	400	500	500	500	500	600	600	700
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X			
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	131	146	174	186	196	205	238	244	293
	20	Pbr(lbs)	350	350	350	350	400	450	550	550	700
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X			
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	152	169	183	195	215	250	288	297	359
	22	Pbr(lbs)	300	300	300	300	450	450	550	550	650
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X			
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	167	186	202	216	283	299	341	352	431
	24	Pbr(lbs)	300	300	300	300	400	400	500	500	600
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X			
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	190	214	237	249	333	349	399	409	501
	26	Pbr(lbs)	300	300	300	300	400	400	500	500	600
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X			
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	211	245	271	305	382	400	457	483	592
	28	Pbr(lbs)	250	250	250	300	400	400	450	450	550
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X			
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	245	273	304	346	423	455	516	547	662
30	Pbr(lbs)	250	250	250	300	350	350	450	450	500	
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X				
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
	I non-comp eff	264	313	335	385	485	509	577	610	708	
32	Pbr(lbs)	250	250	250	250	300	300	350	400	500	
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X				
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
	I non-comp eff	290	337	380	409	460	513	593	673	780	
36	Pbr(lbs)	250	250	250	250	300	350	350	400	400	
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X					
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
	I non-comp eff	337	398	444	526	597	665	708	798	900	

DESIGN GUIDE LRFD LIGHT WEIGHT BRIDGING TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LT WT LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
Concrete Slab Parameters												
Light Weight Concrete (110 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
800	1000	1000	1250	1400	1400	1550	1800	1950	2150	2450	2450	2850
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.5x0.109H	L1.5x0.109H	L1.5x0.138H	L1.75x0.155H	L2x0.163H	L2x0.163H	L2x0.187H	L2.5x0.187H	L2.5x0.187H	L2.5x0.25H			
328	403	403	472	528	528	596	658	703	772	865	865	979
750	1000	1000	1200	1300	1300	1450	1700	1900	2050	2350	2350	2700
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.125H	L1.5x0.109H	L1.5x0.138H	L1.75x0.155H	L1.75x0.17H	L2x0.163H	L2x0.187H	L2.5x0.187H	L2.5x0.187H	L2.5x0.23H			
400	476	506	568	640	665	724	830	882	935	1060	1090	1200
750	950	950	1150	1250	1250	1400	1650	1800	1950	2250	2250	2600
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.125H	L1.5x0.109H	L1.5x0.123H	L1.75x0.155H	L1.75x0.17H	L2x0.163H	L2x0.176H	L2.5x0.187H	L2.5x0.187H	L2.5x0.23H			
477	583	599	698	749	786	873	983	1040	1140	1250	1300	1480
700	900	900	1100	1100	1200	1350	1550	1700	1850	2150	2150	2450
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.5x0.109H	L1.5x0.123H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.212H			
562	680	701	807	841	947	1010	1160	1260	1380	1500	1510	1730
650	750	850	1050	1050	1150	1150	1250	1500	1650	1800	2050	2050
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.5x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L1.75x0.17H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
613	707	804	927	955	1070	1120	1250	1370	1490	1640	1780	1790
600	700	750	900	1000	1000	1200	1200	1450	1550	1700	1700	1950
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.5x0.109H	L1.5x0.109H	L1.5x0.17H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
713	806	865	987	1110	1160	1330	1400	1610	1700	1830	1920	2080
550	650	700	800	950	950	1050	1150	1350	1500	1650	1650	1900
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.5x0.109H	L1.5x0.109H	L1.5x0.138H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
787	893	995	1080	1240	1280	1440	1610	1770	1960	2060	2120	2400
550	650	700	800	900	1000	1100	1200	1300	1450	1550	1800	1800
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.125H	L1.5x0.109H	L1.5x0.155H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
863	1020	1110	1250	1370	1510	1740	1820	2020	2130	2350	2610	2610
500	550	650	700	850	850	950	1050	1200	1350	1350	1450	1650
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.109H	L1.5x0.109H	L1.5x0.123H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
1020	1170	1340	1460	1670	1720	1910	2190	2400	2690	2690	2960	3190

DESIGN GUIDE LRFD LIGHT WEIGHT BRIDGING TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LT WT LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		Concrete Slab Parameters									
		Light Weight Concrete (110 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1	1	1	
		tc (in.)	2	2	2	2	2	2	2	2	2
Js (ft.)	3	3	3	3	3	3	3	3.5	4		
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
50	20	Pbr(lbs)	450	500	500	500	500	550	550	700	750
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X		
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	176	212	228	245	257	298	306	359	400
	22	Pbr(lbs)	400	400	400	450	450	550	550	650	700
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X		
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	199	228	246	290	306	352	364	432	479
	24	Pbr(lbs)	350	350	350	350	450	500	500	600	700
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X		
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	221	254	274	290	359	410	437	482	561
	26	Pbr(lbs)	300	300	300	350	400	500	500	550	650
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X		
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	236	272	294	336	413	472	500	538	648
	28	Pbr(lbs)	300	300	300	300	400	400	500	500	600
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	275	305	332	375	468	493	565	605	741
	30	Pbr(lbs)	250	250	300	400	400	450	450	550	600
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X		
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	299	338	400	489	526	615	633	713	826
32	Pbr(lbs)	250	250	250	300	350	350	450	450	550	
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X			
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
	I non-comp eff	340	373	413	480	583	613	700	769	908	
36	Pbr(lbs)	250	250	250	250	300	350	400	450	500	
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X				
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
	I non-comp eff	405	451	502	573	639	735	857	915	1070	
40	Pbr(lbs)	200	200	250	300	300	400	400	400	450	
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X					
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
	I non-comp eff	450	523	657	742	826	968	1020	1050	1260	

DESIGN GUIDE LRFD LIGHT WEIGHT BRIDGING TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LT WT LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
Concrete Slab Parameters												
Light Weight Concrete (110 pcf) f _c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
1000	1000	1200	1350	1350	1500	1750	1950	2100	2400	2400	2800	2800
									L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.5x0.109H	L1.5x0.109H	L1.5x0.17H	L1.75x0.155H	L2x0.163H	L2x0.163H	L2x0.232H	L2.5x0.187H	L2.5x0.212H				
506	526	595	665	677	751	837	924	975	1100	1130	1300	1300
950	950	1150	1300	1300	1450	1700	1850	2000	2300	2300	2650	2650
									L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.5x0.109H	L1.5x0.109H	L1.5x0.155H	L1.75x0.155H	L1.75x0.17H	L2x0.163H	L2x0.219H	L2.5x0.187H	L2.5x0.187H				
584	621	731	788	818	892	1020	1100	1200	1310	1350	1530	1600
800	900	1100	1100	1250	1350	1600	1750	1900	2200	2200	2550	2550
										L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.25x0.125H	L1.5x0.109H	L1.5x0.155H	L1.75x0.155H	L1.75x0.17H	L2x0.163H	L2x0.205H	L2.5x0.187H	L2.5x0.187H	L2.5x0.25H			
634	722	843	882	950	1060	1190	1310	1400	1580	1580	1800	1860
750	900	1050	1050	1200	1300	1550	1700	1850	2100	2100	2450	2450
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.125H	L1.5x0.109H	L1.5x0.138H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2x0.205H	L2.5x0.187H	L2.5x0.187H	L2.5x0.25H			
729	832	999	999	1130	1250	1410	1560	1650	1800	1880	2140	2140
700	850	950	1000	1150	1250	1350	1600	1750	2050	2050	2350	2350
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.125H	L1.5x0.109H	L1.5x0.123H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2x0.176H	L2.5x0.187H	L2.5x0.187H	L2.5x0.23H			
828	972	1060	1170	1250	1400	1530	1750	1930	2090	2110	2420	2510
700	750	800	1000	1100	1100	1300	1400	1550	1700	1950	1950	2250
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.5x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L1.75x0.17H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
934	1030	1120	1290	1450	1520	1700	1870	2030	2230	2420	2560	2800
650	800	950	950	1050	1150	1250	1350	1500	1600	1850	2150	2150
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.5x0.109H	L1.5x0.123H	L1.5x0.17H	L1.75x0.155H	L1.75x0.17H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
1060	1200	1430	1480	1650	1760	1940	2130	2260	2440	2770	3060	3210
550	650	800	850	950	1050	1150	1250	1400	1500	1750	1750	2000
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.125H	L1.5x0.109H	L1.5x0.155H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
1240	1410	1600	1750	1940	2120	2330	2580	2860	3010	3360	3520	3840
550	600	650	800	800	900	1000	1150	1300	1400	1600	1600	1850
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.125H	L1.5x0.109H	L1.5x0.155H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
1520	1670	1820	2080	2150	2380	2740	3000	3350	3700	3990	4130	4490

DESIGN GUIDE LRFD LIGHT WEIGHT BRIDGING TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LT WT LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
		Concrete Slab Parameters										
		Light Weight Concrete (110 pcf) $f_c = 4.0$ ksi										
		hr (in.)	1	1	1	1	1	1	1	1		
		tc (in.)	2	2	2	2	2	2	2	2		
Js (ft.)	3	3	3	3	3	3	3	3.5	4			
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot										
		TL	300	400	500	600	700	800	900	1000	1200	
55	24	Pbr(lbs)	400	450	450	450	450	550	550	650	750	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	269	310	341	359	377	438	469	541	620	
	26	Pbr(lbs)	350	350	350	450	450	500	550	650	700	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	294	323	377	414	434	518	554	626	717	
	28	Pbr(lbs)	300	300	300	400	400	500	500	600	700	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	314	349	377	469	495	584	584	717	815	
	30	Pbr(lbs)	300	300	300	350	400	450	500	550	650	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	330	365	424	478	555	653	700	769	917	
	32	Pbr(lbs)	300	300	300	300	400	450	500	550	650	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	382	444	483	545	633	725	799	877	1050	
	34	Pbr(lbs)	300	300	300	350	350	450	450	500	550	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	431	482	557	663	696	819	843	956	1110	
36	Pbr(lbs)	300	300	400	400	450	500	600	650	650		
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X					
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H	
	I non-comp eff	474	587	699	799	872	1010	1120	1250	1310		
40	Pbr(lbs)	250	250	250	300	350	400	400	450	550		
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X			
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
	I non-comp eff	501	582	646	765	912	1060	1140	1280	1480		
44	Pbr(lbs)	300	300	300	300	350	350	400	450	550		
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X				
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
	I non-comp eff	674	763	864	979	1140	1210	1320	1490	1780		

DESIGN GUIDE LRFD LIGHT WEIGHT BRIDGING TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LT WT LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
Concrete Slab Parameters												
Light Weight Concrete (110 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
950	1150	1150	1250	1400	1550	1800	1950	2250	2250	2600	2600	2950
									L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X
L1.5x0.109H	L1.5x0.123H	L1.5x0.155H	L1.75x0.155H	L2x0.163H	L2x0.163H	L2x0.232H	L2.5x0.187H	L2.5x0.212H				
749	883	915	988	1080	1170	1330	1460	1640	1690	1860	1950	2120
900	1100	1100	1200	1350	1450	1750	1900	2150	2150	2500	2500	2850
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.5x0.109H	L1.5x0.123H	L1.5x0.155H	L1.75x0.155H	L2x0.163H	L2x0.163H	L2x0.219H	L2.5x0.187H	L2.5x0.212H	L2.5x0.25H			
857	1000	1050	1170	1250	1340	1570	1730	1890	1950	2220	2220	2530
850	1050	1050	1150	1300	1400	1650	1800	2100	2100	2400	2400	2750
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.5x0.109H	L1.5x0.123H	L1.5x0.138H	L1.75x0.155H	L1.75x0.17H	L2x0.163H	L2x0.219H	L2.5x0.187H	L2.5x0.212H	L2.5x0.25H			
975	1170	1230	1320	1470	1570	1840	1950	2210	2210	2520	2600	2820
850	1000	1000	1150	1250	1350	1600	1750	2000	2000	2300	2300	2650
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.5x0.109H	L1.5x0.109H	L1.5x0.138H	L1.75x0.155H	L1.75x0.17H	L2x0.163H	L2x0.205H	L2.5x0.187H	L2.5x0.187H	L2.5x0.23H			
1130	1300	1350	1530	1630	1780	2040	2240	2460	2570	2810	2920	3280
800	950	950	1100	1200	1300	1550	1700	1950	1950	2250	2250	2550
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.125H	L1.5x0.109H	L1.5x0.138H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2x0.205H	L2.5x0.187H	L2.5x0.187H	L2.5x0.23H			
1250	1440	1550	1660	1860	2040	2330	2570	2790	2820	3230	3350	3630
700	750	950	1050	1150	1150	1350	1500	1600	1850	2150	2150	2150
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.5x0.109H	L1.5x0.123H	L1.75x0.155H	L1.75x0.155H	L1.75x0.17H	L2x0.176H	L2.5x0.187H	L2.5x0.187H	L2.5x0.212H			
1300	1460	1680	1880	2110	2110	2430	2650	2910	3160	3670	3670	3810
750	900	900	1000	1000	1100	1200	1300	1550	1550	1800	2050	2050
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.125H	L1.5x0.109H	L1.5x0.123H	L1.75x0.155H	L1.75x0.155H	L1.75x0.17H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
1500	1770	1830	2120	2120	2370	2590	2810	3130	3280	3600	4130	4130
650	750	850	950	1050	1100	1200	1350	1450	1650	1900	1900	2200
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.5x0.109H	L1.5x0.109H	L1.5x0.17H	L1.75x0.155H	L1.75x0.17H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
1690	2000	2180	2410	2780	2900	3220	3570	3750	4190	4800	4800	5520
550	650	800	800	850	950	1150	1250	1350	1550	1550	1800	1800
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.25x0.125H	L1.5x0.109H	L1.5x0.138H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
1940	2210	2530	2620	2900	3340	3660	4100	4520	4880	5060	5790	5790

DESIGN GUIDE LRFD LIGHT WEIGHT BRIDGING TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LT WT LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
		Concrete Slab Parameters										
		Light Weight Concrete (110 pcf) f'c = 4.0 ksi										
		hr (in.)	1	1	1	1	1	1	1	1.5		
		tc (in.)	2	2	2	2	2	2	2	3.25		
		Js (ft.)	3	3	3	3	3	3	3.5	4		
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot										
		TL	300	400	500	600	700	800	900	1000	1200	
60	24	Pbr(lbs)	500	550	550	550	550	600	650	700	950	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	314	369	401	424	450	476	555	589	749	
	26	Pbr(lbs)	450	450	450	450	500	550	650	700	850	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	344	384	414	435	518	555	641	683	813	
	28	Pbr(lbs)	400	400	400	400	500	550	600	650	800	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	370	438	470	507	585	648	732	778	950	
	30	Pbr(lbs)	350	350	350	400	500	500	550	650	800	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	394	449	480	571	675	726	795	877	1070	
	32	Pbr(lbs)	350	350	400	400	450	500	550	600	750	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	466	515	589	635	748	801	880	982	1190	
	36	Pbr(lbs)	300	350	350	450	450	500	550	650	650	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
		H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H
		I non-comp eff	529	617	731	849	924	1040	1160	1320	1400	
40	Pbr(lbs)	300	350	400	400	450	500	600	600	600		
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X		
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H	
	I non-comp eff	643	761	890	1020	1170	1390	1500	1560	1690		
44	Pbr(lbs)	350	350	450	550	500	500	550	600	750		
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X							
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1.25x0.109H	
	I non-comp eff	784	914	1160	1370	1470	1570	1740	1890	2260		
48	Pbr(lbs)	250	250	300	350	350	400	450	450	450		
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X		
	H mat'l size	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	L1x0.109H	
	I non-comp eff	805	954	1130	1260	1440	1660	1830	1990	2070		

DESIGN GUIDE LRFD LIGHT WEIGHT BRIDGING TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LT WT LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
Concrete Slab Parameters												
Light Weight Concrete (110 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.5	3.5	3.5
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
1150	1150	1300	1450	1550	1700	2000	2300	2300	2700	3050		
									L2x0.163X	L2x0.163X		
L1.5x0.109H	L1.5x0.138H	L1.75x0.155H	L1.75x0.17H	L2x0.163H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.23H				
883	915	1010	1120	1180	1290	1500	1690	1690	1950	2120		
900	1100	1250	1400	1500	1650	1950	2250	2250	2550	2550	2900	
									L2x0.163X	L2.5x0.187X	L2.5x0.187X	
L1.5x0.109H	L1.5x0.123H	L1.5x0.17H	L1.75x0.155H	L2x0.163H	L2x0.163H	L2x0.25H	L2.5x0.187H	L2.5x0.212H				
924	1050	1170	1280	1400	1490	1730	1950	2010	2320	2320	2530	
900	1100	1200	1350	1450	1550	1700	2150	2150	2450	2450	2800	3150
									L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.5x0.109H	L1.5x0.123H	L1.5x0.17H	L1.75x0.155H	L2x0.163H	L2x0.163H	L2x0.219H	L2.5x0.187H	L2.5x0.212H				
1040	1230	1370	1500	1640	1730	1930	2300	2300	2610	2730	2980	3150
850	1050	1150	1300	1400	1500	1650	2050	2050	2400	2400	2700	2700
									L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.5x0.109H	L1.5x0.123H	L1.5x0.155H	L1.75x0.155H	L2x0.163H	L2x0.163H	L2x0.205H	L2.5x0.187H	L2.5x0.212H				
1200	1420	1530	1700	1830	2000	2150	2570	2670	2930	3030	3460	3460
900	1000	1100	1250	1350	1450	1700	2000	2000	2300	2600	2600	2900
									L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.5x0.109H	L1.5x0.109H	L1.5x0.155H	L1.75x0.155H	L2x0.163H	L2x0.163H	L2x0.219H	L2.5x0.187H	L2.5x0.187H				
1400	1550	1750	1950	2040	2210	2580	2950	2950	3370	3640	3770	4220
750	950	950	1050	1150	1250	1500	1600	1850	1850	2150	2150	2400
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.125H	L1.5x0.109H	L1.5x0.123H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2x0.187H	L2.5x0.187H	L2.5x0.187H	L2.5x0.212H			
1640	1900	1980	2240	2390	2610	3000	3300	3620	3790	4150	4320	4840
700	850	850	950	1050	1150	1250	1500	1700	1700	2000	2000	2250
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.5x0.109H	L1.5x0.109H	L1.75x0.155H	L1.75x0.155H	L1.75x0.17H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
1910	2280	2350	2640	2950	3100	3410	3910	4450	4510	5160	5160	5810
750	900	1000	1100	1100	1150	1400	1600	1600	1850	1850	2100	2100
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.125H	L1.5x0.109H	L1.5x0.138H	L1.75x0.155H	L1.75x0.155H	L1.75x0.17H	L2x0.176H	L2.5x0.187H	L2.5x0.187H	L2.5x0.212H			
2360	2830	3110	3360	3540	3930	4580	4950	5130	5870	5960	6760	6760
600	700	750	850	950	1000	1200	1300	1500	1500	1750	1750	1950
										L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
L1.25x0.109H	L1.5x0.109H	L1.5x0.109H	L1.5x0.155H	L1.75x0.155H	L1.75x0.155H	L2x0.163H	L2.5x0.187H	L2.5x0.187H	L2.5x0.187H			
2530	2880	3140	3480	4010	4190	4920	5420	5860	6080	6960	6960	8020

DESIGN GUIDE LRFD LIGHT WEIGHT BRIDGING TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LT WT LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		Concrete Slab Parameters									
		Light Weight Concrete (110 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1	1	1	1.5
		tc (in.)	2	2	2	2	2	2	2	2	3.25
Js (ft.)	3	3	3	3	3	3	3	3	3.5	4	
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
65	30	Pbr(lbs)	400	400	400	400	500	600	600	700	850
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	463	517	557	602	699	846	866	970	1200
	32	Pbr(lbs)	400	400	500	500	500	550	650	700	800
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	511	578	708	750	832	910	1050	1160	1260
	34	Pbr(lbs)	400	400	400	400	450	550	550	650	800
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	578	637	702	740	875	999	1080	1220	1470
	36	Pbr(lbs)	350	350	350	450	450	500	550	600	700
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	593	679	770	928	954	1120	1210	1340	1570
	38	Pbr(lbs)	350	350	350	350	450	500	550	600	750
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	661	731	792	903	1070	1210	1310	1470	1790
	40	Pbr(lbs)	300	300	400	400	450	500	600	650	700
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	702	790	980	1080	1190	1390	1570	1700	1880
44	Pbr(lbs)	300	350	350	450	500	500	500	500	650	
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
	H mat'l size										
	I non-comp eff	817	1020	1120	1380	1570	1700	1760	1840	2160	
48	Pbr(lbs)	350	400	500	500	500	550	600	650	800	
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
	H mat'l size										
	I non-comp eff	999	1260	1550	1690	1810	2080	2250	2450	2980	
52	Pbr(lbs)	300	300	300	350	400	500	450	450	500	
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
	H mat'l size										
	I non-comp eff	1090	1270	1450	1660	1960	2240	2260	2350	2730	

DESIGN GUIDE LRFD LIGHT WEIGHT BRIDGING TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LT WT LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
Concrete Slab Parameters												
Light Weight Concrete (110 pcf) f _c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.5	3.5	3.5
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
1050	1200	1300	1400	1550	1700	1850	2100	2450	2450	2750		
L1x0.109X	L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2.5x0.187X		
1420	1590	1740	1900	2010	2240	2360	2670	3030	3180	3460		
950	1000	1150	1250	1500	1650	1750	2050	2350	2350	2650	2650	
L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	
1460	1630	1820	2000	2300	2470	2710	3070	3370	3480	3980	3980	
1000	1100	1200	1300	1450	1550	1700	1950	2250	2250	2550	2850	2850
L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
1770	1990	2220	2330	2510	2780	3090	3370	3840	3960	4540	4820	4820
850	950	1050	1150	1400	1500	1650	1900	2200	2200	2500	2500	2750
L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
1870	2080	2240	2500	2830	3140	3340	3800	4330	4330	4860	5120	5440
900	1050	1150	1250	1350	1450	1600	1800	2100	2100	2400	2650	2650
L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
2130	2390	2680	2930	3090	3360	3700	4260	4670	4850	5440	5770	6100
800	900	1000	1100	1200	1400	1550	1750	1750	2050	2300	2300	2600
L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
2170	2470	2790	2970	3260	3740	4120	4530	4740	5200	5850	6060	6420
750	850	950	1000	1100	1200	1300	1650	1650	1900	1900	2150	2150
L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
2530	2860	3210	3600	3780	4160	4540	5430	5510	6320	6320	7110	7370
850	950	1050	1050	1250	1350	1550	1550	1800	1800	2050	2250	2250
L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
3270	3730	4020	4250	4980	5220	5930	6150	7050	7160	8120	8580	8970
600	750	800	900	1000	1050	1150	1450	1450	1700	1700	1900	1900
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
3130	3710	4100	4730	4950	5500	6100	7190	7190	8240	8380	9500	9500

DESIGN GUIDE LRFD LIGHT WEIGHT BRIDGING TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LT WT LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		Concrete Slab Parameters									
		Light Weight Concrete (110 pcf) f'c = 4.0 ksi									
		hr (in.)	1	1	1	1	1	1	1	1.5	
		tc (in.)	2	2	2	2	2	2	2	3.25	
Js (ft.)	3	3	3	3	3	3	3	3.5	4		
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
70	32	Pbr(lbs)	500	500	500	500	500	600	700	750	850
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	594	688	751	800	857	992	1110	1190	1380
	34	Pbr(lbs)	450	450	450	450	500	600	650	700	900
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	630	728	827	877	944	1100	1230	1350	1660
	36	Pbr(lbs)	400	400	450	450	500	550	600	700	800
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	707	795	903	957	1060	1160	1310	1490	1760
	38	Pbr(lbs)	350	400	450	500	550	650	650	650	800
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	726	867	979	1170	1300	1540	1570	1620	1900
	40	Pbr(lbs)	350	350	400	400	450	500	550	650	750
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	805	887	1090	1150	1270	1400	1560	1800	2050
	44	Pbr(lbs)	350	350	350	400	400	500	550	600	700
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	930	1030	1220	1350	1490	1690	1910	2120	2410
48	Pbr(lbs)	300	350	400	450	500	500	500	550	650	
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
	H mat'l size										
	I non-comp eff	1050	1260	1480	1760	1960	2030	2200	2460	2780	
52	Pbr(lbs)	350	500	450	450	550	550	700	700	750	
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
	H mat'l size										
	I non-comp eff	1270	1690	1880	2060	2360	2660	3040	3190	3510	
56	Pbr(lbs)	450	450	450	450	450	450	450	500	600	
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
	H mat'l size										
	I non-comp eff	1710	1800	2060	2290	2460	2640	2730	3050	3640	

DESIGN GUIDE LRFD LIGHT WEIGHT BRIDGING TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LT WT LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
Concrete Slab Parameters												
Light Weight Concrete (110 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.5	3.5	3.5
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
1050	1150	1300	1500	1650	1800	2050	2400	2400	2700			
L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X			
1630	1830	2070	2310	2570	2720	3070	3490	3660	3990			
1000	1250	1350	1450	1600	1750	2000	2300	2300	2600	2900		
L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2.5x0.187X		
1850	2220	2390	2620	2810	3090	3500	3970	3970	4540	4820		
950	1100	1200	1400	1550	1700	1950	2250	2250	2550	2550		
L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2.5x0.187X		
2090	2340	2560	2840	3150	3350	3810	4340	4490	5130	5130		
950	1050	1150	1250	1350	1500	1850	1850	2150	2450	2450	2750	
L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	
2230	2520	2800	3010	3310	3520	4270	4420	4870	5460	5760	6120	
900	1000	1100	1300	1450	1550	1800	2100	2100	2350	2350	2650	3000
L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
2480	2800	3110	3440	3760	4130	4760	5220	5420	6080	6420	6830	7410
850	950	1050	1150	1350	1350	1700	1700	1950	2200	2200	2450	2800
L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
2880	3230	3620	3970	4570	4570	5470	5790	6360	7160	7410	7860	9040
800	900	1000	1050	1150	1250	1400	1600	1850	1850	2100	2100	2300
L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
3320	3850	4090	4530	4980	5440	5990	6520	7590	7590	8540	8850	9400
950	1000	1000	1200	1300	1500	1500	1750	1750	1950	2200	2200	2200
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
4220	4750	5010	5880	6160	7010	7270	8330	8330	9610	10160	10620	11030
700	800	850	950	1050	1150	1200	1400	1650	1650	1850	1850	2050
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
4180	4780	5240	5780	6420	6780	7480	8390	9620	9790	11100	11100	12280

DESIGN GUIDE LRFD LIGHT WEIGHT BRIDGING TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LT WT LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
		Concrete Slab Parameters										
		Light Weight Concrete (110 pcf) f'c = 4.0 ksi										
		hr (in.)	1	1	1	1	1	1	1.5	1.5	1.5	
		tc (in.)	2	2	2	2	2	2	3.25	3.25	3.25	
Js (ft.)	3	3	3	3	3	3	3	3.5	4			
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot										
		TL	300	400	500	600	700	800	900	1000	1200	
75	34	Pbr(lbs)	500	500	500	550	600	700	700	800	950	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size										
		I non-comp eff	701	833	884	1000	1140	1320	1320	1480	1740	
	38	Pbr(lbs)	450	450	450	450	500	600	700	750	850	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
		H mat'l size										
		I non-comp eff	845	955	1040	1100	1300	1510	1620	1760	2100	
	40	Pbr(lbs)	400	400	450	450	500	550	650	700	850	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
		H mat'l size										
		I non-comp eff	878	1010	1160	1230	1400	1600	1800	1950	2340	
	42	Pbr(lbs)	400	400	400	450	500	600	650	700	800	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
		H mat'l size										
		I non-comp eff	969	1090	1240	1360	1610	1810	1940	2090	2480	
	44	Pbr(lbs)	400	450	550	550	550	600	650	800	800	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
		H mat'l size										
		I non-comp eff	1030	1310	1550	1720	1780	2080	2180	2560	2730	
	48	Pbr(lbs)	350	350	350	400	450	500	600	600	750	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
		H mat'l size										
		I non-comp eff	1160	1350	1460	1660	1950	2180	2470	2660	3160	
52	Pbr(lbs)	350	350	400	500	500	500	550	600	700		
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X		
	H mat'l size											
	I non-comp eff	1300	1520	1870	2290	2400	2490	2790	3040	3580		
56	Pbr(lbs)	450	450	450	500	550	650	650	650	800		
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X		
	H mat'l size											
	I non-comp eff	1720	2010	2250	2640	2970	3380	3530	3720	4490		
60	Pbr(lbs)	450	450	450	450	450	450	500	550	650		
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X		
	H mat'l size											
	I non-comp eff	1960	2200	2480	2730	2930	3150	3510	3840	4430		

DESIGN GUIDE LRFD LIGHT WEIGHT BRIDGING TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LT WT LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
Concrete Slab Parameters												
Light Weight Concrete (110 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.5	3.5	3.5
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
1150	1250	1350	1500	1650	1750	2050	2350	2650				
L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X				
2080	2270	2480	2740	2930	3190	3600	4170	4550				
1050	1200	1300	1400	1500	1650	1900	2200	2500	2500			
L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X			
2520	2810	3020	3320	3570	3920	4430	5040	5770	5770			
1050	1150	1350	1500	1600	1850	2150	2150	2400	2700	3050		
L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2.5x0.187X		
2810	3120	3550	3930	4140	4770	5440	5620	6100	6840	7430		
900	1100	1200	1300	1450	1550	1800	2050	2350	2350	2600		
L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X		
2880	3450	3620	3930	4350	4640	5280	6020	6760	7130	7590		
950	1050	1150	1250	1400	1500	1750	2000	2000	2250	2250	2550	
L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	
3250	3640	3990	4320	4790	5050	5820	6630	6630	7450	7850	8360	
900	1000	1100	1200	1300	1400	1600	1900	2150	2150	2350	2700	2700
L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
3870	4340	4550	5010	5480	6030	6660	7630	8600	8900	9450	10880	10880
750	850	950	1100	1200	1350	1550	1750	1750	2000	2250	2250	2550
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
4040	4540	5090	5880	6230	6760	7700	8970	8970	10110	11120	11120	12800
900	950	1050	1250	1450	1450	1650	1650	1900	2100	2100	2100	2400
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
5120	5840	6120	7180	8170	8170	9730	9730	11220	11870	12410	12890	13930
700	800	850	1000	1100	1200	1400	1600	1600	1850	1850	2050	2300
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
4980	5700	6370	7410	7820	8630	9690	11110	11310	12830	12830	14190	15930

DESIGN GUIDE LRFD LIGHT WEIGHT BRIDGING TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LT WT LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
		Concrete Slab Parameters										
		Light Weight Concrete (110 pcf) $f_c = 4.0$ ksi										
		hr (in.)	1	1	1	1	1	1.5	1.5	1.5	1.5	
		tc (in.)	2	2	2	2	2	3.25	3.25	3.25	3.25	
Js (ft.)	3	3	3	3	3	3	3	3.5	4			
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot										
		TL	300	400	500	600	700	800	900	1000	1200	
80	38	Pbr(lbs)	500	500	550	550	550	650	750	800	950	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size										
		I non-comp eff	935	1050	1220	1300	1390	1550	1800	1980	2340	
	40	Pbr(lbs)	450	450	450	550	650	650	650	800	950	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size										
		I non-comp eff	1010	1130	1240	1510	1760	1800	1860	2120	2610	
	42	Pbr(lbs)	450	450	450	450	550	600	700	750	900	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size										
		I non-comp eff	1080	1250	1370	1460	1670	1850	2160	2340	2760	
	44	Pbr(lbs)	400	400	500	600	550	550	650	700	800	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size										
		I non-comp eff	1140	1290	1540	1840	1930	1970	2190	2380	2850	
	46	Pbr(lbs)	400	400	400	400	450	550	600	700	850	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size										
		I non-comp eff	1210	1410	1540	1630	1860	2180	2400	2740	3320	
	48	Pbr(lbs)	400	500	500	500	500	600	700	850	850	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size										
		I non-comp eff	1320	1660	1910	2060	2220	2480	2810	3360	3620	
52	Pbr(lbs)	500	500	500	600	700	700	700	800	900		
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
	H mat'l size											
	I non-comp eff	1670	1970	2170	2590	3080	3240	3380	3680	4350		
56	Pbr(lbs)	450	450	450	450	450	500	500	600	750		
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
	H mat'l size											
	I non-comp eff	1840	2200	2420	2690	2790	3110	3370	3820	4560		
60	Pbr(lbs)	450	450	500	550	650	650	650	700	850		
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
	H mat'l size											
	I non-comp eff	1980	2390	2820	3280	3890	4070	4280	4710	5660		

DESIGN GUIDE LRFD LIGHT WEIGHT BRIDGING TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LT WT LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
Concrete Slab Parameters												
Light Weight Concrete (110 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
3.25	3.25	3.25	3.25	3.25	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
1100	1300	1400	1550	1700	1950	2250	2550	2550				
L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X				
2630	3140	3320	3710	3920	4440	5050	5780	5780				
1050	1150	1350	1500	1650	1900	2150	2150	2450				
L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X				
2920	3200	3700	3980	4370	4950	5630	5900	6440				
1000	1200	1350	1450	1600	1800	2100	2400	2400	2650			
L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L2x0.163X	L2x0.163X			
3230	3730	4100	4360	4840	5290	6040	6770	7140	7600			
1000	1100	1300	1400	1550	1750	2050	2050	2300	2550			
L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L2x0.163X	L2x0.163X			
3420	3810	4340	4800	5120	5840	6650	6870	7880	8390			
950	1050	1250	1350	1500	1700	1950	1950	2250	2500	2850		
L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X		
3750	4170	4750	5260	5550	6400	7300	7540	8190	9210	10000		
950	1050	1100	1350	1450	1650	1650	1900	2150	2150	2400		
L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X		
4080	4540	4780	5500	6050	6680	6990	7970	8940	9440	10060		
1050	1150	1250	1350	1550	1550	1800	2050	2300	2300	2300	2600	2600
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
5090	5650	6260	6810	7750	7750	9030	10170	10780	11190	11860	12880	12880
850	900	1000	1200	1300	1450	1450	1700	1950	2150	2150	2450	2450
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
5290	5930	6220	7260	7890	8990	9130	10470	11800	12510	12990	14960	14960
950	1000	1100	1400	1400	1400	1600	1850	2050	2050	2050	2300	2300
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
6370	7060	7900	9430	9430	9790	11230	12300	13710	14340	14340	16100	17150

DESIGN GUIDE LRFD LIGHT WEIGHT BRIDGING TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LT WT LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
		Concrete Slab Parameters										
		Light Weight Concrete (110 pcf) f'c = 4.0 ksi										
		hr (in.)	1	1	1	1	1	1.5	1.5	1.5	1.5	
		tc (in.)	2	2	2	2	2	3.25	3.25	3.25	3.25	
Js (ft.)	3	3	3	3	3	3	3	3	3.5	4		
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot										
		TL	300	400	500	600	700	800	900	1000	1200	
90	44	Pbr(lbs)	550	550	550	550	600	700	750	900	1000	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size										
		I non-comp eff	1400	1600	1840	1910	2100	2390	2680	3180	3570	
	46	Pbr(lbs)	500	500	500	550	550	650	750	900	1000	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size										
		I non-comp eff	1530	1750	1870	2120	2220	2480	2830	3330	3910	
	48	Pbr(lbs)	450	500	500	500	550	650	700	850	950	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size										
		I non-comp eff	1580	1850	2040	2190	2440	2850	3090	3640	4110	
	50	Pbr(lbs)	450	450	500	500	600	650	700	850	950	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size										
		I non-comp eff	1660	1930	2240	2430	2780	3010	3270	3960	4460	
	52	Pbr(lbs)	450	450	450	450	500	600	650	800	900	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size										
		I non-comp eff	1800	2020	2230	2500	2720	3090	3540	4100	4830	
	56	Pbr(lbs)	500	500	500	500	550	600	650	750	850	
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size										
		I non-comp eff	2120	2450	2710	2920	3400	3670	3970	4610	5340	
60	Pbr(lbs)	450	450	500	650	650	650	750	800	1000		
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	
	H mat'l size											
	I non-comp eff	2350	2700	3200	3940	4340	4530	4930	5650	6830		
66	Pbr(lbs)	450	600	650	650	800	850	950	1000	1000		
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1.25x0.109X		
	H mat'l size											
	I non-comp eff	2710	3570	4160	4530	5490	6100	6660	7500	8140		
72	Pbr(lbs)	650	650	650	650	650	650	650	700	800		
	X mat'l size	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X		
	H mat'l size											
	I non-comp eff	3640	4200	4700	5120	5590	5850	6160	7000	8020		

DESIGN GUIDE LRFD LIGHT WEIGHT BRIDGING TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LT WT LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
Concrete Slab Parameters												
Light Weight Concrete (110 pcf) f'c = 4.0 ksi												
1.5	1.5	1.5	2	2	2	2	3	3	3	3	3	3
3.25	3.25	3.25	3.25	3.25	3.5	3.5	3.5	3.5	3.5	3.5	4	4
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
1250	1350	1600	1800	1800	2100	2400						
L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X						
4120	4530	5350	6060	6060	6900	7900						
1100	1300	1400	1550	1750	2050	2300	2300					
L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X					
4290	4970	5340	5870	6660	7570	8680	8680					
1150	1250	1500	1700	1700	2000	2250	2500					
L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X					
4800	5420	6160	7020	7270	8010	9490	10110					
1050	1200	1350	1450	1650	1950	1950	2200	2450				
L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X				
4970	5670	6280	6980	7640	8720	9010	10330	11010				
1000	1200	1300	1600	1600	1850	2100	2100	2350				
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X				
5380	6140	6800	7930	8290	9450	10610	11200	11950				
950	1100	1250	1350	1550	1750	1750	2000	2250	2550			
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2x0.163X			
5990	6930	7570	8340	9220	10580	11000	12350	13920	15120			
1050	1150	1250	1450	1450	1700	1900	1900	2100	2100	2400		
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X		
7590	8410	9150	10430	10430	12160	13140	13700	15100	16010	17390		
1200	1400	1400	1600	1850	1850	2050	2050	2300	2450	2450	2800	
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X	
9490	10890	11520	13010	14750	14750	16800	17570	18930	20320	21710	23470	
950	1000	1100	1200	1400	1400	1600	1850	2050	2300	2300	2450	2800
L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X
9710	10790	11400	12580	14150	14870	16540	18760	20790	22400	23340	25710	27790

DESIGN GUIDE LRFD LIGHT WEIGHT BRIDGING TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LT WT LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		Concrete Slab Parameters									
		Light Weight Concrete (110 pcf) f'c = 5.0 ksi									
		hr (in.)	1	1	1	1	1	1.5	1.5	1.5	1.5
		tc (in.)	2	2	2	2	2.5	3.25	3.25	3.25	3.25
Js (ft.)	3	3	3	3	3	3	3	3	3.5	4	
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
100	50	Pbr(lbs)	550	600	600	600	700	850	850	850	1050
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	2080	2410	2620	2870	3280	3970	3970	4150	5110
	52	Pbr(lbs)	550	550	550	600	600	700	850	850	1050
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	2170	2510	2720	3020	3190	3650	4300	4500	5400
	54	Pbr(lbs)	500	500	600	750	750	750	800	900	1100
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	2290	2540	3070	3810	3930	4180	4640	5240	6140
	56	Pbr(lbs)	500	500	500	550	600	700	700	800	1000
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	2370	2730	2940	3420	3800	4380	4700	5000	6280
	58	Pbr(lbs)	500	500	500	500	550	650	750	750	950
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	2480	2930	3150	3400	3870	4430	5130	5370	6470
	60	Pbr(lbs)	450	450	600	700	700	750	850	950	1100
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	2650	3030	3960	4570	4710	5330	5880	6570	7650
66	Pbr(lbs)	450	600	650	650	800	850	950	1000	1000	
	X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1.25x0.109X	
	H mat'l size										
	I non-comp eff	3090	4040	4800	5290	6170	6730	7600	8230	9250	
72	Pbr(lbs)	650	650	650	650	650	650	650	700	850	
	X mat'l size	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	
	H mat'l size										
	I non-comp eff	3890	4780	5420	5950	6260	6530	6960	7630	9420	
80	Pbr(lbs)	650	650	650	650	650	700	800	850	1000	
	X mat'l size	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	
	H mat'l size										
	I non-comp eff	5670	5670	6080	6940	7260	8030	9240	10120	11920	

DESIGN GUIDE LRFD LIGHT WEIGHT BRIDGING TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LT WT LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
Concrete Slab Parameters												
Light Weight Concrete (145 pcf) f'c = 5.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
3.25	3.25	3.25	3.25	3.25	3.5	3.5	3.5	3.5	3.5	3.5	4	4
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
1150	1350	1500	1700	2000	2000							
L1x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X							
5590	6620	7000	7940	9030	9490							
1200	1350	1650	1650	1950	2200	2200						
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X						
6420	6910	8320	8620	9800	11240	11240						
1200	1300	1400	1600	1900	1900	2150						
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X						
6660	7380	8210	9320	10260	10600	12160						
1050	1250	1350	1600	1850	1850	2050	2300					
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X					
6800	7950	8850	9700	11060	11430	13110	14000					
1100	1250	1550	1550	1800	2000	2000	2550					
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X					
7710	8540	9970	10420	11890	13350	14090	16350					
1100	1200	1500	1500	1750	1750	1950	2200					
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X					
8010	9150	10680	11160	12740	12740	14310	16130					
1200	1400	1400	1600	1850	1850	2050	2050	2300				
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X				
10780	12120	12730	14150	16050	16050	18460	19570	21260				
950	1100	1200	1400	1600	1600	1850	2050	2300	2450			
L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X			
10430	12160	13240	15110	16800	17640	19880	21940	25270	26120			
1000	1100	1400	1400	1400	1600	1850	2050	2300	2300	2800	2800	
L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X	L2.5x0.187X	
12640	14150	16910	17600	18490	20570	23340	25880	29070	29070	34640	34640	

DESIGN GUIDE LRFD LIGHT WEIGHT BRIDGING TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LT WT LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		Concrete Slab Parameters									
		Light Weight Concrete (110 pcf) f'c = 5.0 ksi									
		hr (in.)	1	1	1	1	1	1.5	1.5	1.5	
		tc (in.)	2	2	2	2	2.5	3.25	3.25	3.25	
Js (ft.)	3	3	3	3	3	3	3.5	4	4		
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
110	56	Pbr(lbs)	600	600	600	600	750	750	800	900	1100
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	2820	3170	3430	3930	4520	4710	5250	5890	6820
	58	Pbr(lbs)	550	550	550	550	600	700	800	900	1050
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	2910	3400	3690	3890	4320	5060	5640	6080	7330
	60	Pbr(lbs)	550	550	700	700	700	850	950	1050	1150
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X
		H mat'l size									
		I non-comp eff	3120	3500	4590	4880	5050	6200	6960	7300	8290
	62	Pbr(lbs)	550	550	550	600	700	700	750	850	1000
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X
		H mat'l size									
		I non-comp eff	3330	3740	4060	4550	5400	5550	6170	6960	8160
	64	Pbr(lbs)	500	500	500	500	550	650	750	800	1000
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X
		H mat'l size									
		I non-comp eff	3420	3980	4330	4610	5140	5920	6580	7420	8700
	66	Pbr(lbs)	500	600	650	650	800	900	950	1050	1050
		X mat'l size	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1x0.109X	L1.25x0.109X	L1.25x0.109X
		H mat'l size									
		I non-comp eff	3640	4410	5320	5730	6670	7590	8380	9310	9750
72	Pbr(lbs)	650	650	800	850	1000	1000	1000	1100	1400	
	X mat'l size	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	
	H mat'l size										
	I non-comp eff	4480	5250	6650	7760	8710	9490	9850	11000	13200	
80	Pbr(lbs)	650	650	650	650	650	650	700	800	950	
	X mat'l size	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	
	H mat'l size										
	I non-comp eff	5750	6170	7040	7750	8100	8620	9450	10440	12930	
88	Pbr(lbs)	950	950	950	950	950	950	950	1000	1000	
	X mat'l size	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	
	H mat'l size										
	I non-comp eff	7890	7890	9450	10560	11230	11840	12810	13960	15370	

DESIGN GUIDE LRFD LIGHT WEIGHT BRIDGING TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LT WT LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
Concrete Slab Parameters												
Light Weight Concrete (145 pcf) f'c = 5.0 ksi												
1.5	1.5	1.5	2	2	2	2	2	3	3	3	3	3
3.25	3.25	3.25	3.25	3.25	3.5	3.5	3.5	3.5	3.5	3.5	4	4
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
1300	1400	1600	1850	1850	2150							
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X							
8070	8880	10070	11460	12040	13150							
1250	1350	1600	1850	2050	2050							
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X							
8570	9540	10830	12330	14140	14140							
1250	1350	1550	1800	1800	2000							
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X							
9190	10230	11610	12800	13220	15170							
1200	1300	1500	1750	1750	1950	2200						
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X						
9820	10510	11990	13690	14140	16230	17340						
1150	1250	1450	1700	1900	1900	2150						
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X						
10470	11210	12800	14600	16400	17310	18500						
1250	1450	1450	1650	1850	1850	2100						
L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X						
11240	12820	13620	15550	16850	17460	19710						
1400	1600	1850	1850	2050	2050	2300	2450					
L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L2x0.163X					
14520	16650	18270	19250	21330	21330	25530	26380					
1100	1200	1400	1600	1600	1850	2050	2300	2450				
L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2x0.163X				
15090	16440	18760	20880	21920	24700	27280	31440	32510				
1200	1400	1400	1600	1600	1850	2050	2300	2300	2800			
L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X	L2.5x0.187X			
18040	20560	21410	24560	25050	28430	31540	35420	37760	42250			

DESIGN GUIDE LRFD LIGHT WEIGHT BRIDGING TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LT WT LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength											
		Concrete Slab Parameters									
		Light Weight Concrete (110 pcf) f'c = 5.0 ksi									
		hr (in.)	1	1	1	1	1.5	1.5	1.5	1.5	1.5
		tc (in.)	2	2	2	2	3.25	3.25	3.25	3.25	3.25
Js (ft.)	3	3	3	3	3	3	3.5	4	4		
Joist Span (ft.)	Joist Depth (in.)	Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot									
		TL	300	400	500	600	700	800	900	1000	1200
120	72	Pbr(lbs)	650	650	700	850	950	1000	1000	1000	1400
		X mat'l size	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X
		H mat'l size									
		I non-comp eff	5060	5780	7000	8420	9150	10510	11140	11140	14610
	74	Pbr(lbs)	650	650	650	650	800	850	950	1000	1100
		X mat'l size	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X
		H mat'l size									
		I non-comp eff	5340	6100	6720	7230	8750	9580	10590	11770	13050
	76	Pbr(lbs)	650	650	650	650	650	700	800	950	1000
		X mat'l size	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X
		H mat'l size									
		I non-comp eff	5630	6430	7080	7620	8140	8890	10010	11800	13000
	78	Pbr(lbs)	650	800	950	1000	1000	1200	1400	1400	1400
		X mat'l size	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X
		H mat'l size									
		I non-comp eff	5530	7450	9010	10270	10710	12710	14540	15580	16480
	80	Pbr(lbs)	650	700	850	1000	1000	1000	1100	1400	1400
		X mat'l size	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X
		H mat'l size									
		I non-comp eff	5810	7080	9140	10370	11250	12210	13640	16380	17320
	82	Pbr(lbs)	650	650	700	850	950	1000	1000	1100	1400
		X mat'l size	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X
		H mat'l size									
		I non-comp eff	6090	7110	8180	10090	11330	12340	13590	14310	18180
84	Pbr(lbs)	650	650	650	950	950	950	1000	1000	1100	
	X mat'l size	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	
	H mat'l size										
	I non-comp eff	6380	7450	8180	10970	11410	12390	13430	14250	15950	
88	Pbr(lbs)	950	950	1000	1100	1400	1400	1400	1400	1850	
	X mat'l size	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	
	H mat'l size										
	I non-comp eff	8000	9110	11070	12260	14860	16410	17140	18390	22560	
96	Pbr(lbs)	1000	1000	1000	1000	1000	1000	1000	1000	1400	
	X mat'l size	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	
	H mat'l size										
	I non-comp eff	12330	12330	12330	13900	14690	15300	16670	17310	23240	

DESIGN GUIDE LRFD LIGHT WEIGHT BRIDGING TABLES



LIGHT WEIGHT CONCRETE

DESIGN GUIDE LT WT LRFD BRIDGING TABLE FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Based on a 50 ksi Maximum Yield Strength												
Concrete Slab Parameters												
Light Weight Concrete (145 pcf) f'c = 5.0 ksi												
1.5	1.5	1.5	2	2	2	2	3	3	3	3	3	3
3.25	3.25	3.25	3.25	3.25	3.5	3.5	3.5	4	4	4	4	4
5	5.5	6	7	7.5	8	9	10	11	12	13	14	15
Total Safe Factored Uniformly Distributed Joist Load in Pounds Per Linear Foot												
1400	1600	1800	2000	2200	2400	2700	3000	3300	3600	3900	4200	4500
1400	1400	1600	1850	2050	2050							
L1.25x0.109X	L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X							
15350	16320	18630	20200	22290	23640							
1200	1400	1600	1600	1850	2050	2300						
L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X						
14880	16500	18940	19690	22120	24990	27150						
1100	1400	1600	1600	1850	2050	2300						
L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X						
14870	17410	19980	20770	23330	26360	28650						
1600	2050	2050	2050	2300	2300	2450						
L1.25x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L1.75x0.155X						
18630	22280	24110	25210	28310	28310	31200						
1400	1600	1850	2050	2050	2050	2300						
L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L1.75x0.155X						
18030	20670	23910	26520	26520	27540	31740						
1400	1400	1600	1850	2050	2050	2300	2300					
L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L1.75x0.155X	L2x0.163X					
18920	19880	23230	25110	27840	28920	33330	33330					
1400	1400	1400	1600	1850	2050	2300	2300					
L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L1.75x0.155X	L2x0.163X					
19830	20840	21210	24350	27450	30330	34950	34950					
2050	2050	2050	2300	2300	2450	2800	2800					
L1.5x0.109X	L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2x0.163X					
25240	28230	28230	32830	34460	35510	39850	42820					
1400	1400	1600	1850	2050	2050	2300	2300	2800				
L1.5x0.109X	L1.5x0.109X	L1.75x0.155X	L1.75x0.155X	L1.75x0.155X	L1.75x0.155X	L2x0.163X	L2x0.163X	L2.5x0.187X				
24580	25610	29370	32270	36090	37750	42400	45210	50610				

DESIGN GUIDE LRFD LIGHT WEIGHT BRIDGING TABLES



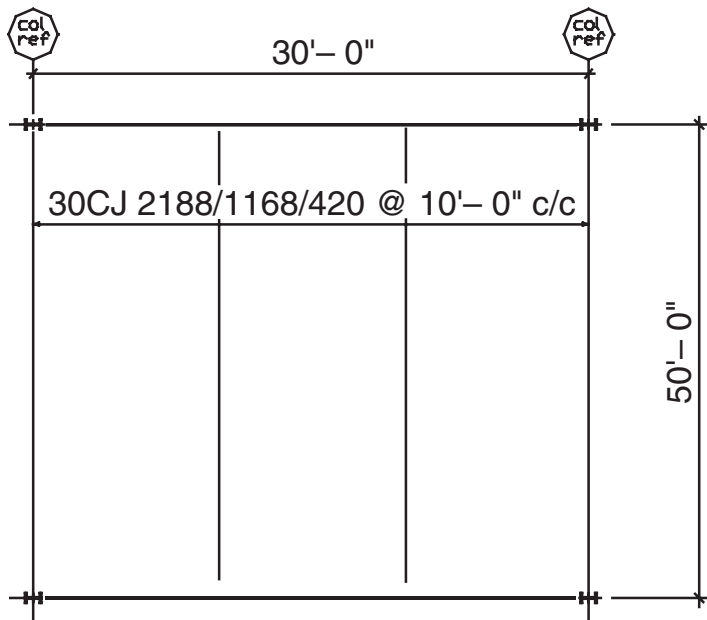


Composite Joist Design Example 1

Uniformly Distributed Loading

The purpose of this example is to demonstrate the typical use of the Composite Steel Joist Weight Tables and Bridging Tables.

Please note the load combinations shown are for this example only and it is not to be presumed that the joist designer is responsible for the applicable building code load combinations. If joist loading criteria are too complex to adequately communicate in a simple load diagram, the Specifying Professional shall provide a load schedule showing the specified design loads, load categories and required load combinations with applicable load factors.



Type of Occupancy: Office
42" ceiling to floor height.

2 1/2" concrete on 2" composite floor deck.

Total slab thickness = 4 1/2"

Normal Weight Concrete

Joist Geometry:

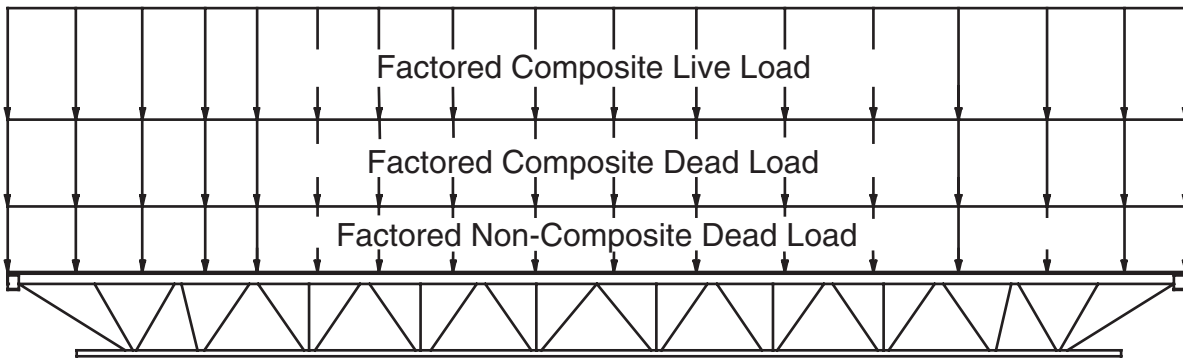
1) Depth	30 in.	(813 mm)
2) Span	50 ft.	(15.24 m)
3) Adjacent Member Spacing (left)	10 ft.	(3.05 m)
4) Adjacent Member Spacing (right)	10 ft.	(3.05 m)

Concrete and Deck:

1) Type of Floor Deck	B Comp Floor Deck
2) Depth of Floor Deck	2 in. (51 mm)
3) Slab Thickness Above Deck	2.5 in. (64 mm)
4) Concrete Unit Weight	145 pcf (2324 kg/m ³)
5) Concrete Compressive Strength	4 ksi (27.6 MPa)



**COMPOSITE JOIST DESIGN EXAMPLE 1
UNIFORMLY DISTRIBUTED LOADING**



Nominal Loads:

1) Non-composite Construction Dead Load			
a) Concrete	43 psf	(2.06 kPa)	
b) Joist and Bridging	4.7 psf	(0.23 kPa)	
c) Deck	2.3 psf	(0.11 kPa)	
d) TOTAL	<u>50 psf</u>	<u>(2.39 kPa)</u>	
	= 500 plf	(7.3 kN/m)	
2) Construction Live Load (1Reduced as Applicable)			
a) During Concrete Placement	14 psf	(0.67 kPa)	
	= 140 plf	(2.0 kN/m)	
3) Composite Dead Load			
a) Fixed Partitions	20 psf	(0.96 kPa)	
b) Mechanical	7 psf	(0.34 kPa)	
c) Electrical	3 psf	(0.14 kPa)	
d) Fireproofing	2 psf	(0.10 kPa)	
e) Floor Covering and Ceiling	3 psf	(0.14 kPa)	
f) Miscellaneous Dead Loads	0 psf	(0 kPa)	
g) TOTAL	<u>35 psf</u>	<u>(1.68 kPa)</u>	
	= 350 plf	(5.1 kN/m)	
4) Composite Live Load			
a) Live Load (² Reduced as Applicable)	73 psf	(3.50 kPa)	
b) Moveable Partitions	0 psf	(0 kPa)	
c) TOTAL	<u>73 psf</u>	<u>(3.50 kPa)</u>	
	= 730 plf	(10.6 kN/m)	
5) Total Factored Non-composite Dead Load, 1.2 x (1d)	= 60 psf (2.87 kPa)	or 600 plf	(8.76 kN/m)
6) Total Factored Composite Dead Load, 1.2 x (3g)	= 42 psf (2.01 kPa)	or 420 plf	(6.13 kN/m)
7) Total Factored Composite Live Load, 1.6 x (4c)	= 116.8 psf (5.59 kPa)	or 1168 plf	(17.05 kN/m)
8) Total Factored Composite Design Load, (5) + (6) + (7)	= 218.8 psf (10.48 kPa)	or 2188 plf	(31.93 kN/m)



COMPOSITE JOIST DESIGN EXAMPLE 1 UNIFORMLY DISTRIBUTED LOADING

¹When estimating construction live loading on a composite steel joist it is suggested that the construction live loading be adjusted for tributary area as follows:

For U.S. Customary units

$$L_c = 20R_1 \text{ where } 12 \leq L_c \leq 20, \text{ lb/ft.}^2 \quad (\text{EX1})$$

$$\begin{aligned} R_1 &= 1 && \text{for } A_t \leq 200 \text{ ft.}^2 \\ R_1 &= 1.2 - 0.001A_t && \text{for } 200 \text{ ft.}^2 < A_t < 600 \text{ ft.}^2 \\ R_1 &= 0.6 && \text{for } A_t \geq 600 \text{ ft.}^2 \end{aligned}$$

Where:

L_c = Construction live load (reduced)
 A_t = Tributary floor area over one joist supporting the construction live load, ft.² (m²)

For Metric units

$$L_c = 0.96R_1 \text{ where } 0.58 \leq L_c \leq 0.96, \text{ kN/m}^2 \quad (\text{EX2})$$

$$\begin{aligned} R_1 &= 1 && \text{for } A_t \leq 18.58 \text{ m}^2 \\ R_1 &= 1.2 - 0.01076A_t && \text{for } 18.58 \text{ m}^2 < A_t < 55.74 \text{ m}^2 \\ R_1 &= 0.6 && \text{for } A_t \geq 55.74 \text{ m}^2 \end{aligned}$$

$$L_{\text{const}} = 20 \text{ psf} \quad (0.96 \text{ kPa})$$

$$A_t = 50 \text{ ft.} \times 10 \text{ ft.} = 500 \text{ ft.}^2 \quad (46.45 \text{ m}^2)$$

$$R_1 = 0.70$$

Therefore, from Equation EX1 (EX2), $L_c = 20 \text{ psf} \times 0.70 = 14 \text{ psf} \quad (0.67 \text{ kPa})$

²Floor Live Loading is allowed to be reduced per ASCE 7-05, Section 4.8 as long as the specified provisions are met.

For U.S. Customary units

$$L_c = L_0 \left[0.25 + \frac{15}{\sqrt{K_{LL}A_T}} \right] \quad (\text{EX3})$$

Where:

L = Reduced design live load per ft.² (m²) of area supported by joist
 L_0 = Unreduced design live load per ft.² (m²) of area supported by joist
 (see ASCE 7-05, Table 4-1)
 K_{LL} = Live load element factor (see ASCE 7-05, Table 4-2)
 A_T = Tributary area in ft.² (m²)



COMPOSITE JOIST DESIGN EXAMPLE 1 UNIFORMLY DISTRIBUTED LOADING

For Metric units

$$L = L_o \left[0.25 + \frac{4.57}{\sqrt{K_{LL}A_T}} \right] \quad (\text{EX4})$$

$$L_o = 100 \text{ psf} \quad (4.79 \text{ kPa})$$

$K_{LL} = 2$ for interior joists from ASCE 7-05, Table 4-2

$$A_T = 50 \text{ ft.} \times 10 \text{ ft.} = 500 \text{ ft.}^2 \quad (46.45 \text{ m}^2)$$

$$K_{LL} A_T = 2 \times 500 \text{ ft.}^2 = 1000 \text{ ft.}^2$$

Since $K_{LL} A_T > 400 \text{ ft.}^2$ (37.16 m^2), the joist is permitted to be designed for a reduced live load according to Equation EX3 (EX4).

$$L = 100 \text{ psf} \times \left[0.25 + \frac{15}{\sqrt{(2)(500)}} \right] = 100 \text{ psf} \times 0.73 = 73 \text{ psf} \quad (3.50 \text{ kPa})$$

Camber and Deflection (unfactored load):

1) Loads to Camber For:

a) Non-composite Dead Load	(1d) x 100%	50 psf	(2.39 kPa)
b) Composite Dead Load	(3g) x 50%	17.5 psf	(0.84 kPa)
c) Composite Live Load	(4c) x 10%	7.3 psf	(0.35 kPa)

2) Maximum Allowable Live Load Deflection, Span/360
 $= (50 \times 12)/360 = 1.67 \text{ in.} \quad (42.3 \text{ mm})$

3) Maximum Deflection, $\frac{\text{SPAN}}{240} = \frac{(50)(12)}{240} = 2.5 \text{ in.} \quad (63.5 \text{ mm})$

Determine joist weight per foot, quantity and size of shear studs, anticipated floor deflections, number of bridging rows required and maximum circular duct size opening.

Solution

Factored Design Loads:

W Non-composite DL	=	600 plf	(8.76 kN/m)
W Composite DL	=	420 plf	(6.13 kN/m)
W Composite LL	=	1168 plf	(17.05 kN/m)
W TL	=	2188 plf	(31.93 kN/m)



COMPOSITE JOIST DESIGN EXAMPLE 1 UNIFORMLY DISTRIBUTED LOADING

Determine the allowable joist depth:

- 42 in. (1067 mm) Ceiling to floor height
- 4.5 in. (114 mm) Slab depth
- 5.5 in. (140 mm) Ceiling to bottom chord
- 32 in. (813 mm) Joist depth

JOIST SELECTION:

The proper joist shall be selected from the **Design Guide LRFD Weight Table for Composite Steel Joists, CJ-Series – Normal Weight Concrete** for a joist with a 50 foot (15.2 m) span, maximum allowable depth of 32 inches (813 mm), normal weight concrete, a total factored composite design load of 2188 plf (31.93 kN/m) and composite live load of 1168 plf (17.05 kN/m).

Choose the column in the table that is equal to or greater than the calculated total safe factored uniformly distributed load and a row where: (1) the joist depth does not exceed the allowable depth, and (2) the least weight per foot. The joist spacing, **Js** in the column selected should be less than or equal to the actual spacing of the joists. However, should the joist spacing be less than the **Js** value chosen, then the concrete capacity would need to be checked, since it would likely have a lower **W360** value and a lower total load carrying capacity. The **SJI Composite Joist Floor Design Parameters Checklist** found in the **Code of Standard Practice for Composite Steel Joists** needs to be filled out.

This information should be forwarded to a Steel Joist Institute member company requesting that a composite joist design be checked.

In this example choose the column headed by total factored load of 2200 plf (32.11 kN/m) and the 30 inch (762 mm) joist depth row (Note: The 30 inch joist depth was selected over the allowable 32 inch joist depth for three reasons: (1) the 30 inch joist weight per foot was less than the 32 inch joist and the number of shear studs was the same for both the 30 and 32 inch joist depths; (2) the composite live load is greater than what is required; and (3) the 30 inch deep joist will allow more available space beneath the joist for mechanicals, light fixtures, etc.).

- Wt = 34.67 plf (0.51 kN/m; 51.62 kg/m)
- W360 = 1236 plf (18.19 kN/m)
- N-ds = 46 – 3/4 in. (19 mm)

BRIDGING AND NOMINAL HORIZONTAL TOP CHORD FORCE (Pbr) SELECTION:

From the **Design Guide LRFD Weight Table for Composite Steel Joists, CJ-Series – Normal Weight Concrete**, use the same column and row selection for the joist selection (2200 plf; 30 inch joist depth) and determine the number of rows and type of bridging:



COMPOSITE JOIST DESIGN EXAMPLE 1 UNIFORMLY DISTRIBUTED LOADING

For this example, two rows of horizontal bridging (**2H**) are required.

For the bridging member size(s) and the nominal horizontal top chord force go to the **Design Guide LRFD Bridging Table for Composite Steel Joists, CJ-Series – Normal Weight Concrete** and choose the column at or nearest the actual joist spacing and the joist depth row based on the joist selection above (Note: This approach is conservative since the nominal horizontal top chord force, **Pbr** will be larger than the actual top chord force, but since the bridging size is also based on the length of bridging, the distance nearest the actual spacing of the joists needs to be considered to size the bridging. This is an estimate and the actual size of the bridging may change when the final design is performed by the joist manufacturer).

For this example, choose the column with **J_s** = 10 feet and the row for a 30 inch deep joist. The bridging size is L2.5 x 2.5 x 0.187 and the nominal horizontal top chord force, **Pbr** is 1423 lbs (Note: The nominal horizontal top chord force is used to determine the connection for the termination of the bridging row).

NON-COMPOSITE EFFECTIVE MOMENT OF INERTIA SELECTION:

To determine the Non-composite Effective Moment of Inertia of the joist go to the **Design Guide LRFD Bridging Table for Composite Steel Joists, CJ-Series – Normal Weight Concrete** and choose the same column and row used in making the joist selection.

For this example, use the column labeled 2200 plf and the row labeled 30 inch joist depth.

$$I_{\text{non-comp eff}} = 1448 \text{ in.}^4 \quad (6.03 \times 10^8 \text{ mm}^4)$$

Deflection:

$$\Delta_{\text{non-composite DL}} = \frac{5(W_{\text{non-composite DL}})(\text{Design Length})^4(1728)}{384E_S I_{\text{non-comp eff}}}$$

Where:

Design Length	=	Span – 4 in. = 49.67 ft. (15.14 m)
E_S	=	Modulus of Elasticity of steel (psi)
$I_{\text{non-comp eff}}$	=	Moment of Inertia of Non-composite joist (in. ⁴)

$$\Delta_{\text{non-composite DL}} = \frac{5(500)(49.67)^4(1728)}{384(29,000,000)(1448)}$$

$$\Delta_{\text{non-composite DL}} = 1.63 \text{ in. (41.4 mm)} = L/368$$



COMPOSITE JOIST DESIGN EXAMPLE 1 UNIFORMLY DISTRIBUTED LOADING

$$\Delta_{\text{Composite DL}} = \left[\frac{W_{\text{Composite DL}}}{W_{360}} \right] \left[\frac{L}{360} \right] = \left[\frac{350}{1236} \right] \left[\frac{(49.67)(12)}{360} \right] = 0.47 \text{ in. (11.9 mm)} = L/1280$$

$$\Delta_{\text{Composite LL}} = \left[\frac{W_{\text{Composite LL}}}{W_{360}} \right] \left[\frac{L}{360} \right] = \left[\frac{730}{1236} \right] \left[\frac{(49.67)(12)}{360} \right] = 0.98 \text{ in. (24.8 mm)} = L/614$$

$$\Delta_{\text{TL}} = \Delta_{\text{Non-composite DL}} + \Delta_{\text{Composite DL}} + \Delta_{\text{Composite LL}}$$

$$\Delta_{\text{TL}} = 1.63 \text{ in.} + 0.47 \text{ in.} + 0.98 \text{ in.} = 3.08 \text{ in. (78.2 mm)} = L/195$$

Camber:

$$\text{Camber joist for } 100\% \times \Delta_{\text{Non-composite DL}} + 50\% \times \Delta_{\text{Composite DL}} + 10\% \times \Delta_{\text{Composite LL}}$$

$$\text{Joist Camber} = 1.0 \times 1.63 \text{ in.} + 0.50 \times 0.47 \text{ in.} + 0.10 \times 0.98 \text{ in.} = 1.96 \text{ in. (49.9 mm)}$$

EFFECTIVE MOMENT OF INERTIA SELECTION:

To determine the Effective Moment of Inertia of the joist go to the **Design Guide LRFD Weight Table for Composite Steel Joists, CJ-Series – Normal Weight Concrete** and choose the same column and row used in making the joist selection.

For this example, use the column labeled 2200 plf and the row labeled 30 inch joist depth.

$$I_{\text{eff}} = 3596 \text{ in.}^4 \text{ (14.97 x 10}^8 \text{ mm}^4\text{)}$$

The published value of **W360** takes into account the reductions in effective transformed moment of inertia associated with web deformations and interfacial slippage. Therefore, the above value of I_{eff} , has been reduced to account for these behaviors. In deriving **W360**, an interfacial slippage factor of 1.05 was assumed.

Therefore, taking out this effect, $I_{\text{e composite without slippage}}$ can be given as:

$$I_{\text{e composite without slippage}} = 1.05 I_{\text{eff}} = 1.05 (3596 \text{ in.}^4) = 3776 \text{ in.}^4 \text{ (15.72 x 10}^8 \text{ mm}^4\text{)}$$



**COMPOSITE JOIST DESIGN EXAMPLE 1
UNIFORMLY DISTRIBUTED LOADING**

Design Summary:

The composite steel joist designation: **30CJ 2188/1168/420**

30	CJ	2188	1168	420
Depth (in.)	Composite Joist Series	Total Factored Composite Design Load (plf)	Total Factored Composite Live Load (plf)	Total Factored Composite Dead Load (plf)

Bridging:

Use **2 rows of 2L's 2.5 x 2.5 x 0.187**

Joist weight = 34.67 plf (0.51 kN/m; 51.62 kg/m)

Δ Non-composite DL = 1.63 in. (41.4 mm)

Δ Composite DL = 0.47 in. (11.9 mm)

Δ Composite LL = 0.98 in. (24.8 mm)

Camber = 1.96 in. (49.9 mm)

Quantity and Type of Shear Studs, N - ds = 46 – 3/4 in. (19 mm)

Duct Opening Available:

From the Approximate Duct Opening Sizes table located in the front portion of the catalog, a 15 in. (381 mm) circular duct is permissible to pass through the web openings of a 30 in. deep composite steel joist.

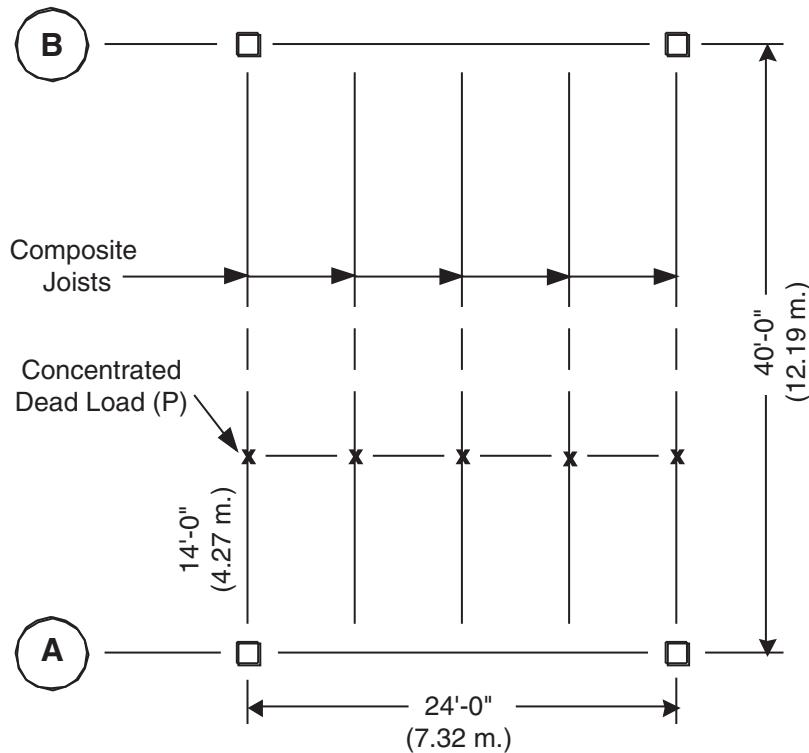


Composite Joist Design Example 2

Special Loadings

The purpose of this example is to demonstrate that the Composite Steel Joist Weight Tables and Bridging Tables may also be used for special loadings.

Please note the load combinations shown are for this example only and it is not to be presumed that the joist designer is responsible for the applicable building code load combinations. If joist loading criteria are too complex to adequately communicate in a simple load diagram, the specifying professional shall provide a load schedule showing the specified design loads, load categories and required load combinations with applicable load factors.



Joist Geometry:

1) Depth	26 in.	(660 mm)
2) Span	40 ft.	(12.19 m)
3) Adjacent Member Spacing (left)	6 ft.	(1.83 m)
4) Adjacent Member Spacing (right)	6 ft.	(1.83 m)

Concrete and Deck:

1) Type of Floor Deck	B Comp Floor Deck
2) Depth of Floor Deck	2 in. (51 mm)
3) Slab Thickness Above Deck	2.5 in. (64 mm)
4) Concrete Unit Weight	145 pcf (2324 kg/m ³)
5) Concrete Compressive Strength	4 ksi (27.6 MPa)



COMPOSITE JOIST DESIGN EXAMPLE 2
SPECIAL LOADINGS

Nominal Loads:

- | | | | |
|--|------------------------------|--------------------|---------------------|
| 1) Non-composite Construction Dead Load | | | |
| a) Concrete | 44 psf | (2.11 kPa) | |
| b) Joist and Bridging (estimated) | 4 psf | (0.19 kPa) | |
| c) Deck | 2 psf | (0.10 kPa) | |
| d) TOTAL | 50 psf | (2.40 kPa) | |
| | = 300 plf | (4.37 kN/m) | |
| 2) ¹ Construction Live Load | | | |
| a) During Concrete Placement | 0 psf | (0.00 kPa) | |
| | = 0 plf | (0.00 kN/m) | |
| 3) Composite Dead Load | | | |
| a) Fixed Partitions | 20 psf | (0.96 kPa) | |
| b) Mechanical | 5 psf | (0.24 kPa) | |
| c) Electrical | 2 psf | (0.10 kPa) | |
| d) Fireproofing | 2 psf | (0.10 kPa) | |
| e) Floor Covering and Ceiling | 16 psf | (0.76 kPa) | |
| f) Miscellaneous Dead Loads | 0 psf | (0.00 kPa) | |
| g) TOTAL | 45 psf | (2.16 kPa) | |
| | = 270 plf | (3.94 kN/m) | |
| 4) Composite Live Load | | | |
| a) Live Load (² Reduced as Applicable) | 100 psf | (4.79 kPa) | |
| b) Moveable Partitions | 0 psf | (0.00 kPa) | |
| c) TOTAL | 100 psf | (4.79 kPa) | |
| | = 600 plf | (8.75 kN/m) | |
| 5) Total Factored Non-composite Dead Load, 1.2 x (1d) | | | |
| | = 60 psf (2.87 kPa) | or 360 plf | (5.25 kN/m) |
| 6) Total Factored Composite Dead Load, 1.2 x (3g) | | | |
| | = 54 psf (2.58 kPa) | or 324 plf | (4.72 kN/m) |
| 7) Total Factored Composite Live Load, 1.6 x (4c) | | | |
| | = 160 psf (7.66 kPa) | or 960 plf | (14.00 kN/m) |
| 8) Total Factored Composite Design Load, (5) + (6) + (7) | | | |
| (Concentrated dead load not included) | | | |
| | = 274 psf (13.11 kPa) | or 1644 plf | (23.97 kN/m) |

Additional Concentrated Dead Load, **P**, at Top Chord = 7.0 kips (31.1 kN)

Total Factored Composite Dead Load, 1.2 x 7.0 = **8.4 kips (37.3 kN)**



COMPOSITE JOIST DESIGN EXAMPLE 2 SPECIAL LOADINGS

NOTES:

¹When estimating construction live loading on a composite steel joist it is suggested that the construction live loading be adjusted for tributary area. No construction live load has been assumed in this example.

²Floor live load may be reduced as applicable per ASCE 7-05, Section 4.8. No live load reduction has been taken in this example.

Camber and Deflection (unfactored load):

1. Loads to Camber For:

- | | | | | |
|--------------------------------|-------------|---|----------|------------|
| a) Percent of Non-composite DL | (1d) x 100% | = | 50 psf | (2.40 kPa) |
| b) Percent of Composite DL | (3g) x 50% | = | 22.5 psf | (1.08 kPa) |
| c) Percent of Composite LL | (4c) x 20% | = | 20 psf | (0.96 kPa) |

2. Maximum Allowable Live Load Deflection, Span/360

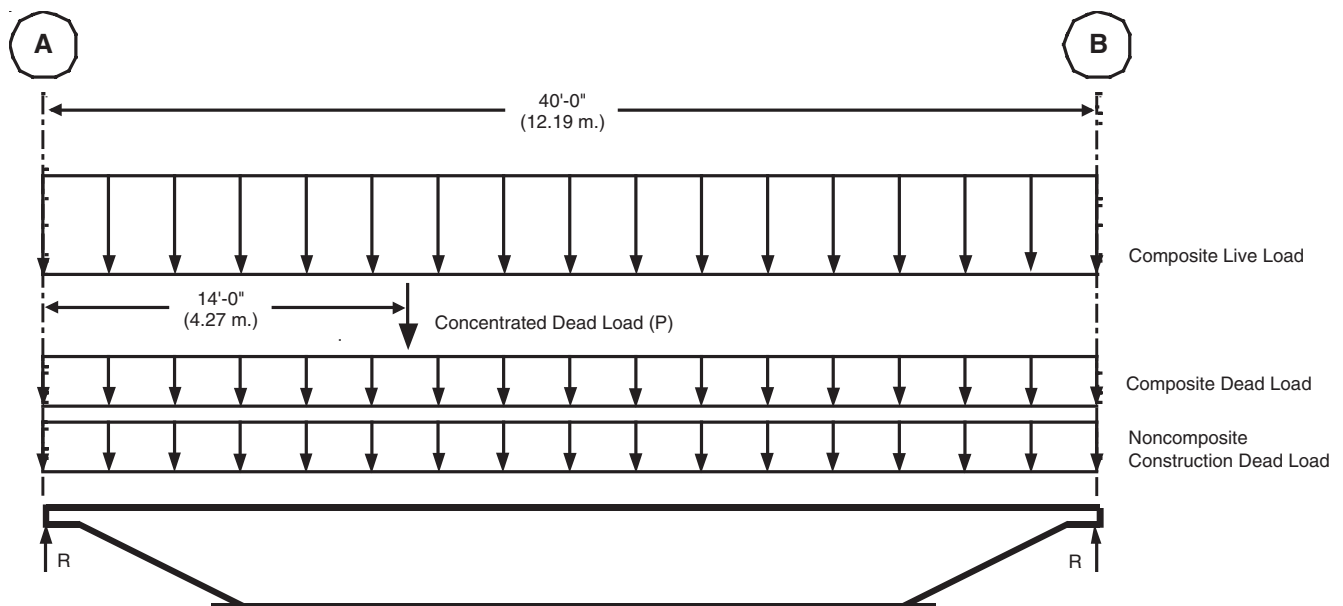
$$= (40 \times 12/360) = 1.33 \text{ in.} \quad (34 \text{ mm})$$

3. Maximum Deflection, Span/240

$$= (40 \times 12/240) = 2.00 \text{ in.} \quad (51 \text{ mm})$$

Determine joist weight per foot, quantity and size of shear studs, and the number of bridging rows required for the following conditions.

Solution



COMPOSITE JOIST DESIGN EXAMPLE 2
SPECIAL LOADINGS

1. Calculate factored loads for one joist as per the provisions for Load and Resistance Factor Design (LRFD)

a) Uniformly Distributed Loads

$$w_f = (60 \text{ psf} + 54 \text{ psf} + 160 \text{ psf}) \times 6 \text{ ft.} = 1644 \text{ plf (23.97 kN/m)}$$

b) Concentrated Load

$$P_f = 8.4 \text{ kips} \times 1000 = 8400 \text{ lbs (37.3kN)}$$

2. Calculate maximum moment and its position along the joist

The point of maximum moment is the point of zero shear.

Calculate this point, L_0 , as follows:

$$R_A = 1644 \text{ plf} \times 40 \text{ ft.}/2 + 8400 \text{ lbs} \times (40 - 14)/40 = 38,340 \text{ lbs (170.4 kN)}$$

$$L_0 = (38,340 \text{ lbs} - 8400 \text{ lbs})/1644 \text{ plf} = 18.2 \text{ ft. (5.55 m)}$$

Thus the maximum moment is:

$$\begin{aligned} M_f &= 1644 \text{ plf} \times 18.2 \text{ ft.} \times (40 \text{ ft.} - 18.2 \text{ ft.})/2 + 8400 \text{ lbs} \times 14 \text{ ft.}/ \times (40 - 18.2)/40 \\ &= 390,229 \text{ ft.- lbs (528.9kN - m)} \end{aligned}$$

3. Calculate maximum end reaction

$$R_A = 38,340 \text{ lbs (170.4kN)} \text{ from previous calculation}$$

4. Calculate equivalent load due to maximum moment

$$w_{eM} = 8 \times 390,229 \text{ ft.} - \text{lbs}/40 \text{ ft.}^2 = 1951 \text{ plf (28.45 kN/m)}$$

5. Calculate equivalent load due to maximum end reaction

$$w_{eR} = 2 \times 38,340 \text{ lbs}/40 \text{ ft.} = 1917 \text{ plf (27.95 kN/m)}$$

6. Determine equivalent load

$$w_e = \text{Maximum of } w_{eM} \text{ and } w_{eR} = 1951 \text{ plf (28.45 kN/m)}$$

7. Select composite joist from the appropriate Composite Joist Weight Table and bridging from appropriate Composite Joist Bridging Table



COMPOSITE JOIST DESIGN EXAMPLE 2 SPECIAL LOADINGS

JOIST SELECTION:

The proper joist shall be selected from the **Design Guide LRFD Weight Table for Composite Steel Joists, CJ-Series – Normal Weight Concrete** for a joist with a 40 foot (12.19 m) span, depth of 26 inches (660 mm), normal weight concrete and a total factored composite design load of 1951 plf (28.45 kN/m) and composite live load of 960 plf (14.00 kN/m).

Choose the column in the table that is equal to or greater than the calculated total safe factored uniformly distributed load and for the corresponding joist depth. The joist spacing, **Js** in the column selected should be less than or equal to the actual spacing of the joists. However, should the joist spacing be less than the **Js** value chosen, then the concrete capacity would need to be checked, since it would likely have a lower **W360** value and a lower total load carrying capacity. The **SJI Composite Joist Floor Design Parameters Checklist** found in the **Code of Standard Practice for Composite Steel Joists** needs to be filled out. This information should be forwarded to a Steel Joist Institute member company requesting that a composite joist design be checked.

In this example choose the column headed by total factored load of 2000 plf (29.16 kN/m) and the 26 inch (660 mm) joist depth row.

$$W_t = 24.0 \text{ plf (35.7 kg/m)}$$

$$W_{360} = 1280 \text{ plf (18.66 kN/m)} > 600 \text{ plf (8.75 kN/m)}$$

$$N-ds = 40 - 5/8 \text{ in. (16 mm)}$$

The joist spacing (6 ft.) in this example is less than the value in the table (7 ft.). Therefore, the concrete capacity should normally be checked and the **W360** value could be less than the tabulated value. However, the concrete slab compressive failure does not govern in general and as shown above, **W360** tabulated value far exceeds the required criterion. For the purpose of the example, it is assumed that the concrete slab capacity is OK.

Because of the presence of a concentrated load, spacing of the shear studs may vary over part of the member. The number of studs will be calculated between the point of zero moment and its adjacent point of concentrated load. The rest of the shear studs will be distributed between the point of maximum moment (L_0) and the point of concentrated load, also considering the maximum spacing of the shear studs.

For estimating purposes only, the total number of shear studs may be adjusted for special loadings as follows:

$$\text{Total number of shear studs} = \left(\frac{\text{Span} \times \text{Quantity from Weight Table}}{2 \times \text{Min} (L_0, \text{Span} - L_0)} \right)$$

For this example,

$$\text{Total number of shear studs} = \left(\frac{40 \times 40}{2 \times \text{Min} (18.2, 40 - 18.2)} \right) = 44.0$$

Therefore, use 44 studs.



COMPOSITE JOIST DESIGN EXAMPLE 2 SPECIAL LOADINGS

BRIDGING AND NOMINAL HORIZONTAL TOP CHORD FORCE (P_{br}) SELECTION:

From the **Design Guide LRFD Weight Table for Composite Steel Joists, CJ-Series – Normal Weight Concrete**, use the same column and row selection for the joist selection (2000 plf; 26 inch joist depth) and determine the number of rows and type of bridging:

For this example two rows of horizontal bridging (**2H**) are required.

For the bridging member size(s) and the nominal horizontal top chord force go to the **Design Guide LRFD Bridging Table for Composite Steel Joists, CJ-Series – Normal Weight Concrete** and choose the column at or nearest the actual joist spacing and the joist depth row based on the joist selection above (Note: This approach is conservative since the nominal horizontal top chord force, P_{br} will be larger than the actual top chord force, but since the bridging size is also based on the length of bridging, the distance nearest the actual spacing of the joists needs to be considered to size the bridging. This is an estimate and the actual size of the bridging may change when the final design is performed by the joist manufacturer).

For this example the size of the bridging and the P_{br} force can be selected for the 7 ft. spacing, because the joist spacing is less than the tabulated value for 2000 plf (29.16 kN/m). The bridging size is L1.5 x 1.5 x 0.138 and the nominal horizontal top chord force, P_{br} is 750 lbs (Note: The nominal horizontal top chord force is used to determine the connection for the termination of the bridging row).

NON-COMPOSITE EFFECTIVE MOMENT of INERTIA SELECTION:

To determine the Non-composite Effective Moment of Inertia of the joist go to the **Design Guide LRFD Bridging Table for Composite Steel Joists, CJ-Series – Normal Weight Concrete** and choose the same column and row used in making the joist selection.

For this example, use the column labeled 2000 plf and the row labeled 26 inch joist depth.

$$I_{\text{non-comp eff}} = 737 \text{ in.}^4 \text{ (} 3.07 \times 10^8 \text{ mm}^4\text{)}$$



COMPOSITE JOIST DESIGN EXAMPLE 2 SPECIAL LOADINGS

Deflection:

$$\Delta_{\text{Non-composite DL}} = \frac{5(W_{\text{Non-composite DL}})(\text{Design Length})^4(1728)}{384E_S I_{\text{non-comp eff}}}$$

Where:

$$\begin{aligned} \text{Design Length} &= \text{Span} - 4 \text{ in.} = 39.67 \text{ ft. (12.19 m)} \\ E_S &= \text{Modulus of Elasticity of steel (psi)} \\ I_{\text{non-comp eff}} &= \text{Moment of Inertia of Non-composite joist (in.}^4\text{)} \end{aligned}$$

$$\Delta_{\text{Non-composite DL}} = \frac{5(300)(39.67)^4(1728)}{384(29,000,000)(737)} = 0.78 \text{ in. (19.9 mm)} = L/614$$

$$\Delta_{\text{Composite DL}} = \frac{5(270)(39.67)^4(1728)}{384(29,000,000)(1910)} + \frac{(7000)(14)(18.2)(39.67^2 - 14^2 - 18.2^2)(1728)}{6(29,000,000)(1910)(39.67)}$$

$$\Delta_{\text{Composite DL}} = 0.27 \text{ in.} + 0.24 \text{ in.} = 0.52 \text{ in. (13.1 mm)} = L/930$$

$$\Delta_{\text{Composite LL}} = \left[\frac{W_{\text{Composite LL}}}{W_{L/360}} \right] \left[\frac{L}{360} \right] = \left[\frac{600}{1299} \right] \left[\frac{(39.67)(12)}{360} \right] = 0.61 \text{ in. (15.5 mm)} = L/786$$

$$\Delta_{\text{TL}} = \Delta_{\text{Non-composite DL}} + \Delta_{\text{Composite DL}} + \Delta_{\text{Composite LL}}$$

$$\Delta_{\text{TL}} = 0.78 \text{ in.} + 0.52 \text{ in.} + 0.61 \text{ in.} = 1.91 \text{ in. (48.5 mm)} = L/251$$

Camber:

$$\text{Camber joist for } 100\% \times \Delta_{\text{Non-composite DL}} + 50\% \times \Delta_{\text{Composite DL}} + 20\% \times \Delta_{\text{Composite LL}}$$

$$\text{Joist Camber} = 1.0 \times 0.78 \text{ in.} + 0.50 \times 0.52 \text{ in.} + 0.20 \times 0.61 \text{ in.} = 1.16 \text{ in. (29.5 mm)}$$



COMPOSITE JOIST DESIGN EXAMPLE 2 SPECIAL LOADINGS

EFFECTIVE MOMENT of INERTIA SELECTION:

To determine the Effective Moment of Inertia of the joist go to the **Design Guide LRFD Weight Table for Composite Steel Joists, CJ-Series – Normal Weight Concrete** and choose the same column and row used in making the joist selection.

For this example, use the column labeled 2000 plf and the row labeled 26 inch joist depth.

$$I_{\text{eff}} = 1910 \text{ in.}^4 \text{ (} 7.95 \times 10^8 \text{ mm}^4\text{)}$$

The published value of **W360** takes into account the reductions in effective transformed moment of inertia associated with web deformations and interfacial slippage. Therefore, the above value of I_{eff} , has been reduced to account for these behaviors. In deriving **W360**, an interfacial slippage factor of 1.05 was assumed.

Therefore, taking out this effect, $I_{e \text{ composite without slippage}}$ can be given as:

$$I_{e \text{ composite without slippage}} = 1.05 I_{\text{eff}} = 1.05 (1910 \text{ in.}^4) = 2006 \text{ in.}^4 \text{ (} 8.35 \times 10^8 \text{ mm}^4\text{)}$$

Design Summary:

The composite steel joist designation: **26CJ 1644/960/324 (660CJ 23.97/14.00/4.72 kN/m)**

26	CJ	1644	960	324
Depth (in.)	Composite Joist Series	Total Factored Composite Design Load (plf)	Total Factored Composite Live Load (plf)	Total Factored Composite Dead Load (plf)

Bridging: Use **2 rows of 2L's 1.5 x 1.5 x 0.138**

Joist weight = 24 plf (35.7 kg/m)

$$\Delta \text{ Non-composite DL} = 0.78 \text{ in. (} 19.9 \text{ mm)}$$

$$\Delta \text{ Composite DL} = 0.52 \text{ in. (} 13.1 \text{ mm)}$$

$$\Delta \text{ Composite LL} = 0.61 \text{ in. (} 15.5 \text{ mm)}$$

Camber = 1.16 in. (29.5 mm)

Quantity and Type of Shear Studs: Use 44 - 5/8 in. diameter studs

Duct Opening Available:

From the Approximate Duct Opening Sizes table located in the front portion of the catalog a 12 in. (305 mm) circular duct is permissible to pass through the web openings of a 26 in. deep composite steel joist.



CODE OF STANDARD PRACTICE FOR COMPOSITE STEEL JOISTS

Adopted by the Steel Joist Institute May 10, 2006
– Effective May 10, 2006

SECTION 1. GENERAL

1.1 SCOPE

The practices and customs set forth herein are in accordance with good engineering practice, tend to ensure safety in composite steel construction, and are standard within the industry. There shall be no conflict between this code and any legal building regulation. This code shall only supplement and amplify such laws. Unless specific provisions to the contrary are made in a contract for the purchase of composite steel joists, this code is understood to govern the interpretation of such a contract.

1.2 APPLICATION

This Code of Standard Practice is to govern as a standard unless otherwise covered in the architects' and engineers' plans and specifications.

1.3 DEFINITIONS

Buyer. The entity that has agreed to purchase Material from the manufacturer and has also agreed to the terms of sale.

Erector. The entity that is responsible for the safe and proper erection of the Materials in accordance with all applicable codes and regulations.

Material. Composite steel joists and accessories as provided by the Seller.

Owner. The entity that is identified as such in the Contract Documents.

Placement Plans. Drawings that are prepared depicting the interpretation of the Contract Documents requirements for the Material to be supplied by the Seller. These floor and/or roof plans are approved by the Specifying Professional, Buyer or Owner for conformance with the design requirements. The Seller uses the information contained on these drawings for final Material design. A unique piece mark number is typically shown for the individual placement of the composite steel joists and accessories along with sections that describe the end bearing conditions and minimum attachment required so that Material is placed in the proper location in the field.

Seller. A company certified by the Steel Joist Institute engaged in the manufacture and distribution of composite steel joists and accessories.

Specifying Professional. The licensed professional who is responsible for sealing the building Contract Documents, which indicates that he or she has performed or supervised the

analysis, design and document preparation for the structure and has knowledge of the load-carrying structural system.

Structural Drawings. The graphic or pictorial portions of the Contract Documents showing the design, location and dimensions of the work. These documents generally include plans, elevations, sections, details, connections, all loads, schedules, diagrams and notes.

1.4 DESIGN

In the absence of ordinances or specifications to the contrary, all designs prepared by the Specifying Professional shall be in accordance with the Steel Joist Institute Standard Specifications for Composite Steel Joists, **CJ-Series**, of latest adoption.

1.5 RESPONSIBILITY FOR DESIGN AND ERECTION

When Material requirements are specified, the Seller shall assume no responsibility other than to furnish the items listed in Section 5.2 (a). When Material requirements are not specified, the Seller shall furnish the items listed in Section 5.2 (a) in accordance with Steel Joist Institute Standard Specifications for Composite Steel Joists, **CJ-Series**, of latest adoption, and this code. Pertinent design information shall be provided to the Seller as stipulated in Section 6.1. The Seller shall identify material by showing size and type. In no case shall the Seller assume any responsibility for the erection of the item furnished.

1.6 PERFORMANCE TEST FOR CJ-SERIES STEEL JOIST CONSTRUCTION

When performance tests on a structure are required, composite steel joists in the test panel shall have bridging and top deck applied as used. In addition to the full dead load, the test panel shall sustain for one hour a test load of 1.65 times the non-factored nominal live load. After this test load has been removed for a minimum of 30 minutes, the remaining deflection shall not exceed 20% of the deflection caused by the test load.

The weight of the test panel itself shall constitute the dead load of the construction and shall include the weight of the joists, bridging, top deck, slab, ceiling materials, etc. In no case shall the factored nominal live load be more than the specified total factored uniformly distributed joist load less the factored dead load. The cost of such tests shall be borne by the purchaser.



SECTION 2. COMPOSITE JOISTS AND ACCESSORIES

2.1 COMPOSITE STEEL JOISTS

Composite steel joists shall carry the loads and meet the requirements of the Steel Joist Institute Standard Specifications for Composite Steel Joists, **CJ-Series**, of latest adoption.

CJ-Series joists are furnished with parallel chords only, and with minimum standard end bearing depth of 2 1/2 inches (64 mm). **CJ-Series** joists may be furnished with either underslung or square ends.

2.2 JOIST LOCATION AND SPACING

The maximum joist spacing shall be in accordance with the requirements of Section 104.8, Steel Joist Institute Standard Specifications for Composite Steel Joists, **CJ-Series**, of latest adoption.

Where sidewalls, wall beams or tie beams are capable of supporting the floor slab or roof deck, the first adjacent composite steel joists may be placed one full space from these members. **CJ-Series** joists are provided with camber. These joists may have a significant difference in elevation with respect to the adjacent structure because of this camber. This difference in elevation should be given consideration when locating the first composite steel joist adjacent to a sidewall, wall beam or tie beam. Therefore, it is recommended that this joist be located one full space away from these members.

Where load bearing partitions occur parallel to joists, joists are generally placed under each such partition, and more than one such joist shall be provided if necessary to safely support the weight of such partition and the adjacent floor, less the live load, on a strip of floor one foot (0.305 m) in width.

Where partitions occur perpendicular to the joists, they shall be treated as concentrated loads in accordance with Section 6.1.

2.3 EXTENDED ENDS

Composite steel joist extended ends shall be in accordance with Manufacturer's Standard and shall meet the requirements of the Steel Joist Institute Standard Specifications of latest adoption. Extended joist ends shall be assumed to act non-compositely. In the absence of a load diagram, the extended top chord will be designed for the uniformly distributed load.

2.4 CEILING EXTENSIONS

Ceiling extensions shall be furnished to support ceilings which are to be attached to the bottom of the joists. They are not furnished for the support of suspended ceilings. The ceiling extension shall be either an extended bottom chord element or a loose unit, whichever is standard with the manu-

facturer, and shall be of sufficient strength to properly support the ceiling.

2.5 BRIDGING AND BRIDGING ANCHORS

(a) Bridging standard with the manufacturer and complying with the applicable Steel Joist Institute Standard Specifications for Composite Steel Joists, **CJ-Series**, of latest adoption shall be used for bridging all joists furnished by the manufacturer. Positive anchorage shall be provided at the ends of each bridging row at both top and bottom chords.

(b) Diagonal cross bridging consisting of angles or other shapes connected to the top and bottom chords, of **CJ-Series** joists shall be used when required by the Steel Joist Institute Standard Specifications for Composite Steel Joists, **CJ-Series**, of latest adoption.

Diagonal bridging, when used, shall have a l/r ratio not exceeding 200.

(c) For the **CJ-Series** joists, horizontal bridging is recommended for spans up to and including 60 feet (18.3 m) except where code requirements for *erection stability* and/or the Steel Joist Institute Specifications require bolted diagonal bridging.

CJ-Series joists, exceeding 60 feet (18.3 m) in length shall have bolted diagonal bridging for all rows.

Refer to Section 105 in the Steel Joist Institute Standard Specifications for Composite Steel Joists, **CJ-Series**, of latest adoption for erection stability requirements.

Refer to OSHA *Safety Standards for Steel Erection, 29 CFR 1926.757 – Open Web Steel Joists* for erection stability requirements.

Note: The requirements as per OSHA also apply for composite steel joists since, during erection, a composite joist is like any SJI steel joist. Only after the concrete has cured, does the joist become composite.

Horizontal bridging shall consist of continuous horizontal steel members. The l/r ratio for horizontal bridging shall not exceed 300.

(d) When bolted diagonal erection bridging is required, the following shall apply:

1. The bridging shall be indicated on the joist placement plan.
2. The joist placement plan shall be the exclusive indicator for the proper placement of this bridging.
3. Shop installed bridging clips, or functional equivalents, shall be provided where the bridging bolts to the steel joist.
4. When two pieces of bridging are attached to the steel joist by a common bolt, the nut that secures the first piece of bridging shall not be removed from the bolt for the attachment of the second piece.



5. Bridging attachments shall not protrude above the top chord of the steel joists.

2.6 CAMBERING

(a) Manufacturing Tolerances

The camber tolerance for **CJ-Series** joists, as shown in

TABLE 2.6 CAMBER TOLERANCES	
TOP CHORD LENGTH feet (millimeters)	TOLERANCE - or + inches (millimeters)
20 (6,096)	-0, +1/4 (6)
30 (9,144)	-0, +1.4 (6)
40 (12,192)	-0, +1/4 (6)
50 (15,240)	-0, +3/8 (9)
60 (18,288)	-0, +1/2 (12)
70 (21,336)	-0, +1/2 (12)
80 (24,384)	-0, +5/8 (16)
90 (27,432)	-0, +5/8 (16)
100 (30,480)	-0, +3/4 (19)
110 (33,528)	-0, +7/8 (22)
120 (36,576)	-0, +7/8 (22)

Table 2.6, shall be -0 in., +1/4 in. (6 mm) or -0 in., + L/1600 [where L = top chord length, in. (mm)] whichever is greater. Negative camber is not permitted.

(b) Camber Design

It is standard practice that a **CJ-Series** joist be furnished with sufficient camber for 100 percent of the non-composite dead load (joist, bridging, deck, and concrete slab). Joist bearings act as pinned/pinned-end connections with negligible end rotation restraint provided. Hence one will obtain 100% of the predicted non-composite joist deflection when the full non-composite dead load has been placed on the composite joist. With the composite joist cambered for 100% of the non-composite dead load and the floor slab placed to a uniform thickness as suggested in Section 9, Concrete Placement, the floor will be approximately level after the concrete has been placed.

Should the Specifying Professional strive to achieve a level floor after the composite dead and live loads are placed on the floor, additional joist camber can be specified on the "SJI Composite Joist Floor Design Parameters Checklist", see Appendix B. It is typical that the "Actual" composite dead and live loads supported by the composite steel joist are less than the full "Design" composite dead and live loads.

(c) Shop Inspection

When a check is to be made of the camber of a **CJ-Series** joist, the joist shall be carefully laid on its side with the joist intermittently supported prior to measuring the camber. With the joist laying on its side, the joist will be in an unstressed condition at which time the amount of camber provided can be accurately determined.

Joists having measured camber outside of the camber tolerances shown in Table 2.6 shall have their camber adjusted by the joist manufacturer. At the option of the joist manufacturer, the joists may be rebuilt with the corrected camber.

2.7 SHEAR STUDS

The joist manufacturer shall indicate the size, quantity and layout of shear studs required on the stud installation drawings. Purchasing of the shear studs and ferrules, rental of shear stud

**SECTION 3.
MATERIALS**

welding equipment, installation of shear studs and field testing of shear studs is the responsibility of the shear stud installer.

3.1 STEEL

The steel used in the manufacture of composite joists shall comply with the Steel Joist Institute Standard Specifications for Composite Steel Joists, **CJ-Series**, of latest adoption.

3.2 PAINT

Standard shop practice is to supply composite steel joists unpainted to facilitate installation of welded shear studs. Paint

**SECTION 4.
INSPECTION**

may potentially hinder the installation of welded shear studs to the joist top chord.

Inspection of composite steel joists at the joist manufacturer's plant shall be made in accordance with the Steel Joist Institute Standard Specifications for Composite Steel Joists, **CJ-Series**, of latest adoption, Section 104.13.

Provisions for field inspection of projects involving composite steel joists shall be made by the Specifying Professional. This field inspection shall include verifying the concrete strength, concrete thickness and placement of the steel shear studs. For more information on stud placement see Section 106 of the Steel Joist Institute Standard Specifications for Composite Steel Joists, **CJ-Series**, of latest adoption. This field inspection will not be provided by SJI member manufacturers.



SECTION 5.
ESTIMATING

5.1 PLANS FOR BIDDING

Plans to serve as the basis for bids shall show the character of the work with sufficient clarity to permit making an accurate estimate and shall show the following:

- Designation and location of Materials (see Section 5.2(a)), including any special design or configuration requirements.
- Locations and elevations of all steel and concrete supporting members and bearing walls.
- Joist depth.
- Joist span.
- Distance, each side of the joist centerline, to adjacent

SECTION 6.
PLANS AND SPECIFICATIONS

joists or other supporting members.

- Type and depth of floor deck.
- Concrete unit weight.
- Concrete compressive strength.
- Total depth of concrete slab.
- Loads and their locations as defined in Section 6.1(a).
- Location and length of joist extended ends.
- Location and size of all openings in floors and roofs.
- Location of all partitions.
- Composite Steel Joists requiring extended bottom chords.
- Deflection limitation.
- No paint on the joist. See **CJ-Series** Standard Specifications, Section 102.6 Paint.

5.2 SCOPE OF ESTIMATE

- (a) Unless otherwise specified, the following items shall be included in the estimate, and requirements shall be determined as outlined in Section 6.1.
- Composite Steel Joists.
 - Joist Extended Ends.
 - Ceiling Extensions.
 - Extended bottom chord used as strut.
 - Bridging and bridging anchors.
- (b) The following items shall not be included in the estimate but may be quoted and identified by the joist manufacturer as separate items:
- Headers for Composite Steel Joists, **CJ-Series**.



- Shear connectors and/or ferrules.
- Centering material and attachments.
- Miscellaneous framing between joists for openings at ducts, dumbwaiters, ventilators, skylights, etc.
- Loose individual or continuous bearing plates and bolts or anchors for such plates.
- Erection bolts for composite joist end anchorage.
- Horizontal bracing in the plane of the top and bottom chords from joist to joist or joist to structural framing and walls.
- Moment plates.
- Special joist configuration or bridging layouts for duct-work or sprinkler system.

6.1 PLANS FURNISHED BY BUYER

The Buyer shall furnish the Seller plans and specifications as prepared by the Specifying Professional showing all Material requirements and composite steel joist designations.

(a) Design Input Required for Composite Steel Joists

The following basic information must be provided by the Specifying Professional.

1. Joist Depth:

The joist depth includes the steel joist portion only, not the deck or concrete slab, in. (mm).

2. Joist Layout:

The joist plans shall show the layout of the composite steel joists, walls, columns, beams, girders and other supports, as well as floor and roof openings. The joist manufacturer will determine the required composite joist span to be fabricated based on this information.

3. Finished Floor, Roof, and Bearing Elevations:

The elevation of finished floors, roofs, and bearings shall be shown with due consideration taken for the effects of dead load deflection.

4. Adjacent Member Spacing:

This is the distance to the adjacent member or to the edge of the slab (if an exterior joist), feet (m).

5. Type of Floor Deck:

Review each manufacturer's deck capacity for load capacity and deflection characteristics and specify the deck depth, profile and thickness to meet the building design.

6. Concrete Unit Weight, lb/ft.³ (kg/m³).

7. Concrete Compressive Strength:

28 day specified compressive strength of concrete, ksi (MPa).

8. Slab Thickness above the top ribs of the deck, in. (mm).

9. Loads

The Steel Joist Institute does not presume to establish the loading requirements for which structures are designed. The Specifying Professional shall provide the nominal loads and load combinations as stipulated by the applicable Code under which the structure is designed. At the present time the **CJ-Series** joists are assumed to be designed utilizing an LRFD design basis.

The Specifying Professional shall calculate and provide the magnitude and location of ALL JOIST LOADS including those shown below. When necessary to clearly convey information, a Load Diagram or Load Schedule shall be provided.

- a. Non-composite DL, lb/ft.² (kPa) - Concrete, joists, deck, bridging, and any other non-composite dead loads.
- b. Construction LL, lb/ft.² (kPa) – It is suggested that construction live load be determined considering the tributary area for each composite steel joist. See “SJI Composite Joist Floor Design Parameters Checklist, Footnote 1.”
- c. Composite DL, lb/ft.² (kPa) - Partitions, mechanical, electrical, fireproofing, floor covering, ceilings, and other composite dead loads. The magnitude and location of composite dead loads shall be clearly dimensioned.
- d. Composite LL, lb/ft.² (kPa) - Reduced design live loads may be specified if applicable.

10. Special Loads:

The Specifying Professional shall be responsible for determining the applicable building code combinations. If the loading criteria are too complex to be adequately communicated in a simple load diagram, then the Specifying Professional shall provide a load schedule showing the specified design loads, load categories and required load combinations with applicable load factors.

The Specifying Professional shall show on the structural drawings and give due consideration to the following special loads and load effects:

- a. Snow drift loads including the accumulation of snow in the vicinity of obstructions such as penthouses, signs, parapets, adjacent buildings, etc.
- b. Axial loads at the joist end supports.
- c. Type and magnitude of end moments. For moment resisting joists framing near the end of a column, due consideration shall be given to extend the column length to allow a plate type connection between the top of the joist top chord and the column. Whenever possible, avoid resolving joist end moment forces through the joist bearing seat connection. A note shall be provided on the structural drawings stating



that all moment resisting joists shall have all dead loads applied to the joist before the bottom chord struts are welded to the supporting connection whenever the moments provided do not include dead load. The top and bottom chord moment connection details and reinforcing steel placed in the concrete slab to resist negative flexural moments shall be designed by the Specifying Professional. The joist designer shall furnish the Specifying Professional with the joist detail information if requested.

- d. Structural bracing loads.
- e. Ponded rain water.
- f. Wind Uplift - When composite steel joists are utilized in roof applications, the magnitude and location of all wind uplift loads shall be clearly shown in terms of net uplift.
- g. Concentrated loads from mechanical units, fans, blowers, tanks, monorails, etc. - Where concentrated loads occur, the magnitude and location of these concentrated loads shall be shown on the structural drawings when, in the opinion of the Specifying Professional, they may require consideration by the joist manufacturer.

11. Camber:

Composite steel joists, unless otherwise specified, are cambered, in. (mm), for 100% of the non-composite weight of joist, bridging, deck and concrete slab. Additional camber to accommodate for actual sustained composite dead and live loads and concrete shrinkage/creep may be identified by the Specifying Professional.

(b) Design Parameter Checklist

The SJI Composite Joist Floor Design Parameters Checklist is a form that can be used for filling in the above standard design information listed in Section 6.1(a)(1) and Sections 6.1(a)(4) – 6.1(a)(9).

(c) Composite Joist Limitations

Composite Steel Joists have some limitations that the Specifying Professional must be aware of. These include:

- The maximum deck depth is 3 inches (76 mm).
- The minimum slab thickness above the top of the deck must be 2 inches (51 mm).
- When shear studs are utilized, they must have at least 1/2 inch (13 mm) of concrete cover.
- The concrete shall be placed to provide a constant thickness along the entire span.

(d) Connections

Minimum End Anchorage for simple span gravity loading shall be in accordance with Steel Joist Institute Standard Specifications for Composite Steel Joists, **CJ-Series**, of latest adoption, Section 104.7. The Specifying

Professional is responsible for the design of the composite joist connection when it is subject to any loads other than simple span gravity loading including uplift and lateral loads. The Specifying Professional is also responsible for bridging termination connections. The contract documents must clearly illustrate these connections.

(e) Special Consideration

The Specifying Professional shall indicate on the construction documents special considerations including:

- a) Oversized or other non-standard web openings
- b) Extended ends
- c) Non-SJI standard bridging

6.2 PLANS FURNISHED BY SELLER

The Seller shall furnish the Buyer with steel placement plans to show the Material as specified on the construction documents and are to be utilized for field installation in accordance with specific project requirements as stated in Section 6.1. Composite Steel Joist placement plans shall include, at a minimum, the following:

1. Listing of all applicable loads as stated in Section 6.1 and used in the design of the composite steel joists as specified in the construction documents
2. Connection requirements for:
 - a) Joist supports
 - b) Field splices
 - c) Bridging attachments
3. Deflection criteria for live load and total load
4. Shear stud installation plans showing:
 - a) Size, quantity and location of all shear connectors to be installed on the composite steel joists
 - b) Design camber for each composite steel joist or reference to a table giving the design camber for each composite steel joist
5. Size, location, and connections for all bridging
6. Joist headers

All Material shall be identified with its piece mark which also appears on the bill of material. **Composite Steel Joist placement plans do not require the seal and signature of the joist manufacturer's registered design professional.**

6.3 DISCREPANCIES

The Specifying Professional's bid plans and specifications will be assumed to be correct in the absence of written notice from the Buyer to the contrary. When plans are furnished by the Buyer which do not agree with the Architect's bid plans, such detailed plans shall be considered as a written notice of change of plans. However, it shall be the Buyer's responsibility to advise the Seller of those changes which affect the composite steel joists.



**SECTION 7.*
HANDLING AND
ERECTION**

6.4 APPROVAL

When composite joist placement plans are furnished by the Seller, prints thereof are submitted to the Buyer and Owner for examination and approval. The Seller allows a maximum of fourteen (14) calendar days in the schedule for the return of placement plans noted with the Owner's and customer's approval, or approval subject to corrections as noted. The Seller makes the corrections, furnishes corrected prints for field use to the Owner/customer and is released by the Owner/customer to start composite joist manufacture.

Approval by the Owner/customer of the placement plans, sections, notes and joist schedule prepared by the Seller indicates that the Seller has correctly interpreted the contract requirements, and is released by the Owner/customer to start joist manufacture. This approval constitutes the Owner's/customer's acceptance of all responsibility for the design adequacy of any detail configuration or joist support conditions shown by the Seller as part of the preparation of these placement plans.

Approval does not relieve the Seller of the responsibility for accuracy of detail dimensions on the plans, nor the general fit-up of joists to be placed in the field.

6.5 CHANGES

When any changes in plans are made by the Buyer (or the Buyer's Representative) either prior to or after approval of detailed plans, or when any Material is required and was not shown on the plans used as the basis of the bid, the cost of such changes and/or extra Material shall be paid by the Buyer at a price to be agreed upon between Buyer and Seller.

6.6 CALCULATIONS

The Seller shall design the composite steel joists in accordance with the Steel Joist Institute Standard Specifications, **CJ-Series**, of latest adoption, to support the load requirements of Section 6.1.

The Specifying Professional may require submission of the composite steel joist calculations as prepared by a registered design professional responsible for the product design. If requested by the Specifying Professional, the composite steel joist manufacturer shall submit design calculations with a cover letter bearing the seal and signature of the joist manufacturer's registered design professional. In addition to standard calculations under this seal and signature, submittal of the following shall be included:

1. Non-SJI standard bridging details (e.g. for cantilevered conditions, net uplift, etc.)
2. Connection details for:
 - a) Non-SJI standard connections (e.g. flush framed or

**SECTION 8.
INSTALLATION AND
INSPECTION OF SHEAR
STUD CONNECTORS**

framed connections)

- b) Field splices
- c) Joist headers

3. Shear stud requirements

The current OSHA SAFETY STANDARDS FOR STEEL ERECTION, 29 CFR PART 1926, SUBPART R - STEEL ERECTION, refers to certain joists at or near columns to be designed with sufficient strength to allow one employee to release the hoisting cable without the need for erection bridging. **This STANDARD shall not be interpreted that any joist at or near a column line is safe to support an employee without bridging installed.** Many limitations exist that prevent these joists from being designed to safely allow an employee on an unbridged joist. Because of these limitations and as required by OSHA, these joists must be erected by incorporating erection methods ensuring joist stability and either:

1. Installing bridging or otherwise stabilizing the joist prior to releasing the hoisting cable, or
2. Releasing the hoisting cable without having a worker on the joist.

A composite steel joist shall not be placed on any support structure unless such structure is stabilized. When composite steel joists are landed on a structure, they shall be secured to prevent unintentional displacement prior to installation.

A bridging terminus point shall be established before joist bridging is installed.

Composite steel joists shall not be used as anchorage points for a fall arrest system unless written direction to do so is obtained from a "qualified person" as defined in the Steel Joist Institute Standard Specifications for Composite Steel Joists, **CJ-Series**, of latest adoption, Section 105(c)(3)(a).

No modification that affects the strength of a composite steel joist shall be made without the written approval of the project engineer of record.

The Buyer and/or Erector shall check all materials on arrival at the job site and promptly report to the Seller any discrepancies and/or damages. The Buyer and/or Erector shall comply with the requirements of the Steel Joist Institute Standard Specifications for Composite Steel Joists, **CJ-Series**, of latest adoption in the handling and erection of Material.

The Seller shall not be responsible for improper fit of Material due to inaccurate construction work.

* For thorough coverage of this topic, refer to SJI Technical



Digest #9, "Handling and Erection of Steel Joists and Joist Girders."

8.1 INSTALLATION

- (a) Locate headed shear studs, hereafter referred to as shear studs, on composite steel joists per details shown on the manufacturer's shear stud placement drawings and as outlined in any shear stud layout tables. Start laying out shear studs from each end of the joist and working toward the center. Alternate installation of the shear studs from one top chord angle to the other. Note minimum concrete longitudinal edge distance for shear studs on ends of joists as shown on placement drawings.
- (b) All shear studs shall be welded through the steel deck after the deck has been placed on the joists. Welding voltage, current, time, and gun settings for lift and plunge shall be set at optimum settings for the particular size of shear studs and range of joist top chord thicknesses, based on recommendations of the shear stud manufacturer and automatic shear stud welding equipment manufacturer, or both. The shear stud installer should consult AWS C5.4, *Recommended Practices for Stud Welding*, for technique guidance. All welding must comply with AWS D1.1, Structural Welding Code - Steel, Section 7, *Stud Welding*.
- (c) Each shear stud shall be provided with the appropriate ceramic ferrule (arc shield) designated by the shear stud manufacturer as designed for weld through deck application. Ferrules shall be stored in a moisture free environment and kept dry during installation.
- (d) Prior to welding of shear studs, the top surface of the joist top chords must be clean, unpainted and free of heavy rust, dirt, sand, oil, grease, water, or other foreign substances. The surfaces of the deck prior to stud welding shall be free of heavy rust or mill scale, moisture, dirt, sand, or other construction related waste materials.
- (e) Prior to welding, the steel deck must rest tightly against the top chord of the composite steel joist.
- (f) Shear studs shall not be welded through more than 1 thickness of 16 gage deck or two thicknesses of 18 gage deck or lighter. Total galvanizing thickness on one thickness or two thicknesses of deck shall not exceed 1.25 oz. per square foot total for both sides of the deck.
- (g) Welding of shear studs shall not be done when the base metal is below 0°F (-18°C) or when the surface is wet or exposed to falling rain or snow. When the base metal temperature is between 0°F (-18°C) and 32°F (0°C), welding may only be done with appropriate set up, pre-production testing and inspection proce-

dures as outlined in AWS D1.1 Structural Welding Code - Steel, Section 7.5, *Technique*.

- (h) Qualification of the stud application procedure used to weld shear studs through metal deck is outlined in AWS D1.1,

**SECTION 9.
CONCRETE PLACEMENT**

Structural Welding Code – Steel, Section 7.6 *Stud Application Qualification Requirements*. This document requires that a minimum of ten (10) shear studs shall be welded using the decking and base material representative of the conditions to be used during construction. The ten (10) studs must then be successfully bend or tensile tested. A document recording the details and settings including the weld set up used for this test must be prepared prior to beginning of any production shear stud welding. A copy of the *Application Qualification Test Data* shall be furnished to the Engineer of Record as outlined in AWS D1.1, Structural Welding Code - Steel, Section 7.6.7 *Application Qualification Test Data*. At the beginning of each day's or shift's production, Pre-production testing in accordance with AWS D1.1 Structural Welding Code - Steel, Section 7.7 *Production Control* must be performed on the first two shear studs that are welded.

8.2 INSPECTION

- (a) The welding of shear studs requires special inspection. The Owner, or the Specifying Professional, acting as Owner's agent, shall employ one or more special inspectors who shall provide inspections of the shear stud welds on a continual and timely basis. The special inspector's duties include verifying welder's qualifications, welding preparation, welding procedures and conformance of materials. Unless otherwise specified in a contract document, the stud installer shall be responsible for application qualification tests, pre-production tests and removal of the ferrule from each weld for inspection purposes.
- (b) To ensure proper welds, bend test a minimum of 1 out of every 100 shear connector studs production welded, by either striking the shear stud with a hammer or placing a pipe or other hollow device over the shear stud and manually or mechanically bending the shear stud 15° from its original axis. Shear studs shall be bent along the longitudinal axis of the joist toward the nearest end of the joist. If failure occurs in the weld zone, a minimum of two adjacent shear studs shall be satisfactorily bend tested. The special inspector, where conditions warrant, may select a reasonable number of additional shear studs to be subjected to a 15° bend test.
- (c) If, in the judgment of the Specifying Professional, shear studs welded during the progress of the work are not in accordance with AWS D1.1, Structural Welding Code -



SECTION 10. BUSINESS RELATIONS

Steel, Section 7, *Stud Welding* requirements, as indicated by inspection and testing, corrective action shall be required of the shear stud installer. At the shear stud installer's expense, the shear stud installer shall make the set-up changes necessary to ensure that shear studs subsequently welded will meet code requirements.

- (d) The shear stud installer shall certify to the Specifying Professional that the shear studs were installed in accordance with the requirements of AWS D1.1, Structural Welding Code - Steel, Section 7, *Stud Welding*.

It is normal practice for joist manufacturers to camber composite steel joists for the full non-composite dead load. This joist camber, while theoretically providing a flat floor surface, after placing of the concrete is completed, requires special consideration relative to concrete placement.

The SJI suggested method for concrete placement is to utilize the "Constant Slab Thickness Method". In this method the concrete slab is placed at a constant thickness across the entire length of the composite steel joist. The reasons to use this method include the following:

- Full concrete slab thickness will be provided along the entire composite joist span to carry the composite steel joist compressive loads.
- A full thickness slab is necessary to provide required fire protection.
- Sufficient concrete cover will be provided over the heads of the shear studs.
- The potential for over runs in concrete placing volume will be greatly reduced.
- Deflections of the composite steel joist under the non-composite loading can be more accurately predicted vs. with a variable thickness slab.

Concrete construction joints should ideally be located between joists. When a construction joint is located closer than 12 in. (305 mm) from the longitudinal centerline of any given composite steel joist, it is the responsibility of the Specifying Professional to determine whether extra transverse steel reinforcing needs to be provided to assure that the composite properties of the supporting member with shear studs has not been affected.

10.1 PRESENTATION OF PROPOSALS

All proposals for furnishing Material shall be made on a Sales Contract Form. After acceptance by the Buyer, these proposals must be approved or executed by a qualified official of the Seller. Upon such approval the proposal becomes a contract.

10.2 ACCEPTANCE OF PROPOSALS

All proposals are intended for prompt acceptance and are subject to change without notice.

10.3 BILLING

Contracts on a lump sum basis are to be billed proportionately as shipments are made.

10.4 PAYMENT

Payments shall be made in full on each invoice without retention.

10.5 ARBITRATION

All business controversies which cannot be settled by direct negotiations between Buyer and Seller shall be submitted to arbitration. Both parties shall sign a submission to arbitration and if possible agree upon an arbitrator. If they are unable to agree, each shall appoint an arbitrator and these two shall appoint a third arbitrator. The expenses of the arbitration shall be divided equally between the parties, unless otherwise provided for in the agreements to submit to a r b i t r a t i o n .

The arbitrators shall pass finally upon all questions, both of law and fact, and their findings shall be conclusive.



SJI COMPOSITE JOIST FLOOR DESIGN PARAMETERS CHECKLIST (NOMINAL UNIFORM LOADS)

Date _____ Project _____

Joist Geometry:

- 1) Depth _____ in. (mm)
- 2) Span _____ ft. (m)
- 3) Adjacent Member Spacing (left) _____ ft. (m)
- 4) Adjacent Member Spacing (right) _____ ft. (m)

Concrete and Deck:

- 1) Type of Floor Deck _____
- 2) Depth of Floor Deck _____ in. (mm)
- 3) Slab Thickness Above Deck _____ in. (mm)
- 4) Concrete Unit Weight _____ pcf (kg/m³)
- 5) Concrete Compressive Strength _____ ksi (MPa)

Nominal Loads:

- 1) Non-composite Construction Dead Load
 - a) Concrete _____ psf (kPa)
 - b) Joist and Bridging _____ psf (kPa)
 - c) Deck _____ psf (kPa)
 - d) **Total** _____ psf (kPa) _____ plf (kN/m)

- 2) ¹Construction Live Load
 - a) During Concrete Placement _____ psf (kPa) _____ plf (kN/m)

- 3) Composite Dead Load
 - a) Fixed Partitions _____ psf (kPa)
 - b) Mechanical _____ psf (kPa)
 - c) Electrical _____ psf (kPa)
 - d) Fireproofing _____ psf (kPa)
 - e) Floor Covering and Ceiling _____ psf (kPa)
 - f) Miscellaneous Dead Loads _____ psf (kPa)
 - g) **Total** _____ psf (kPa) _____ plf (kN/m)

- 4) Composite Live Load
 - a) Live Load (Reduced as Applicable) _____ psf (kPa)
 - b) Moveable Partitions _____ psf (kPa)
 - c) **Total** _____ psf (kPa) _____ plf (kN/m)



SJI COMPOSITE JOIST FLOOR DESIGN PARAMETERS CHECKLIST (NOMINAL UNIFORM LOADS)

5) Total Factored Non-composite Dead Load, 1.2 x (1d)
 _____ psf (kPa) _____ plf (kN/m)

6) Total Factored Composite Dead Load, 1.2 x (3g)
 _____ psf (kPa) _____ plf (kN/m)

7) Total Factored Composite Live Load, 1.6 x (4c)
 _____ psf (kPa) _____ plf (kN/m)

8) Total Factored Composite Design Load, (5) + (6) +(7)
 _____ psf (kPa) _____ plf kN/m)

Camber and Deflection (un-factored load):

- 1) Loads to Camber For
 - a) Non-composite Dead Load (1d) x _____ % (typically 100%)
 - b) Composite Dead Load (3g) x _____ % (typically 0 – 50%)
 - c) Composite Live Load (4c) x _____ % (typically 0 – 25%)
- 2) Maximum Allowable Live Load Deflection Span / _____
- 3) Maximum Deflection _____ in. (mm)

¹When estimating construction live loading on a composite steel joist it is suggested that the construction live loading be adjusted for tributary area as shown below:

For English units

$$L_c = 20R_1 \text{ where } 12 \leq L_c \leq 20, \text{ lb/ft.}^2 \tag{Eq. 1}$$

$R_1 = 1$	for $A_t \leq 200 \text{ ft.}^2$
$R_1 = 1.2 - 0.001A_t$	for $200 \text{ ft.}^2 < A_t < 600 \text{ ft.}^2$
$R_1 = 0.6$	for $A_t \geq 600 \text{ ft.}^2$

Where:

L_c = Construction live load
 A_t = Tributary floor area over one joist supporting the construction live load, ft.² (m²)

For Metric units

$$L_c = 0.96R_1 \text{ where } 0.58 \leq L_c \leq 0.96, \text{ kN/m}^2 \tag{Eq. 2}$$

$R_1 = 1$	for $A_t \leq 18.58 \text{ m}^2$
$R_1 = 1.2 - 0.01076A_t$	for $18.58 \text{ m}^2 < A_t < 55.74 \text{ m}^2$
$R_1 = 0.6$	for $A_t \geq 55.74 \text{ m}^2$



GLOSSARY

NOTES:

Terms in **Bold** and their definitions come from the AISC AND AISI STANDARD Standard Definitions for Use in the Design of Steel Structures, 2004 Edition, First Printing April 2005.

- * These terms are usually qualified by the type of *load effect*, e.g., nominal tensile strength, available compressive strength, design flexural strength.
- ** Term usually qualified by the type of component, e.g. local web buckling, local flange buckling, etc.
- † The definitions provided for these terms come from the OSHA Steel Erection Standard Part §1926.757 – Open Web Steel Joists.

Accessories. Structural components related to the design, fabrication and erection of *joists* and *Joist Girders* including, but not limited to sloped *end bearings*, *extended ends*, *ceiling extensions*, *bridging* and bridging anchors, *headers* and bottom chord lateral bracing for *Joist Girders*.

Anchored Bridging†. The means that the steel joist bridging is connected to a bridging terminus point.

Applicable Building Code. Building code under which the structure is designed.

Bay. The distance between the main structural frames or walls of a building.

Bearing. The distance that the bearing shoe or seat of a *joist* or *Joist Girder* extends over its masonry, concrete or steel support.

Bearing depth. Depth of the joist at the bearing point or bearing seat.

Bearing Plate. The steel plate used for a *joist* or *Joist Girder* to bear on when it is supported by masonry or concrete supports. The plate is designed by the *Specifying Professional* to carry the *joist* reaction to the supporting structure.

Bottom Chord Extension (BCX). The two angle extended part of a *joist* bottom chord from the first bottom chord panel point towards the end of the *joist*.

Bridging. In general, a member connected to a *joist* to brace it from lateral movement. See also Diagonal Bridging and Horizontal Bridging.

Bridging Clip†. A device that is attached to a steel *joist* to allow the bolting of the *bridging* to the steel *joist*.

Bridging Terminus Point†. A wall, beam, tandem *joists* (with all *bridging* installed and a horizontal truss in the plane of the top chord) or other element at an end or intermediate point(s) of a line of *bridging* that provides an anchor point for the steel *joist bridging*.

Buckling. *Limit* state of sudden change in the geometry of a structure or any of its elements under a critical loading condition.

Buckling Strength. *Nominal strength* for *buckling* or instability *limit states*.

Bundle. The banding together of *joist* products, bridging, and decking into certain sizes, weights, pieces, lengths, etc. to expedite shipping, unloading and storage, and erection at a job site.

Buyer. The entity that has agreed to purchase *material* from the manufacturer and has also agreed to the terms of sale.

Camber. An upward curvature of the *chords* of a *joist* or *Joist Girder* induced during shop fabrication. Note, this is in addition to the pitch of the top chord.

Cantilever. The portion of a *joist* product that extends beyond its structural support. A lateral brace may need to be provided at the end of the cantilever to ensure it is stable during erection and under load.

Ceiling Extension. A *bottom chord extension* except that only one angle of the *joist* bottom chord is extended from the first bottom chord panel point towards the end of the *joist*.

Centering. The material placed over the *joists* used for cast-in-place slabs and may be ribbed metal lath, corrugated steel sheets, paper-backed welded wire fabric, removable centering or any other suitable material capable of supporting the slab at the designated *joist* spacing. Centering shall not cause lateral displacement to the top chord of *joists* during installation or damage to the *joists* during removal or placing of the concrete.

Choker†. A wire rope or synthetic fiber rigging assembly that is used to attach a *load* to *hoisting equipment* or device.

Chords. The top and bottom members of a *joist* or *Joist Girder*. When a chord is comprised of two angles there is usually a gap between the members.

Clear Span. The actual clear distance or opening between supports for a *joist*, which is the distance between walls or the distance between the edges of flanges of beams.

Cold-Formed Steel Structural Member. Shape manufactured by press-braking blanks sheared from sheets, cut lengths of coils or plates, or by roll forming cold- or hot-rolled coils or sheets; both forming operations being performed at ambient room temperature, that is, without manifest addition of heat such as would be required for hot forming.

Collateral Load. All additional dead loads other than the weight of the building, such as sprinklers, pipes, ceilings, and mechanical or electrical components.

Competent Person†. One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

Composite. Condition in which steel and concrete elements and members work as a unit in the distribution of internal forces.



Composite Steel Joist. Open web, parallel chord, load-carrying member suitable for direct support of one-way floor or roof systems. Members may consist of hot-rolled or cold-formed steel, including cold-formed steel whose yield strength has been attained by cold working. Shear connection between the joist top chord and overlying concrete slab allows the steel joist and slab to act together as an integral unit after the concrete has adequately cured.

Concrete Compressive Strength. Compressive strength of concrete typically measured after 28 days of curing time.

Concrete	Unit	Weight.
Weight of a volume of concrete, typically 145 lbs/ft. ³ (2300 kg/m ³) for normal weight or 120 lbs/ft. ³ (1900 kg/m ³) for light-weight aggregate.		

Connection. Combination of structural elements and *joints* used to transmit forces between two or more members. See also Splice.

Connector†. An employee who, working with *hoisting equipment*, is placing and connecting structural members and/or components.

C o n s t r u c t a b i l i t y † .
The ability to erect structural steel members in accordance with Subpart R without having to alter the over-all structural design.

Construction Joint. Gap or saw cut in slab to allow for expansion and contraction of concrete.

Construction Load†. (for joist erection only) Any *load* other than the weight of the employee(s), *joists* and the *bridging bundle* (see OSHA Regulations 1926.757(d)(1), (d)(2) and (d)(3)).

Deck. A floor or roof covering made out of gage metal attached by welding or mechanical means to *joists*, beams, *purlins*, or other structural members and can be galvanized, painted, or unpainted.

Design Length. The length of a joist used in the structural analysis.

Design Load. Applied *load determined* in accordance with *LRFD load combinations*.

Design Strength*. *Resistance factor* multiplied by the *nominal strength*, ϕR_n .

Diagonal Bridging. Two angles or other structural shapes connected from the top chord of one *joist* to the bottom chord of the next joist to form an 'X' shape. These members are almost always connected at their point of intersection.

Diaphragm. Roof, floor or other membrane or bracing system that transfers in-plane forces to the lateral force resisting system.

Effective Length. Length of an otherwise identical column with the same strength when analyzed with pin-ended boundary conditions.

End Anchorage. The proper attachment of the ends of a *joist*

product to masonry, structural concrete or structural steel.

End Diagonal or Web. The first web member on either end of a *joist* or *Joist Girder* which begins at the top chord at the seat and ends at the first bottom chord panel point.

End Support. The masonry, structural concrete or structural steel that supports the ends of *joist* products and is capable of carrying the loads transmitted to it by the *joist* products.

Erection Bridging†. The bolted *diagonal bridging* that is required to be installed prior to releasing the hoisting cables from the steel *joists*.

Erector. The entity that is responsible for the safe and proper erection of the *materials* in accordance with all applicable codes and regulations.

Extended End. The extended part of a *joist* top chord with the seat angles also being extended from the end of the joist extension back into the joist and maintaining the standard end *bearing* depth over the entire length of the extension.

Factored Load. Product of a *load factor* and the *nominal load*.

Fall Restraint System†. A fall protection system that prevents the user from falling any distance. The system is comprised of either a body belt or body harness, along with an anchorage, connectors and other necessary equipment. The other components typically include a lanyard, and may also include a lifeline and other devices.

Ferrule. Ceramic ring placed at base of the shear stud which shields the arc between welding equipment and steel deck.

Filler. A rod, plate or angle welded between a two angle web member or between a top or bottom chord panel to tie them together, usually located at the middle of the member.

Flexural Buckling. Buckling mode in which a compression member deflects laterally without twist or change in cross-sectional shape.

Flexural-Torsional Buckling. Buckling mode in which a compression member bends and twists simultaneously without change in cross-sectional shape.

Gravity Load. *Load*, such as that produced by dead and live loads, acting in the downward direction.

Header. A structural member located between two *joists* or between a joist and a wall which carries another joist or joists. It is usually made up of an angle, channel, or beam with saddle angle connections on each end for bearing.

Hoisting Cable. A chain, strap or cable that is attached at each end which is used to facilitate the moving and lifting of *joist* products, bridging, decking, etc.

Hoisting Equipment†. Commercially manufactured lifting equipment designed to lift and position a load of known weight to a location at some known elevation and horizontal distance from the equipment's center of rotation. 'Hoisting equipment' includes but is not limited to cranes, derricks, tower cranes, gin poles and gantry hoist systems. A "come-



a-long” (a mechanical device, usually consisting of a chain or cable attached at each end, that is used to facilitate movement of materials through leverage) is not considered ‘hoisting equipment.’

Horizontal Bridging. A continuous angle or other structural shape connected to the top and bottom chord of a joist.

Inspector. An independent person hired to verify that the erection of a structure is in accordance with the *Site-Specific Erection Plans* including the *Joist Placement Plans* and the deck placement drawings.

Instability. *Limit state* reached in the loading of a *structural component*, frame or structure in which a slight disturbance in the *loads* or geometry produces large displacements.

Joint. Area where two or more ends, surfaces or edges are attached. Categorized by type of fastener or weld used and the method of force transfer.

Joist. A structural load-carrying member with an open web system which supports floors and roofs utilizing hot-rolled or cold-formed steel and is designed as a simple span member. Currently, the SJI has the following joist designations: K-Series including KCS, LH-Series, DLH-Series, and CJ-Series.

Joist Girder. A primary structural load-carrying member with an open web system designed as a simple span supporting equally spaced concentrated loads of a floor or roof system acting at the panel points of the member and utilizing hot-rolled or cold-formed steel.

Joist Placement Plans. Drawings that are prepared depicting the interpretation of the Contract Documents requirements for the *material* to be supplied by the *Seller*. These floor and/or roof plans are approved by the *Specifying Professional, Buyer* or *Owner* for conformance with the design requirements.

The *Seller* uses the information contained on these drawings for final material design. A unique piece mark number is typically shown for the individual placement of *joists, Joist Girders* and *accessories* along with sections that describe the end bearing conditions and minimum attachment required so that *material* is placed in the proper location in the field.

Joist Substitute. A structural member who’s intended use is for very short spans (10 feet or less) where open web steel joists are impractical. They are usually used for short spans in skewed bays, over corridors or for outriggers. It can be made up of two or four angles to form channel sections or box sections.

Lateral Buckling. Buckling mode of a flexural member involving deflection normal to the plane of bending.

Lateral-Torsional Buckling. Buckling mode of a flexural member involving deflection normal to the plane of bending occurring simultaneously with twist about the shear center of the cross section.

Limit State. Condition in which a structure or component

becomes unfit for service and is judged either to be no longer useful for its intended function (*serviceability limit state*) or to have reached its ultimate load-carrying capacity (*strength limit state*).

Load. Force or other action that results from the weight of building materials, occupants and their possessions, environmental effects, differential movement, or restrained dimensional changes.

Load Effect. Forces, stresses, and deformations produced in a *structural component* by the applied loads.

Load Factor. Factor that accounts for deviations of the *nominal load* from the actual *load*, for uncertainties in the analysis that transforms the *load* into a *load effect*, and for the probability that more than one extreme *load* will occur simultaneously.

Local Buckling.** *Limit state of buckling* of a compression element within a cross section.

LRFD (Load and Resistance Factor Design). Method of proportioning *structural components* such that the *design strength* equals or exceeds the *required strength* of the component under the action of the *LRFD load combinations*.

LRFD Load Combination. *Load combination* in the *applicable building code* intended for strength design (*Load and Resistance Factor Design*).

Material. *Joists, Joist Girders* and *accessories* as provided by the *Seller*.

Nesting. The positioning of *joist* products so that when they are bundled together the *chords* of one member fit tightly against or overlap the *chords* of the adjacent member in the *bundle*. Once the strapping that is used to *bundle* the *joists* together is cut the *joists* become de-nested.

Nominal Load. Magnitude of the *load* specified by the *applicable building code*.

Nominal Strength*. Strength of a structure or component (without the *resistance factor* or *safety factor* applied) to resist the *load effects*, as determined in accordance with these *Standard Specifications*.

Non-composite. Condition in which steel and concrete elements and members do not work as a unit in the distribution of internal forces. The bare steel joist carries all applied loads including the wet weight of the concrete.

OSHA. The Occupational Safety and Health Administration is the federal government agency whose purpose is to save lives, prevent injuries, and protect the health of the workers of America.

Owner. The entity that is identified as such in the Contract Documents.

Permanent Load. *Load* in which variations over time are rare or of small magnitude. All other *loads* are *variable loads*.

Personal Fall Arrest System†. A system used to arrest an



employee in a fall from a working level. A personal fall arrest system consists of an anchorage, connectors, a body harness and may include a lanyard, deceleration device, lifeline, or suitable combination of these. The use of a body belt for fall arrest is prohibited.

Placement Plans. See “*Joist Placement Plans.*”

Ponding. Retention of water due solely to the deflection of flat roof framing.

Qualified Person†. One who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated the ability to solve or resolve problems relating to the subject matter, the work, or the project.

Quality Assurance. System of shop and field activities and controls implemented by the *owner* or his/her designated representative to provide confidence to the *owner* and the building authority that quality requirements are implemented.

Quality Control. System of shop and field controls implemented by the *seller* and *erector* to ensure that contract and company fabrication and erection requirements are met.

Required Strength*. Forces, stress, and deformations produced in a *structural component*, determined by either *structural analysis*, for the *LRFD* or *ASD* load combinations, as appropriate, or as specified by these *Standard Specifications*.

Resistance Factor, ϕ . Factor that accounts for unavoidable deviations of the *nominal strength* from the actual strength and for the manner and consequences of failure.

Seller. A company certified by the Joist Institute engaged in the manufacture and distribution of *joists*, *Joist Girders* and *accessories*.

Service Load. *Load* under which serviceability limit states are evaluated.

Serviceability Limit State. Limiting condition affecting the ability of a structure to preserve its appearance, maintainability, durability, or the comfort of its occupants or function of machinery, under normal usage.

Shear Stud. Headed shear connector specifically designed for use on a steel joist or beam, which permits composite action between concrete slab and joist or beam.

Shear Stud Welder. Machine used to weld headed shear studs through the steel deck to the steel joist.

Site-Specific Erection Plan. OSHA has defined a site-specific erection plan in §1926.752(e) as one that shall be developed by a *qualified person* and be available at the work site. This site-specific erection plan is one where employers elect, due to conditions specific to the site, to develop alternate means and methods that provide employee protection in accordance with OSHA §1926.753(c)(5), §1926.757(a)(4) or §1926.757(e)(4).

Slab. Concrete placed to form a deck to a specified thickness. A portion of the slab serves as part of the composite joist

system as well as sub-floor or finished floor.

Slenderness Ratio. The ratio of the effective length of a column to the radius of gyration of the column about the same axis of bending.

S p a n. The centerline-to-centerline distance between structural steel supports such as a beam, column or *Joist Girder* or the clear span distance plus four inches onto a masonry or concrete wall.

Specified Minimum Yield Stress. Lower limit of *yield stress* specified for a material as defined by ASTM.

Specifying Professional. The licensed professional who is responsible for sealing the building Contract Documents, which indicates that he or she has performed or supervised the analysis, design and document preparation for the structure and has knowledge of the load-carrying structural system.

Splice. *Connection* between two structural members joined at their ends by either bolting or welding to form a single, longer member.

Spreader Bar. A specially designed structural steel member attached to *hoisting equipment* that may be used to lift *joist*, *bridging*, or *decking bundles* at two points.

Square End. Bottom chord bearing condition of a parallel chord joist.

Stability. Condition reached in the loading of a *structural component*, frame or structure in which a slight disturbance in the *loads* or geometry does not produce large displacements.

Stabilizer Plate. A steel plate at a column or wall inserted between the end of a bottom chord of a *joist* or *Joist Girder*.

Standard Specifications. Documents developed and maintained by the Steel Joist Institute for the design and manufacture of open web steel joists and Joist Girders. The term “SJI Standard Specifications” encompass by reference the following:

ANSI/SJI-K1.1 Standard Specification for Open Web Steel Joists, K-Series; ANSI/SJI-LH/DLH-1.1 Standard Specifications for Longspan Steel Joists, LH-Series and Deep Longspan Steel Joists, DLH-Series; ANSI/SJI-JG-1.1 Standard Specifications for Joist Girders; and ANSI/SJI-CJ-1.0 Standard Specifications for Composite Steel Joists.

Strength Limit State. Limiting condition affecting the safety of the structure, in which the ultimate load-carrying capacity is reached.

Structural Drawings. The graphic or pictorial portions of the Contract Documents showing the design, location and dimensions of the work. These documents generally include plans, elevations, sections, details, connections, all loads, schedules, diagrams and notes.

Stud Installation Layout Drawing. Plan provided by *Seller* to *Buyer* showing size, quantity and location of all shear con-



nectors to be installed on the composite steel joists.

Tagged End. The end of a *joist* or *Joist Girder* where an identification or piece mark is shown by a metal tag. The member must be erected with this tagged end in the same position as the tagged end noted on the *placement plan*.

Tensile Strength (of material). Maximum tensile stress that a material is capable of sustaining as defined by ASTM.

Tie Joist. A *joist* that is bolted at a column.

Top Chord Extension (TCX). The extended part of a *joist* top chord. This type of extension only has the two top chord angles extended past the joist seat.

Torsional Buckling. *Buckling* mode in which a compression member twists about its shear center axis.

Unbraced Length. Distance between braced points of a member, measured between the centers of gravity of the bracing members.

Variable Load. *Load* not classified as *permanent load*.

Webs. The vertical or diagonal members joined at the top and bottom *chords* of a *joist* or *Joist Girder* to form triangular patterns.

Yield Point. First stress in a material at which an increase in strain occurs without an increase in stress as defined by ASTM.

Yield Strength. Stress at which a material exhibits a specified limiting deviation from the proportionality of stress to strain as defined by ASTM.

Yield Stress. Generic term to denote either *yield point* or *yield strength*, as appropriate for the material.



APPENDIX A - FIRE-RESISTANCE RATINGS WITH COMPOSITE STEEL JOISTS

The CJ-Series Composite Steel Joists can be easily incorporated into many fire resistance designs published by Underwriters Laboratories, Inc. (UL) latest edition of the UL Fire Resistance Directory.

The following information is from ANSI/UL 263 IV. BEAMS, 4. Beam Substitution,

Beam ratings depend upon the type of floor or roof the beam is supporting and the protection on the floor or roof units, as well as the type and thickness of protection material applied to the beam.

The substitution of beams into a floor assembly (A--, D--, G--, or J—Design) or roof assembly (P—Design) should be limited to assemblies which have a similar or greater capacity for heat dissipation from the beam as compared to the capacity for heat dissipation of the floor or roof construction specified in the design from which the beam is being transferred.

Spray-applied Fire-resistive Materials Application of N Series Designs

When it is the intent to only maintain the existing Assembly Rating, the beams, steel joists and steel trusses from N

Series Designs may be substituted for the tested structural member provided the hourly Unrestrained Beam Rating of the structural member being transferred is at least equal to the Unrestrained Beam Rating of the structural member being replaced. Additionally, for steel joists and steel trusses the Restrained Beam Rating of the joist or truss being transferred is to be equal to or greater than the Restrained Assembly Rating of the floor-ceiling assembly into which the joist or truss is being transferred.

The CJ-Series joists shall be designed by the Joist Supplier to meet the minimum requirements of UL Beam Design Numbers. N736 and N825. The following tables give the fire rated floor-ceiling assemblies that can employ CJ-Series Composite Steel Joists.

Fire protection costs can be a significant portion of the overall system cost. Consequently, when spray applied protection is specified, the CJ-Series joists should be spaced as far apart as practical to reduce the number of joists receiving fire protection. Additionally, under certain conditions, CJ-Series joists can be designed without vertical webs and the bridging can be removed after the concrete has cured thereby further reducing the cost of fire protection.



FLOOR – CEILING ASSEMBLIES WITH MEMBRANE PROTECTION

Restrained Assembly Rating	Protection Material	Minimum Joist Size ¹	Concrete		Unrestrained Beam Rating	UL Design Number ³
			Minimum Thickness ² (in.)	Type		
1 Hr.	Exposed Grid System	N736	2.5	LW, NW	1, 1½, 2, 3 Hr.	D216
						D219
1 1/2 Hr.	Exposed Grid System	N736	2.5	LW, NW	1, 1½, 2, 3 Hr.	D216
						D219
	Gypsum Board	N825		NW	1½, 2 Hr.	D502
2 Hr.	Exposed Grid System	N736	2.5	LW, NW	1, 1½, 2, 3 Hr.	D216
						D219
	Gypsum Board	N825		NW	1½, 2 Hr.	D502
3 Hr.	Exposed Grid System	N736	3.25	LW, NW	1, 1½, 2, 3 Hr.	D216
						D219
3 Hr.	Gypsum Board	N736	3.0	NW	2, 3 Hr.	G547

Notes:

1. Minimum joist member sizes are governed by UL Design No. requirements. Maximum joist spacing is not limited.
2. Concrete thickness is thickness of slab above deck in inches.
3. Refer to the *UL Fire Resistance Directory* for the necessary construction details.



FLOOR – CEILING ASSEMBLIES WITH SPRAY APPLIED FIRE RESISTIVE MATERIALS

Restrained Assembly Rating	Protection Material	Minimum Joist Size ¹	Concrete		Unrestrained Beam Rating	UL Design Number ³
			Minimum Thickness ² (in.)	Type		
1 Hr.	SAFRM	N825	2.5	LW, NW	1 1/2 Hr.	D703
		N825	2.5	LW, NW	2 Hr.	D712
		N825	2.5	LW, NW	1, 1 1/2, 2 Hr.	D722
		N736	2.5	LW, NW	1, 1 1/2, 2, 3, 4 Hr.	D739
		N736	2.5	LW, NW	1, 1 1/2, 2, 3 Hr.	D759
		N736	2.5		1, 1 1/2, 2, 3, 4 Hr.	D779
		N736	2.5		1, 1 1/2, 2, 3 Hr.	D780
		N736	3.25	LW	1 1/2, 2, 3, 4 Hr.	D782
		N736	2.5	LW, NW	1, 1 1/2, 2, 3 Hr.	D832
		N736	2.5	LW, NW	1, 1 1/2, 3 Hr.	D847
		N736	2.5	LW, NW	1, 1 1/2, 2, 3, 4 Hr.	D858
		N736	2.0	LW, NW	1, 1 1/2, 2, 3 Hr.	D859
		N736	2.5	LW	1, 1 1/2, 2, 3 Hr.	D902
			3.5	NW		
		N825	2.5	LW	1 Hr.	D914
		N736	2.5	LW	1, 1 1/2, 2, 3 Hr.	D916
			3.5	NW		
		N825	2.5	LW	1, 1 1/2 Hr.	D918
			3.5	NW		
		N825	2.5	LW	1, 1 1/2 Hr.	D919
			3.5	NW		
		N736	2.5	LW	1, 1 1/2, 2, 3, 4 Hr.	D925
			3.5	NW		

APPENDIX A
FIRE RESISTANCE RATINGS



FLOOR – CEILING ASSEMBLIES WITH SPRAY APPLIED FIRE RESISTIVE MATERIALS

Restrained Assembly Rating	Protection Material	Minimum Joist Size ¹	Concrete		Unrestrained Beam Rating	UL Design Number ³
			Minimum Thickness ² (in.)	Type		
1 Hr. (cont d)	SAFRM	N736	2.5	LW, NW	1, 1½, 2, 3 Hr.	G701
						G705
						G708
						G709
						G801

Notes:

1. Minimum joist member sizes are governed by UL Design No. requirements. Maximum joist spacing is not limited.
2. Concrete thickness is thickness of slab above deck in inches.
3. Refer to the *UL Fire Resistance Directory* for the necessary construction details.



FLOOR – CEILING ASSEMBLIES WITH SPRAY APPLIED FIRE RESISTIVE MATERIALS

Restrained Assembly Rating	Protection Material	Minimum Joist Size ¹	Concrete		Unrestrained Beam Rating	UL Design Number ³
			Minimum Thickness ² (in.)	Type		
1 1/2 Hr.	SAFRM	N825	2.5	LW, NW	1 1/2 Hr.	D703
		N825	2.5	LW, NW	2 Hr.	D712
		N825	2.5	LW, NW	1, 1 1/2, 2 Hr.	D722
		N736	2.5	LW, NW	1, 1 1/2, 2, 3, 4 Hr.	D739
		N736	2.5	LW, NW	1, 1 1/2, 2, 3 Hr.	D759
		N736	2.5		1, 1 1/2, 2, 3, 4 Hr.	D779
		N736	2.5		1, 1 1/2, 2, 3 Hr.	D780
		N736	3.25	LW	1 1/2, 2, 3, 4 Hr.	D782
		N736	2.5	LW, NW	1, 1 1/2, 2, 3 Hr.	D832
		N736	2.5	LW, NW	1, 1 1/2, 3 Hr.	D847
		N736	2.5	LW, NW	1, 1 1/2, 2, 3, 4 Hr.	D858
		N736	2.0	LW, NW	1, 1 1/2, 2, 3 Hr.	D859
		N736	3.0	LW	1, 1 1/2, 2, 3 Hr.	D902
			4.0	NW		
		N736	3.0	LW	1, 1 1/2, 2, 3 Hr.	D916
			4.0	NW		
		N825	3.0		1, 1 1/2 Hr.	D918
			4.0			
		N825	3.0		1, 1 1/2 Hr.	D919
			4.0			
		N736	3.0	LW	1, 1 1/2, 2, 3, 4 Hr.	D925
			4.0	NW		



FLOOR – CEILING ASSEMBLIES WITH SPRAY APPLIED FIRE RESISTIVE MATERIALS

Restrained Assembly Rating	Protection Material	Minimum Joist Size ¹	Concrete		Unrestrained Beam Rating	UL Design Number ³
			Minimum Thickness ² (in.)	Type		
1 1/2 Hr. (cont d)	SAFRM	N736	2.5	LW, NW	1, 1 1/2, 2, 3 Hr.	G701
						G705
						G708
						G709
						G801

Notes:

1. Minimum joist member sizes are governed by UL Design No. requirements. Maximum joist spacing is not limited.
2. Concrete thickness is thickness of slab above deck in inches.
3. Refer to the *UL Fire Resistance Directory* for the necessary construction details.



FLOOR – CEILING ASSEMBLIES WITH SPRAY APPLIED FIRE RESISTIVE MATERIALS

Restrained Assembly Rating	Protection Material	Minimum Joist Size ¹	Concrete		Unrestrained Beam Rating	UL Design Number ³
			Minimum Thickness ² (in.)	Type		
2 Hr.	SAFRM	N825	2.5	LW, NW	1½ Hr.	D703
		N825	2.5	LW, NW	2 Hr.	D712
		N825	2.5	LW, NW	1½, 2 Hr.	D716
		N825	2.5	LW, NW	1, 1½, 2 Hr.	D722
		N736	2.5	LW, NW	1, 1½, 2, 3, 4 Hr.	D739
		N825	2.5	NW	1, 1½ Hr.	D742
		N825	2.5	LW, NW	1, 1½, 2 Hr.	D745
		N736	2.5	LW	1, 1½, 2, 3 Hr.	D746
		N825	2.5	LW, NW	1½, 2 Hr.	D750
		N825	2.5	LW	1, 1½, 2 Hr.	D752
		N736	2.5	LW, NW	1, 1½, 2, 3 Hr.	D755
		N736	2.5	LW, NW	1, 1½, 2, 3 Hr.	D759
		N736	2.5		1, 1½, 2, 3, 4 Hr.	D760
		N736	2.5		1, 1½, 2, 3, 4 Hr.	D779
		N736	2.5		1, 1½, 2, 3 Hr.	D780
		N736	3.25	LW	1½, 2, 3, 4 Hr.	D782
		N825	2.5	LW, NW	1 Hr.	D822
		N825	2.5	LW, NW	1, 1½, 2 Hr.	D825
		N825	3.25	LW	1, 1½, 2 Hr.	D826
		N825	2.5	LW, NW	1, 1½, 2 Hr.	D831
		N736	2.5	LW, NW	1, 1½, 2, 3 Hr.	D832
		N825	2.5	LW, NW	1½ Hr.	D833
		N825	3.25	LW	1, 1½ Hr.	D840
		N736	2.5	LW, NW	1, 1½, 3 Hr.	D847
		N736	2.5	LW, NW	1, 1½, 2, 3, 4 Hr.	D858
		N736	2.0	LW, NW	1, 1½, 2, 3 Hr.	D859
		N825	3.25	LW	1, 1½, 2 Hr.	D860
		N825	2.5	LW, NW	1, 1½ Hr.	D861
		N825	2.5	LW	1 Hr.	D862

APPENDIX A
FIRE RESISTANCE RATINGS



FLOOR – CEILING ASSEMBLIES WITH SPRAY APPLIED FIRE RESISTIVE MATERIALS

APPENDIX A
FIRE RESISTANCE RATINGS

Restrained Assembly Rating	Protection Material	Minimum Joist Size ¹	Concrete		Unrestrained Beam Rating	UL Design Number ³
			Minimum Thickness ² (in.)	Type		
2 Hr. (cont d)	SAFRM	N736	3.25	LW	1, 1½, 2, 3 Hr.	D902
			4.5	NW		
		N825	3.25	LW	1, 2 Hr.	D907
		N825	3.25	LW	1 Hr.	D913
		N736	3.25	LW	1, 1½, 2, 3 Hr.	D916
			4.5	NW		
		N825	3.25	LW	1, 1½ Hr.	D918
			4.5	NW		
		N825	3.25	LW	1, 1½ Hr.	D919
			4.5	NW		
		N825	3.25	LW	1½ Hr.	D920
		N736	3.25	LW	1, 1½, 2, 3, 4 Hr.	D925
			4.5	NW		
		N736	2.5	LW, NW	1, 1½, 2, 3 Hr.	G701
						G705
						G708
G709						
G801						

Notes:

1. Minimum joist member sizes are governed by UL Design No. requirements. Maximum joist spacing is not limited.
2. Concrete thickness is thickness of slab above deck in inches.
3. Refer to the *UL Fire Resistance Directory* for the necessary construction details.



FLOOR – CEILING ASSEMBLIES WITH SPRAY APPLIED FIRE RESISTIVE MATERIALS

Restrained Assembly Rating	Protection Material	Minimum Joist Size ¹	Concrete		Unrestrained Beam Rating	UL Design Number ³
			Minimum Thickness ² (in.)	Type		
3 Hr.	SAFRM	N825	2.5	LW, NW	1 1/2 Hr.	D703
		N736	2.5	LW, NW	1 1/2, 3 Hr.	D708
		N736	2.5	LW, NW	1, 1 1/2, 2, 3, 4 Hr.	D739
		N825	3.5	NW	1, 1 1/2 Hr.	D742
		N736	2.5	LW	1, 1 1/2, 2, 3 Hr.	D746
		N825	3.25	LW	1 1/2, 2 Hr.	D754
		N736	2.5	LW, NW	1, 1 1/2, 2, 3 Hr.	D755
		N736	2.5	LW, NW	1, 1 1/2, 2, 3 Hr.	D759
		N736	2.5		1, 1 1/2, 2, 3, 4 Hr.	D760
		N736	2.5		1, 1 1/2, 2, 3, 4 Hr.	D779
		N736	2.5		1, 1 1/2, 2, 3 Hr.	D780
		N736	3.25	LW	1 1/2, 2, 3, 4 Hr.	D782
		N825	2.5	LW, NW	1 1/2, 2 Hr.	D816
		N825	2.5	LW, NW	1, 1 1/2, 2 Hr.	D831
		N736	2.5	LW, NW	1, 1 1/2, 2, 3 Hr.	D832
		N825	2.5	LW, NW	1 1/2 Hr.	D833
		N736	2.5	LW, NW	1, 1 1/2, 2, 3, 4 Hr.	D858
		N736	2.0	LW, NW	1, 1 1/2, 2, 3 Hr.	D859
		N825	3.25	LW	1, 1 1/2, 2 Hr.	D860
		N736	4.19	LW	1, 1 1/2, 2, 3 Hr.	D902
				NW		
		N736	4.19	LW	1, 1 1/2, 2, 3 Hr.	D916
				NW		
		N825	4.19	LW	1, 1 1/2 Hr.	D918
				NW		
		N825	4.19	LW	1, 1 1/2 Hr.	D919
				NW		
		N736	4.19	LW	1, 1 1/2, 2, 3, 4 Hr.	D925
				NW		
			5.25	LW		
NW						



FLOOR – CEILING ASSEMBLIES WITH SPRAY APPLIED FIRE RESISTIVE MATERIALS

Restrained Assembly Rating	Protection Material	Minimum Joist Size ¹	Concrete		Unrestrained Beam Rating	UL Design Number ³
			Minimum Thickness ² (in.)	Type		
3 Hr. (cont d)	SAFRM	N736	2.75	LW, NW	1, 1½, 2, 3 Hr.	G701
						G705
						G708
						G709
						G801

FLOOR – CEILING ASSEMBLIES WITH SPRAY APPLIED FIRE RESISTIVE MATERIALS

Restrained Assembly Rating	Protection Material	Minimum Joist Size ¹	Concrete		Unrestrained Beam Rating	UL Design Number ³
			Minimum Thickness ² (in.)	Type		
4 Hr.	SAFRM	N736	2.5	LW, NW	1, 1½, 2, 3, 4 Hr.	D739
		N825	3.25	LW	1½, 2 Hr.	D754
		N736	2.5	LW, NW	1, 1½, 2, 3, 4 Hr.	D760
		N736	2.5	LW, NW	1, 1½, 2, 3, 4 Hr.	D779
		N736	3.25	LW	1½, 2, 3, 4 Hr.	D782
		N736	2.5	LW, NW	1, 1½, 2, 3, 4 Hr.	D858
		N825	3.25	LW	1, 1½, 2 Hr.	D860

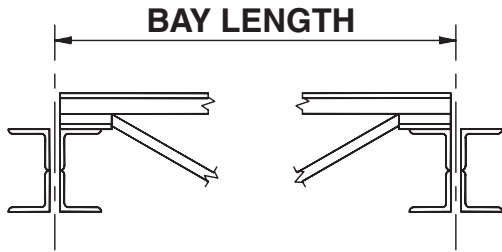
Notes:

1. Minimum joist member sizes are governed by UL Design No. requirements. Maximum joist spacing is not limited.
2. Concrete thickness is thickness of slab above deck in inches.
3. Refer to the *UL Fire Resistance Directory* for the necessary construction details.

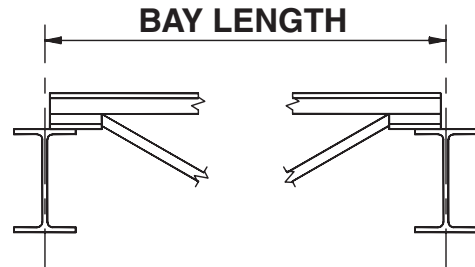


APPENDIX B - OSHA SAFETY STANDARDS FOR STEEL ERECTION

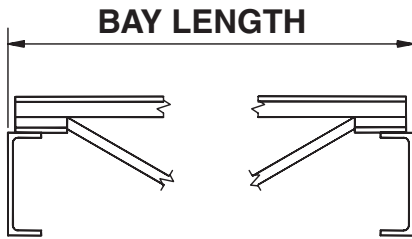
BAY LENGTH DEFINITIONS



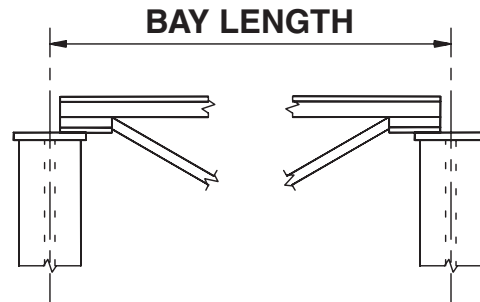
JOIST GIRDERS



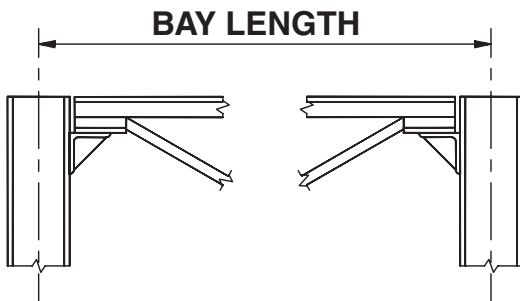
STEEL BEAM



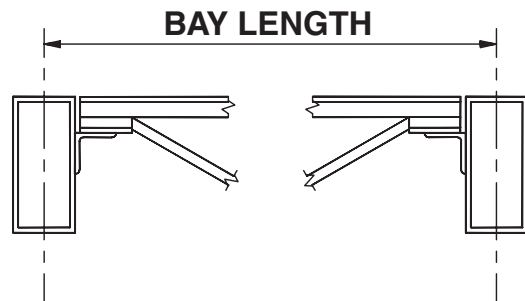
STEEL CHANNEL



STEEL COLUMN

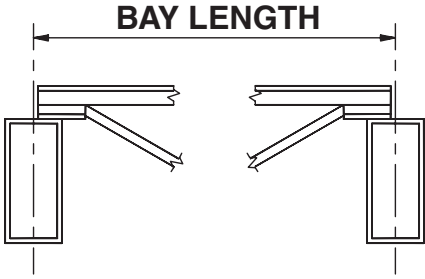


STEEL COLUMN

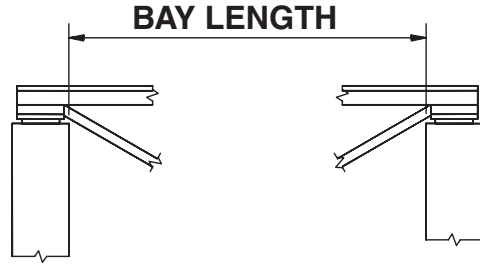


STEEL TUBE

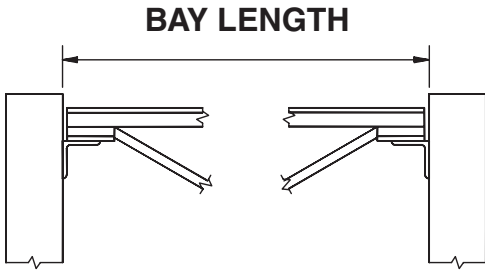




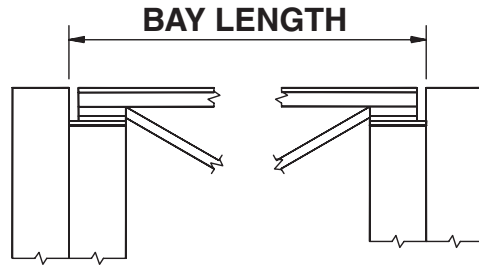
STEEL TUBE



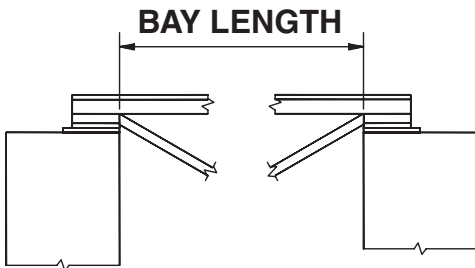
MASONRY OR TILT-UP



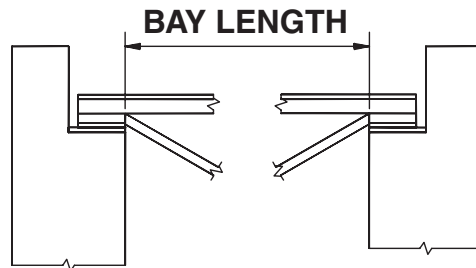
MASONRY OR TILT-UP



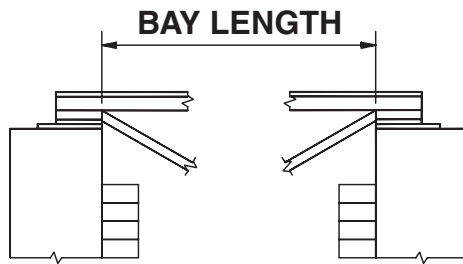
MASONRY WITH PILASTER



MASONRY OR TILT-UP



MASONRY OR TILT-UP



MASONRY WITH FACE BRICK



§1926.751 DEFINITIONS

(Selected items only)

Anchored bridging means that the steel joist bridging is connected to a bridging terminus point.

Bolted diagonal bridging means diagonal bridging that is bolted to a steel joist or joists.

Bridging clip means a device that is attached to the steel joist to allow the bolting of the bridging to the steel joist.

Bridging terminus point means a wall, a beam, tandem joists (with all bridging installed and a horizontal truss in the plane of the top chord) or other element at an end or intermediate point(s) of a line of bridging that provides an anchor point for the steel joist bridging.

Column means a load-carrying vertical member that is part of the primary skeletal framing system. Columns do not include posts.

Constructibility means the ability to erect structural steel members in accordance with subpart R without having to alter the over-all structural design.

Construction load (for joist erection) means any load other than the weight of the employee(s), the joists and the bridging bundle.

Erection bridging means the bolted diagonal bridging that is required to be installed prior to releasing the hoisting cables from the steel joists.

Personal fall arrest system means a system used to arrest an employee in a fall from a working level. A personal fall arrest system consists of an anchorage, connectors, a body harness and may include a lanyard, deceleration device, life-line, or suitable combination of these. The use of a body belt for fall arrest is prohibited.

Project structural engineer means the registered, licensed professional responsible for the design of structural steel framing and whose seal appears on the structural contract documents.

Qualified person (also defined in § 1926.32) means one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated the ability to solve or resolve problems relating to the subject matter, the work, or the project.

Steel joist means an open web, secondary load-carrying member of 144 feet (43.9 m) or less, designed by the manufacturer, used for the support of floors and roofs. This does not include structural steel trusses or cold-formed joists.

Steel joist girder means an open web, primary load-carrying member, designed by the manufacturer, used for the support of floors and roofs. This does not include structural steel trusses.

Structural steel means a steel member, or a member made of a substitute material (such as, but not limited to, fiberglass, aluminum or composite members). These members include, but are not limited to, steel joists, joist girders, purlins, columns, beams, trusses, splices, seats, metal decking, girts, and all bridging, and cold formed metal framing which is integrated with the structural steel framing of a building.

§1926.757 OPEN WEB STEEL JOISTS

(a) General.

(1) Except as provided in paragraph (a)(2) of this section, where steel joists are used and columns are not framed in at least two directions with solid web structural steel members, a steel joist shall be field-bolted at the column to provide lateral stability to the column during erection. For the installation of this joist:

- (i) A vertical stabilizer plate shall be provided on each column for steel joists. The plate shall be a minimum of 6 inch by 6 inch (152 mm by 152 mm) and shall extend at least 3 inches (76 mm) below the bottom chord of the joist with a 13 /16 inch (21 mm) hole to provide an attachment point for guying or plumbing cables.
- (ii) The bottom chords of steel joists at columns shall be stabilized to prevent rotation during erection.
- (iii) Hoisting cables shall not be released until the seat at each end of the steel joist is field-bolted, and each end of the bottom chord is restrained by the column stabilizer plate.

(2) Where constructibility does not allow a steel joist to be installed at the column:

- (i) an alternate means of stabilizing joists shall be installed on both sides near the column and shall:
 - (A) provide stability equivalent to paragraph (a)(1) of this section;
 - (B) be designed by a qualified person;
 - (C) be shop installed; and
 - (D) be included in the erection drawings.
- (ii) hoisting cables shall not be released until the seat at each end of the steel joist is field-bolted and the joist is stabilized.

(3) Where steel joists at or near columns span 60 feet (18.3 m) or less, the joist shall be designed with sufficient strength to allow one employee to release the hoisting cable without the need for erection bridging.

(4) Where steel joists at or near columns span more than 60 feet (18.3 m), the joists shall be set in tandem with all bridging installed unless an alternative method of erection, which provides equivalent stability to the steel joist, is designed by a qualified person and is included in the site-specific erection plan.



(5) A steel joist or steel joist girder shall not be placed on any support structure unless such structure is stabilized.

(6) When steel joist(s) are landed on a structure, they shall be secured to prevent unintentional displacement prior to installation.

(7) No modification that affects the strength of a steel joist or steel joist girder shall be made without the approval of the project structural engineer of record.

(8) *Field-bolted joists.*

(i) Except for steel joists that have been pre-assembled into panels, connections of individual steel joists to steel structures in bays of 40 feet (12.2 m) or more shall be fabricated to allow for field bolting during erection.

(ii) These connections shall be field-bolted unless constructibility does not allow.

(9) Steel joists and steel joist girders shall not be used as anchorage points for a fall arrest system unless written approval to do so is obtained from a qualified person.

(10) A bridging terminus point shall be established before bridging is installed. (See Appendix C to this subpart.)

(b) Attachment of steel joists and steel joist girders.

(1) Each end of “K” series steel joists shall be attached to the support structure with a minimum of two 1 /8 -inch (3 mm) fillet welds 1 inch (25 mm) long or with two 1 /2 -inch (13 mm) bolts, or the equivalent.

(2) Each end of “LH” and “DLH” series steel joists and steel joist girders shall be attached to the support structure with a minimum of two 1 /4 -inch (6 mm) fillet welds 2 inches (51 mm) long, or with two 3 /4 -inch (19 mm) bolts, or the equivalent.

(3) Except as provided in paragraph (b)(4) of this section, each steel joist shall be attached to the support structure, at least at one end on both sides of the seat, immediately upon placement in the final erection position and before additional joists are placed.

(4) Panels that have been pre-assembled from steel joists with bridging shall be attached to the structure at each corner before the hoisting cables are released.

(c) Erection of steel joists.

(1) Both sides of the seat of one end of each steel joist that requires bridging under Tables A and B shall be attached to the support structure before hoisting cables are released.

(2) For joists over 60 feet, both ends of the joist shall be attached as specified in paragraph (b) of this section and the provisions of paragraph (d) of this section met before the hoisting cables are released.

(3) On steel joists that do not require erection bridging under Tables A and B, only one employee shall be allowed on the joist until all bridging is installed and anchored.

► **NOTE: TABLES A and B HAVE BEEN EDITED TO CONFORM WITH STEEL JOIST INSTITUTE BOLTED DIAGONAL BRIDGING REQUIREMENTS. EDITED ITEMS ARE SHOWN WITH A STRIKE THROUGH NOTATION. NEW ITEMS ARE SHOWN IN RED.**

► **TABLE A. — ERECTION BRIDGING FOR SHORT SPAN JOISTS**

Joist	Span
8L 8K1	NM
10K1	NM
12K1	23-0
12K3	NM
12K5	NM
14K1	27-0
14K3	NM
14K4	NM
14K6	NM
16K2	29-0
16K3	30-0
16K4	32-0
16K5	32-0
16K6	NM
16K7	NM
16K9	NM
18K3	31-0
18K4	32-0
18K5	33-0
18K6	35-0
18K7	NM
18K9	NM
18K10	NM
20K3	32-0
20K4	34-0
20K5	34-0
20K6	36-0
20K7	39-0
20K9	39-0
20K10	NM
22K4	34-0
22K5	35-0
22K6	36-0
22K7	40-0
22K9	40-0
22K10	40-0 NM
22K11	40-0 NM
24K4	36-0
24K5	38-0
24K6	39-0
24K7	43-0
24K8	43-0
24K9	44-0
24K10	NM
24K12	NM
26K5	38-0
26K6	39-0

NM = diagonal bolted bridging not mandatory for joists under 40 feet.



► **TABLE A. — ERECTION BRIDGING FOR SHORT SPAN JOISTS (continued)**

Joist	Span
26K7	43-0
26K8	44-0
26K9	45-0 44-0
26K10	49-0
26K12	NM
28K6	40-0
28K7	43-0
28K8	44-0
28K9	45-0
28K10	49-0
28K12	53-0
30K7	44-0
30K8	45-0
30K9	45-0
30K10	50-0
30K11	52-0
30K12	54-0
10KCS1	NM
10KCS2	NM
10KCS3	NM
12KCS1	NM
12KCS2	NM
12KCS3	NM
14KCS1	NM
14KCS2	NM
14KCS3	NM
16KCS2	NM
16KCS3	NM
16KCS4	NM
16KCS5	NM
18KCS2	35-0
18KCS3	NM
18KCS4	NM
18KCS5	NM
20KCS2	36-0
20KCS3	39-0
20KCS4	NM
20KCS5	NM
22KCS2	36-0
22KCS3	40-0
22KCS4	NM
22KCS5	NM
24KCS2	39-0
24KCS3	44-0
24KCS4	NM
24KCS5	NM
26KCS2	39-0
26KCS3	44-0
26KCS4	NM
26KCS5	NM
28KCS2	40-0
28KCS3	45-0
28KCS4	53-0
28KCS5	53-0
30KCS3 30KCS3	45-0
30KCS4	54-0
30KCS5	54-0

NM = diagonal bolted bridging not mandatory for joists under 40 feet.

► **TABLE B. — ERECTION BRIDGING FOR LONG SPAN JOISTS**

Joist	Span
18LH02	33-0
18LH03	NM.
18LH04	NM.
18LH05	NM.
18LH06	NM.
18LH07	NM.
18LH08	NM.
18LH09	NM.
20LH02	33-0
20LH03	38-0
20LH04	NM.
20LH05	NM.
20LH06	NM.
20LH07	NM.
20LH08	NM.
20LH09	NM.
20LH10	NM.
24LH03	35-0
24LH04	39-0
24LH05	40-0
24LH06	45-0
24LH07	NM.
24LH08	NM.
24LH09	NM.
24LH10	NM.
24LH11	NM.
28LH05	42-0
28LH06	42-0 46-0
28LH07	NM. 54-0
28LH08	NM. 54-0
28LH09	NM.
28LH10	NM.
28LH11	NM.
28LH12	NM.
28LH13	NM.
32LH06	47-0 through 60-0
32LH07	47-0 through 60-0
32LH08	55-0 through 60-0
32LH09	NM through 60-0
32LH10	NM through 60-0
32LH11	NM through 60-0
32LH12	NM through 60-0
32LH13	NM through 60-0
32LH14	NM through 60-0
32LH15	NM through 60-0
36LH07	47-0 through 60-0
36LH08	47-0 through 60-0
36LH09	57-0 through 60-0
36LH10	NM through 60-0
36LH11	NM through 60-0
36LH12	NM through 60-0
36LH13	NM through 60-0
36LH14	NM through 60-0
36LH15	NM through 60-0
40LH08	47-0 through 59-0
40LH09	47-0 through 59-0
44LH09	52-0 through 59-0

NM = diagonal bolted bridging not mandatory for joists under 40 feet.



(4) Employees shall not be allowed on steel joists where the span of the steel joist is equal to or greater than the span shown in Tables A and B except in accordance with § 1926.757(d).

(5) When permanent bridging terminus points cannot be used during erection, additional temporary bridging terminus points are required to provide stability. (See appendix C of this subpart.)

(d) Erection bridging.

(1) Where the span of the steel joist is equal to or greater than the span shown in Tables A and B, the following shall apply:

- (i) A row of bolted diagonal erection bridging shall be installed near the midspan of the steel joist;
- (ii) Hoisting cables shall not be released until this bolted diagonal erection bridging is installed and anchored; and
- (iii) No more than one employee shall be allowed on these spans until all other bridging is installed and anchored.

(2) Where the span of the steel joist is over 60 feet (18.3 m) through 100 feet (30.5 m), the following shall apply:

- (i) All rows of bridging shall be bolted diagonal bridging;
- (ii) Two rows of bolted diagonal erection bridging shall be installed near the third points of the steel joist;
- (iii) Hoisting cables shall not be released until this bolted diagonal erection bridging is installed and anchored; and
- (iv) No more than two employees shall be allowed on these spans until all other bridging is installed and anchored.

(3) Where the span of the steel joist is over 100 feet (30.5 m) through 144 feet (43.9 m), the following shall apply:

- (i) All rows of bridging shall be bolted diagonal bridging;
- (ii) Hoisting cables shall not be released until all bridging is installed and anchored; and
- (iii) No more than two employees shall be allowed on these spans until all bridging is installed and anchored.

(4) For steel members spanning over 144 feet (43.9 m), the erection methods used shall be in accordance with § 1926.756.

(5) Where any steel joist specified in paragraphs (c)(2) and (d)(1), (d)(2), and (d)(3) of this section is a bottom chord bearing joist, a row of bolted diagonal bridging shall be provided near the support(s). This bridging shall be installed and anchored before the hoisting cable(s) is released.

(6) When bolted diagonal erection bridging is required by this section, the following shall apply:

- (i) The bridging shall be indicated on the erection drawing;
- (ii) The erection drawing shall be the exclusive indicator of the proper placement of this bridging;
- (iii) Shop-installed bridging clips, or functional equivalents, shall be used where the bridging bolts to the steel joists;
- (iv) When two pieces of bridging are attached to the steel joist by a common bolt, the nut that secures the first piece of bridging shall not be removed from the bolt for the attachment of the second; and
- (v) Bridging attachments shall not protrude above the top chord of the steel joist.

(e) Landing and placing loads.

(1) During the construction period, the employer placing a load on steel joists shall ensure that the load is distributed so as not to exceed the carrying capacity of any steel joist.

(2) Except for paragraph (e)(4) of this section, no construction loads are allowed on the steel joists until all bridging is installed and anchored and all joist-bearing ends are attached.

(3) The weight of a bundle of joist bridging shall not exceed a total of 1,000 pounds (454 kg). A bundle of joist bridging shall be placed on a minimum of three steel joists that are secured at one end. The edge of the bridging bundle shall be positioned within 1 foot (0.30 m) of the secured end.

(4) No bundle of decking may be placed on steel joists until all bridging has been installed and anchored and all joist bearing ends attached, unless all of the following conditions are met:

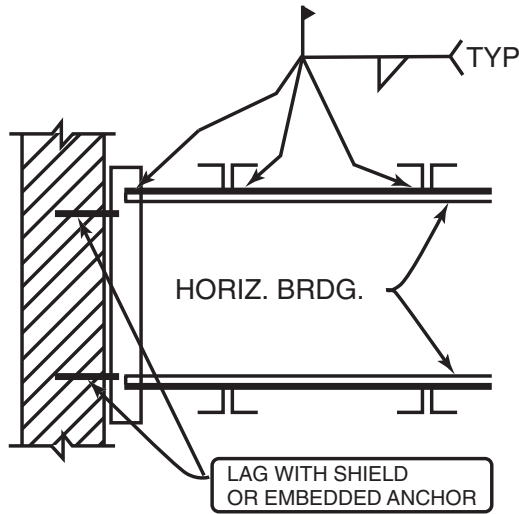
- (i) The employer has first determined from a qualified person and documented in a site-specific erection plan that the structure or portion of the structure is capable of supporting the load;
- (ii) The bundle of decking is placed on a minimum of three steel joists;
- (iii) The joists supporting the bundle of decking are attached at both ends;
- (iv) At least one row of bridging is installed and anchored;
- (v) The total weight of the bundle of decking does not exceed 4,000 pounds (1816 kg); and
- (vi) Placement of the bundle of decking shall be in accordance with paragraph (e)(5) of this section.

(5) The edge of the construction load shall be placed within 1 foot (0.30 m) of the bearing surface of the joist end.

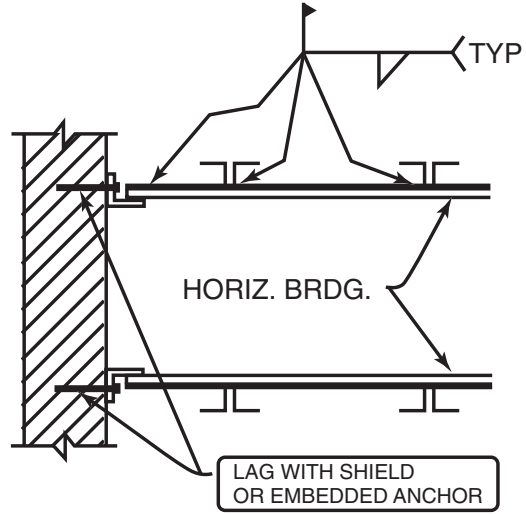


ILLUSTRATIONS OF OSHA BRIDGING TERMINUS POINTS (NON-MANDATORY)

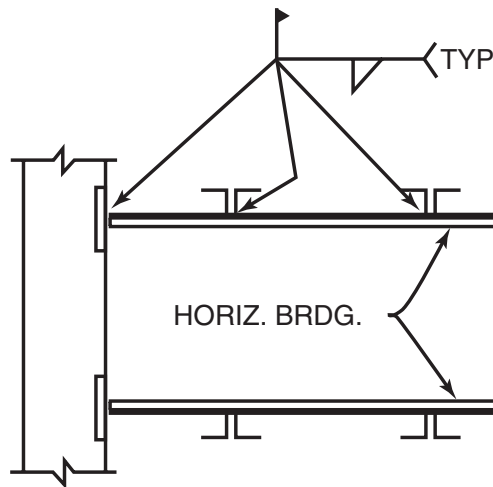
Guidelines for Complying with OSHA Steel Erection Standard, Paragraph §1926.757(a)(10) and §1926.757(c)(5).



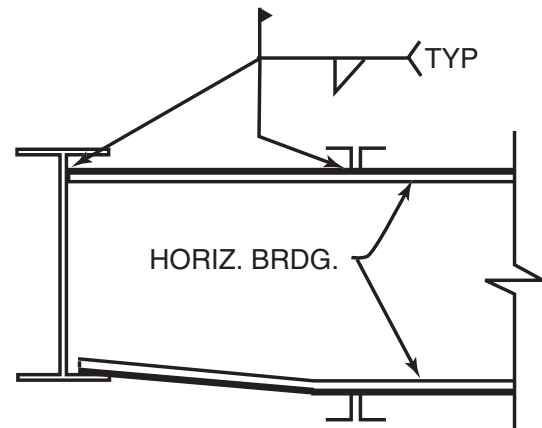
HORIZONTAL BRIDGING
TERMINUS AT WALL



HORIZONTAL BRIDGING
TERMINUS AT WALL

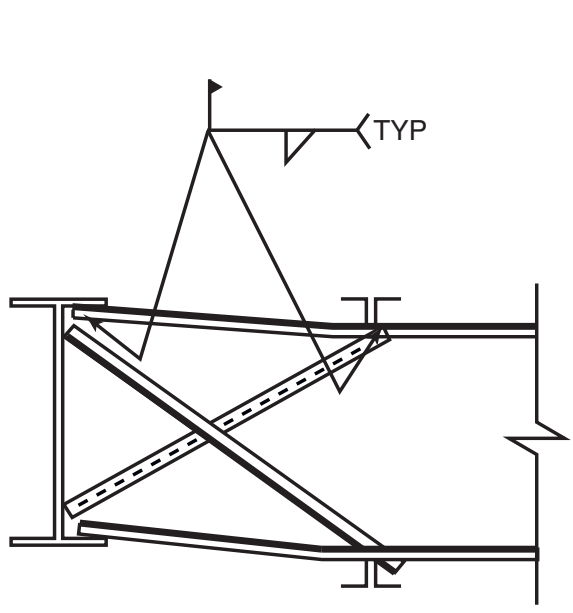


HORIZONTAL BRIDGING
TERMINUS AT PANEL WALL

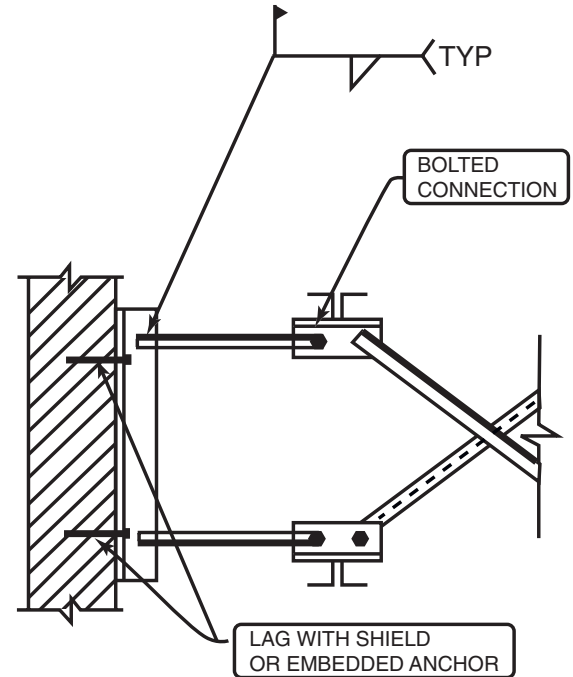


HORIZONTAL BRIDGING
TERMINUS AT
STRUCTURAL SHAPE

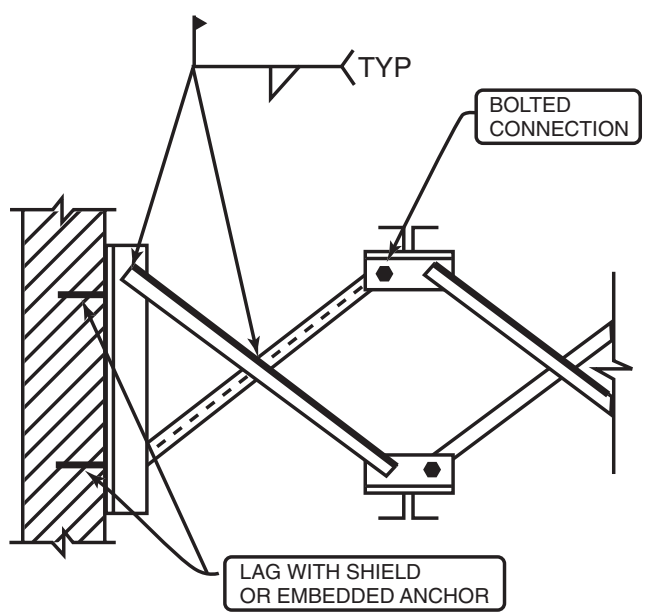




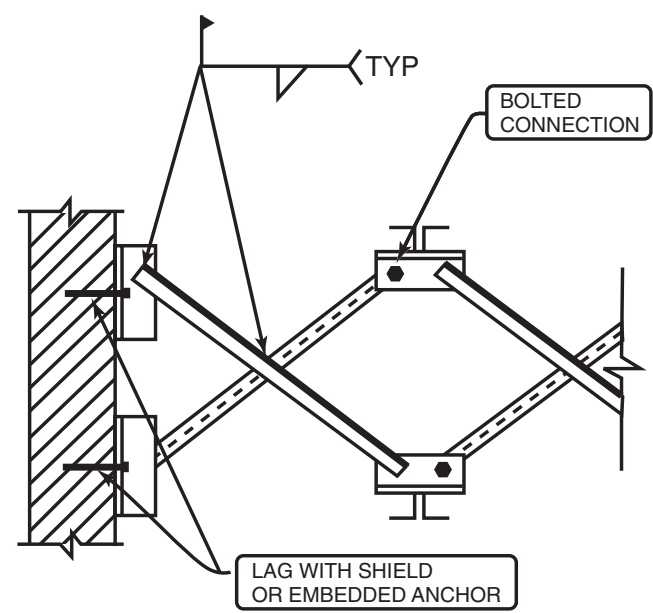
HORIZONTAL BRIDGING
TERMINUS AT STRUCTURAL
SHAPE WITH OPTIONAL
"X-BRIDGING"



BOLTED DIAGONAL BRIDGING
TERMINUS AT WALL

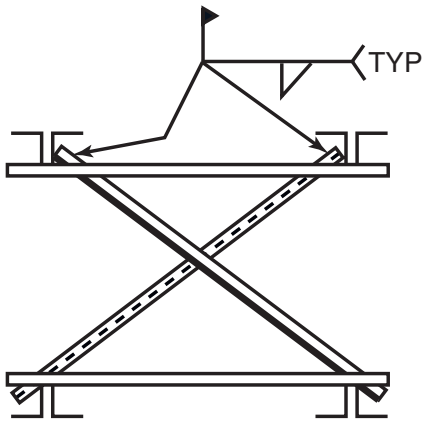


BOLTED DIAGONAL BRIDGING
TERMINUS AT WALL

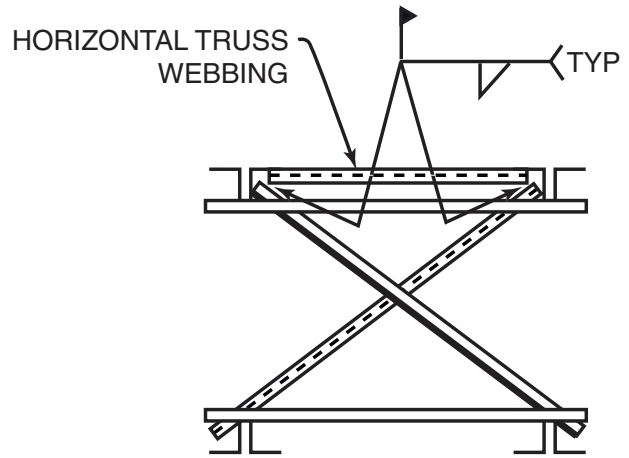


BOLTED DIAGONAL BRIDGING
TERMINUS AT WALL

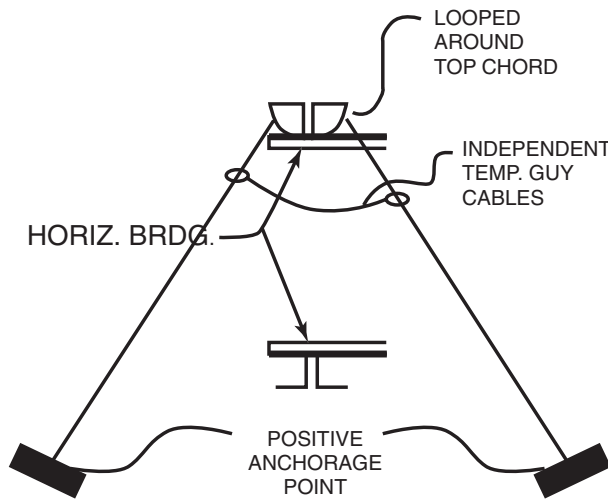




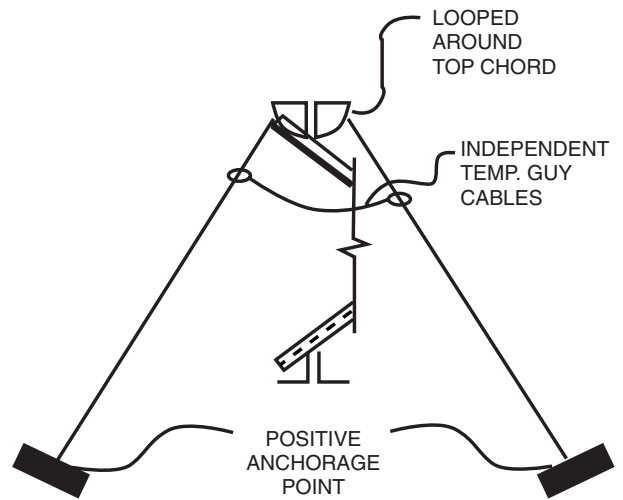
JOISTS PAIR BRIDGING
TERMINUS POINT



JOISTS PAIR BRIDGING
TERMINUS POINT



HORIZONTAL BRIDGING
TERMINUS POINT
SECURED BY TEMP.
GUY CABLES



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NOTES:



NOTES:



NOTES:





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SUPPLEMENT NUMBER 1

**STANDARD SPECIFICATIONS FOR
COMPOSITE STEEL JOISTS
AND
CODE OF STANDARD PRACTICE**

DECEMBER 31, 2010



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STANDARD SPECIFICATION FOR COMPOSITE STEEL JOISTS, CJ-SERIES

Adopted by the Steel Joist Institute May 10, 2006
Revised to May 18, 2010, Effective December 31, 2010

SECTION 100. SCOPE AND DEFINITION

100.1 SCOPE

The *Standard Specification for Composite Steel Joists, CJ-Series*, hereafter referred to as the Specification, covers the design, manufacture, application, and erection stability and handling of Composite Steel Joists **CJ-Series** in buildings or other structures, where other structures are defined as those structures designed, manufactured, and erected in a manner similar to buildings. **CJ-Series** joists shall be designed using Load and Resistance Factor Design (LRFD) in accordance with this Specification. Composite Steel Joists shall be erected in accordance with the Occupational Safety and Health Administration (OSHA), U.S. Department of Labor, Code of Federal Regulations 29CFR Part 1926 Safety Standards for Steel Erection, Section 1926.757 Open Web Steel Joists.

This Specification includes Sections 100 through 107.

100.2 DEFINITION

The term "Composite Steel Joists **CJ-Series**", as used herein, refers to open web, parallel chord, load-carrying members utilizing hot-rolled or cold-formed steel, including cold-formed steel whose yield strength has been attained by cold working, suitable for the direct support of one-way floor or roof systems. Shear connection between the joist top chord and overlying concrete slab allows the steel joist and slab to act together as an integral unit after the concrete has adequately cured. The **CJ-Series** joists have been standardized in depths from 10 inches (254 mm) through 96 inches (2438 mm), for spans up through 120 feet (36576 mm).

The **CJ-Series** standard joist designation is determined by its nominal depth, the letters "**CJ**", followed by the total uniform composite load, uniform composite live load, and finally the uniform composite dead load. Composite Steel Joists shall be designed in accordance with these specifications to support the loads defined by the **specifying professional**.

Two standard types of **CJ-Series** joists are designed and manufactured. These types are underslung (top chord bearing) or square-ended (bottom chord bearing), with parallel chords.

100.3 STRUCTURAL DESIGN DRAWINGS AND SPECIFICATIONS

The design drawings and specifications shall meet the requirements in the *Code of Standard Practice for Composite Steel Joists*, except for deviations specifically identified in the design drawings and/or specifications.



SECTION 101. REFERENCES

101.1 REFERENCED SPECIFICATIONS, CODES AND STANDARDS

ACI International (ACI)

ACI 318-08, *Building Code Requirements for Structural Concrete and Commentary*

ACI 318M-08, *Metric Building Code Requirements for Structural Concrete and Commentary*

American Institute of Steel Construction, Inc. (AISC)

ANSI/AISC 360-10 *Specification for Structural Steel Buildings*

American Iron and Steel Institute (AISI)

ANSI/AISI S100-2007 *North American Specification for Design of Cold-Formed Steel Structural Members*

ANSI/AISI S100-07/S1-09 , *Supplement No. 1 to the North American Specification for the Design of Cold-Formed Steel Structural Members*, 2007 Edition

ANSI/AISI S100-07/S2-10 , *Supplement No. 2 to the North American Specification for the Design of Cold-Formed Steel Structural Members*, 2007 Edition

American Society of Testing and Materials, ASTM International (ASTM)

ASTM A6/A6M-09, Standard Specification for General Requirements for Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling

ASTM A36/A36M-08, Standard Specification for Carbon Structural Steel

ASTM A242/242M-04 (2009), Standard Specification for High-Strength Low-Alloy Structural Steel

ASTM A307-07b, Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength

ASTM A325/325M-09, Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi [830 MPa] Minimum Tensile Strength

ASTM A370-09ae1, Standard Test Methods and Definitions for Mechanical Testing of Steel Products

ASTM A500/A500M-07, Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes

ASTM A529/A529M-05, Standard Specification for High-Strength Carbon-Manganese Steel of Structural Quality

ASTM A572/A572M-07, Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel

ASTM A588/A588M-05, Standard Specification for High-Strength Low-Alloy Structural Steel, up to 50 ksi [345 MPa] Minimum Yield Point, with Atmospheric Corrosion Resistance

ASTM A606/A606M-09, Standard Specification for Steel, Sheet and Strip, High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, with Improved Atmospheric Corrosion Resistance

ASTM A992/A992M-06a, Standard Specification for Structural Steel Shapes

ASTM A1008/A1008M-09, Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable

ASTM A1011/A1011M-09a, Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength

American Welding Society (AWS)

- AWS A5.1/A5.1M-2004, Specification for Carbon Steel Electrodes for Shielded Metal Arc Welding
- AWS A5.5/A5.5M:2006, Specification for Low-Alloy Steel Electrodes for Shielded Metal Arc Welding
- AWS A5.17/A5.17M-97:R2007, Specification for Carbon Steel Electrodes and Fluxes for Submerged Arc Welding
- AWS A5.18/A5.18M:2005, Specification for Carbon Steel Electrodes and Rods for Gas Shielded Arc Welding
- AWS A5.20/A5.20M:2005, Specification for Carbon Steel Electrodes for Flux Cored Arc Welding
- AWS A5.23/A5.23M:2007, Specification for Low-Alloy Steel Electrodes and Fluxes for Submerged Arc Welding
- AWS A5.28/A5.28M:2005, Specification for Low-Alloy Steel Electrodes and Rods for Gas Shielded Arc Welding
- AWS A5.29/A5.29M:2005, Specification for Low Alloy Steel Electrodes for Flux Cored Arc Welding
- AWS D1.1/D1.1M-2004, Structural Welding Code – Steel

Steel Deck Institute (SDI)

- ANSI/SDI C1.0-2006, Standard for Composite Steel Floor Deck
- ANSI/SDI NC-2010, Standard for Noncomposite Steel Floor Deck

101.2 OTHER REFERENCES

The following references are non-ANSI approved documents and as such, are provided solely as sources of commentary or additional information related to the topics in this Specification:

American Society of Civil Engineers (ASCE)

- SEI/ASCE 7-10 *Minimum Design Loads for Buildings and Other Structures*
- ASCE Task Committee on Design Criteria for Composite Structures in Steel and Concrete (1996), *Proposed Specification and Commentary for Composite Joists and Composite Trusses*, *ASCE Journal of Structural Engineering*, Vol. 122, No. 4, April.

Federal Register, Department of Labor, Occupational Safety and Health Administration (2001), 29 CFR Part 1926 Safety Standards for Steel Erection; Final Rule, §1926.757 Open Web Steel Joists - January 18, 2001, Washington, D.C.

Steel Joist Institute (SJI)

- SJI-CJ COSP-2007 and 2010 Supplement, *Code of Standard Practice for Composite Steel Joists*
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- Technical Digest No. 8 (2008), *Welding of Open Web Steel Joists and Joist Girders*
- Technical Digest No. 9 (2008), *Handling and Erection of Steel Joists and Joist Girders*
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- CISC (1997), *Handbook of Steel Construction*, CAN/CSA-S16.1-94, Section 16 - “Open-Web Steel Joists”, 7th Edition, Canadian Institute of Steel Construction, Willowdale, Ontario.
- Corrin, Michael (1993), Stanley D. Lindsey & Associates, Ltd, *312 Elm Street- Innovation Pays Off*, *The Military Engineer*, No. 554, January–February.
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Samuelson, David (2002) *Composite Steel Joists*, AISC Engineering Journal, Vol. 39, No. 3, Third Quarter.

Samuelson, David (2004) SJI Updates – *Expanded Load Tables for Noncomposite Joists/ Joist Girders and Development of New Composite Joist Series*, North American Steel Construction Conference, Long Beach, CA, March 24-27.

Sublett, Charles and Easterling, Sam (1992), *Strength of Welded Headed Studs in Ribbed Metal Deck on Composite Joists*, CE/VPI-ST92/03, Department of Civil and Environmental Engineering, Virginia Polytechnic Institute and State University, Blacksburg, VA.

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SECTION 102. MATERIALS

102.1 STEEL CHORD and WEB MEMBERS

(a) Specifications

The steel used in the manufacture of **CJ**-Series joists shall conform to one of the following ASTM Specifications of latest adoption:

- Carbon Structural Steel, ASTM A36/A36M.
- High-Strength Low-Alloy Structural Steel, ASTM A242/A242M.
- Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes, ASTM A500/A500M.



- High-Strength Carbon-Manganese Steel of Structural Quality ASTM A529/A529M.
- High-Strength Low-Alloy Columbium-Vanadium Structural Steel, ASTM A572/A572M.
- High-Strength Low-Alloy Structural Steel up to 50 ksi [345 MPa] Minimum Yield Point, with Atmospheric Corrosion Resistance, ASTM A588/A588M.
- Steel, Sheet and Strip, High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, with Improved Atmospheric Corrosion Resistance, ASTM A606/A606M.
- Structural Steel Shapes, ASTM A992/A992M.
- Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable, ASTM A1008/A1008M.
- Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra High Strength, ASTM A1011/A1011M.

or shall be of suitable quality ordered or produced to other than the listed specifications, provided that such material in the state used for final assembly and manufacture is weldable and is proved by tests performed by the producer or manufacturer to have the properties specified in Section 102.1(b).

(b) Mechanical Properties

Steel used for **CJ-Series** joists shall have a minimum yield strength determined in accordance with one of the procedures specified in this section, which is equal to the yield strength* assumed in the design.

*The term "Yield Strength" as used herein shall designate the yield level of a material as determined by the applicable method outlined in ASTM A 370, *Standard Test Methods and Definitions for Mechanical Testing of Steel Products*, paragraph 13.1 "Yield Point", and in paragraph 13.2 "Yield Strength", or as specified in Section 102.1(b) of this Specification.

Evidence that the steel furnished meets or exceeds the design yield strength shall, if requested, be provided in the form of an affidavit, or by witnessed or certified test reports.

For material used without consideration of increase in yield strength resulting from cold forming, the specimens shall be taken from as-rolled material. In the case of material with mechanical properties that conform to the requirements of one of the listed specifications, the test specimens and procedures shall conform to those of such specifications and to ASTM A370.

In the case of material with mechanical properties that do not conform to the requirements of one of the listed specifications, the test specimens and procedures shall conform to the applicable requirements of ASTM A370, and the specimens shall exhibit a yield strength equal to or exceeding the design yield strength and an elongation of not less than (a) 20 percent in 2 inches (51 mm) for sheet and strip, or (b) 18 percent in 8 inches (203 mm) for plates, shapes and bars with adjustments for thickness for plates, shapes and bars as prescribed in ASTM A36/A36M, A242/A242M, A500/A500M, A529/A529M, A572/A572M, or A588/A588M, A992/A992M whichever specification is applicable, on the basis of design yield strength.

The number of tests shall be as prescribed in ASTM A6/A6M for plates, shapes, and bars; and ASTM A606/A606M, A1008/A1008M and A1011/A1011M for sheet and strip.



If as-formed strength is utilized, the test reports shall show the results of tests performed on full section specimens in accordance with the provisions of the *AISI North American Specification for the Design of Cold-Formed Steel Structural Members*. They shall also indicate compliance with these provisions and with the following additional requirements:

- a) The yield strength calculated from the test data shall equal or exceed the design yield strength.
- b) Where tension tests are made for acceptance and control purposes, the tensile strength shall be at least 8 percent greater than the yield strength of the section.
- c) Where compression tests are used for acceptance and control purposes, the specimen shall withstand a gross shortening of 2 percent of its original length without cracking. The length of the specimen shall be not greater than 20 times its least radius of gyration.
- d) If any test specimen fails to pass the requirements of subparagraphs (a), (b), or (c) above, as applicable, two retests shall be made of specimens from the same lot. Failure of one of the retest specimens to meet such requirements shall be the cause for rejection of the lot represented by the specimens.

102.2 PAINT

Composite Steel Joists, CJ-Series, shall be provided unpainted to facilitate installation of welded shear studs.

SECTION 103. DESIGN AND MANUFACTURE

103.1 METHOD

The design of Composite Steel Joists shall be based on achieving the nominal flexural strength of the composite member and is limited to the design of one-way, composite joist systems that meet the following criteria:

- a) Members are simply-supported and are not considered part of the lateral load-resisting system.
- b) Horizontal shear connection is achieved by direct bearing of embedments within the concrete slab.

Where any applicable design feature is not specifically covered herein, the design shall be in accordance with the following specifications:

- For steel that consists of hot-rolled shapes, bars, or plates, use the American Institute of Steel Construction, *Specification for Structural Steel Buildings*.
- For members which are cold-formed from sheet or strip steel, use the American Iron and Steel Institute, *North American Specification for the Design of Cold-Formed Steel Structural Members*.

103.2 LOADS, FORCES AND LOAD COMBINATIONS

The loads and forces used for the composite steel joist design shall be calculated by the **specifying professional** in accordance with the applicable building code and specified and provided on the contract drawings.

The load combinations shall be specified by the **specifying professional** on the contract drawings in accordance with the applicable building code or, in the absence of a building code, the load combinations shall be those stipulated in SEI/ASCE 7 Section 2.3 for LRFD design.



At a minimum, the required stress shall be computed for the factored loads based on the factors and load combinations as follows:

(a) Non-composite

$$1.4D_c \quad (103.2-1)$$

$$1.2D_c + 1.6L_c \quad (103.2-2)$$

Where:

D_c = construction dead load due to weight of the joist, the decking, and the fresh concrete, lb/ft.² (kPa)

L_c = construction live load due to the work crews and the construction equipment, lb/ft.² (kPa)

(b) Composite

$$1.4D \quad (103.2-3)$$

$$1.2D + 1.6 (L, \text{ or } L_r, \text{ or } S, \text{ or } R) \quad (103.2-4)$$

Where:

D = dead load due to the weight of the structural elements and the permanent features of the structure, lb/ft.² (kPa)

L = live load due to occupancy and movable equipment, lb/ft.² (kPa)

L_r = roof live load, when composite joists are utilized in roofs, lb/ft.² (kPa)

S = snow load, when composite joists are utilized in roofs, lb/ft.² (kPa)

R = load due to initial rainwater or ice exclusive of the ponding contribution, when composite joists are utilized in roofs, lb/ft.² (kPa)

103.3 NOMINAL STRESSES

Joists shall have their components so proportioned that the required stresses, f_u , shall not exceed ϕF_n where:

f_u = required stress computed for the factored loads based on the factors and load combinations, ksi (MPa)
 combinations, ksi (MPa)

ϕ = resistance factor

F_n = nominal stress, ksi (MPa)

ϕF_n = design stress, ksi (MPa)

F_y = specified minimum yield stress, ksi (MPa)

E = modulus of elasticity of steel, ksi (MPa)

For Chords: The calculation of design stress shall be based on a yield strength, F_y , of the material used in manufacturing equal to 50 ksi (345 MPa).

For all other joist elements: The calculation of design stress shall be based on a yield strength, F_y , of the material used in manufacturing, but shall not be less than 36 ksi (250 MPa) or greater than 50 ksi (345 MPa).

Note: Yield strengths greater than 50 ksi shall not be used for the design of any joist members.



(a) **Tension:** $\phi_t = 0.90$

$$F_n = F_y \quad (103.3-1)$$

$$\phi F_n = \phi_t F_y \quad (103.3-2)$$

(b) **Compression:** $\phi_c = 0.90$

$$F_n = F_{cr} \quad (103.3-3)$$

$$\phi F_n = \phi_c F_{cr} \quad (103.3-4)$$

For members with

$$K\ell/r \leq 4.71\sqrt{E/QF_y}$$

$$F_{cr} = Q \left[0.658 \left(\frac{QF_y}{F_e} \right) \right] F_y \quad (103.3-5)$$

For members with

$$K\ell/r > 4.71\sqrt{E/QF_y}$$

$$F_{cr} = 0.877F_e \quad (103.3-6)$$

Where:

F_e = elastic buckling stress determined in accordance with Equation 103.3-7.

$$F_e = \frac{\pi^2 E}{\left(\frac{K\ell}{r} \right)^2} \quad (103.3-7)$$

In the above equations, ℓ is taken as the distance in inches (millimeters) between panel points for the chord members and web members, and r is the corresponding least radius of gyration of the member or any component thereof. E is equal to 29,000 ksi (200,000 MPa).

For hot-rolled sections and cold formed angles, Q is the full reduction factor for slender compression members as defined in the AISC *Specification for Structural Steel Buildings*, except that when the first primary compression web member is a crimped-end angle member, whether hot-rolled or cold formed:

$$Q = [5.25/(w/t)] + t \leq 1.0 \quad (103.3-8)$$

Where: w = angle leg length, inches
 t = angle leg thickness, inches

or,

$$Q = [5.25/(w/t)] + (t/25.4) \leq 1.0 \quad (103.3-9)$$

Where: w = angle leg length, mm
 t = angle leg thickness, mm

For all other cold-formed sections the method of calculating the nominal compressive strength is given in the AISI, *North American Specification for the Design of Cold-Formed Steel Structural Members*.

(c) Bending: $\phi_b = 0.90$

Bending calculations are to be based on using the elastic section modulus.

For chords and web members other than solid rounds:

$$F_n = F_y \quad (103.3-10)$$

$$\phi F_n = \phi_b F_y \quad (103.3-11)$$

For web members of solid round cross section:

$$F_n = 1.6 F_y \quad (103.3-12)$$

$$\phi F_n = \phi_b (1.6 F_y) \quad (103.3-13)$$

For bearing plates used in joist seats:

$$F_n = 1.5 F_y \quad (103.3-14)$$

$$\phi F_n = \phi_b (1.5 F_y) \quad (103.3-15)$$

(d) Weld Design Strength:

Shear at throat of fillet welds, flare bevel groove welds, partial joint penetration groove welds, and plug/slot welds:

$$\text{Nominal Shear Stress} = F_{nw} = 0.6F_{exx} \quad (103.3-16)$$

$$\phi_w = 0.75$$

$$\text{Design Shear Strength} = \phi R_n = \phi_w F_{nw} A = 0.45F_{exx} A_w \quad (103.3-17)$$

Made with E70 series electrodes or F7XX-EXXX flux-electrode combinations $F_{exx} = 70$ ksi (483 MPa)

Made with E60 series electrodes or F6XX-EXXX flux-electrode combinations $F_{exx} = 60$ ksi (414 MPa)

A_w = effective throat area, where:

For fillet welds, A_w = effective throat area, (other design methods demonstrated to provide sufficient strength by testing shall be permitted to be used);

For flare bevel groove welds, the effective weld area is based on a weld throat width, T, where:

$$T \text{ (inches)} = 0.12D + 0.11 \quad (103.3-18)$$

Where: D = web diameter, inches

or,

$$T \text{ (mm)} = 0.12D + 2.8 \quad (103.3-19)$$

Where: D = web diameter, mm

For plug/slot welds, A_w = cross-sectional area of the hole or slot in the plane of the faying surface provided that the hole or slot meets the requirements of the American Institute of Steel Construction *Specification for Structural Steel Buildings* (and as described in SJI Technical Digest No. 8, "Welding of Open-Web Steel Joists and Joist Girders").

Strength of resistance welds and complete-joint-penetration groove or butt welds in tension or compression (only when the stress is normal to the weld axis) is equal to the base metal strength:

$$\phi_t = \phi_c = 0.90$$

$$\text{Design Stress} = 0.90 F_y \quad (103.3-20)$$

103.4 MAXIMUM SLENDERNESS RATIOS

The slenderness ratios, $1.0\ell/r$ and $1.0\ell_s/r$ of members as a whole or any component part shall not exceed the values given in Table 103.4-1, Parts A.

The effective slenderness ratio, $k\ell/r$ to be used in calculating the nominal stresses, F_{cr} and F'_e , is the largest value as determined from Table 103.4-1, Parts B and C.

In compression members when fillers or ties are used, they shall be spaced so that the ℓ_s/r_z ratio of each component does not exceed the governing ℓ/r ratio of the member as a whole. The terms used in Table 103.4-1 are defined as follows:

- ℓ = length center-to-center of panel points, except $\ell = 36$ inches (914 mm) for calculating ℓ/r_y of top chord member, in. (mm).
- ℓ_s = maximum length center-to-center between panel point and filler (tie), or between adjacent fillers (ties), in. (mm).
- r_x = member radius of gyration in the plane of the joist, in. (mm).
- r_y = member radius of gyration out of the plane of the joist, in. (mm).
- r_z = least radius of gyration of a member component, in. (mm).

Compression web members are those web members subject to compressive axial loads under gravity loading.

Tension web members are those web members subject to tension axial loads under gravity loading, and which may be subject to compressive axial loads under alternate loading conditions, such as net uplift.

For top chords, the end panel(s) are the panels between the bearing seat and the first primary interior panel point comprised of at least two intersecting web members.

**TABLE 103.4-1
MAXIMUM AND EFFECTIVE SLENDERNESS RATIOS**

Description	kℓ/r _x	kℓ/r _y	kℓ/r _z	kℓ _s /r _z	
I TOP CHORD INTERIOR PANELS					
A.	The slenderness ratios, 1.0ℓ/r and 1.0ℓ _s /r, of members as a whole or any component part shall not exceed 90.				
B.	The effective slenderness ratio, kℓ/r, to determine F _{cr} where k is:				
1.	With fillers or ties	0.75	0.94	---	1.0
2.	Without fillers or ties	---	---	0.75	---
3.	Single component members	0.75	0.94	---	---
C.	For bending, the effective slenderness ratio, kℓ/r, to determine F' _e where k is:				
		0.75	---	---	---
II TOP CHORD END PANELS, ALL BOTTOM CHORD PANELS					
A.	The slenderness ratios, 1.0ℓ/r and 1.0ℓ _s /r, of members as a whole or any component part shall not exceed 120 for Top Chords, or 240 for Bottom Chords.				
B.	The effective slenderness ratio, kℓ/r, to determine F _{cr} where k is:				
1.	With fillers or ties	1.0	0.94	---	1.0
2.	Without fillers or ties	---	---	1.0	---
3.	Single component members	1.0	0.94	---	---
C.	For bending, the effective slenderness ratio, kℓ/r, to determine F' _e where k is:				
		1.0	---	---	---
III TENSION WEB MEMBERS					
A.	The slenderness ratios, 1.0ℓ/r and 1.0ℓ _s /r, of members as a whole or any component part shall not exceed 240.				
B.	For end web members subject to compression, the effective slenderness ratio, kℓ/r, to determine F _{cr} where k is:				
1.	With fillers or ties	0.75	1.0	---	1.0
2.	Without fillers or ties	---	---	1.0	---
3.	Single component members	0.75	0.8	---	---
IV COMPRESSION WEB MEMBERS					
A.	The slenderness ratios, 1.0 and 1.0ℓ _s /r, of members as a whole or any component part shall not exceed 200.				
B.	The effective slenderness ratio, kℓ/r, to determine F _{cr} where k is:				
1.	With fillers or ties	0.75	1.0	---	1.0
2.	Without fillers or ties	---	---	1.0	---
3.	Single component members	0.75	1.0	---	---

103.5 MEMBERS

(a) Chords

(1) Non-composite Design

The bottom chord shall be designed as an axially loaded tension member.

The top chord shall resist the construction loads, at which time the joist is behaving non-compositely. An analysis shall be made using an effective depth of the joist to determine the member forces due to construction loads. The effective depth for a non-composite joist shall be considered the vertical distance between the centroids of the top and bottom chord members.

The minimum horizontal flat leg width and minimum thickness of top chord shall be as specified in Table 103.5-1.

**TABLE 103.5-1
MINIMUM TOP CHORD SIZES FOR INSTALLING WELDED SHEAR STUDS**

Shear Stud Diameter, in. (mm)	Minimum Horizontal Flat Leg Width, in. (mm)	Minimum Leg Thickness, in. (mm)
0.375 (10)	1.50 (38)	0.125 (3.2)
0.500 (13)	1.75 (44)	0.167 (4.2)
0.625 (16)	2.00 (51)	0.209 (5.3)
0.750 (19)	2.50 (64)	0.250 (6.3)

The top chord shall be designed as a continuous member subject to combined axial and bending stresses and shall be so proportioned that

at the panel point: $f_{au} + f_{bu} \leq 0.9F_y$ (103.5-1)

at the mid panel:

$$\text{for, } \frac{f_{au}}{\phi_c F_{cr}} \geq 0.2, \quad \frac{f_{au}}{\phi_c F_{cr}} + \frac{8}{9} \left[\frac{C_m f_{bu}}{\left[1 - \left(\frac{f_{au}}{\phi_c F'_{e}} \right) \right] Q \phi_b F_y} \right] \leq 1.0 \quad (103.5-2)$$

$$\text{for, } \frac{f_{au}}{\phi_c F_{cr}} < 0.2, \quad \left(\frac{f_{au}}{2\phi_c F_{cr}} \right) + \left[\frac{C_m f_{bu}}{\left[1 - \left(\frac{f_{au}}{\phi_c F'_{e}} \right) \right] Q \phi_b F_y} \right] \leq 1.0 \quad 103.5-3$$

Where:

- f_{au} = P_u/A_t = required compressive stress, ksi (MPa)
- P_u = required axial strength using LRFD load combinations, kips (N)
- f_{bu} = M_u/S = required bending stress at the location under consideration, ksi (MPa)
- M_u = required flexural strength using LRFD load combinations, kip-in. (N-mm)



- S = elastic section modulus, in.³ (mm³)
 F_{cr} = nominal axial compressive stress in ksi (MPa) based on ℓ/r as defined in Section 103.4
 $C_m = 1 - 0.3 f_{au} / \phi_c F'_e$ for end panels
 $C_m = 1 - 0.4 f_{au} / \phi_c F'_e$ for interior panels
 F_y = specified minimum yield strength, ksi (MPa)
 $F'_e = \frac{\pi^2 E}{(\mathbf{K}\ell/r_x)^2}$, ksi (MPa)
 ℓ = chord panel length per Section 103.4, in. (mm)
 r_x = radius of gyration about the axis of bending, in. (mm)
 Q = form factor defined in Section 103.3
 A_t = area of the top chord, in.², (mm²)

The top chord shall be considered as stayed laterally by the floor provided the requirements of Section 104.9(d) of these specifications are met.

The top chord and bottom chord shall be designed such that at each joint:

$$f_{vmod} \leq \phi_v f_n \quad (\text{LRFD, } \phi = 1.00) \quad (103.5-4)$$

Where:

- f_n = nominal shear stress = $0.6F_y$, ksi (MPa)
 f_t = axial stress = P/A , ksi (MPa)
 f_v = shear stress = V/bt , ksi (MPa)
 $f_{vmod} = \text{modified shear stress} = \left(\frac{1}{2}\right)(f_t^2 + 4f_v^2)^{1/2}$
 b = length of vertical part(s) of cross section, in. (mm)
 t = thickness of vertical part(s) of cross section, in. (mm)

It shall not be necessary to design the top chord and bottom chord for the modified shear stress when a round bar web member is continuous through a joint. The minimum required shear of Section 103.5(b) (25 percent of the end reaction) shall not be required when evaluating Equation 103.5-4.

(2) Composite Design

The distance between the centroid of the tension bottom chord and the centroid of the concrete compression block, d_e , shall be computed using a concrete stress of $0.85f'_c$ and an effective concrete width, b_e , taken as the sum of the effective widths for each side of the joist centerline, each of which shall be the lowest value of the following:

1. one-eighth of the joist span, center-to-center of supports;
2. one-half the distance to the center-line of the adjacent joist;
3. the distance to the edge of the slab.

$$A = M_n / (0.85 f'_c b_e d_e) \leq t_c, \text{ in. (mm)} \quad (103.5-5)$$

$$d_e = d_j - y_{bc} + h_{\text{deck}} + t_c - a/2, \text{ in. (mm)} \quad (103.5-6)$$

Where:

- A = depth of concrete compressive stress block, in. (mm)
- b_e = effective width of concrete slab over the joist, in. (mm)
- d_j = steel joist depth, in. (mm)
- f_c = specified minimum 28 day concrete compressive strength, ksi (MPa)
- h_{deck} = height of metal deck, in. (mm)
- M_n = nominal moment capacity of the composite joist, kip-in. (N-mm)
- t_c = thickness of concrete slab above the steel deck, in. (mm)
- y_{bc} = vertical distance to centroidal axis of bottom chord measured from the bottom of the bottom chord, in. (mm)

When the metal deck ribs are perpendicular to the steel joists, the concrete below the top of the metal deck shall be neglected when determining section properties and in calculating the concrete compressive block.

The contribution of the steel joist top chord to the moment capacity of the composite system shall be ignored. The first top chord end panel member shall be designed for the full factored load requirements as a non-composite member per Section 103.5(a)(1).

$$M_u \leq \phi M_n \quad (103.5-7)$$

ϕM_n = minimum design flexural strength of composite section as determined from Equations 103.5-8, 103.5-9, 103.5-10, and 103.5-11, kip-in. (N-mm)

M_u = required flexural strength determined from applied factored loads, kip-in. (N-mm)

The design flexural strength of the composite section, ϕM_n , shall be computed as the lowest value of the following limit states:

a) Bottom Chord Tensile Yielding: $\phi_t = 0.90$

$$\phi M_n = \phi_t A_b F_y d_e \quad (103.5-8)$$

b) Bottom Chord Tensile Rupture: $\phi_{tr} = 0.75$

$$\phi M_n = \phi_{tr} A_n F_u d_e \quad (103.5-9)$$

c) Concrete Crushing: $\phi_{cc} = 0.85$

$$\phi M_n = \phi_{cc} 0.85 f'_c b_e t_c d_e \quad (103.5-10)$$

d) Shear Connector Strength: $\phi_{stud} = 0.90$

$$\phi M_n = \phi_{stud} N Q_n d_e \geq 0.50 \phi_t A_b F_y d_e \quad (103.5-11)$$



Where:

- A_b = cross-sectional area of steel joist bottom chord, in.² (mm²)
- A_n = net cross-sectional area of the steel joist bottom chord, in.² (mm²)
- b_e = effective width of concrete slab over the joist, in. (mm)
- d_e = vertical distance from the centroid of steel joist bottom chord to the centroid of resistance of the concrete in compression, in.(mm)
- F_u = tensile strength of the steel joist bottom chord, ksi (MPa)
- F_y = specified minimum yield stress of steel joist bottom chord, ksi (MPa)
- N = number of shear studs between the point of maximum moment and zero moment
- t_c = minimum thickness of the concrete slab above the top of the metal deck, in. (mm)

(b) Webs

Vertical shears to be used in the design of the web members shall be determined from the controlling load combination from Section 103.2(b), but such vertical shears shall not be less than the following:

- i. 25% of the factored end reaction.
- ii. Tension web members controlled by (i) shall be designed for a compressive force resulting from a factored shear value of:

$$V_{c\min} = \frac{(1.6w_L)L}{8} \quad (103.5-12)$$

Where:

- w_L = non-factored live load due to occupancy and moveable equipment, plf (kN/m)
- L = design length for the composite joist as defined in Table 104.2-1, Definition of Span, ft. (m) where design length = Span – 0.33 ft. (Span – 102 mm)
- $V_{c\min}$ = minimum factored compressive design shear in tension web members, lb (kN)

Interior vertical web members used in modified Warren type web systems shall be designed to resist the gravity loads supported by the member plus 2.0 percent of the composite bottom chord axial force.

Maximum slenderness ratios shall be in accordance with Sections III and IV of Table 103.4-1.

(c) Chord Configuration

Composite joists shall have parallel chords.

(d) Eccentricity

Members connected at a joint shall have their centers of gravity lines meet at a point, if practical. Eccentricity on either side of the neutral axis of chord members shall be permitted to be neglected when it does not exceed the distance between the neutral axis and the back of the chord. Otherwise, provision shall be made for the stresses due to eccentricity.

Eccentricity between the intersection of the centroid of the web members and center of compression in the concrete slab shall be permitted to be neglected. Ends of joists shall be proportioned to resist bending produced by eccentricity at the support.

In those cases where a single angle compression member is attached to the outside of the stem of a tee or double angle chord, due consideration shall be given to eccentricity.



(e) Joist Extensions

Joist extensions are defined as one of three types, top chord extensions (TCX), extended ends, or full depth cantilevers.

Design criteria for joist extensions shall be specified using one of the following methods:

- (1) A joist extension shall be designed for the load based on the design length and designation of the specified composite steel joist. In the absence of other design information, the joist manufacturer shall design the joist extension for this loading as a default.
- (2) A loading diagram shall be provided for the joist extension. The diagram shall include the magnitude and location of the loads to be supported, as well as the appropriate load combinations.

Any deflection requirements or limits due to the accompanying loads and load combinations on the joist extension shall be provided by the **specifying professional**, regardless of the method used to specify the extension. Unless otherwise specified, the joist manufacturer shall check the extension for the specified deflection limit under uniform live load acting simultaneously on both the joist base span and the extension.

The joist manufacturer shall consider the effects of joist extension loading on the base span of the joist. This includes carrying the design bending moment due to the loading on the extension into the top chord end panel(s), and the effect on the overall joist chord and web axial forces. The joist extension shall support all end loads without relying on any composite action.

Bracing of joist extensions shall be clearly indicated on the structural drawings.

Design of concrete reinforcing steel in the negative moment region shall be the responsibility of the **specifying professional**.

(f) Joist Bearing Depths

The joist bearing depths shall range from 2 1/2 inches (64 mm) to 7 1/2 inches (191 mm).

103.6 CONNECTIONS

(a) Methods

Joint connections and splices shall be made by attaching the members to one another by arc or resistance welding or other accredited methods.

- (1) Welded Connections
 - a) Selected welds shall be inspected visually by the manufacturer. Prior to this inspection, weld slag shall be removed.
 - b) Cracks are not acceptable and shall be repaired.
 - c) Thorough fusion shall exist between layers of weld metal and base metal for the required design length of the weld; such fusion shall be verified by visual inspection.
 - d) Unfilled weld craters shall not be included in the design length of the weld.
 - e) Undercut shall not exceed 1/16 inch (2 mm) for welds oriented parallel to the principal stress.
 - f) The sum of surface (piping) porosity diameters shall not exceed 1/16 inch (2 mm) in any 1 inch (25 mm) of design weld length.
 - g) Weld splatter is acceptable.



(2) **Welded Connections for Crimped-End Angle Web Members**

The connection of each end of a crimped angle web member to each side of the chord shall consist of a weld group made of more than a single line of weld. The design weld length shall include, at minimum, an end return of two times the nominal weld size.

(3) **Welding Program**

Manufacturers shall have a program for establishing weld procedures and operator qualification and for weld sampling and testing. (See Steel Joist Institute Technical Digest 8 - Welding of Open Web Steel Joists and Joist Girders.)

(4) **Weld inspection by Outside Agencies (See Section 104.13 of this specification).**

The agency shall arrange for visual inspection to determine that welds meet the acceptance standards of Section 103.6(a)(1) above. Ultrasonic, X-Ray, and magnetic particle testing are inappropriate for joists due to the configurations of the components and welds.

(b) Strength

(1) **Joint Connections** - Joint connections shall develop the maximum force due to any of the design loads, but not less than 50 percent of the nominal strength of the member in tension or compression, whichever force is the controlling factor in the selection of the member.

(2) **Shop Splices** - Shop splices shall be permitted to occur at any point in chord or web members. Splices shall be designed for the member force, but not less than 50 percent of the nominal member strength. All component parts comprising the cross section of the chord or web member (including reinforcing plates, rods, etc....) at the point of the splice, shall develop an ultimate tensile force of at least 1.2 times the product of the yield strength and the full design area of the chord or web. The "full design area" is the minimum required area such that the required stress will be less than the design stress.

(c) Field Splices

Field splices shall be designed by the manufacturer and shall be permitted to be either bolted or welded. Splices shall be designed for the member force, but not less than 50 percent of the nominal member strength.

(d) Shear Studs

Shear studs, after installation, shall extend not less than 1 1/2 in. (38 mm) above the top of the steel deck and there shall be at least 1/2 in. (13 mm) of concrete cover above the top of the installed studs.

For studs in 1.5 in. (38 mm), 2 in. (51 mm), or 3 in. (76 mm) deep decks with $d_{stud}/t_{top\ chord} \leq 2.7$:

$$Q_n = \text{Min} \left[0.5A_{stud} \sqrt{f'_c E_c} , R_p R_g A_{stud} F_{u\ stud} \right] \text{ (kips)} \quad (103.6-1)$$

$$Q_n = \text{Min} \left[0.5A_{stud} \sqrt{f'_c E_c} , (R_p R_g A_{stud} F_{u\ stud} / 1000) \right] \text{ (kN)} \quad (103.6-2)$$

For studs in 1.5 in. (38 mm), 2 in. (51 mm), or 3 in. (76 mm) deep decks with $2.7 < d_{stud}/t_{top\ chord} \leq 3.0$:

$$Q_n = \text{Min} \left[0.5A_{stud} \sqrt{f'_c E_c} , R_p R_g A_{stud} F_{u\ stud} - 1.5 \left(\frac{d_{stud}}{t_{top\ chord}} - 2.7 \right) \right] \text{ (kips)} \quad (103.6-3)$$



$$Q_n = \text{Min} \left[0.5A_{\text{stud}} \sqrt{f'_c E_c} , (R_p R_g A_{\text{stud}} F_{u \text{ stud}} / 1000) - 6.67 \left(\frac{d_{\text{stud}}}{t_{\text{top chord}}} - 2.7 \right) \right] (\text{kN}) \quad (103.6-4)$$

Where:

- A_{stud} = cross-sectional area of shear stud, in.² (mm²)
- d_{stud} = diameter of shear stud, in. (mm)
- E_c = modulus of elasticity of the concrete, ksi (MPa)
- f'_c = specified minimum 28 day concrete compressive strength, ksi (MPa)
- $F_{u \text{ stud}}$ = minimum tensile strength of stud, 65 ksi (450 MPa)
- Q_n = shear capacity of a single shear stud, kips (kN)
- R_p = shear stud coefficient from Table 103.6-1

- R_g = 1.00 for one stud per rib or staggered position studs
 = 0.85 for two studs per rib side-by-side
 = 0.70 for three studs per rib side-by-side
- $t_{\text{top chord}}$ = thickness of top chord horizontal leg or flange, in. (mm)

**TABLE 103.6-1
VALUES FOR R_p**

Deck Height	W_r @ mid-height	3/8 in. (10 mm) Dia. Stud	1/2 in. (13 mm) Dia. Stud	5/8 in. (16 mm) Dia. Stud	3/4 in. (19 mm) Dia. Stud
1 in. (25 mm)	1.9 in. (48 mm)	0.55	0.55	0.50	0.45
1.5 in. (38 mm)	2.1 in. (53 mm)	0.55	0.50	0.45	0.40
1.5 in. (38 mm) Inverted	3.9 in. (99 mm)	0.85	0.60	0.60	0.60
2 in. (51 mm)	6 in. (152 mm)	---	0.55	0.50	0.45
3 in. (76 mm)	6 in. (152 mm)	---	0.50	0.50	0.50

- Notes: 1) W_r @ mid-height = Average deck rib width of deck rib containing the shear stud.
 2) The deck is assumed to be oriented perpendicular to the joists.

103.7 CAMBER

CJ-Series joists shall be cambered. The approximate camber shall be based on the deflection associated with 100% of the non-composite unfactored dead load plus any additional loads defined by the **specifying professional**.

103.8 VERIFICATION OF DESIGN AND MANUFACTURE

(a) Design Calculations

Companies manufacturing any **CJ-Series Joists** shall submit design data to the Steel Joist Institute (or an independent agency approved by the Steel Joist Institute) for verification of compliance with the SJI Specifications.

(b) In-Plant Inspections



Each manufacturer shall verify his ability to manufacture **CJ-Series Joists** through periodic In-Plant Inspections. Inspections shall be performed by an independent agency approved by the Steel Joist Institute. The frequency, manner of inspection and manner of reporting shall be determined by the Steel Joist Institute. The Plant inspections are not a guarantee of the quality of any specific joists; this responsibility lies fully and solely with the individual manufacturer.

SECTION 104. APPLICATION

104.1 USAGE

The specifications shall apply to any type of structure where floor and roof decks are to be supported directly by Composite Steel Joists installed as hereinafter specified. Joists used other than for simple spans as prescribed in Section 103.1 shall be investigated and modified as necessary by the **specifying professional** to limit the unit stresses to those listed in Section 103.3. Design for large openings that interrupt truss action is beyond the scope of this specification.

CAUTION: If a rigid connection of the bottom chord is to be made to the column or other support, it shall be made only after the application of the non-composite dead loads. The joist is no longer simply-supported and the system shall be investigated for continuous frame action by the **specifying professional**.

The designed detail of a rigid type connection and moment plates shall be shown on the structural drawings by the **specifying professional**. The moment plates shall be furnished by other than the joist manufacturer.

104.2 SPAN

The span of a standard SJI composite joist shall be from 12 to 30 times the depth of the steel joist. The term "Span" is defined in Table 104.2-1, Definition of Span.

104.3 DEPTH

The depth of the composite joist shall be the vertical distance from the top of the steel top chord to the bottom of the bottom chord.

104.4 END SUPPORTS

(a) Masonry and Concrete

CJ-Series Joists supported by masonry or concrete shall bear on steel bearing plates and shall be designed as steel bearing. Due consideration of the end reactions and all other vertical and lateral forces shall be taken by the **specifying professional** in the design of the steel bearing plate and the masonry or concrete. The ends of **CJ-Series Joists** shall extend over the masonry or concrete support as shown below and be anchored to a steel bearing plate. This steel bearing plate shall be located no more than 1/2 inch (13 mm) from the face of the wall. The distance over the wall that the composite joist shall bear, width of the steel bearing plate and anchorage of the **CJ-Series Joists** shall be as defined below:

For $2\ 1/2" \leq \text{Seat Depth} < 5"$:

- The ends of **CJ-Series Joists** shall extend a distance of not less than 4 inches (102 mm) over the masonry or concrete support and be anchored to the steel bearing plate.
- The width of the plate perpendicular to the span of the Composite Steel Joist shall be not less than 6 inches (152 mm).
- The Composite Steel Joists shall bear a minimum of 2 1/2 inches (64 mm) on the steel bearing plate.

For Seat Depth ≥ 5 ":

- The ends of **CJ-Series Joists** shall extend a distance of not less than 6 inches (152 mm) over the masonry or concrete support and be anchored to the steel bearing plate.
- The width of the plate perpendicular to the span of the Composite Steel Joist shall be not less than 9 inches (229 mm).
- The Composite Steel Joists shall bear a minimum of 4 inches (102 mm) on the steel bearing plate.

The steel bearing plate is to be designed by the **specifying professional** and shall be furnished by other than the joist manufacturer.

Where it is deemed necessary to bear less than the dimensions listed above over the masonry or concrete support, special consideration is to be given to the design of the steel bearing plate and the masonry or concrete by the **specifying professional**. The joist shall meet the minimum bearing requirement on the steel bearing plate.

(b) Steel

Due consideration of the end reactions and all other vertical and lateral forces shall be taken by the **specifying professional** in the design of the steel support.

For $2 \frac{1}{2}'' \leq \text{Seat Depth} < 5''$:

The ends of **CJ-Series Joists** shall extend a distance of not less than 2 1/2 inches (64 mm) over the steel supports.

For Seat Depth ≥ 5 ":

The ends of **CJ-Series Joists** shall extend a distance of not less than 4 inches (102 mm) over the steel supports.

Where deemed necessary to butt opposite joists over a narrow steel support with bearing less than that noted above, special ends shall be specified, and such ends shall have positive attachment to the support, either by bolting or welding.

104.5 BRIDGING

Top and bottom chord bridging is required and shall consist of one or both of the following types:

(a) Horizontal

Horizontal bridging lines shall consist of continuous horizontal steel members. The ℓ/r ratio of the bridging member shall not exceed 300, where ℓ is the distance in inches (millimeters) between attachments and r is the least radius of gyration of the bridging member.

(b) Diagonal

Diagonal bridging lines shall consist of cross-bracing with a ℓ/r ratio of not more than 200, where ℓ is the distance in inches (millimeters) between connections and r is the least radius of gyration of the bracing member. Where cross-bracing members are connected at their point of intersection, the ℓ distance shall be taken as the distance in inches (millimeters) between connections at the point of intersection of the bridging members and the connections to the chords of the joists.



(c) Bridging Lines

For spans up through 60 feet (18.3 meters), welded horizontal bridging shall be permitted to be used except where the row of bridging nearest the center is required to be bolted diagonal bridging as indicated on the joist manufacturer's joist placement plans. When the span of the composite steel joist is over 60 feet (18.3 meters), but not greater than 100 feet (30.5 meters), hoisting cables shall not be released until the two rows of bridging nearest the third points are completely installed. When the span exceeds 100 feet (30.5 meters) hoisting cables shall not be released until all rows of bridging are completely installed. For spans over 60 feet (18.3 meters) all rows of bridging shall be diagonal bridging with bolted connections at the chords and intersections.

(d) Spacing

Bridging shall be properly spaced and anchored to support the decking and the employees prior to the attachment of the deck to the top chord. The maximum spacing of lines of bridging, ℓ_{brmax} shall be the lesser of,

$$\ell_{brmax} = \left(100 + 0.67 d_j + 40 \frac{d_j}{L} \right) r_y, \text{ in.} \quad (104.5-1a)$$

$$\ell_{brmax} = \left(100 + 0.026 d_j + 0.48 \frac{d_j}{L} \right) r_y, \text{ mm} \quad (104.5-1b)$$

Or,

$$\ell_{brmax} = 170 r_y \quad (104.5-2)$$

Where:

d_j is the steel joist depth, in. (mm)

L is the design length for the composite joist, ft. (m)

r_y is the out-of-plane radius of gyration of the top chord, in. (mm)

The number of rows of bottom chord bridging shall not be less than the number of top chord rows. Rows of bottom chord bridging are permitted to be spaced independently of rows of top chord bridging.

(e) Connections

Connection of bridging to the chords of the Composite Steel Joists shall be made by positive mechanical means or by welding. Ends of all bridging lines terminating at walls, beams, or double joists boxed by diagonal bridging shall be anchored.

Connection of the horizontal and diagonal bridging to the joist chord or bridging terminus point shall be capable of resisting the nominal top chord horizontal force, P_{br} given in Equation 104.5-3.

$$P_{br} = 0.0025 n A_t F_{construction}, \text{ lbs (N)} \quad (104.5-3)$$

Where

$n = 8$ for horizontal bridging

$n = 2$ for diagonal bridging

$A_t =$ cross sectional area of joist top chord, in.² (mm²)

$F_{construction} =$ assumed ultimate stress in top chord to resist construction loads



$$F_{\text{construction}} = \left(\frac{\pi^2 E}{\left(\frac{0.9 \ell_{\text{brmax}}}{r_y} \right)^2} \right) \geq 12.2 \text{ ksi} \quad (104.5-4a)$$

$$F_{\text{construction}} = \left(\frac{\pi^2 E}{\left(\frac{0.9 \ell_{\text{brmax}}}{r_y} \right)^2} \right) \geq 84.1 \text{ MPa} \quad (104.5-4b)$$

Where:

E = Modulus of Elasticity of steel = 29,000 ksi (200,000 MPa)

and $\frac{\ell_{\text{brmax}}}{r_y}$ is determined from Equations 104.5-1a, 104.5-1b or 104.5-2

(f) Sizing of Bridging

Horizontal and diagonal joist bridging shall be designed to resist the nominal unfactored horizontal compressive force given by Equation 104.5-3.

(g) Bottom Chord Bearing Joists

Where bottom chord bearing joists are utilized, a row of diagonal bridging shall be provided near the support(s). This bridging shall be installed and anchored before the hoisting cable(s) is released.

104.6 INSTALLATION OF BRIDGING

Bridging shall be provided to support the top chord during installation of the decking prior to the attachment of the deck to the top chord. All bridging and bridging anchors shall be completely installed before construction loads are placed on the joists. Bridging shall support the top and bottom chords against lateral movement during the construction period and shall hold the steel joists in the approximate position as shown on the joist placement plans.

104.7 BEARING SEAT ATTACHMENTS

(a) Masonry and Concrete

Ends of Composite Steel Joists resting on steel bearing plates on masonry or structural concrete shall be attached thereto as defined below:

For $2 \frac{1}{2}'' \leq \text{Seat Depth} < 5''$:

With a minimum of two 1/8 inch (3 mm) fillet welds 2 inches (51 mm) long, or with two 1/2 inch (13 mm) ASTM A307 bolts, or with the equivalent.

For Seat Depth $\geq 5''$:

With a minimum of two 1/4 inch (6 mm) fillet welds 2 inches (51 mm) long, or with two 3/4 inch (19 mm) ASTM A307 bolts or the equivalent.



(b) Steel

Ends of Composite Steel Joists resting on steel supports shall be attached thereto as defined below:

For $2\ 1/2'' \leq \text{Seat Depth} < 5''$:

With a minimum of two 1/8 inch (3 mm) fillet welds 2 inches (51 mm) long, or with two 1/2 inch (13 mm) ASTM A307 bolts, or with the equivalent.

For Seat Depth $\geq 5''$:

With a minimum of two 1/4 inch (6 mm) fillet welds 2 inches (51 mm) long, or with two 3/4 inch (19 mm) ASTM A307 bolts or the equivalent.

In steel frames, where columns are not framed in at least two directions with solid structural steel members, joists at column lines shall be field bolted and the joist bottom chords shall be restrained by a vertical stabilizer plate attached to the column providing lateral stability during construction. Where constructability does not allow a steel joist to be installed directly at the column, an alternate means of stabilizing the joist shall be installed on both sides near the column (OSHA 2001). When **CJ-Series Joists** are used to provide lateral stability to the supporting member, the final connection shall be made by welding or as designated by the **specifying professional**.

(c) Uplift

Where uplift forces are a design consideration, composite joists used in roof applications shall be anchored to resist such forces (Refer to Section 104.12).

104.8 JOIST SPACING

Composite joists shall be spaced so that the loading on each joist does not exceed the design load.

104.9 DECKS

(a) Material

Floor deck shall consist of formed steel capable of supporting the required load at the specified joist spacing.

(b) Thickness

Cast-in-place slabs shall be not less than 2 inches (51 mm) thick above the deck.

(c) Bearing

Slabs or decks shall bear uniformly along the top chords of the joists.

(d) Attachments of the steel deck

The deck shall be attached per Steel Deck Institute requirements (ANSI/SDI C1.0-2006, Standard for Composite Steel Floor Deck and ANSI/SDI NC-2010, Standard for Noncomposite Steel Floor Deck) prior to placing construction loads on the composite joists. The spacing of the attachments along the top chord shall not exceed 36 inches (914 mm).

104.10 DEFLECTION

The deflection due to the design live load shall not exceed the following:

Floors: 1/360 of span.

Roofs: 1/360 of span where a plaster ceiling is attached or suspended.

1/240 of span for all other cases.



The **specifying professional** shall give due consideration to the effects of deflection, both short and long term, and vibration* in the selection of composite joists. All deflection calculations shall account for the inherent flexibility of the open web configuration.

*For further reference, refer to Steel Joist Institute Technical Digest #5, "Vibration of Steel Joist-Concrete Slab Floors" and the Institute's Computer Vibration Program.

104.11 PONDING

When Composite Steel Joists are used in roofs, a ponding investigation shall be performed by the **specifying professional**.

* For further reference, refer to the Steel Joist Institute Technical Digest #3, "Structural Design of Steel Joist Roofs to Resist Ponding Loads" and the AISC Specification for Structural Steel Buildings.

104.12 UPLIFT

When Composite Steel Joists are used in roofs, and where uplift forces due to wind are a design requirement, these forces shall be indicated on the contract drawings in terms of net uplift in pounds per square foot (kilopascals). When these forces are specified, they shall be considered in the design of the joists and/or bridging. A single line of bottom chord bridging shall be provided near the first bottom chord panel points whenever uplift due to wind forces is a design consideration.

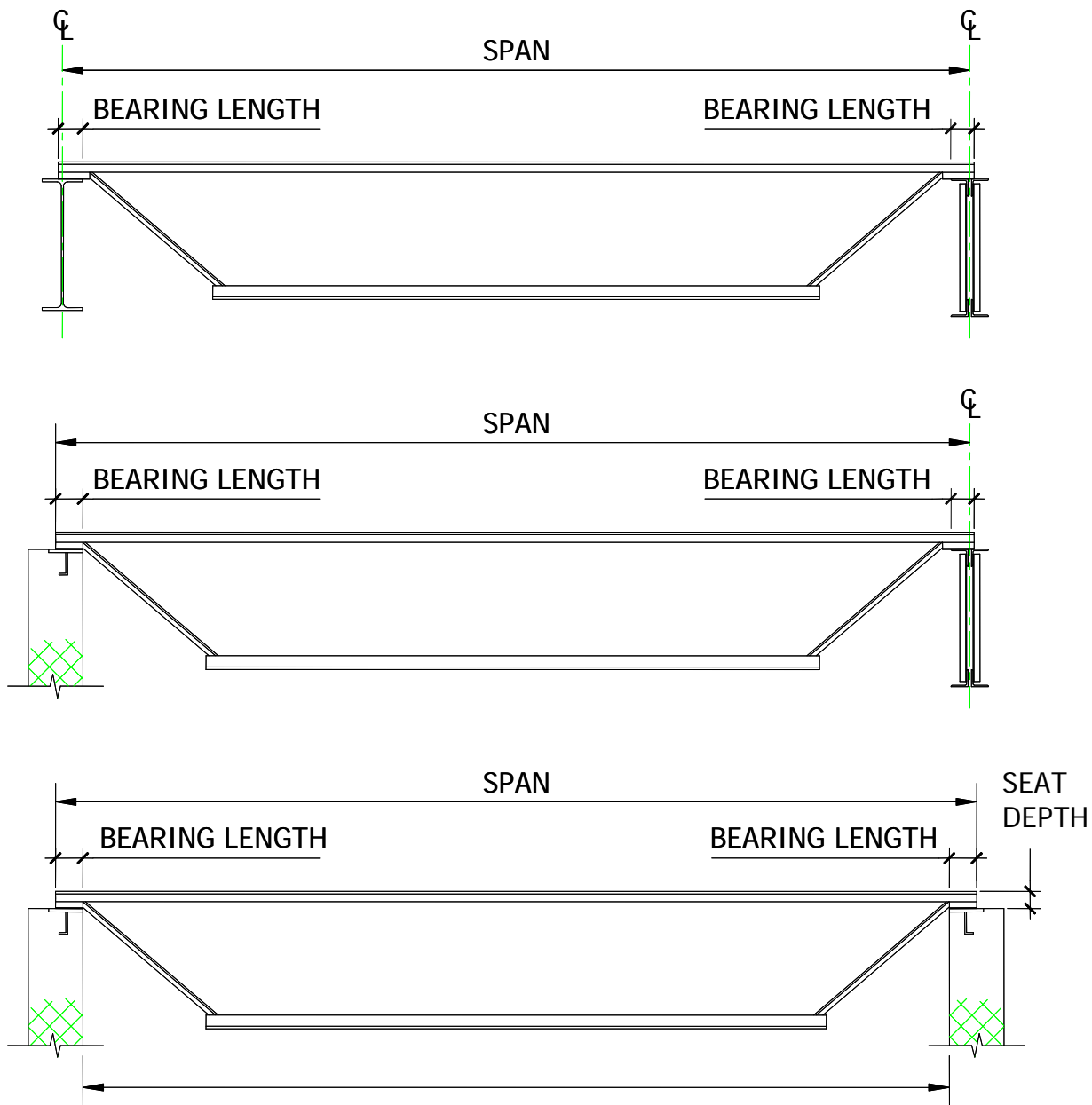
* For further reference, refer to Steel Joist Institute Technical Digest #6, "Structural Design of Steel Joist Roofs to Resist Uplift Loads".

104.13 INSPECTION

Joists shall be inspected by the manufacturer before shipment to verify compliance of materials and workmanship with the requirements of these specifications. If the purchaser wishes an inspection of the steel joists by someone other than the manufacturer's own inspectors, they shall be permitted to reserve the right to do so in their "Invitation to Bid" or the accompanying "Job specifications".

Arrangements shall be made with the manufacturer for such shop inspection of the joists at the manufacturing shop by the purchaser's inspectors at purchaser's expense.

**TABLE 104.2-1
DEFINITION OF SPAN**



- NOTES:
- 1) DESIGN LENGTH = SPAN - 0.33 FT
 - 2) BEARING LENGTH FOR STEEL SUPPORTS SHALL NOT BE LESS THAN SHOWN IN TABLE 104.4-1; FOR MASONRY AND CONCRETE NOT LESS THAN 6 INCHES
 - 3) PARALLEL CHORD JOISTS INSTALLED TO A SLOPE GREATER THAN ½ INCH PER FOOT SHALL USE SPAN DEFINED BY THE LENGTH ALONG THE SLOPE.

**SECTION 105.
ERECTION STABILITY AND
HANDLING***

When it is necessary for the erector to climb on the composite steel joists, extreme caution shall be exercised since unbridged joists exhibit some degree of instability under the erector's weight.

* For a thorough coverage of this topic, refer to Steel Joist Institute Technical Digest #9, "Handling and Erection of Steel Joists and Joist Girders".

(a) Erection Stability

Joist erection bridging requirements shall be determined by the joist manufacturer and indicated on the joist placement plans.

(b) Stability Requirements during Joist Erection

- (1) Before an employee is allowed on the composite steel joist: BOTH ends of composite joists at columns (or composite joists designated as column joists) shall be attached to its supports. For all other composite joists a minimum of one end shall be attached before the employee is allowed on the composite joist. The attachment shall be in accordance with Section 104.7- End Anchorage.

When a bolted seat connection shall be used for erection purposes, as a minimum, the bolts shall be snug tightened. The snug tight condition shall be defined as the tightness that exists when all plies of a joint are in firm contact. This shall be attained by a few impacts of an impact wrench or the full effort of an employee using an ordinary spud wrench.

- (2) On composite steel joists that do not require erection bridging as shown on the joist placement plans, only one employee shall be allowed on the composite joist unless all bridging is installed and anchored.
- (3) Where the span of the composite steel joist requires one line of bolted diagonal erection bridging nearest the mid-span of the joist, as indicated on the joist placement plans, the following shall apply:
 - a. Hoisting cables shall not be released until the row of bolted diagonal erection bridging is installed and anchored, unless an alternate method of stabilizing the composite steel joist has been provided; and
 - b. No more than one employee shall be allowed on these spans until all bridging is installed and anchored.
- (4) Where the span of the Composite Steel Joist requires two lines of bolted diagonal erection bridging nearest the third points of the joist, as indicated on the joist placement plans, the following shall apply:
 - a. Hoisting cables shall not be released until the two rows of bolted diagonal erection bridging are installed and anchored; and
 - b. No more than two employees shall be allowed on these spans until all other bridging is installed and anchored.
- (5) Where the span of the composite steel joist requires all lines of bridging to be bolted diagonal erection bridging as indicated on the joist placement plans, the following shall apply:
 - a. Hoisting cables shall not be released until all bridging is installed and anchored; and
 - b. No more than two employees shall be allowed on these spans until all other bridging is installed and anchored.



- (6) When permanent bridging terminus points can not be used during erection, additional temporary bridging terminus points are required to provide lateral stability.
- (7) In the case of bottom chord bearing joists, the ends of the composite joist shall be restrained laterally per Section 104.5(g) before releasing the hoisting cables.
- (8) After the composite steel joist is straightened and plumbed, and all bridging is completely installed and anchored, the ends of the joists shall be fully connected to the supports in accordance with Section 104.7-End Anchorage.

(c) Landing and Placing Loads

- (1) Except as stated in paragraph 105(c)(3) of this section, no “construction loads” ⁽¹⁾ shall be allowed on the Composite Steel Joists until all bridging is installed and anchored, and all joist bearing ends are attached. “construction loads” (for joist erection) means any load other than the weight of the employee(s), the joists, and the bridging bundle(s).
- (2) During the construction period, loads placed on the Composite Steel Joists shall be distributed so as not to exceed the non-composite capacity of the composite steel joists.
- (3) The weight of a bundle of joist bridging shall not exceed a total of 1000 pounds (454 kilograms). The bundle of joist bridging shall be placed on a minimum of 3 steel joists that are secured at one end. The edge of the bridging bundle shall be positioned within 1 foot (0.30 m) of the secured end.
- (4) No bundle of deck shall be placed on Composite Steel Joists until all bridging has been installed and anchored and all composite steel joist bearing ends attached, unless the following conditions are met:
 - a. The contractor has first determined from a “qualified person” ⁽²⁾ and documented in a site specific erection plan that the structure or portion of structure is capable of supporting the load. A “qualified person” means one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated the ability to solve or resolve problems relating to the subject mater, the work, or the project;
 - b. The bundle of decking is placed on a minimum of 3 composite steel joists;
 - c. The composite steel joists supporting the bundle of decking are attached at both ends;
 - d. At least one row of bridging is installed and anchored;
 - e. The total weight of the decking does not exceed 4000 pounds (1816 kilograms);
 - f. The edge of the bundle of decking shall be placed within 1 foot (0.30 meter) of the bearing surface of the composite steel joist end.
- (5) The edge of any construction load shall be placed within 1 foot (0.30 meter) of the bearing surface of the composite steel joist end.

(d) Field Welding

- (1) All field welding shall be performed in accordance with contract documents. Field welding shall not damage the composite joists.
- (2) On cold-formed members whose yield strength has been attained by cold working, and whose as-formed strength is used in the design, the total length of weld at any one point shall not exceed 50 percent of the overall developed width of the cold-formed section.



(e) Handling

Particular attention shall be paid to the erection of Composite Steel Joists. Care shall be exercised at all times to avoid damage to the composite joists and accessories. Hoisting cables shall be attached at panel point locations and those locations shall be selected to minimize erection stresses.

Each Composite Steel Joist shall be adequately braced laterally before any loads are applied. If lateral support is provided by the bridging, the bridging lines as defined in Section 105(b), paragraphs (2), (3), (4) and (5), shall be anchored to prevent lateral movement.

(f) Fall Arrest Systems

Composite steel joists shall not be used as anchorage points for a fall arrest system unless written approval to do so is obtained from a "qualified person" as defined in paragraph 105(c)(3)(a).

⁽¹⁾ See Federal Register, Department of Labor, Occupational Safety and Health Administration (2001), 29 CFR Part 1926 Safety Standards for Steel Erection; Final Rule, §1926.757 Open Web Steel Joists - January 18, 2001, Washington, D.C. for definition of "construction load".

⁽²⁾ See Federal Register, Department of Labor, Occupational Safety and Health Administration (2001), 29 CFR Part 1926 Safety Standards for Steel Erection; Final Rule, §1926.757 Open Web Steel Joists - January 18, 2001, Washington, D.C. for definition of "qualified person".

**SECTION 106.
SHEAR CONNECTOR
PLACEMENT AND WELDING**

- (a) Shear connectors required on each side of the point of maximum positive or negative bending moment, shall be distributed uniformly between that point and the adjacent points of zero moment, unless otherwise specified. However the number of shear connectors placed between any concentrated load and the nearest point of zero moment shall be sufficient to develop the maximum moment required at the concentrated load point.
- (b) Studs shall be alternately placed on each chord angle section for double angle top chords. When constructability does not allow this to occur, stud placement shall be limited as follows:
 - 1. No more than three studs shall be placed consecutively on any one chord angle, and
 - 2. No more than 60% of the total number of studs shall be placed on any one chord angle.

Studs shall have a minimum of 1/2 inch (13 mm) concrete cover over the head of each stud (see Section 103.6(d)).

- (c) The minimum center-to-center spacing of stud connectors shall be six stud diameters along the longitudinal axis of the supporting composite joist, except that within the ribs of formed steel decks oriented perpendicular to the steel joists, the minimum center-to-center spacing shall be four stud diameters in any direction.
- (d) The distance measured along the longitudinal axis of the joist from the free edge of the concrete slab to the first stud shall not be less than the deck height plus four stud diameters.
- (e) The spacing of stud shear connectors along the length of the supporting joist shall not exceed eight times the slab depth or 36 inches (914 mm).
- (f) To resist uplift, the steel deck shall be anchored to all supporting members at a spacing not to exceed 18 inches (460 mm). Such anchorage shall be provided by stud connectors, a combination of stud connectors and arc spot (puddle) welds, or other devices.



SECTION 107.
SPECIAL CASES

When a method of shear transfer is used other than headed shear studs for developing composite joist behavior, the strength of shear connectors and details of composite construction shall be established by a test program that has been submitted to and accepted by the SJI.

CODE OF STANDARD PRACTICE FOR COMPOSITE STEEL JOISTS

Adopted by the Steel Joist Institute May 10, 2006
Revised to May 18, 2010 - Effective December 31, 2010

SECTION 1 GENERAL

1.1 SCOPE

The practices and customs set forth herein are in accordance with good engineering practice, tend to ensure safety in composite steel construction, and are standard within the industry. There shall be no conflict between this code and any legal building regulation. This code shall only supplement and amplify such laws. Unless specific provisions to the contrary are made in a contract for the purchase of composite steel joists, this code is understood to govern the interpretation of such a contract.

1.2 APPLICATION

This Code of Standard Practice is to govern as a standard unless otherwise covered in the architects' and engineers' plans and specifications.

1.3 DEFINITIONS

Buyer. The entity that has agreed to purchase material from the manufacturer and has also agreed to the terms of sale.

Erector. The entity that is responsible for the safe and proper erection of the materials in accordance with all applicable codes and regulations.

Material. Composite steel joists and accessories as provided by the seller.

Owner. The entity that is identified as such in the contract documents.

Placement Plans. Drawings that are prepared depicting the interpretation of the contract documents requirements for the material to be supplied by the seller. These floor and/or roof plans are approved by the **specifying professional**, buyer or owner for conformance with the design requirements. The seller uses the information contained on these drawings for final material design. A unique piece mark number is typically shown for the individual placement of the composite steel joists and accessories along with sections that describe the end bearing conditions and minimum attachment required so that material is placed in the proper location in the field.

Seller. A company certified by the Steel Joist Institute engaged in the manufacture and distribution of composite steel joists and accessories.

Specifying Professional. The licensed professional who is responsible for sealing the building contract documents, which indicates that he or she has performed or supervised the analysis, design and document preparation for the structure and has knowledge of the load-carrying structural system.



Structural Drawings. The graphic or pictorial portions of the contract documents showing the design, location and dimensions of the work. These documents generally include plans, elevations, sections, details, connections, all loads, schedules, diagrams and notes.

1.4 DESIGN

In the absence of ordinances or specifications to the contrary, all designs prepared by the **specifying professional** shall be in accordance with the Steel Joist Institute Standard Specifications for Composite Steel Joists, **CJ-Series**, of latest adoption.

1.5 RESPONSIBILITY FOR DESIGN AND ERECTION

When material requirements are specified, the seller shall assume no responsibility other than to furnish the items listed in Section 5.2 (a). When material requirements are not specified, the seller shall furnish the items listed in Section 5.2 (a) in accordance with Steel Joist Institute Standard Specifications for Composite Steel Joists, **CJ-Series**, of latest adoption, and this code. Pertinent design information shall be provided to the seller as stipulated in Section 6.1. The seller shall identify material by showing size and type. In no case shall the seller assume any responsibility for the erection of the item furnished.

1.6 PERFORMANCE TESTS FOR CJ-SERIES STEEL JOIST CONSTRUCTION

When a performance test on a composite steel joist is required, the following criteria shall be used:

- a) The performance test load shall be the maximum factored uniformly distributed composite design load for the selected composite steel joist.
- b) Joist self-weight and the weight of all test materials (i.e. bridging, top deck, slab, ceiling materials, etc.) shall be included in the calculation of applied performance test loading as appropriate for the composite steel joist during testing.
- c) Loading shall be uniformly distributed across the full length of the joist top chord, and the load application shall maintain uniform distribution throughout the test. At any stage during the application of the test loading, the test load shall not be distributed in such a manner as to result in any joist component being subjected to a higher proportion of force than intended by the composite steel joist design.
- d) At a minimum, a panel test assembly shall be comprised of a pair of joists with bridging, top deck, shear studs and concrete slab applied as used. The concrete shall be allowed adequate cure time as determined by the **specifying professional** (typically 28 days) prior to testing. The deck attachments and bridging shall be installed per the approved joist and deck placement plans. All bottom chord horizontal bridging rows shall be terminated by bracing back to the top chord of the adjacent joist or by a lateral restraint system which does not inhibit the vertical deflection of the panel test assembly.
- e) The performance test loading shall be applied at a rate of no greater than 25 plf per minute and shall be sustained for no less than 15 minutes. After the maximum test load has been removed for a minimum of 10 minutes, the remaining vertical displacement at midspan shall not exceed 20% of the vertical midspan deflection sustained under the full performance test load.
- f) All costs associated with such testing shall be borne by the purchaser.
- g) Joists that have been designed and manufactured and have satisfied the above performance test criteria shall be considered to satisfy the intent of the **CJ-Series** Standard Specification, and shall be considered safe for use in construction. No further proof of strength of individual joist components or connections is required.



SECTION 2 COMPOSITE JOISTS AND ACCESSORIES

2.1 COMPOSITE STEEL JOISTS

Composite steel joists shall carry the loads and meet the requirements of the Steel Joist Institute Standard Specifications for Composite Steel Joists, **CJ-Series**, of latest adoption.

CJ-Series joists are furnished with parallel chords only, and with minimum standard end bearing depth of 2½ inches (64 mm). **CJ-Series** joists shall be permitted to be furnished with either under slung or square ends.

2.2 JOIST LOCATION AND SPACING

The maximum joist spacing shall be in accordance with the requirements of Section 104.8, Steel Joist Institute Standard Specifications for Composite Steel Joists, **CJ-Series**, of latest adoption.

Where sidewalls, wall beams or tie beams are capable of supporting the floor slab or roof deck, the first adjacent composite steel joists may be placed one full space from these members. **CJ-Series** joists are provided with camber. These joists may have a significant difference in elevation with respect to the adjacent structure because of this camber. This difference in elevation should be given consideration when locating the first composite steel joist adjacent to a sidewall, wall beam or tie beam. Therefore, it is recommended that this joist be located one full space away from these members.

Where load bearing partitions occur parallel to joists, joists are generally placed under each such partition, and more than one such joist shall be provided if necessary to safely support the weight of such partition and the adjacent floor, less the live load, on a strip of floor one foot (0.305 m) in width. Where partitions occur perpendicular to the joists, they shall be treated as concentrated loads in accordance with Section 6.1.

2.3 JOIST EXTENSIONS

Composite steel joist extensions shall be in accordance with the requirements of the Steel Joist Institute Standard Specifications Load Tables & Weight Tables of latest adoption.

The magnitude and location of the loads to be supported, deflection requirements, and proper bracing of joist or Joist Girder Top Chord Extensions (S Type), Extended Ends (R Type) or full depth cantilever ends shall be clearly indicated on the structural drawings.

Extended joist ends shall be assumed to act non-compositely. In the absence of a load diagram, the extended top chord shall be designed for the uniformly distributed load.

2.4 CEILING EXTENSIONS

Ceiling extensions shall be furnished to support ceilings which are to be attached to the bottom of the joists. They are not furnished for the support of suspended ceilings. The ceiling extension shall be either an extended bottom chord element or a loose unit, whichever is standard with the manufacturer, and shall be of sufficient strength to properly support the ceiling.



2.5 BRIDGING AND BRIDGING ANCHORS

- (a) Bridging standard with the manufacturer and complying with the applicable Steel Joist Institute Standard Specifications for Composite Steel Joists, **CJ-Series**, of latest adoption shall be used for bridging all joists furnished by the manufacturer. Positive anchorage shall be provided at the ends of each bridging row at both top and bottom chords.
- (b) Diagonal cross bridging consisting of angles or other shapes connected to the top and bottom chords of **CJ-Series** joists shall be used when required by the Steel Joist Institute Standard Specifications for Composite Steel Joists, **CJ-Series**, of latest adoption.

Diagonal bridging, when used, shall have a l/r ratio not exceeding 200.

- (c) For the **CJ-Series** joists, horizontal bridging is recommended for spans up to and including 60 feet (18.3 m) except where code requirements for erection stability and/or the Steel Joist Institute Specifications require bolted diagonal bridging.

CJ-Series joists, exceeding 60 feet (18.3 m) in length shall have bolted diagonal bridging for all rows.

Refer to Section 105 in the Steel Joist Institute Standard Specifications for Composite Steel Joists, **CJ-Series**, of latest adoption for erection stability requirements.

Refer to OSHA *Safety Standards for Steel Erection, 29 CFR 1926.757 – Open Web Steel Joists* for erection stability requirements.

Note: The requirements as per OSHA also apply for composite steel joists since, during erection, a composite joist is like any SJI steel joist. Only after the concrete has cured, does the joist become composite.

Horizontal bridging shall consist of continuous horizontal steel members. The l/r ratio for horizontal bridging shall not exceed 300.

- (d) When bolted diagonal erection bridging is required, the following shall apply:
1. The bridging shall be indicated on the joist placement plan.
 2. The joist placement plan shall be the exclusive indicator for the proper placement of this bridging.
 3. Shop installed bridging clips, or functional equivalents, shall be provided where the bridging bolts to the steel joist.
 4. When two pieces of bridging are attached to the steel joist by a common bolt, the nut that secures the first piece of bridging shall not be removed from the bolt for the attachment of the second piece.
 5. Bridging attachments shall not protrude above the top chord of the steel joists.

2.6 CAMBERING

- (a) Manufacturing Tolerances

The camber tolerance for **CJ-Series** joists, as shown in Table 2.6, shall be -0 in., +1/4 in. (6 mm) or -0 in., + L / 1600 [where L = top chord length, in. (mm)] whichever is greater. Negative camber is not permitted.



TABLE 2.6
Camber Tolerances

TOP CHORD LENGTH feet (mm)	TOLERANCE - or + inches (mm)
20 (6,096)	-0, +1/4 (6)
30 (9,144)	-0, +1.4 (6)
40 (12,192)	-0, +1/4 (6)
50 (15,240)	-0, +3/8 (9)
60 (18,288)	-0, +1/2 (12)
70 (21,336)	-0, +1/2 (12)
80 (24,384)	-0, +5/8 (16)
90 (27,432)	-0, +5/8 (16)
100 (30,480)	-0, +3/4 (19)
110 (33,528)	-0, +7/8 (22)
120 (36,576)	-0, +7/8 (22)

(b) Camber Design

It is standard practice that a **CJ-Series** joist be furnished with sufficient camber for 100 percent of the non-composite dead load (joist, bridging, deck, and concrete slab). Joist bearings act as pinned/pinned-end connections with negligible end rotation restraint provided. Hence one shall obtain 100% of the predicted non-composite joist deflection when the full non-composite dead load has been placed on the composite joist. With the composite joist cambered for 100% of the non-composite dead load and the floor slab placed to a uniform thickness as suggested in Section 9, Concrete Placement, the floor shall be approximately level after the concrete has been placed.

Should the **specifying professional** strive to achieve a level floor after the composite dead and live loads are placed on the floor, additional joist camber can be specified on the “Composite Joist Floor Design Parameters Checklist”, see Appendix A. It is typical that the “Actual” composite dead and live loads supported by the composite steel joist are less than the full “Design” composite dead and live loads.

(c) Shop Inspection

When a check is to be made of the camber of a **CJ-Series** joist, the joist shall be carefully laid on its side with the joist intermittently supported prior to measuring the camber. With the joist lying on its side, the joist shall be in an unstressed condition at which time the amount of camber provided can be accurately determined.

Joists having measured camber outside of the camber tolerances shown in Table 2.6 shall have their camber adjusted by the joist manufacturer. At the option of the joist manufacturer, the joists shall be permitted to be rebuilt with the corrected camber.

2.7 SHEAR STUDS

The joist manufacturer shall indicate the size, quantity and layout of shear studs required on the stud installation drawings. Purchasing of the shear studs and ferrules, rental of shear stud welding equipment, installation of shear studs and field testing of shear studs is the responsibility of the shear stud installer.



SECTION 3 MATERIALS

3.1 STEEL

The steel used in the manufacture of composite joists shall comply with the Steel Joist Institute Standard Specifications for Composite Steel Joists, **CJ-Series**, of latest adoption.

3.2 PAINT

Standard shop practice is to supply composite steel joists unpainted to facilitate installation of welded shear studs. Paint may potentially hinder the installation of welded shear studs to the joist top chord.

SECTION 4 INSPECTION

Inspection of composite steel joists at the joist manufacturer's plant shall be made in accordance with the Steel Joist Institute Standard Specifications for Composite Steel Joists, **CJ-Series**, of latest adoption, Section 104.13.

Provisions for field inspection of projects involving composite steel joists shall be made by the **specifying professional**. This field inspection shall include verifying the concrete strength, concrete thickness and placement of the steel shear studs. For more information on stud placement see Section 106 of the Steel Joist Institute Standard Specifications for Composite Steel Joists, **CJ-Series**, of latest adoption. This field inspection shall not be provided by SJI member manufacturers.

SECTION 5 ESTIMATING

5.1 PLANS FOR BIDDING

Plans to serve as the basis for bids shall show the character of the work with sufficient clarity to permit making an accurate estimate and shall show the following:

- Designation and location of materials (see Section 5.2(a)), including any special design or configuration requirements.
- Locations and elevations of all steel and concrete supporting members and bearing walls.
- Joist depth.
- Joist span.
- Distance, each side of the joist centerline, to adjacent joists or other supporting members.



- Type and depth of floor deck.
- Concrete unit weight.
- Concrete compressive strength.
- Total depth of concrete slab.
- Loads and their locations as defined in Section 6.1(a).
- Location and length of joist extended ends.
- Location and size of all openings in floors and roofs.
- Location of all partitions.
- Composite Steel Joists requiring extended bottom chords.
- Deflection limitation.
- No paint on the joist. See **CJ-Series** Standard Specifications, Section 102.6 Paint.

5.2 SCOPE OF ESTIMATE

- (a) Unless otherwise specified, the following items shall be included in the estimate, and requirements shall be determined as outlined in Section 6.1.
- Composite Steel Joists.
 - Joist Extensions.
 - Ceiling Extensions.
 - Extended bottom chord used as strut.
 - Bridging and bridging anchors.
- (b) The following items shall not be included in the estimate but may be quoted and identified by the joist manufacturer as separate items:
- Headers for Composite Steel Joists, **CJ-Series**.
 - Shear connectors and/or ferrules.
 - Centering material and attachments.
 - Miscellaneous framing between joists for openings at ducts, dumbwaiters, ventilators, skylights, etc.
 - Loose individual or continuous bearing plates and bolts or anchors for such plates.
 - Erection bolts for composite joist end anchorage.
 - Horizontal bracing in the plane of the top and bottom chords from joist to joist or joist to structural framing and walls.
 - Moment plates.
 - Special joist configuration or bridging layouts for ductwork or sprinkler system.



SECTION 6
PLANS AND SPECIFICATIONS

6.1 PLANS FURNISHED BY BUYER

The buyer shall furnish the seller plans and specifications as prepared by the **specifying professional** showing all material requirements and composite steel joist designations.

(a) Design Input Required for Composite Steel Joists

The following basic information shall be provided by the **specifying professional**.

1. Joist Depth:

The joist depth includes the steel joist portion only, not the deck or concrete slab, in. (mm).

2. Joist Layout:

The joist plans shall show the layout of the composite steel joists, walls, columns, beams, girders and other supports, as well as floor and roof openings. The joist manufacturer shall determine the required composite joist span to be fabricated based on this information.

3. Finished Floor, Roof, and Bearing Elevations:

The elevation of finished floors, roofs, and bearings shall be shown with due consideration taken for the effects of dead load deflection.

4. Adjacent Member Spacing:

This is the distance to the adjacent member or to the edge of the slab (if an exterior joist), feet (m).

5. Type of Floor Deck:

Review each manufacturer's deck capacity for load capacity and deflection characteristics and specify the deck depth, profile and thickness to meet the building design.

6. Concrete Unit Weight, lb/ft.³ (kg/m³).

7. Concrete Compressive Strength:

28 day specified compressive strength of concrete, ksi (MPa).

8. Slab Thickness above the top ribs of the deck, in. (mm).

9. Loads

The Steel Joist Institute does not presume to establish the loading requirements for which structures are designed. The **specifying professional** shall provide the nominal loads and load combinations as stipulated by the applicable Code under which the structure is designed. At the present time the **CJ-Series** joists are assumed to be designed utilizing an LRFD design basis.

The **specifying professional** shall calculate and provide the magnitude and location of ALL JOIST LOADS including those shown below. When necessary to clearly convey information, a Load Diagram or Load Schedule shall be provided.



- a. Non-composite DL, lb/ft.² (kPa) - Concrete, joists, deck, bridging, and any other non-composite dead loads.
- b. Construction LL, lb/ft.² (kPa) – It is suggested that construction live load be determined considering the tributary area for each composite steel joist. See Appendix A, Footnote 1.
- c. Composite DL, lb/ft.² (kPa) - Partitions, mechanical, electrical, fireproofing, floor covering, ceilings, and other composite dead loads. The magnitude and location of composite dead loads shall be clearly dimensioned.
- d. Composite LL, lb/ft.² (kPa) - Reduced design live loads shall be permitted to be specified if applicable.

10. Special Loads:

The **specifying professional** shall be responsible for determining the applicable building code combinations. If the loading criteria are too complex to be adequately communicated in a simple load diagram, then the Specifying Professional shall provide a load schedule showing the specified design loads, load categories and required load combinations with applicable load factors.

The **specifying professional** shall show on the structural drawings and give due consideration to the following special loads and load effects:

- a. Snow drift loads including the accumulation of snow in the vicinity of obstructions such as penthouses, signs, parapets, adjacent buildings, etc.
- b. Axial loads at the joist end supports.
- c. Type and magnitude of end moments. For moment resisting joists framing near the end of a column, due consideration shall be given to extend the column length to allow a plate type connection between the top of the joist top chord and the column. Whenever possible, avoid resolving joist end moment forces through the joist bearing seat connection. A note shall be provided on the structural drawings stating that all moment resisting joists shall have all dead loads applied to the joist before the bottom chord struts are welded to the supporting connection whenever the moments provided do not include dead load. The top and bottom chord moment connection details and reinforcing steel placed in the concrete slab to resist negative flexural moments shall be designed by the **specifying professional**. The joist designer shall furnish the Specifying Professional with the joist detail information if requested.
- d. Structural bracing loads.
- e. Ponded rain water.
- f. Wind Uplift - When composite steel joists are utilized in roof applications, the magnitude and location of all wind uplift loads shall be clearly shown in terms of net uplift.
- g. Concentrated loads from mechanical units, fans, blowers, tanks, monorails, etc. - Where concentrated loads occur, the magnitude and location of these concentrated loads shall be shown on the structural drawings when, in the opinion of the **specifying professional**, they shall require consideration by the manufacturer.

For nominal concentrated loads, which have been accounted for in the specified uniform design loads, a “strut” to transfer the load to a panel point on the opposite chord shall not be required provided the sum of the concentrated loads within a chord pane, does not exceed 100 pounds and the attachments are concentric to the chord. If the slab is already designed to transfer concentrated loads from above to top chord panel points, the added member would not be required.

11. Camber:

Composite steel joists, unless otherwise specified, are cambered, in. (mm), for 100% of the non-composite weight of joist, bridging, deck and concrete slab. Additional camber to accommodate for actual sustained composite dead and live loads and concrete shrinkage/creep shall be identified by the **specifying professional**.



(b) Design Parameter Checklist

The SJI Composite Joist Floor Design Parameters Checklist shown in Appendix A provides a form for filling in the above standard design information listed in Section 6.1(a)(1) and Sections 6.1(a)(4) – 6.1(a)(9).

(c) Composite Joist Limitations

Composite Steel Joists have some limitations that the **specifying professional** shall be aware of. These include:

- The maximum deck depth is 3 inches (76 mm).
- The minimum slab thickness above the top of the deck shall be 2 inches (51 mm).
- When shear studs are utilized, they shall have at least 1/2 inch (13 mm) of concrete cover.
- The concrete shall be placed to provide a constant thickness along the entire span.

(d) Connections

Minimum End Anchorage for simple span gravity loading shall be in accordance with Steel Joist Institute Standard Specifications; Section 104.7 for **CJ-Series**. The end anchorage of a composite steel joist is the connection of the joist bearing seat to the support of the composite steel joist.

The adequacy of the end anchorage connection (bolted or welded) between the composite steel joist bearing seat and the supporting structure is the responsibility of the **specifying professional**. The contract documents shall clearly illustrate the end anchorage connection.

When the end anchorage is welded, it is recommended that the **specifying professional** consider a smaller fillet weld thickness in conjunction with a longer weld length.

The **specifying professional** is responsible for bridging termination connections. The contract documents shall clearly illustrate these termination connections.

The joist manufacturer is responsible for the design of the bearing seats of composite steel joists for the loads designated by the **specifying professional** in the contract documents.

(e) Special Considerations

The **specifying professional** shall indicate on the construction documents special considerations including:

- a) Oversized or other non-standard web openings
- b) Extended ends
- c) Non-SJI standard bridging

6.2 PLANS FURNISHED BY SELLER

The seller shall furnish the buyer with steel placement plans to show the material as specified on the construction documents and are to be utilized for field installation in accordance with specific project requirements as stated in Section 6.1. Composite Steel Joist placement plans shall include, at a minimum, the following:

1. Listing of all applicable loads as stated in Section 6.1 and used in the design of the composite steel joists as specified in the construction documents
2. Connection requirements for:
 - a) Joist supports
 - b) Field splices
 - c) Bridging attachments



3. Deflection criteria for live load and total load
4. Shear stud installation plans showing:
 - a) Size, quantity and location of all shear connectors to be installed on the composite steel joists
 - b) Design camber for each composite steel joist or reference to a table giving the design camber for each composite steel joist
5. Size, location, and connections for all bridging
6. Joist headers

All material shall be identified with its piece mark which also appears on the bill of material. **Composite Steel Joist placement plans do not require the seal and signature of the joist manufacturer's registered design professional.**

6.3 DISCREPANCIES

The **specifying professional's** bid plans and specifications shall be assumed to be correct in the absence of written notice from the buyer to the contrary. When plans are furnished by the buyer which does not agree with the Architect's bid plans, such detailed plans shall be considered as a written notice of change of plans. However, it shall be the buyer's responsibility to advise the seller of those changes which affect the composite steel joists.

6.4 APPROVAL

When composite joist placement plans are furnished by the seller, prints thereof are submitted to the buyer and owner for examination and approval. The seller allows a maximum of fourteen (14) calendar days in his schedule for the return of placement plans noted with the owner's and customer's approval, or approval subject to corrections as noted. The seller makes the corrections, furnishes corrected prints for field use to the owner/customer and is released by the owner/customer to start composite joist manufacture.

Approval by the owner/customer of the placement plans, sections, notes and joist schedule prepared by the seller indicates that the seller has correctly interpreted the contract requirements, and is released by the owner/customer to start joist manufacture. This approval constitutes the owner's/customer's acceptance of all responsibility for the design adequacy of any detail configuration of joist support conditions shown by the seller as part of his preparation of these placement plans.

Approval does not relieve the seller of the responsibility for accuracy of detail dimensions on the plans, nor the general fit-up of joists to be placed in the field.

6.5 CHANGES

When any changes in plans are made by the buyer (or the buyer's representative) either prior to or after approval of detailed plans, or when any material is required and was not shown on the plans used as the basis of the bid, the cost of such changes and/or extra material shall be paid by the buyer at a price to be agreed upon between buyer and seller.

6.6 CALCULATIONS

The seller shall design the composite steel joists in accordance with the Steel Joist Institute Standard Specifications, **CJ-Series**, of latest adoption, to support the load requirements of Section 6.1. The **specifying professional** may require submission of the composite steel joist calculations as prepared by a registered design professional responsible for the product design. If requested by the **specifying professional**, the composite steel joist manufacturer shall submit design



calculations with a cover letter bearing the seal and signature of the joist manufacturer's registered design professional. In addition to standard calculations under this seal and signature, submittal of the following shall be included:

1. Non-SJI standard bridging details (e.g. for cantilevered conditions, net uplift, etc.)
2. Connection details for:
 - a) Non-SJI standard connections (e.g. flush framed or framed connections)
 - b) Field splices
 - c) Joist headers
3. Shear stud requirements

SECTION 7 HANDLING AND ERECTION*

The current OSHA SAFETY STANDARDS FOR STEEL ERECTION, 29 CFR PART 1926, SUBPART R - STEEL ERECTION, refers to certain joists at or near columns to be designed with sufficient strength to allow one employee to release the hoisting cable without the need for erection bridging. **This STANDARD shall not be interpreted that any joist at or near a column line is safe to support an employee without bridging installed.** Many limitations exist that prevent these joists from being designed to safely allow an employee on an unbridged joist. Because of these limitations and as required by OSHA, these joists shall be erected by incorporating erection methods ensuring joist stability and either:

1. Installing bridging or otherwise stabilizing the joist prior to releasing the hoisting cable, or
2. Releasing the hoisting cable without having a worker on the joist.

A composite steel joist shall not be placed on any support structure unless such structure is stabilized. When composite steel joists are landed on a structure, they shall be secured to prevent unintentional displacement prior to installation.

A bridging terminus point shall be established before joist bridging is installed.

Composite steel joists shall not be used as anchorage points for a fall arrest system unless written direction to do so is obtained from a "qualified person" as defined in the Steel Joist Institute Standard Specifications for Composite Steel Joists, **CJ-Series**, of latest adoption, Section 105(c)(3)(a).

No modification that affects the strength of a composite steel joist shall be made without the written approval of the project engineer of record.

The buyer and/or erector shall check all materials on arrival at job site and promptly report to seller any discrepancies and/or damages. The buyer and/or erector shall comply with the requirements of the Steel Joist Institute Standard Specifications for Composite Steel Joists, **CJ-Series**, of latest adoption in the handling and erection of material.

The seller shall not be responsible for improper fit of material due to inaccurate construction work.

*For thorough coverage of this topic, refer to SJI Technical Digest #9, "Handling and Erection of Steel Joists and Joist Girders".



SECTION 8
INSTALLATION AND
INSPECTION OF SHEAR
STUD CONNECTORS

8.1 INSTALLATION

- (a) Locate headed shear studs, hereafter referred to as shear studs, on composite steel joists per details shown on the manufacturer's shear stud placement drawings and as outlined in any shear stud layout tables. Start laying out shear studs from each end of the joist and working toward the center. Alternate installation of the shear studs from one top chord angle to the other. Note minimum concrete longitudinal edge distance for shear studs on ends of joists as shown on placement drawings.
- (b) All shear studs shall be welded through the steel deck after the deck has been placed on the joists. Welding voltage, current, time, and gun settings for lift and plunge shall be set at optimum settings for the particular size of shear studs and range of joist top chord thicknesses, based on recommendations of the shear stud manufacturer and automatic shear stud welding equipment manufacturer, or both. The shear stud installer should consult AWS C5.4, *Recommended Practices for Stud Welding*, for technique guidance. All welding shall comply with AWS D1.1, *Structural Welding Code - Steel, Section 7, Stud Welding*.
- (c) Each shear stud shall be provided with the appropriate ceramic ferrule (arc shield) designated by the shear stud manufacturer as designed for weld through deck application. Ferrules shall be stored in a moisture free environment and kept dry during installation.
- (d) Prior to welding of shear studs, the top surface of the joist top chords shall be clean, unpainted and free of heavy rust, dirt, sand, oil, grease, water, or other foreign substances. The surfaces of the deck prior to stud welding shall be free of heavy rust or mill scale, moisture, dirt, sand, or other construction related waste materials.
- (e) Prior to welding, the steel deck shall rest tightly against the top chord of the composite steel joist.
- (f) Shear studs shall not be welded through more than 1 thickness of 16 gage deck or two thicknesses of 18 gage deck or lighter. Total galvanizing thickness on one thickness or two thicknesses of deck shall not exceed 1.25 oz. per square foot total for both sides of the deck.
- (g) Welding of shear studs shall not be done when the base metal is below 0°F (-18°C) or when the surface is wet or exposed to falling rain or snow. When the base metal temperature is between 0°F (-18°C) and 32°F (0°C), welding shall be permitted to only be done with appropriate set up, pre-production testing and inspection procedures as outlined in AWS D1.1 *Structural Welding Code - Steel, Section 7.5, Technique*.
- (h) Qualification of the stud application procedure used to weld shear studs through metal deck is outlined in AWS D1.1, *Structural Welding Code - Steel, Section 7.6 Stud Application Qualification Requirements*. This document requires that a minimum of ten (10) shear studs shall be welded using the decking and base material representative of the conditions to be used during construction. The ten (10) studs shall then be successfully bend or tensile tested. A document recording the details and settings including the weld set up used for this test shall be prepared prior to beginning of any production shear stud welding. A copy of the Application Qualification Test Data shall be furnished to the Engineer of Record as outlined in AWS D1.1, *Structural Welding Code- Steel, Section 7.6.7 Application Qualification Test Data*. At the beginning of each day's or shift's production, Pre-production testing in accordance with AWS D1.1 *Structural Welding Code - Steel, Section 7.7 Production Control* shall be performed on the first two shear studs that are welded.



8.2 INSPECTION

- (a) The welding of shear studs requires special inspection. The owner, or the **specifying professional**, acting as owner's agent, shall employ one or more special inspectors who shall provide inspections of the shear stud welds on a continual and timely basis. The special inspector's duties include verifying welder's qualifications, welding preparation, welding procedures and conformance of materials. Unless otherwise specified in a contract document, the stud installer shall be responsible for application qualification tests, pre-production tests and removal of the ferrule from each weld for inspection purposes.
- (b) To ensure proper welds, bend test a minimum of 1 out of every 100 shear connector studs production welded, by either striking the shear stud with a hammer or placing a pipe or other hollow device over the shear stud and manually or mechanically bending the shear stud 15° from its original axis. Shear studs shall be bent along the longitudinal axis of the joist toward the nearest end of the joist. If failure occurs in the weld zone, a minimum of two adjacent shear studs shall be satisfactorily bend tested. The special inspector, where conditions warrant, shall be permitted to select a reasonable number of additional shear studs to be subjected to a 15° bend test.
- (c) If, in the judgment of the **specifying professional**, shear studs welded during the progress of the work are not in accordance with AWS D1.1, Structural Welding Code - Steel, Section 7, *Stud Welding* requirements, as indicated by inspection and testing, corrective action shall be required of the shear stud installer. At the shear stud installer's expense, the shear stud installer shall make the set-up changes necessary to ensure that shear studs subsequently welded meet code requirements.
- (d) The shear stud installer shall certify to the **specifying professional** that the shear studs were installed in accordance with the requirements of AWS D1.1, Structural Welding Code - Steel, Section 7, *Stud Welding*.

SECTION 9 CONCRETE PLACEMENT

It is normal practice for joist manufacturers to camber composite steel joists for the full non-composite dead load. This joist camber, while theoretically providing a flat floor surface, after placing of the concrete is completed, requires special consideration relative to concrete placement.

The SJI suggested method for concrete placement is to utilize the "Constant Slab Thickness Method". In this method the concrete slab is placed at a constant thickness across the entire length of the composite steel joist. The reasons to use this method include the following:

- Full concrete slab thickness shall be provided along the entire composite joist span to carry the composite steel joist compressive loads.
- A full thickness slab is necessary to provide required fire protection.
- Sufficient concrete cover shall be provided over the heads of the shear studs.
- The potential for over runs in concrete placing volume shall be greatly reduced.
- Deflections of the composite steel joist under the non-composite loading can be more accurately predicted vs. with a variable thickness slab.



Concrete construction joints should ideally be located between joists. When a construction joint is located closer than 12 in. (305 mm) from the longitudinal centerline of any given composite steel joist, it is the responsibility of the **specifying professional** to determine whether extra transverse steel reinforcing needs to be provided to assure that the composite properties of the supporting member with shear studs has not been affected.

SECTION 10 BUSINESS RELATIONS

10.1 PRESENTATION OF PROPOSALS

All proposals for furnishing material shall be made on a Sales Contract Form. After acceptance by the buyer, these proposals shall be approved or executed by a qualified official of the seller. Upon such approval the proposal becomes a contract.

10.2 ACCEPTANCE OF PROPOSALS

All proposals are intended for prompt acceptance and are subject to change without notice.

10.3 BILLING

Contracts on a lump sum basis are to be billed proportionately as shipments are made.

10.4 PAYMENT

Payments shall be made in full on each invoice without retention.

10.5 ARBITRATION

All business controversies which cannot be settled by direct negotiations between buyer and seller shall be submitted to arbitration. Both parties shall sign a submission to arbitration and if possible agree upon an arbitrator. If they are unable to agree, each shall appoint an arbitrator and these two shall appoint a third arbitrator. The expenses of the arbitration shall be divided equally between the parties, unless otherwise provided for in the agreements to submit to arbitration. The arbitrators shall pass finally upon all questions, both of law and fact, and their findings shall be conclusive.

