Special Profile Steel Joists

- 40,000+ Engineered Design Specifications
- Gable, Bowstring, Scissor, and Arch Joist Profiles
- Nationwide Engineering and Manufacturing

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BUILDING SYSTEMS

Flexible to the Finish

NEW MILLENNIUM
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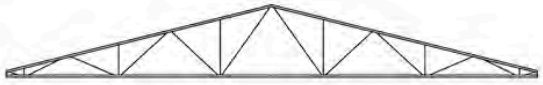
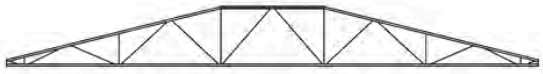


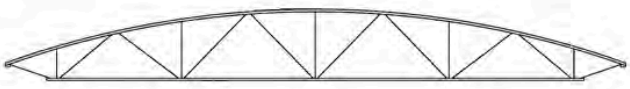
GABLE



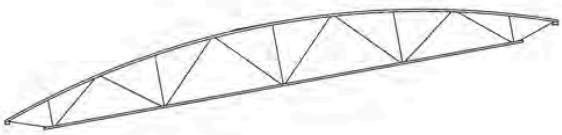
FLAT TOP GABLE

SCISSOR

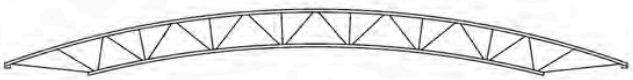
COMPOUND SCISSOR



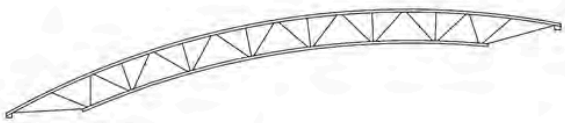
BOWSTRING



SLOPED BOWSTRING



ARCH



SLOPED ARCH

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Uplift your design ideas

40,000 ways to change the shape of architecture.

This catalog was developed in response to the growing demand for new structural design ideas and innovative rooflines that are only possible using "special profile" steel joists.

To meet the aspirations of both architects and engineers, we have vastly expanded the previous range of published weight table specifications for the four basic special joist profiles: gable, bowstring, scissor, and arch. This development has eased the way for the evaluation and specification of many thousands more combinations of steel joist profiles that were heretofore not practically supported by the specification tables.

With this catalog as your guide and our engineering teams at your service, you now have access to the following:

- Over 40,000 engineering design specifications across four basic profiles
- Engineers can now more feasibly and practically specify unique steel architecture
- Tables include bridging information, bearing seat depth and other key information
- Online joist specification "tools" make specification even easier and faster
- Online tools are available as mobile apps for Android and iOS devices

As more architects have learned about the design flexibility of gable, scissor, bowstring and arch joist profiles, they have used variations and even combinations of these profiles to uplift distinctive building designs.

Discover the easiest way to specify special profile joists:
www.newmill.com/digital-tools

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BUILDING SYSTEMS

Shipping Considerations

Delivery coordination of your project.

We ship special profile steel joists to all regions of the country and are always mindful of related considerations, such as trailering length and erection site constraints. We will collaborate on these important considerations to further assure the cost-minimized success of the project.

- Coordination on material delivery schedules prior to shipping to ensure the erection crew has the proper equipment and is ready to unload when the truck arrives. NMBS engineering can provide joist weights and bundle weights to assist in this planning.
- Coordination on erection site access and joist routing on site are often based on joist size and length, including whether profile dimensions must be modified in advance to minimize delivery costs. Related considerations include whether the joists can be shipped and erected in one piece or shipped in shorter sections for field splicing.
- Coordination extends to roadway considerations and meeting any state requirements regarding over-length or over-width material, types of escorts and route surveys.
- Sufficient time should be allowed for safe unloading. Special profile joists can take more time to unload than standard steel joists, due to their often-unusual shapes and dimensions.
- The safe erection of steel joists is guided by the OSHA Steel Erection Standard Part §1926. This information is published in our Steel Joists and Joist Girders catalog.

Hundreds of steel building projects feature special profile steel joists. New Millennium can deliver anywhere in the country.

Together, let's build a better steel experience.

New Millennium's competitive advantage is flexibility.

As our customers nationwide have discovered, we engineer winning relationships, success stories that continue to build America.

Our uniquely flexible engineering and manufacturing business model enables us to take the project owner's point of view: delivering higher total-project performance, for less total-project cost. You can count on us for the experience, products, services, and nationwide locations that will build your business...

- **Value engineered total-project cost management**
- **Flexible approach to steel joist and metal decking supply**
- **Experienced developers of special profile steel joists**
- **Leading, most experienced providers of BIM/IPD projects**
- **Nationwide locations for local supply and support**

QUALITY ASSURANCE

New Millennium is a Steel Joist Institute (SJI) member company, fully certified to manufacture K, LH and DLH-Series Steel Joists, and Joist Girders. New Millennium is also a Steel Deck Institute (SDI) member company, fully certified to manufacture roof deck, form deck, and composite floor deck.

- New Millennium products meet FM, UL and ULC requirements.
- Welders are certified in accordance with AWS D1.1 and D1.3.
- The Indiana and Nevada facilities meet CSA Standard W47.1 in Division 2 for open web joists.
- The Indiana facility is certified in accordance with the requirements of the current IBC/Michigan Building Code, Chapter 17, Section 1705, Paragraph 2.2.
- The Florida facility is certified in accordance with the requirements of the Miami-Dade County, Florida Building Code, Article IV, Chapter 8.
- The Arkansas and Florida facilities are certified in accordance with the Houston, Texas Building Code, Section 1704.2.2.
- The Nevada and Mexico facilities are certified in accordance with the requirements of Clark County, LA City, IAS (pending).

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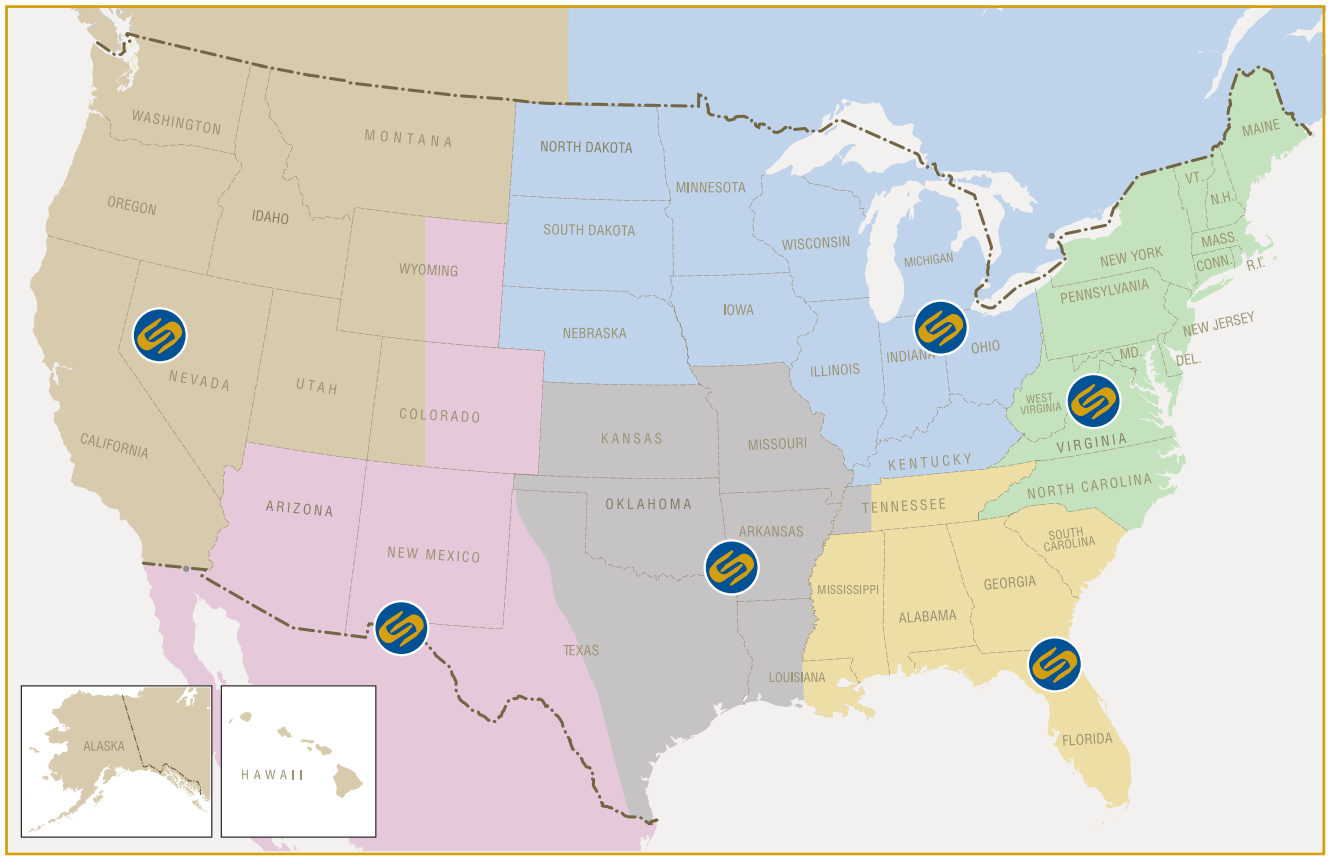
Nationwide Support

New Millennium is your nationwide resource for design, manufacturing, and delivery of structural steel joists, and steel roof and floor decking.



MANUFACTURING LOCATIONS:

Indiana Facility
6115 County Road 42
Butler, IN 46721
Phone: (260) 868-6000
Fax: (260) 868-6001

Florida Facility
1992 NW Bascom
Norris Drive
Lake City, FL 32055
Phone: (386) 466-1300
Fax: (386) 466-1301

Virginia Facility
100 Diuguids Lane
Post Office Box 3400
Salem, VA 24153
Phone: (540) 389-0211
Fax: (540) 389-0378

Arkansas Facility
3565 Highway 32 North
Hope, AR 71801
Phone: (870) 722-4100
Fax: (870) 722-4245

Nevada Facility
8200 Woolery Way
Fallon, NV 89406
Phone: (775) 867-2130
Fax: (775) 867-2169

Mexico Facility
Carr. Panamericana 9920
Col. Puente Alto
C.P. 32695
Cuidad Juarez Chihuahua
Mexico
Phone: (915) 298-5050
Fax: (915) 298-4040

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Industry-leading 3D BIM design • State-of-the-art manufacturing • Nationwide delivery and support • Steel joists and metal decking

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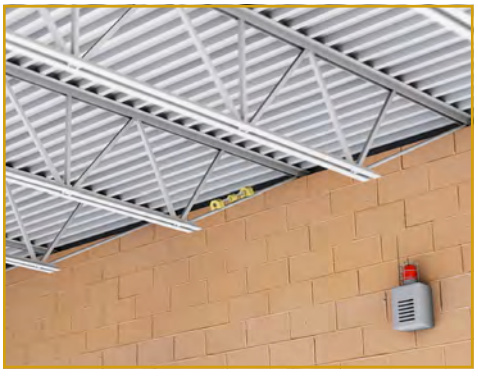
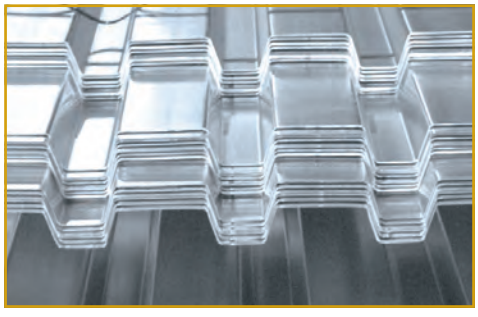
Product Flexibility

Assure the winning success of your project, with our full range of structural steel roofing and flooring systems development.

For faster and easier specification, start with our convenient web-based or mobile app design tools. See page 6 of this catalog or visit www.newmill.com/digital-tools





STANDARD STEEL JOISTS

Joist products include K, LH and DLH Series joists and joist girders, and CJ Series joists (Composite Joist). Joists can be furnished as a single-piece up to 15 feet deep and up to 125 feet long, depending on location and shipping restrictions. All are produced in accordance with the specifications of the Steel Joist Institute.

FLEX-JOIST™ TENSION-CONTROLLED STEEL JOIST DESIGN

Flex-Joist™ tension controlled steel joist design results in a joist that characteristically displays both higher strength levels and large inelastic deformations prior to collapse. The result is a roof or floor framing system with improved strength, an improved reliability index, and improved sensory alert to overload prior to collapse.

Flex-Joist™ tension-controlled steel joist design is ideally suited to electronic monitoring of deflection and/or strain for early warning of high loads, if desired. This can allow time for building evacuation, load removal, and/or shoring to prevent collapse. Although electronic monitoring is not provided by NMBS, we can help coordinate requirements with your electronic monitoring supplier.

SPECIAL PROFILE STEEL JOISTS

Unique roofline designs are now practical and economical using special profile steel joists, due to our development of engineering specifications enabling over 40,000 special profile steel joist design possibilities. We manufacture a complete range of special profile steel joist products, including bowstring, arched, scissor, double-pitched, and single-pitched steel joists.

METAL DECKING

Roof and floor metal deck options include B deck, N deck, form deck and composite deck. Engineered to the application, our decking systems are certified to address performance requirements related to such factors as wind uplift, fire resistance and noise reduction.

Discover the easiest way to specify special profile joists:
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BUILDING SYSTEMS

Service Flexibility

Elevate the long-term success of your business with our proactive approach to your project needs.

ARCHITECTURAL SOLUTIONS

Bring us in early on the project to help achieve your architectural vision, while holding the line on structural execution and related project costs. We can show you new design solutions made possible by our leading development of over 40,000 new engineering specifications in the discipline of special profile steel joist design.

BIM DESIGN COLLABORATION

We participate in BIM based projects using our new Dynamic Joist® digital design component. The component is available as a free, downloadable add-on for Tekla Structures. New Millennium supports the Industry Foundation Classes (IFC) standard for data transport and the sharing of our component across various BIM platforms.

ENGINEERED COST REDUCTIONS

We remove a chain reaction of project costs, starting with reduced steel tonnage and ending with lower on-site labor costs for handling, lifting and erection. Our approach to cost-accountable engineering can shorten project timelines and prevent delayed occupancy or lost retail revenues.

DYNAMIC MANUFACTURING & DELIVERY

Our dynamic manufacturing can adjust to any project timeline or changing erection site needs, including staged and just-in-time deliveries. Just tell us what you need and when you need it.

Digital Specification Tools

Discover the easiest way to specify special profile steel joists: **www.newmill.com/digital-tools**

- **Easier and faster specification**
- **Helpful cost-saving guidelines and options**
- **Mobile app for on-the-go convenience**

- **Complete range of digital design tools:**
  - Standard steel joists and steel Joist Girders
  - Special profile steel joists
  - Steel roof and floor decking

3D BIM-BASED DESIGN

Our Dynamic Joist® component is the leading choice for BIM-based steel joist 3D design.

New Millennium pioneered IPD (integrated project delivery) with steel joists by making BIM-based process management a reality. Since early 2010, Dynamic Joist® has enhanced design collaboration in real-world projects throughout North America.

Available as a FREE download on our website. Get yours today!

WEB-BASED AND MOBILE SPECIFICATION TOOLS

Whether you're in the office or out in the field, New Millennium has you covered. Introducing the industry's first complete set of digital specification tools. To further simplify and accelerate the steel package design process, New Millennium has packed the power of our specification catalogs into advanced web and mobile applications.

Built upon our expertise in steel joist and metal deck engineering, and backed by our database of load and weight tables, this toolset will prove to be your handy go-to resource. You will find everything you need... from standard steel joists and girders, to our industry-leading special profile steel joist designs, to a wide range of roof, form, and composite floor decking.

Our commitment to building a better steel experience is focused on you. Log on to our website and start using these tools today.

LEED Information

LEED (Leadership in Energy & Environmental Design)

New Millennium is a member of the US Green Building Council, the governing body of LEED, the most widely recognized and used green building program around the globe.

New Millennium monitors changes in the LEED rating system as well as other environmental rating systems and can provide documentation on recycled content and regional material information depending on project location.

Current New Millennium LEED information can be found under the DOWNLOADS tab on our website at www.newmill.com.

Scan the QR-code at the right for a quick link to our detailed LEED information page, including downloadable PDFs regarding our current recycled content.

LEED® Green Building Rating System™

The LEED Green Building Rating System™ is a voluntary, consensus-based standard to support and certify successful green building design, construction and operations. LEED certification is available for all building types including new construction and major renovation, schools, healthcare, retail, homes, neighborhoods, core and shell, commercial interiors and even existing buildings.

What's driving green building? The growth of green building is being expedited by three factors:

- Unprecedented level of government initiatives
- Heightened demand for green construction
- Improvements in sustainable materials

Why build green? Green buildings consume less energy and fewer resources. In comparison to the average commercial building, green buildings:

- Consume 26% less energy
- Have 13% lower maintenance costs
- Have 27% higher occupant satisfaction
- Produce 33% less greenhouse gas emissions

Source: GSA Public Buildings Service (2008). Assessing Green Building Performance: A Post Occupancy Evaluation of 12 GSA Building.

The LEED certification system is organized into five environmental categories: Sustainable Sites (SS), Water Efficiency (WE), Energy and Atmosphere (EA), Materials and Resources (MR) and Indoor Environmental Quality (IEQ). An additional category, Innovation in Design (ID), addresses sustainable building expertise as well as design measures not covered under the five environmental categories. The number of points the project earns determines the level of LEED Certification the project receives.

NEW MILLENNIUM RECYCLED CONTENT

New Millennium steel joists and metal decking products are fabricated from steel manufactured at mini-mills using scrap steel. Therefore, our product can be used towards points under the Materials and Resources Credit 4 which covers Recycled Content.

Under MR Credit 4 you can obtain up to 2 points towards LEED certification if you use materials with recycled content such that the postconsumer recycled content plus 1/2 of the preconsumer content constitutes at least 10% (1 point) or 20% (2 points), based on cost, of the total value of the materials in the project.

Special Profile Steel Joists, SP-Series

AVAILABILITY

There are an endless number of possibilities for joist profiles, loadings, and applications. In order to make this catalog a more useful and focused publication, four distinct profiles were identified and made the focus. The four profiles are: Gable, Bowstring, Scissor, and Arch. Most SP-Series joists are either one of these four types, a variation of one type, or a combination of one or more types. When specifying SP-Series joists, communication between the specifying professional and NMBS is key to success.

SP-Series joists are available with either underslung or square ends. Due to the limitations of depth and span inherent in special profiles, it is recommended that the owner's representative contact NMBS early in the design stage. Considerable cost savings may be recognized by addressing design and shipping issues early in the design process. SP-Series joists may require horizontal or vertical field splicing involving installation cost at the job site. To ensure a fair and accurate bidding process, these issues should be identified and resolved prior to bid. Design calculations prepared by a professional engineer registered in the state of manufacture are available for NMBS SP-Series joists.

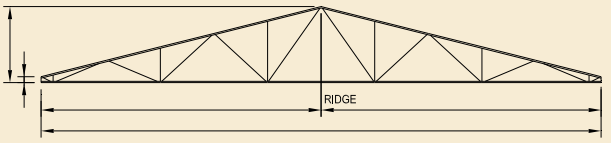
Experienced NMBS design personnel equipped with sophisticated design software are on staff to help with the design of SP-Series joists or joist girders. In a matter of minutes, NMBS can design a SP-Series joist and e-mail a STAAD or AutoCAD file at no charge. This preliminary design can give you the head start that you need to gain a competitive edge.

GEOMETRY

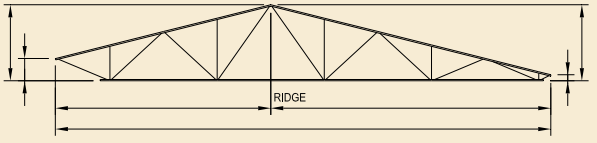
The dimensions shown on the SP-Series profile diagrams to the right and in the following page should be clearly shown and noted in the construction documents. Web layouts in SP-Series joists vary greatly depending on geometry and loading. Special web layouts may be specified on the contract documents for architectural needs or compatibility (e.g. duct clearances). Unless specifically noted or requested, NMBS will provide an economical web geometry that meets the requirements of this specification and those contained in the contract documents. When special web layouts are required, they should be clearly shown and noted in the contract documents.

The old adage "deeper is cheaper" is true when considering SP-Series joists. It is also usually more cost effective to specify fewer joists, with increased spacing, and therefore heavier, compared to more numerous, lighter joists at narrower spacing.

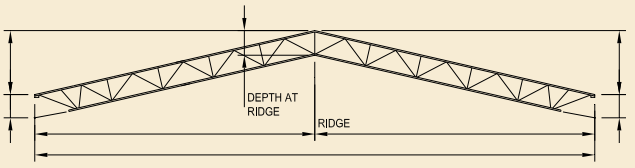
All SP-Series joists are provided with no camber unless otherwise specified in the contract documents.



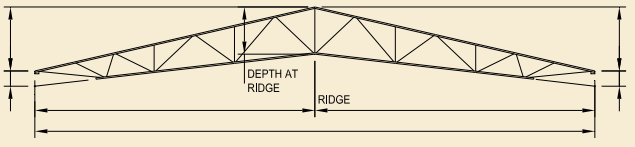
GABLE



OFFSET GABLE



SCISSOR



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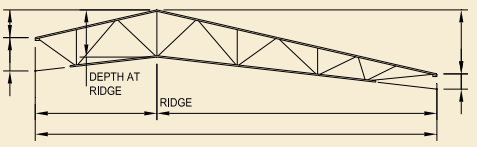

OFFSET COMPOUND SCISSOR

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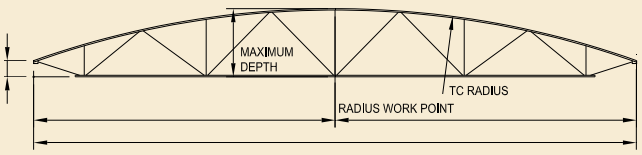
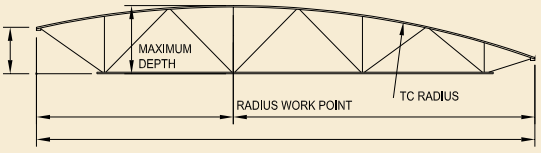
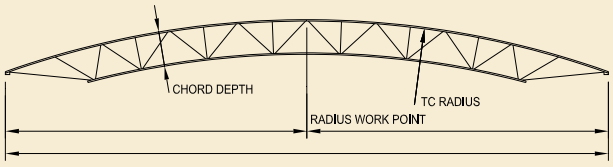
Special Profile Steel Joists, SP-Series



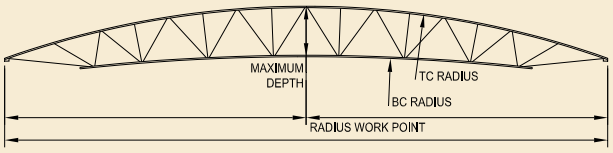
BOWSTRING



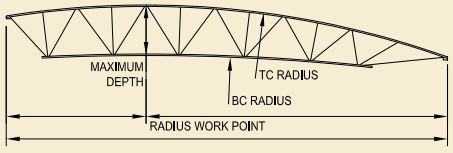
OFFSET BOWSTRING



ARCH



COMPOUND ARCH



OFFSET COMPOUND ARCH

DESIGN

The specifying professional has several things to consider when specifying SP-Series joists. The specifying professional is responsible for providing all loads for which the joist or joist girder must be designed. NMBS can help identify and suggest areas for review and value engineering on SP-Series joists to insure proper load development, analysis, and structural design for any project.

WIND LOADS

Design of structures to resist wind load in combination with other loads is required by every building code. Wind load alone creates both lateral forces and uplift forces on a structure. The lateral forces and uplift forces on a structure must be resisted by the primary and secondary roof support members. Both types of forces may or may not involve roof deck, standard joists, joist girders, or SP-Series joists provided by NMBS.

The lateral wind moment or lateral forces are best provided to NMBS in terms of "Wind Moment" in units of foot-kips or "Wind Axial Load" in units of kips. As end moments and axial forces act in combination with other loads, (e.g. uniform gravity and continuity moments), coordination between the specifying professional and NMBS is crucial to ensure that the building code specified combinations are properly applied. Clear instructions on the contract documents and, better still, contact with NMBS during the design process is advised.

Uplift is best provided to NMBS in terms of "Net Uplift" in units of pounds per square foot and shown on a plan uplift layout. These loads are then applied to the affected members according to the tributary area. Uplift design may also involve additional rows of bridging or joist girder bottom chord braces beyond those required for normal erection stability.

On sloped roofs, wind load acting on the roof will create inward pressure on the windward side of the roof that is additive to normal gravity loading and outward pressure on the leeward side that opposes the normal gravity loading. Both loading conditions have effects on the resulting member forces and subsequent design. The specifying professional is reminded to clearly communicate such loads to NMBS.

GRAVITY LOADS

Design of structures to resist gravity snow load, dead load, and live load in combination with other loads is required by every building code.

When joists are part of the lateral force resisting system, they may also resist axial loads, end moments, or perform

Special Profile Steel Joists, SP-Series

other structural requirements as determined by the design professional.

The uniform snow load in combination with the dead load (including estimated self-weight) is best provided to NMBS as part of the SP-Series designation in units of pounds per linear foot. Refer to the design examples on pages 17 through 23 for further explanation. There are also several abbreviated examples on pages 100 through 103.

On steep sloped or curved roof profiles more complex load combinations must be considered. Depending on the slope, snow drift may be a consideration or live load reduction may be permitted. Unbalanced loading may also create critical stresses. Coordination between the specifying professional and NMBS becomes crucial to ensure that code specified combinations are properly applied. Clear instructions in the contract documents and, better still, personal contact with NMBS during the design process is advised.

While it is not the purview of this document to dictate design loads, there are several items that must be drawn to the specifying professional's attention to ensure SP-Series joist designs are consistent with applicable building codes and specifications. Building codes vary in minimum load and load combination requirements. Model codes, such as the latest *International Building Code (IBC)* and the widely referenced *ASCE/SEI 7 Minimum Design Loads for Buildings and Other Structures*, contain complex sections dictating the application of loads to all components of buildings and other structures. Attention is drawn to the fact that the application of loads to sloping, curved, and pitched roofs that utilize SP-Series joists must be concerned with loads on horizontal and vertical projections, windward and leeward wind and snow loads, uniform and drifting snow, unbalanced loading, and myriad other possible loads specific to the geometry, geographic location, and structural functions explicit to the SP-Series joist design requirements.

The intent of the weight tables in this publication is to provide the specifying professional approximate weights, bridging requirements, seat depths, and other design information when appropriate for special profile joists. This information is to serve as a basis for comparison of alternative designs and value engineering purposes. The weight tables were generated based on various uniform loadings on a select array of Special Profile Joists, SP-Series, geometries. In using the weight tables, the specifying professional must use sound judgment in relating actual loading conditions to a comparable equivalent uniform load.

Design information should be clearly shown in the contract documents by the specifying professional. Load diagrams should convey load combinations, uniform load and unbalanced load requirements in addition to the total, live, and net uplift specified by the designation. Concentrated load values and locations should also be shown and noted by type and by applicable load case where appropriate.

See Section 906 – HOW TO SPECIFY SPECIAL PROFILE JOISTS

Special Profile Steel Joists, SP-Series

FIRE RATINGS

NMBS SP-Series joists are made entirely of steel and are non-combustible. They qualify in roof construction for some uses in construction types that the model building codes identify as Type IA, IB, IIA, IIB, IIIA and IIIB. Specifying professionals should consult applicable local codes for details and other requirements for the entire roof system.

FABRICATION & DELIVERY

NMBS production facilities have been specifically designed and equipped to produce SP-Series joists. This allows NMBS to maintain the high quality our customers expect and provide cost advantages through state-of-the-art design and manufacturing facilities.

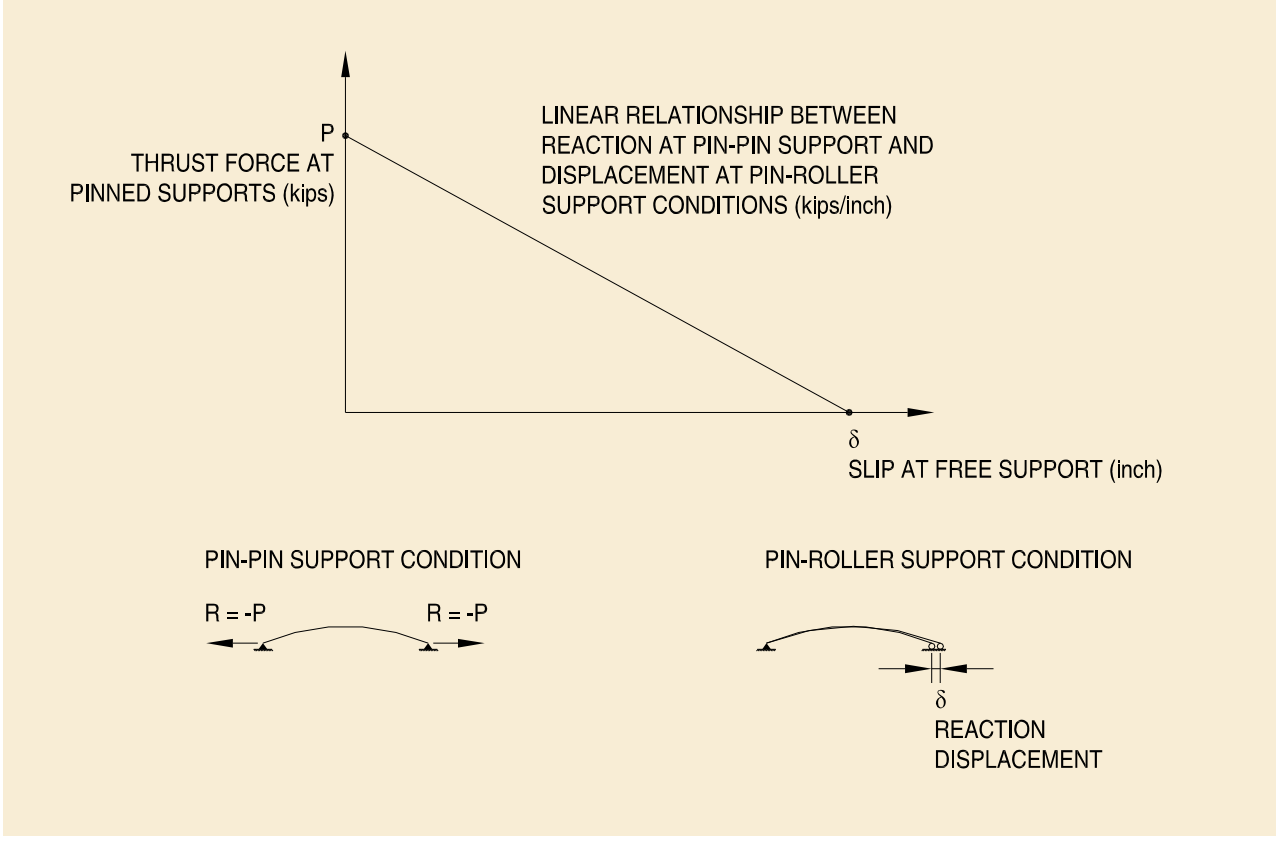
SP-Series Design

HORIZONTAL REACTIONS

The behavior of some SP-Series profiles, such as Scissor or Arch, may cause a horizontal reaction to be applied to the supporting structure. When joists with upwardly curved or sloped bottom chords deflect under load, they either displace at the bearing points or induce a horizontal thrust force at the supports. The magnitude of the thrust force imparted to the support is a function of the stiffness of the joist, the stiffness of the support, and the attachment conditions. The chart below shows the linear interactive relationship between the two theoretical conditions.

From a design standpoint, one option is to provide a slip connection at one end, which eliminates the bearing restraint and the resulting horizontal thrust force (pin-roller condition). This option eliminates the possibility for the joist to transmit chord axial forces to the supporting structure at the slip-bearing end. For this condition, the specifying professional should coordinate the allowable horizontal deflection at the bearing with NMBS. Diaphragm forces collected into the joist chords must transfer through the pinned end of the joist seat. Consequently, joist anchorage must be designed for both the windward and leeward forces. The pin and roller anchorage conditions necessary for this approach must be intentionally designed and detailed by the specifying professional and clearly indicated in the contract documents. To facilitate proper design for this condition and to be certain that code specified requirements are properly satisfied, coordination between the specifying professional and NMBS is crucial.

A second design option is to design the end anchorage supports as fixed at each end (pin-pin condition). This design option may decrease the weight of the joist. However, the horizontal thrust at the end anchorage of the joist can be quite large and the resisting structure or tie must be designed by the specifying professional for the thrust force. Once the joist end attachment has been made, the combined horizontal stiffness of both the supporting structure and the joist must be large enough to develop the required horizontal thrust at the joist end anchorage. The required stiffness can be generated by means of a braced frame, a tension tie, or some other structural mechanism. Once again, clear instructions in the contract documents and, better still, personal contact with a NMBS design engineer during the quote and design process is imperative for successful SP-Series joist design.



LOAD ADJUSTMENT FACTORS

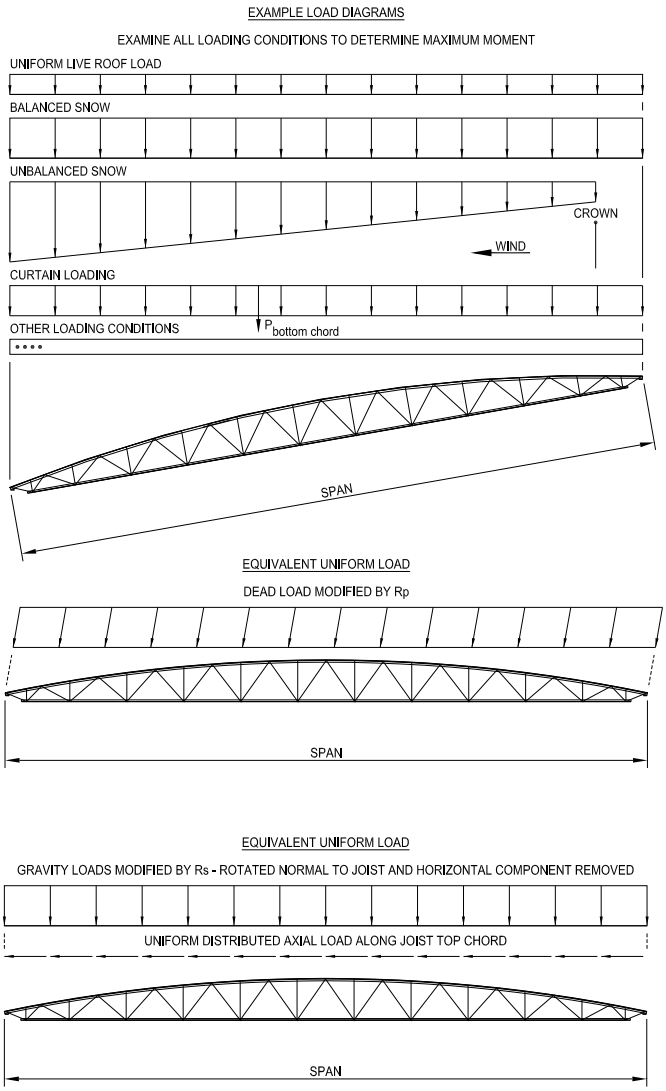
The SP-Series Weight Tables were generated using a uniform distributed load on a horizontal span. Therefore, the uniform loads specified in the SP-Series joist designations should be calculated as distributed normal to the span. Loads in design development are generally defined as horizontal or vertical. When the SP-Series joists' span is sloping, or when the top chord is pitched or curved, one or more adjustment factors are needed to convert actual loads, w_a, to the designation loads, w_d, used in the SP-Series designations.

The first of these adjustment factors, R_p, is the Profile Projection Ratio and accounts for the difference between the actual chord length and the straight line length along the span. The Profile Projection Ratio comes in two varieties, R_{pp} and R_{pr}, for pitched chords and radius chords respectively. The purpose of the Profile Projection Ratio is to account for dead loads uniformly distributed on the actual length of the joist top chord, which will always be longer than the span length for SP-Series joists. Calculating and applying the R_p ratio enables the specifying professional to easily determine the equivalent uniform load projected normal to the span.

The second adjustment factor, R_s, is the Slope Projection Ratio and accounts for the difference in the horizontal span length and the joist span as defined in Section 904.2 on page 95. R_s is independent of the profile shape and should be calculated when the joist span is sloped. As seen on the right, applying R_s isolates the component of the uniform load normal to the span of the joist. The longitudinal component of this load translates into a uniform distributed axial load along the top chord of the joist. Load resulting from a slope as high as 4:12 has a negligible effect on the chords or webs. The chord size is generally governed by the maximum moment at the center, thus the axial load accumulated toward the low end of the joist does not govern over the chord force at the center of the joist.

The load adjustment factors R_p and R_s are independent of one another and must be applied to the design loads in order to accurately determine an equivalent uniform total gravity load. Figures to the right show the general theory for determining the uniform load with which to enter the joist tables. Design examples may be found on pages 17 through 23.

In order to convert uniform distributed loads generated in design development to uniform loads tabulated in the SP-Series Weight Tables, the specifying professional must first determine the maximum moment from all applicable load cases. The maximum moment will generally be the best determination for the chord sizes of the joist design since the top and bottom chords are the key factors in determining joist weight.



Once the maximum moment is determined, the next step is to find the equivalent total uniform load ($W_{eqM\text{-}TL}$) that would cause this maximum moment. While this method does assume that the maximum uniform moment occurs at the mid-span of the joist, it is accurate for determining a joist self-weight, bearing seat heights, and bridging requirements. NMBS engineering staff is available to assist with your specific design needs.

After determining the equivalent uniform moment, the next and final step is to adjust the uniform loads with R_s. Once the load is adjusted, the geometry and designation may be referenced in the SP-Series Weight Tables. The tables contain the uniform self-weight, bearing seat depth, bridging requirements, and horizontal deflection requirements when applicable.

SP-Series Design

Profile Projection Ratio for Gable or Scissor Joists, R_{pp} = Ratio of the pitched length of the joist top chord to the length of span defined in Section 904.2. Because the length of the dead load supported by the pitched joist chord is longer than the span, the roof Dead Load, D, must be increased by the ratio of these values. Note that only dead loads in the pitched part of the roof need adjusted by R_{pp}. Dead loads defined in the horizontal plane (e.g. ceiling tiles) should not be adjusted. The roof Live Load, L_r, and Snow Load, S, which are defined on the horizontal projection are also not affected.

Gable or Scissor joists:

$$R_{pp} = \frac{\sqrt{Pitch^2 + 144}}{12}$$

Pitch = Rise per 12" of the top chord

Profile Projection Ratio for Arch or Bowstring Joists, R_{pr} = Ratio of the arched length of the joist top chord to the length of span defined in Section 904.2. Because the length of the dead load supported by the arched joist chord is longer than the span, the roof Dead Load, D, must be increased by the ratio of these values. Note that only dead loads in the arched part of the roof need adjusted by R_{pr}. Dead loads defined in the horizontal plane (e.g. ceiling tiles) should not be adjusted. The roof Live Load, L_r, and Snow Load, S, which are defined on the horizontal projection are also not affected.

Arch or Bowstring joists:

$$R_{pr} = \left(\frac{2 \cdot Radius \cdot \pi}{Span \cdot 180°}\right) \cdot Sin^{-1}\left(\frac{Span}{2 \cdot Radius}\right)$$

Radius = Curve of the top chord and span
is defined in Section 904.2 (Span & Radius in feet)

Slope Projection Ratio, R_S = Ratio of span defined on the slope to the horizontal projection of the span. As code specifies, the roof Live Load, L_r, and roof Snow Load, S, are defined on the horizontal projection. Thus, when the joist span is defined along the slope, these loads must be decreased in the same proportion that the span increases as compared to the horizontal projection. R_S is independent of the joist profile and should be calculated whenever the joist span is sloped. For a horizontal span, $R_S = 1$.

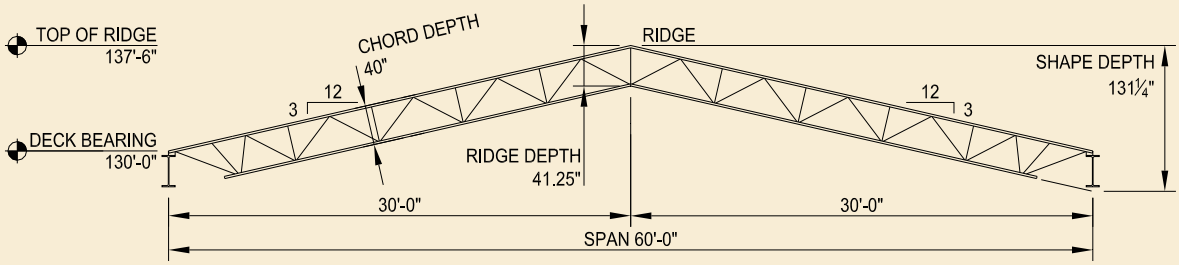
$$R_s = \frac{\sqrt{Rise^2 + Run^2}}{Run}$$

Rise = Difference in elevation between the top of the joist chord
at each bearing location

Run = Horizontal projection of span

SCISSOR JOIST DESIGN EXAMPLE

The following example will determine the self-weight of an SP-Series, Scissor joist (SPSC). For the design examples, only the snow load development is illustrated. All load combinations should be fully investigated by the specifying professional.



Design Criteria:

Design Code: *IBC 2006* and *ASCE 7-05*
Project Location: Grand Rapids, Mich.
Load Combinations: ASD
Building Class: II
Importance Factor: I = 1.0

Joist Span = 60'-0" (center to center of steel supports)
Joist Spacing = 9'-0"
Roof Pitch = 3:12
Exposure C

Loading:

Roof Dead Load (D) = 25 psf	includes estimate for joist self-weight
Roof Live Load (L_r) = 20 psf	not reducible
Net Uplift (UL) = 70 plf	calculations not shown

Snow Load:

Ground Snow: p_g = 35 psf
C_e = 1.0 C_t = 1.0 C_s = 1.0

Flat Roof Snow: $p_f = 0.7\ C_e\ C_t\ I\ p_g$ = 24.5 psf
Sloped Roof Snow: $p_s = C_s p_f$ = 24.5 psf

The first step is to adjust the dead load by the Profile Projection Ratio, R_{pp}.

$$R_{pp} = \frac{\sqrt{Pitch^2 + 144}}{12} = \frac{\sqrt{3^2 + 144}}{12} = 1.031$$

The uniform Dead Load, D, is 25 psf x R_{pp} x joist spacing = 25 psf x 1.031 x 9'-0" c-c = 232 plf.

The uniform roof Live Load, L_r, is 20 psf x joist spacing = 20 psf x 9'-0" c-c = 180 plf.

The uniform roof Snow Load, S, = 24.5 psf x joist spacing = 24.5 psf x 9'-0" c-c = 221 plf.

The uniform sloped roof Snow Load, S, = 24.5 psf governs, as it exceeds the 20 psf live load.

Thus, the resulting uniform Total Load, TL = D + (L_r or S) = 232 plf + 221 plf = 453 plf.

SP-Series Design

The next step is to determine the equivalent total uniform load, W_{eq}, that results in a shear or moment equal to the shear or moment for the worst-case loading conditions. For this example, refer to ASCE 7-05 Section 2.4.1 load case 3: D + (L_r or S).

For the uniform Snow Load case the uniform Total Load, TL = 453 plf.

$W_{eqV\text{-}TL}$ = $W_{eqM\text{-}TL}$ = 453 plf

For the Live Load deflection check $W_{eq\delta\text{-}LL}$ = 221 plf

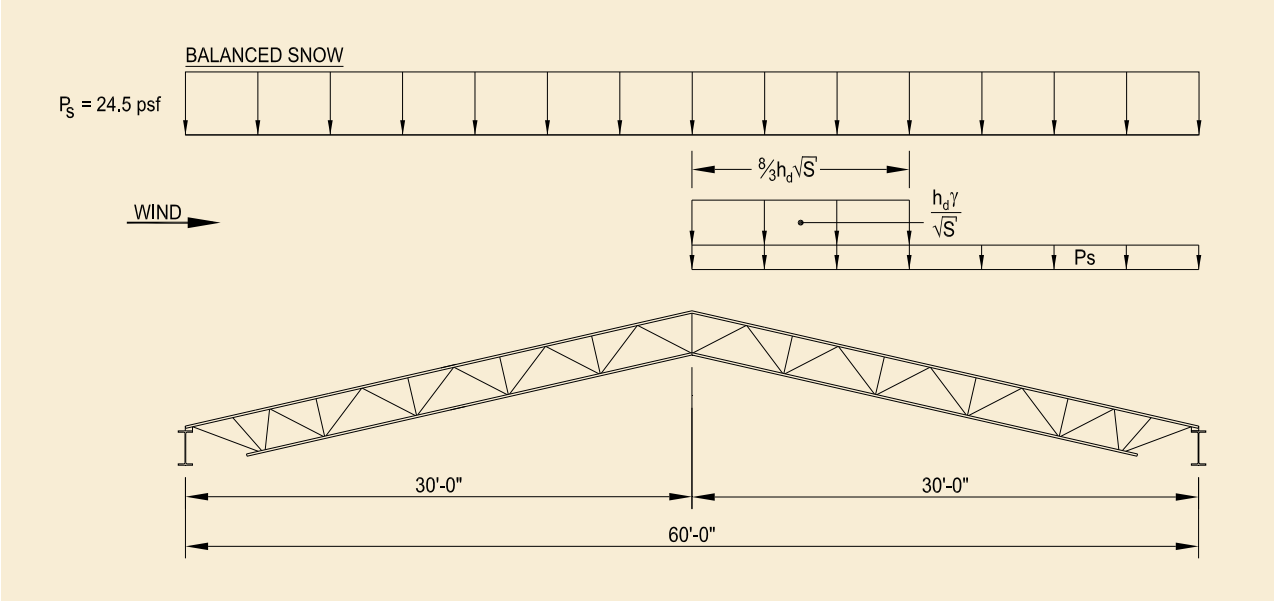
For unbalanced Snow Load case per ASCE 7-05 Section 7.6.1:

Windward side:

Uniform Snow Load = 0.3 * p_s = 7.35 psf

Leeward side:

Uniform Snow Load full width leeward = p_s = 24.5 psf
Plus rectangular Snow Load surcharge = $h_d \times \gamma/\sqrt{S}$
Where $h_d = 0.43 \times \sqrt[3]{l_u} \times \sqrt[4]{(p_g+10)} - 1.5 = 1.96$
$\gamma = 0.13 \times p_g + 14 = 18.55$ S = .25 $l_u = 60 / 2 = 30$
Rectangular Snow Load surcharge = 1.96 x 18.55 / 0.5 = 72.72 psf
Width of surcharge from ridge = (8 / 3) x $\sqrt{S}$ x h_d
Width of surcharge from ridge = (8 / 3) x 0.5 x 1.96 = 2.613'



The unbalanced Snow Load case at a span of 60' results in a maximum shear and moment with equivalent uniform loads:

V_{ub} = 12.825 kips	$W_{eqv\text{-}TL} = 2 \times V_{ub} / L$	= 427 plf.
M_{ub} = 181.425 kip-ft.	$W_{eqm\text{-}TL} = 8 \times M_{ub} / L^2$	= 403 plf

For determining uniform Total Load to use for the SP-Series Weight Table, it is suggested that the designer use the W_{eq} based on the maximum moment, since the chords for a joist comprise most of the joist self-weight. This will give a close approximation to the actual weight and the number of bridging rows for cost comparisons and estimating. Entering the tables, the uniform Total Load of W_{eq} = 453 plf should be used and should be rounded up to 500 plf to select the proper joist from the SPSC Weight Table. The specifying professional is reminded to provide specific load diagrams for actual contract documents for NMBS, as all load cases must be checked for accurate quoting and for actual final design. In some cases, the unbalanced Snow Load may govern the final web, weld, and top chord end panel design.

Since the span of this joist is horizontal, there is no adjustment needed to account for the sloped span.

$$R_s = \frac{\sqrt{Rise^2 + Run^2}}{Run}$$

Rise = 0 and Run = 12 therefore R_s = 1.0

The next step is to determine the actual joist depth to be specified. In this example, the top of joist is at 130'-0" + 7'-6"=137'-6". The bottom of the joist is at 134'-0¾". This gives a ridge depth of 3'-5¼" or 41.25" and a chord depth of 40". Generally speaking, greater depths will yield lighter and usually most economical designs. An easy way to remember this is; 'deeper is cheaper.'

To determine the estimated self-weight in plf, estimated number of bridging rows, and the minimum seat depth, enter the Scissor Joist (SPSC) Weight Table at the 60' span (page 62), 40" parallel chord depth, slope of 3:12 for a total uniform load of 500 plf and find the estimated self-weight of 27 plf. Also note that the joist profile requires three rows of bridging and has a minimum seat depth of 5". Also note that for a pin-roller support, the horizontal deflection at the roller end of the joist is less than 2 inches since the table does not mark the weight listed as having $\delta_x > 2"$.

The tabulated joist weight in the weight table is also based on limiting the joist live load deflection to L/240 based on a live load not to exceed the tabulated total load 500 plf x 0.75 = 375 plf, which is greater than the 221 plf determined in the design example.

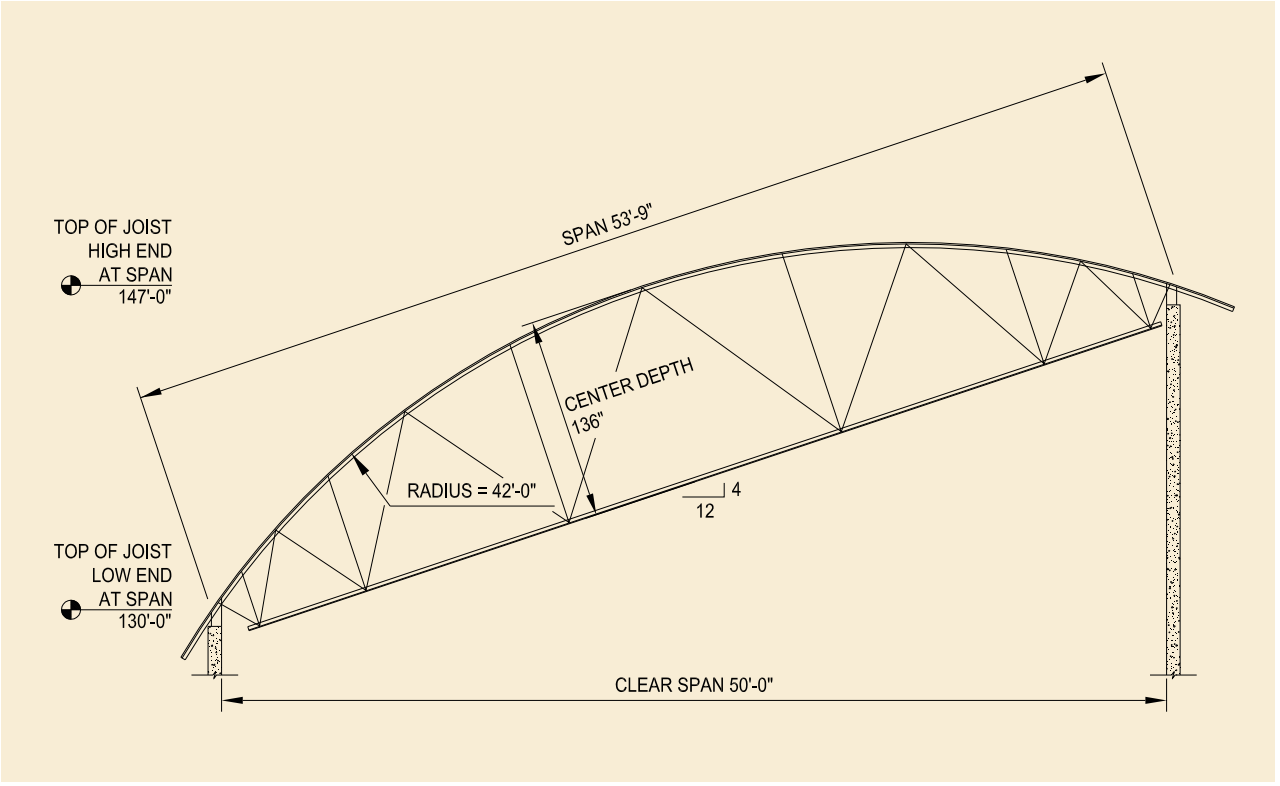
The resulting SP-Series designation is: 40 SPSC 453 / 221 / 70: Span = 60'-0"; Top Chord Pitch = 3 on 12.

This example investigates only the basic calculation for a snow load example. All loading conditions, combinations, and compliance with local building code requirements should be fully investigated by the specifying professional. Specific loads and load combinations shall be furnished to NMBS by the specifying professional in the form of the uniform load designation and/or load diagrams for accurate quoting and for actual final design.

SP-Series Design

BOWSTRING JOIST DESIGN EXAMPLE

The following example will determine the self-weight of an SP-Series, Bowstring joist (SPBW). For the design examples, only the snow load development is illustrated. All load combinations should be fully investigated by the specifying professional.



Design Criteria:

Design Code: IBC 2006 and ASCE 7-05
Project Location: Grand Rapids, Mich.
Load combinations: ASD
Building Class: II
Importance Factor I = 1.0

Clear Span = 50'-0"
Joist Span = 53'-9" on Slope
Joist Spacing = 6'-0"
Exposure C

Loading:

Roof Dead Load (D)	= 20 psf	Includes estimate for joist self-weight
Roof Live Load (L_r)	= 20 psf	Not reducible
Roof Net Uplift (UL)	= 70 plf	Calculations not shown

Snow Load

Ground Snow	p_g = 35 psf	
C_e = 1.0	C_t = 1.0	C_s = 1.0
Flat Roof Snow	$p_f = 0.7\ C_e\ C_t\ I\ p_g$	= 24.5 psf
Sloped Roof Snow	$p_s = C_s\ p_f$	= 24.5 psf

The first step is to adjust the dead load, D, by the Profile Projection Ratio, R_{pr}.

$$R_{pr} = \left(\frac{2 \cdot Radius \cdot \pi}{Span \cdot 180°}\right) \cdot Sin^{-1}\left(\frac{Span}{2 \cdot Radius}\right) = \left(\frac{2 \cdot 42 \cdot \pi}{53.75 \cdot 180°}\right) \cdot Sin^{-1}\left(\frac{53.75}{2 \cdot 42}\right) = 1.085$$

The adjusted Dead Load is D x R_{pr} x joist spacing = 20 psf x 1.085 x 6'-0" c-c = 131 plf.

The uniform roof Live Load L_r x joist spacing = 20 psf x 6'-0" c-c = 120 plf.

The uniform roof Snow Load is S x joist spacing = 24.5 psf x 6'-0" c-c = 147 plf.

The uniform sloped roof Snow Load, S, = 24.5 psf governs, as it exceeds the 20 psf live load.

The resulting uniform Total Load, TL = D + (L_r or S) = 131 plf + 147 plf = 278 plf.

The next step is to determine the equivalent total uniform load, W_{eq}, that results in a shear or moment equal to the shear or moment for the worst-case loading conditions. For this example, refer to *ASCE 7-05* Section 2.4.1 load case 3: D + (L_r or S).

For the uniform Snow Load case the uniform Total Load, TL = 278 plf.

$W_{eqV\text{-}TL} = W_{eqM\text{-}TL}$ = 278 plf.
For Live Load deflection check $W_{eqM\text{-}LL}$ = 147 plf.

For the unbalanced Snow Load case per *ASCE 7-05* Section 7.6.2.

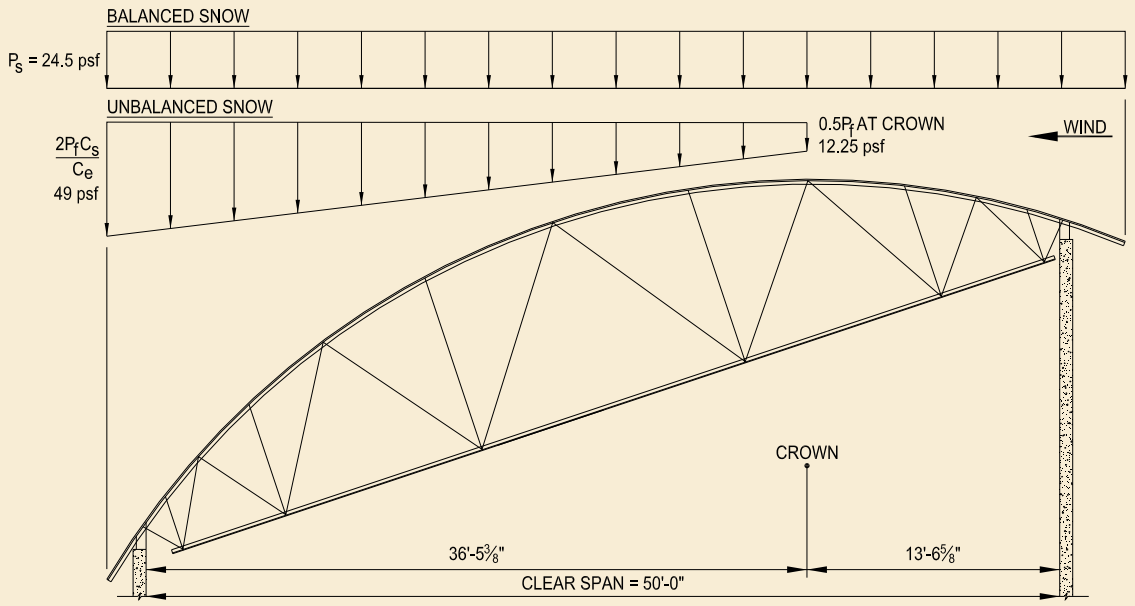
With the Bowstring sloped, the crown shifts towards the high end to 36'-5 3/8" from the inside face of wall. For simplicity, the equivalent uniform load is calculated by using a simple beam with the leeward unbalanced snow at the inside face of the wall and not at the eave or end of the extension. This is slightly conservative and has a negligible effect on the resulting maximum moment.

Windward Side:
No Snow Load per Figure 7.3 Case 1
With the slope at the eave < 30 degrees

Leeward Side:
Snow Load S = 2 x p_f x C_s / C_e = 49 psf at the eave
Snow Load S = S x Spacing = 49 psf x 6'-0" = 294 plf

Snow Load S = 0.5 x p_f = 12.25 psf at the crown
Snow Load S = S x Spacing = 12.25 psf x 6'-0" = 74 plf

SP-Series Design



The unbalanced Snow Load case at a span of 51' results in a maximum shear and moment and equivalent uniform loads:

V_{ub} = 8.128 kips $W_{eqV\text{-}TL} = 2 \times V_{ub} / L$ = 319 plf.
M_{ub} = 86.78 kip-ft. $W_{eqM\text{-}TL} = 8 \times M_{ub} / L^2$ = 267 plf.

The next step is to adjust the maximum W_{eq} for TL to the sloped span to utilize the SP-Series Weight Table. Since this is a Bowstring joist with sloped bearings, the loads normal to the span must be determined. It is suggested that the designer use the W_{eq} based on the maximum moment, since the chords for a joist comprise most of the joist self-weight. This will give a close approximation to the actual weight and the number of bridging rows for cost comparisons and estimating.

$$R_s = \frac{\sqrt{Rise^2 + Run^2}}{Run}$$

Rise = 4 and Run = 12 therefore R_s = 1.054

Adjusted $W_{eq} = W_{eq} / R_s$ = 278 plf / 1.054 = 264 plf at the sloped span = 53'-9"

Adjusted $W_{eqLL} = W_{eqLL} / R_s$ = 147 plf / 1.054 = 140 plf

Entering the tables, the uniform Total Load of W_{eq} = 264 plf should be used and should be rounded up to 300 plf to select the proper joist from the SPBW Weight Table. The specifying professional is reminded to provide specific load diagrams for actual contract documents for NMBS, as all load cases must be checked for accurate quoting and for actual final design. In some cases, the unbalanced Snow Load may govern the final web, weld, and top chord end panel design.

The actual joist depth is specified as 136" and the top chord radius is specified as 42'. To determine the estimated self-weight in plf, estimated number of bridging rows and the minimum seat depth at the 53.75 ft span, interpolation needs to be utilized, since the

table only has information for 50 ft (page45) and 60 ft (page 46) spans. The closest joist that fits the example joist profile for the 50 ft span weighs 27 plf at Center Depth = 136 in, Top Chord Radius = 42 ft and TL = 300 plf. The closest joist that fits the example joist profile for the 60 ft span weighs 33 plf at Center Depth = 148 in, Top Chord Radius = 50 ft and TL = 300 plf. This selection is chosen, since the resulting self-weight is slightly more conservative compared to choosing the joist at Center Depth = 132 in, Top Chord Radius = 50 ft and TL = 300 plf. Using linear interpolation, the self-weight of the example joist is:

$$\left[\frac{(53.75\ \text{ft.} - 50\ \text{ft.})}{(60\ \text{ft.} - 50\ \text{ft.})} \times (33\ \text{plf} - 27\ \text{plf})\right] + 27\ \text{plf} \cong 29\ \text{plf}$$

In addition, both selections for the 50 ft span and the 60 ft span show that a 5" minimum seat depth and four rows of X-bolted bridging are required. The same will hold true for the example joist profile. The table gives the minimum seat depth of 5" based on a flat span, which would require adjustment for slope and top chord extensions.

The tabulated joist weight in the Weight Table is also based on limiting the joist live load deflection to L/240 based on a live load not to exceed the tabulated total load 300 plf x 0.75 = 225 plf, which is greater than the 140 plf determined in the design example.

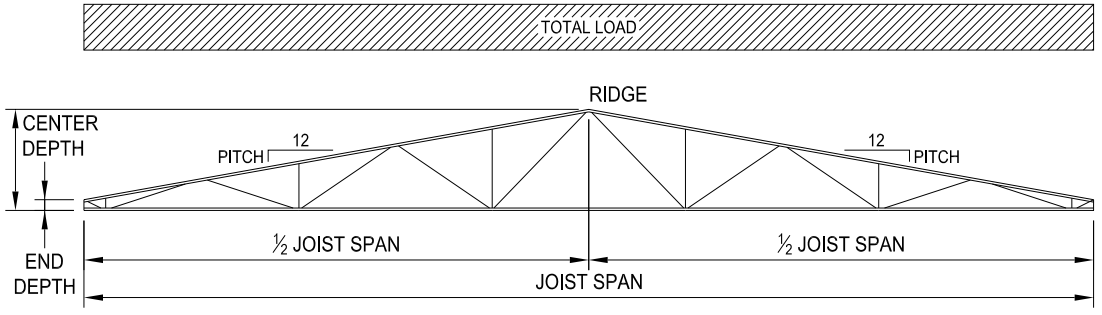
The resulting SP-Series designation is: 136 SPBW 264 / 140 / 70; Span = 53'-9"; Top Chord Radius = 42'.

This example investigates only the basic calculation for a snow load example. All loading conditions, combinations, and compliance with local building code requirements should be fully investigated by the specifying professional. Specific loads and load combinations shall be furnished to NMBS by the specifying professional in the form of the uniform load designation and/or load diagrams for accurate quoting and for final design.

Gable Joist (SPGB) Tables

The following weight tables are representative of SP-Series joist designs for Gable Joists with parameters shown in the diagram below. The maximum allowable Live Load deflection is L/240 for a Live Load equal to 75 percent of the Total Load listed in the table. The tables also give bridging requirements per Section 904.5(d), the required seat depth for the given profile, as well as the estimated self-weight in pounds per linear foot. This catalog provides two design examples for reference and clarification on design issues. The following tables are not representative of any limits or constraints on design or constructability by NMBS. For further information, please contact your nearest NMBS representative or visit www.newmill.com.

ALL TABLES ARE BASED ON ASD



GABLE JOIST (SPGB)

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Gable Joist (SPGB) Tables

Span ft	End Depth in	Center Depth in	Top Chord Pitch in/ft	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
				300	350	400	450	500	550	600	650	700	750	800
				Joist Self-Weight - Pounds per Linear Foot (**plf**)										
10	18.1	20	0.375	8	8	8	8	8	8	8	8	8	8	8
10	17.5	20	0.500	8	8	8	8	8	8	8	8	8	8	8
10	16.9	20	0.625	8	8	8	8	8	8	8	8	8	8	8
10	16.3	20	0.750	8	8	8	8	8	8	8	8	8	8	8
10	15.6	20	0.875	8	8	8	8	8	8	8	8	8	8	8
10	15.0	20	1.000	7	7	7	7	7	7	7	7	7	7	7
10	19.6	24	0.875	8	8	8	8	8	8	8	8	8	8	8
10	19.0	24	1.000	8	8	8	8	8	8	8	8	8	8	8
10	17.8	24	1.250	8	8	8	8	8	8	8	8	8	8	8
10	16.5	24	1.500	8	8	8	8	8	8	8	8	8	8	8
10	14.0	24	2.000	8	8	8	8	8	8	8	8	8	8	8
10	9.0	24	3.000	8	8	8	8	8	8	8	8	8	8	8
10	23.0	28	1.000	8	8	8	8	8	8	8	8	8	8	8
10	21.8	28	1.250	8	8	8	8	8	8	8	8	8	8	8
10	20.5	28	1.500	8	8	8	8	8	8	8	8	8	8	8
10	18.0	28	2.000	8	8	8	8	8	8	8	8	8	8	8
10	13.0	28	3.000	8	8	8	8	8	8	8	8	8	8	8
10	8.0	28	4.000	8	8	8	8	8	8	8	8	8	8	8
10	27.0	32	1.000	7	8	8	8	8	8	8	8	8	8	8
10	25.8	32	1.250	7	8	8	8	8	8	8	8	8	8	8
10	24.5	32	1.500	7	8	8	8	8	8	8	8	8	8	8
10	22.0	32	2.000	8	8	8	8	8	8	8	8	8	8	8
10	17.0	32	3.000	8	8	8	8	9	9	9	9	9	9	9
10	12.0	32	4.000	8	8	8	8	8	8	8	8	8	9	9
10	31.8	38	1.250	8	8	8	8	8	8	8	8	8	8	8
10	30.5	38	1.500	8	8	8	8	8	8	8	8	8	8	8
10	28.0	38	2.000	8	8	8	8	8	8	8	8	8	8	8
10	23.0	38	3.000	8	8	8	8	8	8	8	8	8	8	8
10	18.0	38	4.000	9	9	9	9	9	9	9	9	9	9	9
10	8.0	38	6.000	9	9	9	9	9	9	9	9	9	9	9
10	37.8	44	1.250	8	8	8	8	8	8	8	8	9	9	9
10	36.5	44	1.500	8	8	8	8	8	8	8	8	9	9	9
10	34.0	44	2.000	8	8	8	8	8	8	8	9	9	9	9
10	29.0	44	3.000	8	8	8	8	8	8	8	8	8	8	8
10	24.0	44	4.000	8	8	8	8	8	8	8	8	8	8	8
10	14.0	44	6.000	9	9	9	9	9	9	9	9	9	9	9
10	43.8	50	1.250	8	8	8	8	8	8	9	9	9	9	9
10	42.5	50	1.500	8	8	8	8	8	8	9	9	9	9	9
10	40.0	50	2.000	8	8	8	8	8	8	9	9	9	9	9
10	35.0	50	3.000	8	8	8	8	8	8	9	9	9	9	9
10	30.0	50	4.000	8	8	8	8	8	8	9	9	9	9	9
10	20.0	50	6.000	9	9	9	9	9	9	9	9	9	9	9
10	51.8	58	1.250	9	9	9	9	9	9	9	9	10	10	10
10	50.5	58	1.500	9	9	9	9	9	9	9	9	10	10	10
10	48.0	58	2.000	9	9	9	9	9	9	9	9	10	10	10
10	43.0	58	3.000	9	9	9	9	9	9	9	9	9	10	10
10	38.0	58	4.000	9	9	9	9	9	9	9	9	9	10	10
10	28.0	58	6.000	9	9	9	9	9	9	9	10	10	10	10
10	59.8	66	1.250	10	10	10	10	10	10	11	11	11	11	11
10	58.5	66	1.500	10	10	10	10	10	10	10	10	11	11	11
10	56.0	66	2.000	10	10	10	10	10	10	10	10	11	11	11
10	51.0	66	3.000	10	10	10	10	10	10	10	10	11	11	11
10	46.0	66	4.000	10	10	10	10	10	10	10	11	11	11	11
10	36.0	66	6.000	10	10	10	10	10	10	10	10	11	11	11
10	69.8	76	1.250	12	12	12	12	12	12	13	13	13	13	13
10	68.5	76	1.500	12	12	12	12	12	12	12	12	13	13	13
10	66.0	76	2.000	12	12	12	12	12	12	12	12	13	13	13
10	61.0	76	3.000	11	11	11	11	11	12	12	12	12	12	13
10	56.0	76	4.000	11	11	11	11	11	11	11	12	12	12	12
10	46.0	76	6.000	11	11	11	11	11	11	11	11	12	12	12

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Gable Joist (SPGB) Tables

Span	End Depth	Center Depth	Top Chord Pitch	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
				300	350	400	450	500	550	600	650	700	750	800
ft	in	in	in/ft	Joist Self-Weight - Pounds per Linear Foot (**plf**)										
20	17.5	20	0.250	7	7	7	7	7	8	8	8	9	10	10
20	16.3	20	0.375	7	7	7	7	7	8	8	9	9	10	10
20	15.0	20	0.500	7	7	7	7	7	8	8	9	9	10	10
20	13.8	20	0.625	7	7	7	7	7	8	8	9	9	10	10
20	12.5	20	0.750	7	7	7	7	7	8	8	9	9	10	10
20	11.3	20	0.875	7	7	7	7	7	8	8	9	9	10	10
20	17.8	24	0.625	7	7	7	7	7	8	8	8	9	10	10
20	16.5	24	0.750	7	7	7	7	7	8	8	9	9	10	10
20	15.3	24	0.875	7	7	7	7	7	8	8	9	9	9	10
20	14.0	24	1.000	7	7	7	7	7	7	8	8	9	9	10
20	11.5	24	1.250	7	7	7	7	7	8	8	9	9	10	10
20	9.0	24	1.500	7	7	7	7	7	8	8	9	9	10	10
20	22.5	30	0.750	7	7	7	8	8	8	8	9	9	9	10
20	21.3	30	0.875	7	7	7	8	8	8	8	9	9	10	10
20	20.0	30	1.000	7	7	7	7	8	8	8	8	9	10	10
20	17.5	30	1.250	7	7	7	7	7	8	8	8	9	10	10
20	15.0	30	1.500	7	7	7	7	7	8	8	8	9	9	10
20	10.0	30	2.000	7	7	7	7	7	7	8	8	9	9	9
20	27.3	36	0.875	7	7	7	7	8	8	8	9	9	10	10
20	26.0	36	1.000	7	7	7	7	8	8	8	9	9	10	10
20	23.5	36	1.250	7	7	7	8	8	8	8	9	9	10	10
20	21.0	36	1.500	7	7	7	8	8	8	8	9	9	10	10
20	16.0	36	2.000	7	7	8	8	8	8	8	9	9	10	10
20	6.0	36	3.000	7	7	8	8	8	8	8	9	9	10	10
20	33.3	42	0.875	7	8	8	8	8	8	8	9	9	10	10
20	32.0	42	1.000	7	8	8	8	8	8	8	9	9	10	10
20	29.5	42	1.250	7	8	8	8	8	8	9	9	9	10	10
20	27.0	42	1.500	8	8	8	8	8	8	9	9	9	10	10
20	22.0	42	2.000	8	8	8	8	8	8	8	9	9	10	10
20	12.0	42	3.000	7	7	7	7	8	8	8	8	9	9	10
20	40.0	50	1.000	8	8	8	8	9	9	9	10	10	10	11
20	37.5	50	1.250	8	8	8	8	9	9	9	10	10	10	11
20	35.0	50	1.500	8	8	8	8	8	9	9	9	10	10	11
20	30.0	50	2.000	8	8	8	8	8	8	9	9	9	10	11
20	20.0	50	3.000	8	8	8	8	9	9	9	9	10	10	10
20	10.0	50	4.000	7	8	8	8	8	8	8	8	9	10	10
20	48.0	58	1.000	9	9	9	10	10	10	10	11	11	12	13
20	45.5	58	1.250	9	9	9	10	10	10	10	11	11	12	12
20	43.0	58	1.500	9	9	9	9	10	10	10	10	11	11	12
20	38.0	58	2.000	8	8	8	9	9	10	10	10	11	11	12
20	28.0	58	3.000	8	9	9	9	9	9	9	9	9	10	11
20	18.0	58	4.000	8	8	8	9	9	9	9	9	10	10	11
20	55.5	68	1.250	9	10	10	11	11	11	12	14	14	15	15
20	53.0	68	1.500	9	10	10	11	11	11	12	12	13	14	15
20	48.0	68	2.000	9	9	10	10	10	11	11	12	12	13	14
20	38.0	68	3.000	9	9	9	9	10	10	10	11	11	11	12
20	28.0	68	4.000	9	9	9	9	9	9	9	9	10	11	11
20	8.0	68	6.000	8	9	9	9	9	9	9	10	10	11	11
20	65.5	78	1.250	11	12	12	13	13	14	15	15	17	17	17
20	63.0	78	1.500	11	12	12	13	13	14	15	15	16	17	17
20	58.0	78	2.000	11	11	12	12	12	13	14	15	16	16	17
20	48.0	78	3.000	10	10	11	11	11	12	12	13	14	15	15
20	38.0	78	4.000	10	10	10	10	11	11	11	11	11	12	13
20	18.0	78	6.000	10	10	10	11	11	11	11	11	11	12	12
20	77.5	90	1.250	16	16	17	19	19	20	20	20	20	21	21
20	75.0	90	1.500	15	16	17	19	19	19	19	20	20	20	20
20	70.0	90	2.000	14	14	16	17	18	18	18	19	19	20	20
20	60.0	90	3.000	12	13	13	13	14	15	15	16	17	17	18
20	50.0	90	4.000	11	11	12	12	12	13	13	14	15	15	16
20	30.0	90	6.000	11	11	11	11	11	12	12	12	13	13	13

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

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Gable Joist (SPGB) Tables

Span	End Depth	Center Depth	Top Chord Pitch	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
				300	350	400	450	500	550	600	650	700	750	800
ft	in	in	in/ft	Joist Self-Weight - Pounds per Linear Foot (**plf**)										
30	16.3	20	0.250	8	9	10	11	13	14	15	16	16	18	20
30	14.4	20	0.375	8	9	10	12	13	14	15	16	17	18	20
30	12.5	20	0.500	8	9	11	12	13	14	16	16	17	18	20
30	10.6	20	0.625	8	9	11	12	13	15	16	17	18	20	20
30	8.8	20	0.750	9	10	11	13	14	15	16	18	19	20	20
30	6.9	20	0.875	9	10	12	13	14	16	17	17	20	21	21
30	18.5	26	0.500	7	8	8	10	10	11	12	13	14	15	16
30	16.6	26	0.625	7	8	9	10	10	11	12	13	14	15	16
30	14.8	26	0.750	7	8	9	10	10	11	12	13	14	15	16
30	12.9	26	0.875	7	8	9	10	10	11	13	13	14	15	16
30	11.0	26	1.000	7	8	9	10	11	12	13	14	15	16	17
30	7.3	26	1.250	8	9	10	10	12	13	14	15	16	17	18
30	22.6	32	0.625	7	7	8	9	10	10	11	12	13	13	14
30	20.8	32	0.750	7	8	8	9	10	10	11	12	13	13	14
30	18.9	32	0.875	7	8	8	9	10	10	11	12	13	14	14
30	17.0	32	1.000	7	7	8	9	10	11	11	12	13	13	14
30	13.3	32	1.250	7	7	8	9	10	11	11	12	13	14	14
30	9.5	32	1.500	7	8	8	9	10	10	11	12	14	14	15
30	28.8	40	0.750	7	8	8	9	10	10	11	12	13	13	14
30	26.9	40	0.875	7	8	8	9	10	11	11	12	13	13	13
30	25.0	40	1.000	7	8	8	9	10	11	11	12	13	13	13
30	21.3	40	1.250	8	8	8	9	10	11	11	12	13	13	13
30	17.5	40	1.500	7	8	8	9	10	11	11	12	13	13	13
30	10.0	40	2.000	7	8	8	9	10	10	11	12	12	13	14
30	36.8	48	0.750	8	8	9	9	10	11	12	13	14	14	14
30	34.9	48	0.875	8	8	9	9	10	11	12	13	13	14	14
30	33.0	48	1.000	8	8	9	9	10	11	12	12	13	14	14
30	29.3	48	1.250	8	8	9	9	10	11	11	12	13	14	14
30	25.5	48	1.500	8	8	8	9	10	11	11	12	13	14	14
30	18.0	48	2.000	7	8	8	9	10	10	11	12	13	13	14
30	44.9	58	0.875	9	9	10	10	11	12	12	13	13	14	15
30	43.0	58	1.000	9	9	9	10	11	12	12	12	13	14	14
30	39.3	58	1.250	9	9	9	10	11	11	12	13	13	14	15
30	35.5	58	1.500	8	9	9	10	11	11	12	12	13	15	15
30	28.0	58	2.000	8	8	8	9	10	11	11	12	13	14	14
30	13.0	58	3.000	8	8	8	9	10	10	11	12	12	13	14
30	53.0	68	1.000	10	11	11	11	13	13	14	16	16	18	18
30	49.3	68	1.250	10	10	11	11	12	13	13	15	16	16	18
30	45.5	68	1.500	9	10	10	11	11	12	13	13	14	14	15
30	38.0	68	2.000	9	9	9	10	11	12	13	13	13	14	15
30	23.0	68	3.000	9	9	9	10	10	11	12	12	13	14	15
30	8.0	68	4.000	8	8	9	10	10	11	12	12	13	14	14
30	65.0	80	1.000	12	13	14	15	15	16	18	18	18	19	20
30	61.3	80	1.250	12	13	13	14	15	16	17	17	18	18	19
30	57.5	80	1.500	12	12	12	13	14	15	16	16	18	18	19
30	50.0	80	2.000	11	11	12	12	13	14	15	16	16	17	17
30	35.0	80	3.000	10	10	11	11	12	13	14	15	15	16	16
30	20.0	80	4.000	9	9	10	10	11	12	13	14	15	15	15
30	77.0	92	1.000	15	17	17	18	18	19	20	21	21	21	22
30	73.3	92	1.250	14	15	16	17	19	19	20	20	20	21	22
30	69.5	92	1.500	14	14	15	16	17	18	19	19	20	21	21
30	62.0	92	2.000	12	13	13	14	15	17	17	18	19	19	19
30	47.0	92	3.000	11	12	12	13	13	13	14	15	16	17	18
30	32.0	92	4.000	11	11	11	12	13	14	14	15	16	17	17
30	87.3	106	1.250	19	20	21	21	21	22	24	24	24	25	25
30	83.5	106	1.500	18	19	20	20	21	22	23	23	23	23	25
30	76.0	106	2.000	16	17	19	19	19	20	21	22	22	23	23
30	61.0	106	3.000	14	15	15	16	17	18	19	20	20	20	21
30	46.0	106	4.000	14	15	15	15	15	15	17	18	19	19	19
30	16.0	106	6.000	11	12	12	13	13	14	14	16	16	17	18

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Gable Joist (SPGB) Tables

Span ft	End Depth in	Center Depth in	Top Chord Pitch in/ft	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**) 300	350	400	450	500	550	600	650	700	750	800
				Joist Self-Weight - Pounds per Linear Foot (**plf**)										
40	19.0	24	0.250	11	13	14	16	17	20	21	23	25	26	28
40	16.5	24	0.375	11	13	14	16	18	19	21	23	25	27	27
40	14.0	24	0.500	12	14	15	16	18	20	21	25	25	28	29
40	11.5	24	0.625	12	14	16	17	19	20	22	25	28	28	29
40	9.0	24	0.750	13	15	16	17	20	21	25	25	28	29	31
40	6.5	24	0.875	13	16	17	20	21	24	25	28	29	31	34
40	20.0	30	0.500	9	11	12	13	15	17	18	18	20	21	22
40	17.5	30	0.625	10	11	13	14	15	17	18	19	20	22	23
40	15.0	30	0.750	10	11	13	14	16	16	18	20	21	22	24
40	12.5	30	0.875	10	11	13	15	16	18	18	20	21	23	25
40	10.0	30	1.000	10	12	13	15	17	18	20	20	22	25	26
40	5.0	30	1.250	12	13	16	17	19	20	22	26	26	28	29
40	25.5	38	0.625	9	10	11	12	13	14	15	16	17	19	19
40	23.0	38	0.750	9	10	11	12	13	14	15	16	17	19	19
40	20.5	38	0.875	9	10	11	12	13	14	15	16	17	19	19
40	18.0	38	1.000	9	10	11	12	14	14	15	17	17	19	19
40	13.0	38	1.250	9	10	11	12	14	15	16	17	18	19	20
40	8.0	38	1.500	9	10	12	13	15	16	17	19	20	20	22
40	31.0	46	0.750	8	10	10	12	13	14	14	15	16	17	18
40	28.5	46	0.875	8	10	11	12	13	14	14	15	16	17	18
40	26.0	46	1.000	8	9	10	12	13	13	14	15	16	17	18
40	21.0	46	1.250	9	10	10	11	13	14	14	15	16	17	18
40	16.0	46	1.500	9	9	10	12	12	14	14	16	16	18	18
40	6.0	46	2.000	8	10	10	12	14	14	15	17	18	19	21
40	41.0	56	0.750	9	11	12	12	13	14	15	15	16	16	18
40	38.5	56	0.875	9	10	11	12	13	14	15	15	16	17	18
40	36.0	56	1.000	9	10	11	12	13	14	14	15	16	17	18
40	31.0	56	1.250	9	10	11	12	13	14	14	15	15	17	17
40	26.0	56	1.500	9	9	11	12	13	14	14	15	16	17	18
40	16.0	56	2.000	8	9	10	11	13	14	15	15	16	17	17
40	48.5	66	0.875	10	11	12	13	14	15	15	16	16	17	18
40	46.0	66	1.000	10	11	12	13	14	15	15	15	17	17	18
40	41.0	66	1.250	10	11	12	13	14	15	15	16	16	17	18
40	36.0	66	1.500	9	11	12	13	14	15	15	16	16	17	17
40	26.0	66	2.000	9	10	11	12	14	14	15	16	16	17	17
40	6.0	66	3.000	9	10	11	11	12	13	14	15	16	17	18
40	60.5	78	0.875	12	13	14	15	16	17	18	19	19	20	21
40	58.0	78	1.000	12	12	14	14	15	17	18	18	19	19	20
40	53.0	78	1.250	11	11	13	14	14	16	16	18	18	19	20
40	48.0	78	1.500	11	12	13	14	15	16	16	17	17	18	19
40	38.0	78	2.000	10	12	13	13	14	16	16	16	17	18	18
40	18.0	78	3.000	9	10	12	13	13	14	15	16	16	17	17
40	70.0	90	1.000	15	16	17	19	20	20	21	22	23	23	25
40	65.0	90	1.250	14	15	16	17	18	19	20	21	21	22	23
40	60.0	90	1.500	13	14	15	15	16	17	19	19	20	20	21
40	50.0	90	2.000	12	12	13	14	15	15	16	18	18	19	19
40	30.0	90	3.000	10	12	12	14	14	15	16	17	17	18	18
40	10.0	90	4.000	10	11	12	13	14	16	16	17	18	18	19
40	84.0	104	1.000	18	20	21	21	23	24	25	25	25	26	28
40	79.0	104	1.250	17	18	19	20	21	22	23	24	24	25	25
40	74.0	104	1.500	17	18	20	20	20	22	23	23	24	24	26
40	64.0	104	2.000	15	16	17	18	20	20	21	22	22	23	24
40	44.0	104	3.000	13	13	14	14	15	17	17	19	20	20	21
40	24.0	104	4.000	12	13	13	15	15	17	18	18	19	19	21
40	100.0	120	1.000	25	25	26	27	28	29	29	30	32	33	33
40	95.0	120	1.250	24	25	25	27	27	27	28	29	30	30	32
40	90.0	120	1.500	22	23	23	24	25	26	26	27	28	30	30
40	80.0	120	2.000	20	21	21	22	23	24	25	26	26	26	27
40	60.0	120	3.000	17	18	19	20	21	22	23	23	25	25	25
40	40.0	120	4.000	16	16	17	18	18	21	21	21	23	23	24

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Gable Joist (SPGB) Tables

Span	End Depth	Center Depth	Top Chord Pitch	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
				300	350	400	450	500	550	600	650	700	750	800
ft	in	in	in/ft	Joist Self-Weight - Pounds per Linear Foot (**plf**)										
50	21.8	28	0.250	14	16	18	21	24	25	28	29	32	33	36
50	18.6	28	0.375	15	17	20	21	25	26	29	31	32	36	38
50	15.5	28	0.500	15	17	20	22	25	28	29	30	33	36	37
50	12.4	28	0.625	15	18	20	23	25	28	29	32	36	37	39
50	9.3	28	0.750	16	19	21	25	28	29	32	36	38	40	41
50	6.1	28	0.875	17	21	24	28	29	32	37	38	42	51	51
50	26.6	36	0.375	12	13	16	17	19	20	22	25	26	28	29
50	23.5	36	0.500	12	14	16	17	19	20	22	25	26	28	29
50	20.4	36	0.625	12	14	16	18	19	21	22	25	26	28	30
50	17.3	36	0.750	13	14	16	18	20	21	23	26	28	29	31
50	14.1	36	0.875	13	15	17	18	20	21	25	26	28	29	31
50	11.0	36	1.000	13	16	18	19	21	23	25	28	29	31	32
50	28.4	44	0.625	11	12	14	15	17	19	19	21	23	24	26
50	25.3	44	0.750	11	12	14	15	17	19	19	21	22	24	26
50	22.1	44	0.875	11	12	14	15	17	19	19	21	22	25	26
50	19.0	44	1.000	11	12	14	15	17	19	20	22	24	26	26
50	12.8	44	1.250	11	13	15	16	18	20	21	23	26	26	28
50	6.5	44	1.500	14	15	17	18	20	22	25	26	28	30	31
50	38.4	54	0.625	11	12	13	15	16	18	18	20	21	21	23
50	35.3	54	0.750	11	12	13	15	16	17	18	20	21	21	23
50	32.1	54	0.875	11	12	13	14	16	17	18	19	21	22	23
50	29.0	54	1.000	11	12	13	14	16	17	18	19	20	21	23
50	22.8	54	1.250	11	12	13	14	16	17	18	20	21	22	23
50	16.5	54	1.500	11	11	13	14	16	18	18	20	21	23	23
50	45.3	64	0.750	12	12	14	16	16	17	18	18	20	20	21
50	42.1	64	0.875	12	13	13	15	16	16	18	19	19	20	21
50	39.0	64	1.000	11	13	13	15	16	17	18	19	19	20	22
50	32.8	64	1.250	11	12	14	15	16	16	18	18	19	19	21
50	26.5	64	1.500	11	12	13	14	15	16	18	19	19	20	21
50	14.0	64	2.000	11	11	13	14	16	16	18	19	20	21	22
50	57.3	76	0.750	13	13	15	15	17	17	19	20	21	22	22
50	54.1	76	0.875	12	13	14	16	16	17	18	21	21	21	22
50	51.0	76	1.000	12	13	14	16	16	17	18	21	21	21	22
50	44.8	76	1.250	12	13	15	16	17	17	18	20	21	21	22
50	38.5	76	1.500	12	13	14	15	16	17	18	19	20	20	21
50	26.0	76	2.000	12	13	14	16	17	17	18	19	19	20	20
50	68.1	90	0.875	15	15	16	18	20	20	21	23	24	24	27
50	65.0	90	1.000	15	16	17	19	19	19	20	22	23	24	25
50	58.8	90	1.250	14	15	16	17	18	20	20	22	22	23	23
50	52.5	90	1.500	14	14	16	17	17	19	19	21	21	23	23
50	40.0	90	2.000	13	14	15	16	16	18	19	20	21	22	23
50	15.0	90	3.000	12	13	14	15	17	18	18	19	19	21	22
50	82.1	104	0.875	19	21	22	22	23	24	24	26	26	27	29
50	79.0	104	1.000	18	19	20	22	22	22	24	26	26	27	27
50	72.8	104	1.250	17	19	20	21	22	22	23	25	26	27	27
50	66.5	104	1.500	16	17	18	19	21	21	21	22	24	26	26
50	54.0	104	2.000	15	15	17	18	20	20	22	22	22	23	23
50	29.0	104	3.000	13	14	15	16	20	20	20	20	20	21	22
50	95.0	120	1.000	27	28	28	28	29	29	31	32	32	35	35
50	88.8	120	1.250	24	25	25	26	29	29	29	30	31	33	35
50	82.5	120	1.500	22	24	24	25	27	28	28	29	30	31	33
50	70.0	120	2.000	20	20	22	23	24	24	24	26	27	28	29
50	45.0	120	3.000	17	18	18	20	22	22	23	23	24	26	27
50	20.0	120	4.000	16	17	18	19	21	21	22	22	23	24	25
50	111.0	136	1.000	30	31	32	33	34	36	37	37	37	39	41
50	104.8	136	1.250	27	29	29	30	31	32	34	35	36	36	38
50	98.5	136	1.500	27	28	29	29	30	31	31	33	35	35	36
50	86.0	136	2.000	27	27	27	29	30	31	31	31	33	35	36
50	61.0	136	3.000	21	22	23	24	27	27	27	27	28	29	31
50	36.0	136	4.000	20	20	21	22	23	25	25	25	25	27	28

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Gable Joist (SPGB) Tables

Span	End Depth	Center Depth	Top Chord Pitch	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
				300	350	400	450	500	550	600	650	700	750	800
ft	in	in	in/ft	Joist Self-Weight - Pounds per Linear Foot (**plf**)										
60	24.5	32	0.250	17	20	25	26	29	32	34	37	40	46	50
60	20.8	32	0.375	18	21	25	28	29	31	36	37	40	46	50
60	17.0	32	0.500	18	21	25	27	30	32	36	39	41	50	51
60	13.3	32	0.625	19	22	25	29	32	35	38	41	51	51	51
60	9.5	32	0.750	21	25	28	31	34	38	41	47	51	51	57
60	5.8	32	0.875	23	28	29	34	38	42	52	52	57	60	60
60	28.8	40	0.375	15	17	19	22	24	26	28	30	33	34	37
60	25.0	40	0.500	15	18	20	22	24	26	28	31	33	36	38
60	21.3	40	0.625	16	18	20	21	25	28	29	31	33	36	38
60	17.5	40	0.750	16	19	20	23	25	28	29	32	35	36	39
60	13.8	40	0.875	17	19	21	24	26	29	31	34	37	39	42
60	10.0	40	1.000	18	20	22	26	28	32	32	37	40	42	48
60	31.3	50	0.625	14	16	18	20	21	23	24	26	28	29	32
60	27.5	50	0.750	14	16	18	19	21	23	25	26	29	31	32
60	23.8	50	0.875	14	16	18	19	21	23	26	27	28	31	33
60	20.0	50	1.000	14	16	18	20	21	24	26	28	29	32	34
60	12.5	50	1.250	15	17	19	20	23	26	29	30	32	33	37
60	5.0	50	1.500	17	19	22	25	29	30	32	35	37	40	42
60	41.3	60	0.625	14	15	16	18	19	21	22	24	24	26	28
60	37.5	60	0.750	14	15	16	18	19	21	22	24	24	26	29
60	33.8	60	0.875	14	15	17	18	20	21	22	24	25	27	29
60	30.0	60	1.000	14	15	17	19	20	21	22	24	25	27	28
60	22.5	60	1.250	14	15	16	18	20	21	23	25	26	27	29
60	15.0	60	1.500	14	15	17	19	20	21	24	26	27	29	31
60	49.5	72	0.750	15	16	17	17	19	20	21	23	25	25	27
60	45.8	72	0.875	15	16	17	17	19	20	21	22	25	25	26
60	42.0	72	1.000	15	16	17	18	19	20	21	23	24	25	27
60	34.5	72	1.250	14	15	17	18	19	20	20	22	25	25	26
60	27.0	72	1.500	14	15	16	18	19	19	21	22	24	25	26
60	12.0	72	2.000	14	15	17	19	20	21	22	24	26	27	28
60	63.5	86	0.750	16	17	18	19	21	21	23	24	25	27	28
60	59.8	86	0.875	16	17	18	19	19	21	23	24	25	27	28
60	56.0	86	1.000	15	16	17	18	20	21	22	24	25	26	28
60	48.5	86	1.250	15	16	17	18	20	20	21	22	26	26	26
60	41.0	86	1.500	15	16	17	17	19	20	21	22	24	25	26
60	26.0	86	2.000	15	16	17	18	18	20	21	22	23	25	25
60	73.8	100	0.875	23	23	23	24	24	25	26	27	28	29	29
60	70.0	100	1.000	22	22	23	24	24	25	25	26	29	29	29
60	62.5	100	1.250	22	22	23	23	23	24	25	25	27	28	29
60	55.0	100	1.500	21	22	22	23	23	24	24	25	26	28	28
60	40.0	100	2.000	22	22	22	22	22	23	24	25	26	27	27
60	10.0	100	3.000	21	21	22	22	23	23	23	24	24	26	26
60	89.8	116	0.875	27	28	28	29	30	30	30	31	33	34	35
60	86.0	116	1.000	26	27	27	27	29	29	29	30	32	32	34
60	78.5	116	1.250	25	25	25	26	28	29	29	29	31	31	33
60	71.0	116	1.500	24	25	25	25	27	27	29	29	30	30	31
60	56.0	116	2.000	23	24	24	25	25	25	27	28	28	28	29
60	26.0	116	3.000	23	23	23	23	24	24	25	27	27	28	28
60	102.0	132	1.000	31	32	34	34	35	36	38	39	39	39	40
60	94.5	132	1.250	30	30	31	32	33	33	34	34	36	37	37
60	87.0	132	1.500	29	29	30	31	32	32	32	33	33	35	37
60	72.0	132	2.000	28	28	28	28	30	30	31	31	33	33	33
60	42.0	132	3.000	25	25	26	26	27	27	27	29	30	30	30
60	12.0	132	4.000	24	24	25	25	26	26	26	29	29	29	29
60	118.0	148	1.000	36	36	37	37	39	40	41	41	41	43	47
60	110.5	148	1.250	36	38	38	39	40	42	42	43	43	44	46
60	103.0	148	1.500	34	35	36	36	38	39	40	42	42	42	43
60	88.0	148	2.000	32	32	33	34	35	35	35	37	37	38	40
60	58.0	148	3.000	30	30	30	31	31	32	33	34	34	34	35
60	28.0	148	4.000	28	28	28	28	28	31	31	31	31	32	32

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Gable Joist (SPGB) Tables

Span ft	End Depth in	Center Depth in	Top Chord Pitch in/ft	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
				300	350	400	450	500	550	600	650	700	750	800
				Joist Self-Weight - Pounds per Linear Foot (**plf**)										
70	27.3	36	0.250	21	25	29	32	35	39	45	50	50	55	58
70	22.9	36	0.375	21	25	28	31	35	39	46	50	50	55	58
70	18.5	36	0.500	22	26	29	32	35	39	46	50	51	58	58
70	14.1	36	0.625	24	28	30	34	37	41	51	51	55	59	63
70	9.8	36	0.750	25	29	32	38	41	52	52	57	60	63	67
70	5.4	36	0.875	29	32	38	42	52	52	60	64	68	76	82
70	32.9	46	0.375	20	21	23	26	29	30	33	36	38	40	47
70	28.5	46	0.500	20	20	24	26	28	31	33	36	39	41	46
70	24.1	46	0.625	20	21	24	26	29	32	34	37	40	42	51
70	19.8	46	0.750	19	22	25	28	30	32	37	38	42	46	51
70	15.4	46	0.875	20	22	26	29	31	34	37	40	48	51	51
70	11.0	46	1.000	20	25	28	29	32	37	40	41	51	52	52
70	36.1	58	0.625	20	20	21	23	24	26	29	31	33	35	37
70	31.8	58	0.750	20	20	21	22	25	27	29	31	33	35	37
70	27.4	58	0.875	20	20	21	23	25	27	29	31	34	35	37
70	23.0	58	1.000	20	20	21	23	26	27	29	32	35	37	38
70	14.3	58	1.250	20	20	22	25	27	29	32	35	38	39	43
70	5.5	58	1.500	20	22	26	29	32	35	38	41	48	52	52
70	48.1	70	0.625	20	21	21	21	23	24	25	27	30	32	33
70	43.8	70	0.750	20	20	21	22	23	24	25	27	30	32	34
70	39.4	70	0.875	20	20	21	21	23	24	25	27	30	32	34
70	35.0	70	1.000	20	20	21	21	22	24	26	27	30	32	33
70	26.3	70	1.250	20	20	21	22	22	24	27	28	30	33	34
70	17.5	70	1.500	20	20	21	22	23	25	27	29	32	33	35
70	57.8	84	0.750	21	21	22	23	23	25	26	27	30	31	33
70	53.4	84	0.875	21	21	22	23	24	25	26	27	29	31	32
70	49.0	84	1.000	21	21	22	22	23	25	26	26	29	31	32
70	40.3	84	1.250	21	21	21	22	23	24	25	26	28	31	32
70	31.5	84	1.500	21	21	21	22	23	24	25	26	28	30	33
70	14.0	84	2.000	20	21	21	22	23	24	26	29	30	31	34
70	71.8	98	0.750	23	24	24	24	25	27	28	28	30	32	33
70	67.4	98	0.875	23	23	23	23	25	25	27	28	29	32	32
70	63.0	98	1.000	23	23	23	24	24	25	27	28	29	31	33
70	54.3	98	1.250	22	22	23	23	24	25	26	27	29	31	32
70	45.5	98	1.500	22	22	23	23	23	24	26	26	27	29	32
70	28.0	98	2.000	21	22	22	23	23	24	25	26	28	29	31
70	81.4	112	0.875	25	27	27	27	27	30	30	30	32	35	35
70	77.0	112	1.000	24	26	26	26	27	30	30	30	31	32	33
70	68.3	112	1.250	25	25	26	26	27	28	29	30	31	32	35
70	59.5	112	1.500	24	24	24	25	26	27	28	29	30	33	33
70	42.0	112	2.000	23	23	23	24	25	26	27	28	29	32	33
70	7.0	112	3.000	22	23	23	23	24	25	26	27	29	31	33
70	95.4	126	0.875	28	28	29	31	31	31	32	34	36	36	38
70	91.0	126	1.000	28	28	31	31	31	33	34	36	36	38	38
70	82.3	126	1.250	27	29	29	30	32	32	32	32	34	38	38
70	73.5	126	1.500	26	27	28	29	29	31	31	32	33	33	37
70	56.0	126	2.000	26	26	27	27	28	29	30	30	32	34	35
70	21.0	126	3.000	24	24	25	26	26	27	27	29	31	31	34
70	109.4	140	0.875	34	36	36	37	39	40	40	42	42	44	47
70	105.0	140	1.000	32	36	36	36	38	38	39	41	41	41	43
70	96.3	140	1.250	31	32	33	34	34	35	36	38	39	40	41
70	87.5	140	1.500	30	30	33	34	35	35	35	37	38	39	40
70	70.0	140	2.000	28	30	30	31	32	33	33	34	35	36	38
70	35.0	140	3.000	26	26	27	27	28	29	30	30	31	32	35
70	119.0	154	1.000	40	40	42	43	44	44	46	48	53	53	54
70	110.3	154	1.250	37	38	38	38	41	41	42	43	44	44	47
70	101.5	154	1.500	34	36	37	37	38	40	41	42	42	43	44
70	84.0	154	2.000	32	32	34	35	36	37	37	37	40	41	42
70	49.0	154	3.000	29	29	30	30	32	32	33	33	34	35	37
70	14.0	154	4.000	27	27	29	29	29	31	31	32	33	33	36

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Gable Joist (SPGB) Tables

Span	End Depth	Center Depth	Top Chord Pitch	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
				300	350	400	450	500	550	600	650	700	750	800
ft	in	in	in/ft	Joist Self-Weight - Pounds per Linear Foot (**plf**)										
80	30.0	40	0.250	26	30	34	38	44	50	50	57	62	65	70
80	25.0	40	0.375	26	30	35	38	46	50	50	58	62	65	70
80	20.0	40	0.500	26	31	34	39	46	51	51	58	62	66	70
80	15.0	40	0.625	28	32	36	41	51	51	54	59	66	66	74
80	10.0	40	0.750	29	34	40	52	52	55	60	67	67	75	85
80	5.0	40	0.875	34	39	52	52	60	67	67	82	85	98	106
80	35.0	50	0.375	21	25	28	30	33	36	40	42	51	51	51
80	30.0	50	0.500	21	26	28	30	34	37	40	47	50	51	52
80	25.0	50	0.625	22	26	28	31	34	38	41	51	51	51	55
80	20.0	50	0.750	22	26	30	33	37	40	42	51	52	52	59
80	15.0	50	0.875	23	28	30	34	39	42	52	52	52	59	59
80	10.0	50	1.000	26	29	33	37	41	51	52	53	60	60	67
80	42.0	62	0.500	21	22	23	27	29	32	33	36	38	42	48
80	37.0	62	0.625	21	21	24	27	29	32	35	36	38	41	48
80	32.0	62	0.750	21	22	25	26	29	32	35	38	39	43	47
80	27.0	62	0.875	20	21	24	27	29	32	35	37	41	47	52
80	22.0	62	1.000	20	23	26	28	30	33	38	39	42	47	52
80	12.0	62	1.250	21	25	29	30	33	38	41	43	52	52	52
80	51.0	76	0.625	21	21	23	24	26	29	31	33	35	38	39
80	46.0	76	0.750	21	21	22	24	26	28	31	33	35	37	39
80	41.0	76	0.875	21	21	23	24	27	28	31	33	35	37	39
80	36.0	76	1.000	20	21	22	24	26	29	31	34	35	38	40
80	26.0	76	1.250	20	21	23	24	27	30	33	33	36	39	42
80	16.0	76	1.500	21	21	23	27	30	32	33	36	39	41	44
80	60.0	90	0.750	22	22	23	25	26	28	30	32	34	36	38
80	55.0	90	0.875	22	22	23	24	26	27	30	32	34	35	38
80	50.0	90	1.000	22	22	23	25	25	28	31	32	35	36	38
80	40.0	90	1.250	21	22	22	24	25	28	30	31	34	37	37
80	30.0	90	1.500	21	21	22	24	25	28	30	32	34	36	38
80	10.0	90	2.000	21	22	22	26	28	31	32	36	36	40	43
80	74.0	104	0.750	24	24	26	27	29	29	31	33	35	36	39
80	69.0	104	0.875	23	24	25	26	28	28	30	33	35	36	38
80	64.0	104	1.000	23	24	25	26	27	28	31	32	34	36	37
80	54.0	104	1.250	23	23	24	25	26	27	29	32	33	34	37
80	44.0	104	1.500	22	23	24	25	26	27	29	30	33	35	36
80	24.0	104	2.000	22	22	23	24	25	27	29	31	33	35	36
80	88.0	118	0.750	28	28	28	29	31	31	33	36	38	38	41
80	83.0	118	0.875	27	27	29	30	30	31	32	35	35	37	39
80	78.0	118	1.000	27	27	28	28	30	31	31	33	36	36	39
80	68.0	118	1.250	26	26	27	28	29	30	32	33	35	37	38
80	58.0	118	1.500	24	25	26	26	29	29	31	33	35	35	38
80	38.0	118	2.000	24	24	25	26	27	28	29	32	34	36	37
80	97.0	132	0.875	31	31	33	34	34	35	37	39	41	42	43
80	92.0	132	1.000	30	31	32	33	33	34	35	37	40	41	42
80	82.0	132	1.250	29	30	30	32	33	33	34	36	38	40	41
80	72.0	132	1.500	27	29	30	31	31	32	33	35	38	38	41
80	52.0	132	2.000	26	27	28	28	30	31	32	35	36	38	39
80	12.0	132	3.000	25	25	25	27	28	28	30	32	35	35	38
80	111.0	146	0.875	33	35	36	37	38	39	41	42	42	44	47
80	106.0	146	1.000	33	34	35	35	37	37	39	41	45	45	46
80	96.0	146	1.250	34	35	35	37	37	39	39	42	43	44	45
80	86.0	146	1.500	32	34	34	34	34	36	37	39	41	42	42
80	66.0	146	2.000	29	31	31	34	34	34	35	38	40	40	42
80	26.0	146	3.000	27	27	27	30	30	30	32	33	35	37	39
80	125.0	160	0.875	41	42	43	45	46	47	47	49	54	54	55
80	120.0	160	1.000	40	40	42	43	45	45	47	49	54	54	54
80	110.0	160	1.250	37	38	39	41	42	44	44	44	46	49	52
80	100.0	160	1.500	38	40	40	41	42	43	43	43	48	49	49
80	80.0	160	2.000	34	35	36	38	38	38	39	41	41	44	45
80	40.0	160	3.000	29	31	32	32	34	35	36	37	38	40	42

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Gable Joist (SPGB) Tables

Span	End Depth	Center Depth	Top Chord Pitch	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
				300	350	400	450	500	550	600	650	700	750	800
ft	in	in	in/ft	Joist Self-Weight - Pounds per Linear Foot (**plf**)										
90	34.8	46	0.250	28	32	36	40	46	50	54	58	66	71	73
90	29.1	46	0.375	28	32	36	40	50	50	54	58	65	70	73
90	23.5	46	0.500	30	32	38	41	50	51	59	59	66	69	74
90	17.9	46	0.625	29	34	40	51	51	56	59	66	66	74	80
90	12.3	46	0.750	32	37	41	51	51	60	66	66	75	85	85
90	6.6	46	0.875	37	42	52	56	59	67	76	85	85	103	103
90	41.1	58	0.375	23	27	30	33	37	40	48	51	52	56	60
90	35.5	58	0.500	24	27	30	33	37	40	47	51	51	56	60
90	29.9	58	0.625	24	28	31	34	37	40	51	52	52	59	59
90	24.3	58	0.750	25	28	32	35	38	42	51	52	56	59	59
90	18.6	58	0.875	26	30	33	37	41	46	52	52	60	60	67
90	13.0	58	1.000	27	32	34	40	47	52	52	60	60	67	67
90	49.5	72	0.500	23	24	26	29	33	35	38	40	43	49	53
90	43.9	72	0.625	23	24	26	30	32	36	37	40	42	49	53
90	38.3	72	0.750	23	24	27	30	33	36	39	42	48	49	53
90	32.6	72	0.875	22	24	27	29	32	35	38	41	47	53	53
90	27.0	72	1.000	23	25	27	31	32	37	39	41	48	53	53
90	15.8	72	1.250	24	27	30	32	35	39	43	53	53	53	61
90	57.9	86	0.625	24	25	25	27	31	34	36	37	40	43	49
90	52.3	86	0.750	24	24	25	28	31	33	36	37	40	42	48
90	46.6	86	0.875	24	24	25	27	30	33	35	38	39	42	48
90	41.0	86	1.000	24	24	25	27	30	33	35	38	40	42	47
90	29.8	86	1.250	24	24	25	28	30	34	36	38	41	43	48
90	18.5	86	1.500	23	25	26	30	32	35	38	40	42	50	53
90	66.3	100	0.750	25	25	26	27	30	32	35	37	39	41	44
90	60.6	100	0.875	25	25	26	27	29	32	34	37	38	40	43
90	55.0	100	1.000	25	25	26	26	29	32	34	39	39	42	44
90	43.8	100	1.250	25	25	25	26	29	32	34	37	38	41	44
90	32.5	100	1.500	24	24	25	26	28	31	34	36	38	40	44
90	10.0	100	2.000	24	24	26	29	32	34	37	40	44	49	54
90	80.3	114	0.750	28	28	28	30	31	34	36	38	39	42	43
90	74.6	114	0.875	28	28	29	29	30	33	35	37	39	41	43
90	69.0	114	1.000	28	28	28	29	30	33	35	37	39	41	43
90	57.8	114	1.250	27	27	27	28	29	32	34	36	38	39	41
90	46.5	114	1.500	26	27	27	27	29	31	34	36	38	40	41
90	24.0	114	2.000	25	25	26	27	29	32	35	37	38	41	43
90	94.3	128	0.750	32	32	32	33	34	36	39	41	41	45	46
90	88.6	128	0.875	31	31	32	32	33	35	38	39	40	44	45
90	83.0	128	1.000	30	31	31	32	33	35	37	39	41	42	45
90	71.8	128	1.250	30	30	31	31	32	35	37	38	40	40	44
90	60.5	128	1.500	28	29	30	30	30	33	36	37	39	41	43
90	38.0	128	2.000	27	28	28	29	30	32	35	37	38	40	42
90	102.6	142	0.875	35	35	35	36	38	40	42	43	45	46	50
90	97.0	142	1.000	34	34	34	35	38	40	41	41	44	44	49
90	85.8	142	1.250	34	34	34	34	35	37	40	43	43	46	46
90	74.5	142	1.500	32	32	33	34	34	36	38	40	42	43	45
90	52.0	142	2.000	30	30	31	31	32	33	37	38	40	41	43
90	7.0	142	3.000	28	28	29	29	31	34	36	38	40	42	44
90	116.6	156	0.875	38	39	39	41	43	44	47	50	52	53	55
90	111.0	156	1.000	36	40	41	43	45	46	46	49	51	51	54
90	99.8	156	1.250	37	38	38	39	39	41	46	46	46	48	51
90	88.5	156	1.500	35	35	37	37	37	39	42	45	45	48	48
90	66.0	156	2.000	33	34	34	36	36	38	40	42	45	46	48
90	21.0	156	3.000	30	31	31	32	34	35	36	38	41	42	44
90	130.6	170	0.875	44	46	48	48	49	51	58	58	58	59	60
90	125.0	170	1.000	41	42	44	46	47	48	49	52	56	57	59
90	113.8	170	1.250	40	43	44	46	48	48	49	51	54	56	57
90	102.5	170	1.500	40	40	40	43	45	46	47	48	48	50	56
90	80.0	170	2.000	36	36	36	39	41	42	43	44	46	49	53
90	35.0	170	3.000	33	33	34	35	35	41	41	41	44	44	47

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Gable Joist (SPGB) Tables

Span ft	End Depth in	Center Depth in	Top Chord Pitch in/ft	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**) 300	350	400	450	500	550	600	650	700	750	800
				Joist Self-Weight - Pounds per Linear Foot (**plf**)										
100	37.5	50	0.250	32	36	45	50	54	58	63	71	74	82	92
100	31.3	50	0.375	32	36	47	50	55	58	62	70	73	83	92
100	25.0	50	0.500	32	38	46	50	55	59	66	71	74	83	93
100	18.8	50	0.625	34	40	50	51	59	63	66	75	80	84	100
100	12.5	50	0.750	37	41	51	56	60	67	75	85	85	103	103
100	6.3	50	0.875	41	52	60	63	73	81	84	103	119	128	128
100	43.3	62	0.375	27	30	34	37	42	51	52	56	59	63	67
100	37.0	62	0.500	27	30	34	39	42	51	51	56	59	64	67
100	30.8	62	0.625	28	31	34	38	47	51	52	59	59	67	68
100	24.5	62	0.750	28	31	37	40	47	51	56	60	64	67	72
100	18.3	62	0.875	30	33	39	42	51	51	59	59	68	71	74
100	12.0	62	1.000	32	38	42	52	52	60	60	67	75	81	85
100	51.0	76	0.500	25	28	30	34	37	39	43	49	54	55	58
100	44.8	76	0.625	24	27	30	33	37	39	42	48	53	54	57
100	38.5	76	0.750	24	27	30	33	38	42	48	53	53	57	61
100	32.3	76	0.875	24	28	31	35	38	42	48	52	53	56	61
100	26.0	76	1.000	25	29	32	35	38	43	52	52	53	60	61
100	13.5	76	1.250	27	31	35	39	42	52	53	57	61	65	69
100	58.8	90	0.625	25	25	28	31	35	37	40	43	49	50	55
100	52.5	90	0.750	25	25	28	32	36	39	40	43	48	50	55
100	46.3	90	0.875	24	26	29	32	35	38	41	44	50	50	54
100	40.0	90	1.000	24	26	28	31	35	37	40	43	50	54	55
100	27.5	90	1.250	24	27	30	33	36	39	42	48	53	54	55
100	15.0	90	1.500	25	28	32	35	39	42	49	54	54	58	62
100	72.8	104	0.625	27	27	28	31	34	36	39	41	44	49	51
100	66.5	104	0.750	26	27	28	31	33	36	38	42	44	48	51
100	60.3	104	0.875	26	26	27	32	34	37	38	42	44	48	50
100	54.0	104	1.000	25	26	27	31	34	36	38	41	44	49	50
100	41.5	104	1.250	25	26	28	31	34	37	39	41	44	48	51
100	29.0	104	1.500	25	25	28	31	34	36	39	43	44	50	55
100	80.5	118	0.750	29	30	31	32	35	37	40	40	43	47	50
100	74.3	118	0.875	28	29	30	32	35	37	39	41	43	46	50
100	68.0	118	1.000	28	28	30	32	35	37	39	41	43	46	49
100	55.5	118	1.250	27	28	29	31	34	36	38	42	42	46	49
100	43.0	118	1.500	27	27	28	31	33	36	39	41	43	46	49
100	18.0	118	2.000	26	26	29	31	33	36	39	42	45	51	51
100	94.5	132	0.750	32	32	34	35	38	40	42	43	46	49	52
100	88.3	132	0.875	31	31	33	34	36	39	40	42	45	47	52
100	82.0	132	1.000	31	32	33	34	37	38	40	42	46	46	54
100	69.5	132	1.250	30	30	31	33	35	37	39	41	44	46	51
100	57.0	132	1.500	29	30	30	31	35	36	38	41	44	44	51
100	32.0	132	2.000	28	28	29	31	33	36	38	41	42	46	50
100	108.5	146	0.750	37	37	37	41	43	45	46	48	50	50	57
100	102.3	146	0.875	35	35	37	38	38	40	43	46	48	50	55
100	96.0	146	1.000	35	35	36	37	40	41	43	45	48	49	55
100	83.5	146	1.250	34	34	35	36	38	41	42	44	46	49	54
100	71.0	146	1.500	32	32	34	34	37	38	41	43	45	46	53
100	46.0	146	2.000	30	31	31	32	36	37	40	42	43	45	52
100	116.3	160	0.875	40	40	41	44	46	47	48	50	53	58	59
100	110.0	160	1.000	39	39	41	42	44	46	47	49	53	57	58
100	97.5	160	1.250	38	39	40	40	42	46	46	50	50	57	57
100	85.0	160	1.500	35	37	38	40	42	44	45	47	49	54	57
100	60.0	160	2.000	33	35	35	36	38	41	43	46	46	48	51
100	10.0	160	3.000	31	31	32	34	36	39	40	43	46	48	52
100	130.3	174	0.875	44	46	48	49	49	52	57	58	59	59	64
100	124.0	174	1.000	44	46	48	48	51	51	54	56	57	62	63
100	111.5	174	1.250	41	41	45	46	49	49	51	53	59	59	61
100	99.0	174	1.500	39	41	41	43	45	50	50	51	55	56	58
100	74.0	174	2.000	38	39	39	40	42	45	47	47	49	57	57
100	24.0	174	3.000	32	34	35	36	38	40	42	44	46	52	52

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

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Gable Joist (SPGB) Tables

Span ft	End Depth in	Center Depth in	Top Chord Pitch in/ft	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
				300	350	400	450	500	550	600	650	700	750	800
				Joist Self-Weight - Pounds per Linear Foot (**plf**)										
110	42.3	56	0.250	34	39	46	51	55	63	66	73	79	83	93
110	35.4	56	0.375	34	39	46	50	59	62	66	73	79	84	93
110	28.5	56	0.500	34	39	50	51	59	62	66	74	82	83	100
110	21.6	56	0.625	36	41	51	54	59	66	75	80	84	101	101
110	14.8	56	0.750	40	52	52	59	67	71	81	85	103	103	117
110	7.9	56	0.875	47	51	60	67	76	85	102	102	120	127	127
110	47.4	68	0.375	29	34	38	41	52	52	56	60	64	68	72
110	40.5	68	0.500	29	33	37	42	52	52	56	60	68	68	75
110	33.6	68	0.625	30	34	38	47	51	52	59	60	67	71	75
110	26.8	68	0.750	31	35	40	48	51	55	59	64	67	76	80
110	19.9	68	0.875	32	37	42	52	52	60	64	67	75	80	85
110	13.0	68	1.000	34	40	52	52	60	64	67	75	82	86	95
110	52.5	80	0.500	28	30	34	38	42	49	54	54	58	62	65
110	45.6	80	0.625	27	30	34	39	42	48	54	54	58	62	66
110	38.8	80	0.750	27	30	35	39	42	49	53	58	61	62	65
110	31.9	80	0.875	27	31	36	38	43	52	53	58	61	64	69
110	25.0	80	1.000	29	32	38	42	48	53	53	59	61	68	71
110	11.3	80	1.250	33	38	41	53	53	61	61	68	72	77	87
110	57.6	92	0.625	28	29	32	36	40	43	48	50	55	59	59
110	50.8	92	0.750	28	29	32	36	39	43	50	50	55	59	60
110	43.9	92	0.875	28	29	32	37	40	43	50	54	55	58	63
110	37.0	92	1.000	28	29	33	37	40	43	50	54	55	58	63
110	23.3	92	1.250	28	30	33	40	42	49	53	54	58	62	66
110	9.5	92	1.500	30	35	38	44	53	54	58	62	69	70	77
110	69.6	104	0.625	29	31	33	36	39	42	45	50	52	53	58
110	62.8	104	0.750	28	30	32	35	38	41	43	50	52	52	60
110	55.9	104	0.875	28	29	32	35	37	41	44	49	52	56	60
110	49.0	104	1.000	28	29	31	34	37	40	43	48	51	56	59
110	35.3	104	1.250	28	29	31	35	38	41	44	50	55	56	59
110	21.5	104	1.500	28	29	33	37	40	43	49	54	55	59	62
110	74.8	116	0.750	31	32	33	36	38	40	43	45	50	53	55
110	67.9	116	0.875	30	31	33	36	38	40	43	45	50	52	55
110	61.0	116	1.000	30	30	33	35	38	39	42	45	51	52	54
110	47.3	116	1.250	29	30	31	34	38	39	42	45	51	53	57
110	33.5	116	1.500	28	30	32	34	37	40	43	49	51	57	58
110	6.0	116	2.000	29	32	36	40	43	50	55	55	63	64	67
110	86.8	128	0.750	34	34	36	38	39	41	45	47	52	53	56
110	79.9	128	0.875	32	34	35	37	39	41	44	46	51	52	55
110	73.0	128	1.000	32	34	35	37	38	41	44	47	50	53	54
110	59.3	128	1.250	31	32	34	37	37	40	43	46	50	51	54
110	45.5	128	1.500	30	31	33	35	38	41	44	46	50	52	54
110	18.0	128	2.000	29	31	32	35	38	41	44	51	52	56	58
110	98.8	140	0.750	35	37	40	41	43	44	46	49	53	54	56
110	91.9	140	0.875	36	37	38	40	41	44	44	48	51	55	55
110	85.0	140	1.000	35	36	37	39	40	42	45	48	52	53	54
110	71.3	140	1.250	33	34	35	37	40	40	43	46	52	52	54
110	57.5	140	1.500	33	34	35	37	39	40	42	46	51	51	52
110	30.0	140	2.000	31	32	34	35	38	41	42	46	51	53	54
110	110.8	152	0.750	39	42	42	45	45	48	49	52	57	58	58
110	103.9	152	0.875	38	40	41	43	45	46	49	52	53	56	59
110	97.0	152	1.000	37	39	40	42	43	45	48	51	55	55	58
110	83.3	152	1.250	37	38	39	41	42	43	45	48	51	55	56
110	69.5	152	1.500	35	36	37	39	42	42	44	48	53	54	55
110	42.0	152	2.000	33	34	36	37	39	40	43	46	52	52	54
110	122.8	164	0.750	44	45	48	48	49	50	52	58	59	61	62
110	115.9	164	0.875	43	45	45	47	48	48	51	54	58	60	61
110	109.0	164	1.000	42	43	44	46	47	48	50	53	59	59	60
110	95.3	164	1.250	40	42	43	44	46	47	49	52	56	57	60
110	81.5	164	1.500	39	39	40	43	44	44	47	50	52	57	58
110	54.0	164	2.000	36	37	38	41	43	43	45	48	53	55	55

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Gable Joist (SPGB) Tables

Span ft	End Depth in	Center Depth in	Top Chord Pitch in/ft	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**) 300	350	400	450	500	550	600	650	700	750	800
				Joist Self-Weight - Pounds per Linear Foot (**plf**)										
120	45.0	60	0.250	38	46	51	58	62	70	75	84	93	99	100
120	37.5	60	0.375	38	46	50	58	62	70	79	83	93	100	101
120	30.0	60	0.500	38	51	51	59	66	71	80	84	93	101	101
120	22.5	60	0.625	40	51	55	59	67	75	83	83	100	100	117
120	15.0	60	0.750	47	51	59	67	75	84	84	103	116	126	126
120	7.5	60	0.875	52	60	67	75	85	103	103	127	127	127	150
120	49.5	72	0.375	33	38	42	52	53	60	61	68	72	76	86
120	42.0	72	0.500	32	38	43	52	52	59	64	68	75	80	84
120	34.5	72	0.625	33	37	48	52	56	60	64	68	75	81	84
120	27.0	72	0.750	35	40	52	52	60	60	67	75	80	85	94
120	19.5	72	0.875	37	42	52	52	60	68	72	82	85	95	104
120	12.0	72	1.000	40	52	52	59	68	72	82	86	104	104	117
120	54.0	84	0.500	30	34	39	43	49	54	58	62	65	69	73
120	46.5	84	0.625	30	34	39	42	48	53	57	62	65	70	73
120	39.0	84	0.750	30	36	38	44	52	54	57	61	65	72	76
120	31.5	84	0.875	31	36	40	49	53	53	61	65	69	73	76
120	24.0	84	1.000	33	38	41	53	53	57	60	69	73	76	82
120	9.0	84	1.250	38	43	53	57	61	68	77	81	86	103	103
120	58.5	96	0.625	29	32	37	40	44	50	54	56	60	63	68
120	51.0	96	0.750	29	32	36	40	44	50	55	58	59	66	67
120	43.5	96	0.875	29	32	38	40	43	49	55	59	63	66	67
120	36.0	96	1.000	29	34	37	40	49	54	55	58	62	65	70
120	21.0	96	1.250	31	35	39	44	54	54	58	62	66	69	78
120	6.0	96	1.500	36	42	53	53	61	66	68	76	87	87	104
120	70.5	108	0.625	30	33	36	39	43	45	50	53	58	62	63
120	63.0	108	0.750	30	32	36	39	42	46	51	52	58	60	62
120	55.5	108	0.875	30	32	35	40	43	46	51	57	57	61	65
120	48.0	108	1.000	29	31	36	40	43	48	51	56	59	60	65
120	33.0	108	1.250	29	32	35	39	44	50	55	56	60	64	66
120	18.0	108	1.500	30	34	37	43	50	55	55	59	63	67	71
120	82.5	120	0.625	32	35	36	39	42	45	51	53	55	60	63
120	75.0	120	0.750	32	33	36	39	41	45	51	52	55	62	63
120	67.5	120	0.875	31	34	36	38	41	45	50	53	54	62	63
120	60.0	120	1.000	31	32	35	39	41	44	51	53	54	62	62
120	45.0	120	1.250	30	32	35	38	41	45	50	52	57	61	61
120	30.0	120	1.500	30	32	36	39	42	45	51	56	57	60	65
120	87.0	132	0.750	34	36	38	42	42	45	49	52	55	58	61
120	79.5	132	0.875	34	35	37	39	41	44	48	53	55	57	60
120	72.0	132	1.000	34	35	37	40	41	44	47	52	55	57	65
120	57.0	132	1.250	32	34	36	41	41	44	47	53	55	56	63
120	42.0	132	1.500	31	33	34	38	40	45	49	51	55	59	63
120	12.0	132	2.000	31	34	37	41	46	51	57	58	61	66	69
120	99.0	144	0.750	38	39	41	44	45	48	50	56	57	58	63
120	91.5	144	0.875	37	38	40	43	43	46	50	54	56	57	59
120	84.0	144	1.000	36	37	40	42	43	46	49	53	55	57	62
120	69.0	144	1.250	35	36	38	42	42	45	49	52	53	57	59
120	54.0	144	1.500	33	35	37	39	41	44	48	51	54	57	60
120	24.0	144	2.000	31	33	36	40	41	45	52	53	54	60	63
120	111.0	156	0.750	42	43	46	47	47	50	53	57	60	62	62
120	103.5	156	0.875	40	41	44	46	46	50	54	56	58	60	64
120	96.0	156	1.000	39	42	43	47	47	49	52	56	57	61	61
120	81.0	156	1.250	38	39	42	43	43	46	50	54	55	57	61
120	66.0	156	1.500	35	38	40	41	43	46	49	54	54	57	60
120	36.0	156	2.000	34	36	38	40	42	45	48	52	54	56	61
120	123.0	168	0.750	46	46	48	49	52	53	60	61	62	66	68
120	115.5	168	0.875	45	45	47	48	50	51	58	59	61	63	66
120	108.0	168	1.000	43	44	47	48	48	51	54	58	61	61	63
120	93.0	168	1.250	40	43	45	48	48	50	52	58	58	59	63
120	78.0	168	1.500	40	41	42	44	45	48	51	56	57	59	60
120	48.0	168	2.000	37	38	40	42	43	45	49	55	55	56	58

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Gable Joist (SPGB) Tables

Span	End Depth	Center Depth	Top Chord Pitch	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
				300	350	400	450	500	550	600	650	700	750	800
ft	in	in	in/ft	Joist Self-Weight - Pounds per Linear Foot (**plf**)										
130	49.8	66	0.250	40	51	55	59	67	74	80	84	92	101	114
130	41.6	66	0.375	40	51	55	60	67	73	79	84	100	101	114
130	33.5	66	0.500	40	51	55	59	66	74	83	84	101	101	113
130	25.4	66	0.625	47	51	59	66	71	80	84	102	102	114	123
130	17.3	66	0.750	51	56	59	67	82	84	103	103	117	125	125
130	9.1	66	0.875	51	59	67	80	85	103	120	127	127	140	149
130	53.6	78	0.375	36	41	48	53	57	61	69	72	80	85	86
130	45.5	78	0.500	36	41	52	53	60	65	68	75	80	86	94
130	37.4	78	0.625	36	41	52	53	60	65	68	76	85	85	102
130	29.3	78	0.750	37	42	52	56	60	68	76	81	85	95	102
130	21.1	78	0.875	40	52	53	60	65	72	80	86	96	103	103
130	13.0	78	1.000	43	52	60	64	73	81	86	104	104	118	126
130	57.5	90	0.500	34	38	43	49	54	58	62	66	70	74	82
130	49.4	90	0.625	33	38	42	49	54	58	63	65	72	76	81
130	41.3	90	0.750	33	39	42	53	53	58	62	69	73	77	82
130	33.1	90	0.875	33	38	44	53	54	61	66	69	77	82	86
130	25.0	90	1.000	36	42	48	53	58	61	69	73	82	87	95
130	8.8	90	1.250	41	53	53	61	68	76	82	85	104	104	116
130	69.5	102	0.500	32	36	40	43	50	56	59	60	67	68	75
130	61.4	102	0.625	31	36	40	44	50	56	59	60	68	68	74
130	53.3	102	0.750	32	36	40	44	50	56	59	63	67	71	75
130	45.1	102	0.875	32	36	40	44	49	55	59	63	67	71	74
130	37.0	102	1.000	31	37	40	50	54	55	58	66	70	73	78
130	20.8	102	1.250	33	39	43	54	54	62	65	69	74	83	87
130	73.4	114	0.625	34	36	40	43	49	52	58	61	62	69	70
130	65.3	114	0.750	32	36	39	43	50	52	58	61	62	68	70
130	57.1	114	0.875	32	35	39	44	50	51	57	60	62	68	70
130	49.0	114	1.000	31	35	40	44	49	51	57	60	65	68	70
130	32.8	114	1.250	32	36	39	44	50	55	59	64	68	71	75
130	16.5	114	1.500	33	37	43	50	55	60	63	68	71	79	84
130	85.4	126	0.625	35	37	40	43	47	52	54	57	63	66	68
130	77.3	126	0.750	34	37	39	43	46	51	53	55	63	64	67
130	69.1	126	0.875	34	36	39	42	46	52	54	60	63	65	67
130	61.0	126	1.000	33	35	39	43	46	52	53	59	62	63	70
130	44.8	126	1.250	32	36	39	42	46	52	57	61	62	69	69
130	28.5	126	1.500	32	36	39	42	49	52	57	61	65	68	72
130	89.3	138	0.750	37	38	41	43	47	52	54	56	61	66	67
130	81.1	138	0.875	36	38	40	42	46	52	53	55	60	65	66
130	73.0	138	1.000	36	37	40	43	47	52	54	57	58	65	65
130	56.8	138	1.250	34	36	39	42	46	50	53	56	63	64	65
130	40.5	138	1.500	33	34	40	43	46	51	54	59	64	64	71
130	8.0	138	2.000	33	38	43	48	57	58	61	66	73	77	80
130	101.3	150	0.750	40	43	44	46	49	55	55	58	61	66	71
130	93.1	150	0.875	40	41	44	45	50	53	55	57	62	65	69
130	85.0	150	1.000	38	41	42	45	47	55	55	56	58	63	69
130	68.8	150	1.250	37	39	41	43	47	52	54	57	60	66	67
130	52.5	150	1.500	35	38	40	43	46	51	53	55	60	65	67
130	20.0	150	2.000	34	36	39	43	47	52	55	60	63	64	70
130	113.3	162	0.750	44	47	48	49	51	55	60	61	64	69	70
130	105.1	162	0.875	42	45	47	48	50	53	58	59	62	66	69
130	97.0	162	1.000	43	43	46	47	50	54	56	59	61	65	67
130	80.8	162	1.250	40	42	44	45	48	51	55	56	60	62	67
130	64.5	162	1.500	38	40	41	44	48	53	54	56	59	63	67
130	32.0	162	2.000	36	37	40	43	48	53	55	57	62	65	67
130	125.3	174	0.750	48	49	49	51	54	57	63	64	66	71	72
130	117.1	174	0.875	45	49	49	49	53	58	60	63	64	68	70
130	109.0	174	1.000	44	47	48	50	52	57	60	61	63	67	69
130	92.8	174	1.250	42	45	45	48	51	56	57	60	61	64	69
130	76.5	174	1.500	42	43	46	47	50	53	58	58	61	64	68
130	44.0	174	2.000	38	40	42	44	48	53	55	55	60	62	68

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Gable Joist (SPGB) Tables

Span ft	End Depth in	Center Depth in	Top Chord Pitch in/ft	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**) 300	350	400	450	500	550	600	650	700	750	800
				Joist Self-Weight - Pounds per Linear Foot (**plf**)										
140	52.5	70	0.250	48	52	59	67	74	79	94	101	101	114	123
140	43.8	70	0.375	47	51	59	67	74	79	93	101	101	113	123
140	35.0	70	0.500	51	52	59	66	74	85	94	101	113	123	123
140	26.3	70	0.625	51	55	63	71	80	85	102	102	125	125	126
140	17.5	70	0.750	52	59	67	75	85	103	103	126	127	127	150
140	8.8	70	0.875	59	67	81	85	102	115	126	127	148	148	172
140	55.8	82	0.375	39	48	53	57	62	69	76	81	86	93	102
140	47.0	82	0.500	38	48	53	57	64	69	76	81	86	101	101
140	38.3	82	0.625	41	52	53	60	65	72	79	84	95	102	102
140	29.5	82	0.750	41	52	56	61	68	75	81	85	102	102	116
140	20.8	82	0.875	47	53	60	67	72	81	85	103	103	116	126
140	12.0	82	1.000	52	57	64	72	82	86	104	119	126	126	128
140	67.8	94	0.375	36	41	50	54	59	63	66	74	78	83	88
140	59.0	94	0.500	37	41	49	54	58	63	66	73	78	83	88
140	50.3	94	0.625	37	42	49	54	58	63	69	73	80	85	95
140	41.5	94	0.750	37	42	53	54	62	65	70	77	82	86	95
140	32.8	94	0.875	38	44	53	54	61	68	73	77	87	94	103
140	24.0	94	1.000	39	48	52	62	65	69	76	81	86	104	104
140	71.0	106	0.500	35	40	44	51	56	60	64	68	75	76	83
140	62.3	106	0.625	36	40	44	50	56	60	64	67	74	76	83
140	53.5	106	0.750	35	40	44	50	56	60	64	67	75	79	84
140	44.8	106	0.875	35	40	44	54	55	60	66	70	74	79	83
140	36.0	106	1.000	35	40	49	54	58	62	67	71	78	82	88
140	18.5	106	1.250	40	44	54	58	62	69	74	83	87	98	105
140	74.3	118	0.625	35	40	43	51	53	59	62	63	70	73	78
140	65.5	118	0.750	35	39	43	50	52	58	62	66	70	72	78
140	56.8	118	0.875	35	39	43	50	52	58	61	68	69	75	77
140	48.0	118	1.000	35	40	44	50	56	57	61	67	69	75	77
140	30.5	118	1.250	35	40	44	51	56	59	64	68	76	78	84
140	13.0	118	1.500	38	43	55	55	63	67	71	78	83	89	105
140	86.3	130	0.625	37	41	44	47	53	55	62	65	67	73	76
140	77.5	130	0.750	37	39	43	47	53	55	61	64	66	72	76
140	68.8	130	0.875	36	39	43	47	52	54	61	64	66	72	76
140	60.0	130	1.000	35	39	43	47	52	54	62	63	70	72	74
140	42.5	130	1.250	34	39	42	47	53	58	62	62	69	71	77
140	25.0	130	1.500	35	40	44	51	57	61	64	68	73	75	80
140	98.3	142	0.625	40	42	45	48	54	56	59	66	68	72	73
140	89.5	142	0.750	39	41	43	47	53	56	58	65	67	71	75
140	80.8	142	0.875	38	40	43	48	53	55	57	65	66	70	74
140	72.0	142	1.000	37	39	43	47	52	55	57	64	66	69	74
140	54.5	142	1.250	36	39	42	46	53	55	60	64	65	72	73
140	37.0	142	1.500	35	39	43	47	51	54	63	63	70	71	78
140	101.5	154	0.750	43	44	46	49	57	57	60	64	67	73	75
140	92.8	154	0.875	41	42	45	49	54	56	58	64	69	72	73
140	84.0	154	1.000	40	42	45	48	54	55	58	63	68	72	73
140	66.5	154	1.250	39	40	43	47	52	55	58	62	67	70	71
140	49.0	154	1.500	37	39	43	46	52	54	57	65	66	69	74
140	14.0	154	2.000	36	41	45	48	54	59	62	67	71	76	80
140	113.5	166	0.750	46	48	49	51	57	59	62	66	70	71	77
140	104.8	166	0.875	45	46	48	51	55	57	60	63	68	70	76
140	96.0	166	1.000	43	46	48	50	55	58	59	65	67	75	76
140	78.5	166	1.250	42	44	45	48	53	56	58	60	65	71	74
140	61.0	166	1.500	40	42	44	48	55	55	58	61	68	70	72
140	26.0	166	2.000	37	41	44	47	54	56	62	65	67	73	75
140	125.5	178	0.750	50	52	55	56	61	65	66	71	73	77	80
140	116.8	178	0.875	48	50	52	54	57	62	65	66	72	72	79
140	108.0	178	1.000	46	49	50	52	59	61	63	68	70	71	78
140	90.5	178	1.250	44	46	50	51	57	59	60	65	66	72	76
140	73.0	178	1.500	43	45	47	50	54	57	60	63	67	69	74
140	38.0	178	2.000	39	42	44	48	54	55	58	63	68	71	73

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Gable Joist (SPGB) Tables

Span	End Depth	Center Depth	Top Chord Pitch	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
				300	350	400	450	500	550	600	650	700	750	800
ft	in	in	in/ft	Joist Self-Weight - Pounds per Linear Foot (**plf**)										
150	57.3	76	0.250	48	56	61	68	75	84	93	101	115	123	124
150	47.9	76	0.375	51	56	60	68	76	84	93	102	113	123	123
150	38.5	76	0.500	51	56	63	70	80	84	100	101	123	123	126
150	29.1	76	0.625	52	59	67	76	85	94	102	115	125	126	136
150	19.8	76	0.750	56	64	71	80	96	103	116	127	127	139	149
150	10.4	76	0.875	59	71	85	96	103	125	125	125	150	150	172
150	57.9	86	0.375	42	53	57	62	70	77	81	85	102	103	114
150	48.5	86	0.500	42	53	57	65	69	77	84	95	103	103	114
150	39.1	86	0.625	47	53	60	64	73	81	86	102	103	115	125
150	29.8	86	0.750	47	53	61	68	75	86	95	103	116	127	127
150	20.4	86	0.875	52	56	64	72	82	85	104	115	127	127	127
150	11.0	86	1.000	56	64	72	81	97	104	117	126	127	142	150
150	67.9	96	0.375	40	50	55	58	63	70	74	82	87	95	103
150	58.5	96	0.500	40	49	55	58	65	70	73	82	87	95	104
150	49.1	96	0.625	39	49	54	58	66	70	77	81	87	102	103
150	39.8	96	0.750	42	53	54	61	65	72	82	86	95	103	104
150	30.4	96	0.875	41	54	56	61	69	77	82	87	103	103	114
150	21.0	96	1.000	48	53	61	69	73	83	87	103	103	117	128
150	68.5	106	0.500	40	45	51	56	60	67	72	75	83	84	97
150	59.1	106	0.625	39	44	51	56	59	66	71	74	83	88	96
150	49.8	106	0.750	39	44	55	56	63	66	74	78	83	87	97
150	40.4	106	0.875	40	49	55	58	63	66	73	83	87	96	104
150	31.0	106	1.000	39	50	54	58	66	70	78	83	87	104	104
150	12.3	106	1.250	49	53	61	69	77	82	87	104	104	118	127
150	78.5	116	0.500	39	43	50	53	58	62	69	70	77	82	86
150	69.1	116	0.625	38	42	50	57	60	61	69	73	77	84	86
150	59.8	116	0.750	38	42	50	57	61	64	68	74	76	85	85
150	50.4	116	0.875	38	43	50	56	60	64	68	74	79	84	89
150	41.0	116	1.000	38	44	50	55	60	65	71	75	84	88	97
150	22.3	116	1.250	40	50	55	59	63	70	75	84	88	99	105
150	79.1	126	0.625	38	44	47	52	59	63	64	72	74	79	84
150	69.8	126	0.750	38	43	47	53	59	63	64	71	74	79	86
150	60.4	126	0.875	39	42	47	52	58	62	67	70	76	78	85
150	51.0	126	1.000	39	42	47	52	58	62	68	70	76	81	85
150	32.3	126	1.250	39	43	51	56	59	65	68	75	80	83	89
150	13.5	126	1.500	40	51	56	59	68	71	79	84	90	106	107
150	89.1	136	0.625	40	44	48	52	56	64	65	69	73	77	82
150	79.8	136	0.750	39	43	47	53	55	63	65	68	73	76	82
150	70.4	136	0.875	39	42	47	53	55	63	65	70	73	75	80
150	61.0	136	1.000	39	42	47	53	55	62	64	71	73	79	80
150	42.3	136	1.250	38	42	47	53	58	62	67	70	77	78	86
150	23.5	136	1.500	38	43	51	57	61	65	69	77	80	86	91
150	99.1	146	0.625	40	45	48	56	57	60	67	69	72	79	80
150	89.8	146	0.750	41	43	47	54	56	58	66	69	71	78	79
150	80.4	146	0.875	40	43	47	53	55	59	65	67	70	78	78
150	71.0	146	1.000	39	43	47	53	54	58	64	67	73	77	80
150	52.3	146	1.250	38	42	46	53	55	61	64	67	72	77	79
150	33.5	146	1.500	37	43	46	54	59	63	63	70	75	79	83
150	109.1	156	0.625	44	47	50	55	58	61	66	70	74	75	81
150	99.8	156	0.750	43	45	50	53	57	60	65	71	73	75	81
150	90.4	156	0.875	41	45	48	55	56	59	64	69	73	76	81
150	81.0	156	1.000	41	44	47	53	56	59	68	68	71	77	80
150	62.3	156	1.250	40	43	46	53	56	58	65	67	70	78	78
150	43.5	156	1.500	38	43	46	52	56	62	65	66	73	75	80
150	109.8	166	0.750	44	47	50	57	59	61	67	69	75	79	79
150	100.4	166	0.875	44	47	49	54	58	61	66	71	75	76	79
150	91.0	166	1.000	43	46	48	52	58	60	66	71	74	75	81
150	72.3	166	1.250	42	44	48	54	56	59	63	69	73	74	80
150	53.5	166	1.500	40	43	47	51	56	59	66	67	71	75	79
150	16.0	166	2.000	40	44	47	55	62	65	69	73	76	81	85

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1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

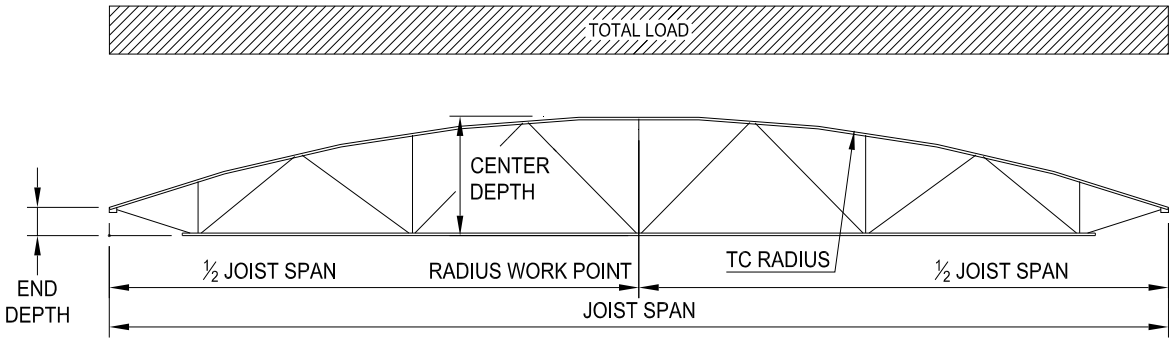
Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Bowstring Joist (SPBW) Tables

The following weight tables are representative of SP-Series joist designs for Bowstring Joists with parameters shown in the diagram below. The maximum allowable Live Load deflection is L/240 for a Live Load equal to 75 percent of the Total Load listed in the table. The tables also give bridging requirements per Section 904.5(d), the required seat depth for the given profile, as well as the estimated self-weight in pounds per linear foot. This catalog provides two design examples for reference and clarification on design issues. The following tables are not representative of any limits or constraints on design or constructability by NMBS. For further information, please contact your nearest NMBS representative or visit www.newmill.com.

ALL TABLES ARE BASED ON ASD



BOWSTRING JOIST (SPBW)

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Bowstring Joist (SPBW) Tables

Span	End Depth	Center Depth	Top Chord Radius	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
				300	350	400	450	500	550	600	650	700	750	800
ft	in	in	ft	Joist Self-Weight - Pounds per Linear Foot (**plf**)										
10	16	20	38	8	8	8	8	8	8	9	9	9	9	9
10	15	20	30	8	8	8	8	8	8	9	9	9	9	9
10	14	20	25	8	8	8	8	8	9	9	9	9	9	9
10	13	20	22	8	8	8	8	8	9	9	9	9	9	9
10	10	20	15	8	8	8	9	9	9	9	9	9	9	9
10	5	20	11	9	9	9	9	9	9	9	9	9	9	9
10	20	24	38	8	8	8	8	8	8	8	8	8	8	8
10	19	24	30	8	8	8	8	8	8	8	8	8	8	9
10	18	24	25	8	8	8	8	8	8	8	8	8	9	9
10	17	24	22	8	8	8	8	8	8	8	8	9	9	9
10	14	24	15	8	8	8	8	8	8	9	9	9	9	9
10	9	24	11	9	9	9	9	9	9	9	9	9	9	9
10	23	28	30	8	8	8	8	8	8	8	8	8	8	8
10	22	28	25	8	8	8	8	8	8	8	8	8	8	8
10	21	28	22	8	8	9	9	9	9	9	9	9	9	9
10	18	28	15	8	8	8	9	9	9	9	9	9	9	9
10	13	28	11	9	9	9	9	9	9	9	9	9	9	9
10	8	28	8	9	9	9	9	9	9	9	9	9	9	9
10	27	32	30	8	9	9	9	9	9	9	9	9	9	9
10	26	32	25	8	9	9	9	9	9	9	9	9	9	9
10	25	32	22	8	9	9	9	9	9	9	9	9	9	9
10	22	32	15	9	9	9	9	9	9	9	9	9	9	9
10	17	32	11	9	9	9	9	9	9	9	9	9	9	9
10	12	32	8	9	9	9	9	9	9	9	9	9	9	9
10	32	38	25	9	9	9	9	9	9	9	9	9	9	9
10	31	38	22	9	9	9	9	9	9	9	9	9	9	9
10	28	38	15	9	9	9	9	9	9	9	9	9	9	9
10	23	38	11	9	9	9	9	9	9	9	9	9	9	9
10	18	38	8	9	9	9	9	9	9	9	9	9	9	9
10	8	38	6	9	9	10	10	10	10	10	10	10	10	10
10	38	44	25	8	8	8	8	8	8	9	9	9	9	9
10	37	44	22	8	8	8	8	8	8	8	9	9	9	9
10	34	44	15	8	8	8	8	8	8	8	8	9	9	9
10	29	44	11	9	9	9	9	9	9	9	9	9	9	9
10	24	44	8	9	9	9	9	9	9	9	9	9	9	10
10	14	44	6	10	10	10	10	10	10	11	11	11	11	11
10	44	50	25	9	9	9	9	9	9	9	9	9	9	9
10	43	50	22	9	9	9	9	9	9	9	9	9	9	9
10	40	50	15	9	9	9	9	9	9	9	9	9	9	9
10	35	50	11	9	9	9	9	9	9	9	9	9	9	9
10	30	50	8	9	9	9	9	9	9	9	9	9	9	9
10	20	50	6	10	10	10	10	10	10	10	11	11	11	11
10	52	58	25	10	10	10	10	10	10	10	10	10	10	10
10	51	58	22	10	10	10	10	10	10	10	10	10	10	10
10	48	58	15	10	10	10	10	10	10	10	10	10	10	10
10	43	58	11	9	9	9	9	9	9	9	9	10	10	10
10	38	58	8	10	10	10	10	10	10	10	10	10	10	10
10	28	58	6	10	10	10	10	10	10	10	10	11	11	11
10	60	66	25	11	11	11	11	11	11	11	11	11	11	11
10	59	66	22	11	11	11	11	11	11	11	11	11	11	11
10	56	66	15	11	11	11	11	11	11	11	11	11	11	11
10	51	66	11	11	11	11	11	11	11	11	11	11	11	11
10	46	66	8	11	11	11	11	11	11	11	11	11	11	11
10	36	66	6	11	11	11	11	11	11	11	11	11	11	11
10	70	76	25	13	13	13	13	13	13	13	13	13	13	13
10	69	76	22	12	12	12	12	12	12	12	12	12	12	12
10	66	76	15	12	12	12	12	12	12	12	12	12	12	12
10	61	76	11	12	12	12	12	12	12	12	12	12	12	12
10	56	76	8	12	12	12	12	12	12	12	12	12	12	12
10	46	76	6	13	13	13	13	13	13	13	13	13	13	13

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1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Bowstring Joist (SPBW) Tables

Span ft	End Depth in	Center Depth in	Top Chord Radius ft	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
				300	350	400	450	500	550	600	650	700	750	800
				Joist Self-Weight - Pounds per Linear Foot (**plf**)										
20	14	20	100	8	8	8	8	8	8	9	9	9	9	10
20	13	20	86	8	8	8	8	8	8	9	9	9	9	10
20	11	20	67	8	8	8	8	8	8	8	9	9	9	9
20	10	20	60	8	8	8	8	8	8	8	9	9	9	9
20	8	20	51	8	8	8	8	8	8	8	9	9	9	10
20	5	20	41	8	8	8	8	8	8	8	9	9	9	9
20	18	24	100	8	8	8	8	8	8	9	9	9	9	10
20	17	24	86	8	8	8	8	8	8	9	9	9	9	10
20	15	24	67	8	8	8	8	8	8	8	9	9	9	9
20	14	24	60	8	8	8	8	8	8	8	9	9	9	10
20	12	24	51	8	8	8	8	8	8	8	9	9	9	10
20	9	24	41	8	8	8	8	8	8	8	9	9	9	9
20	23	30	86	8	8	8	8	8	8	8	9	9	10	10
20	21	30	67	8	8	8	8	8	8	8	9	9	10	10
20	20	30	60	8	8	8	8	8	8	8	9	9	9	10
20	18	30	51	8	8	8	8	8	8	9	9	9	9	10
20	15	30	41	8	8	8	8	8	8	9	9	9	9	10
20	10	30	31	8	8	8	8	9	9	9	9	9	9	9
20	27	36	67	8	8	8	8	9	9	9	9	9	9	10
20	26	36	60	8	8	8	8	9	9	9	9	9	10	10
20	24	36	51	8	8	8	8	8	9	9	9	9	10	10
20	21	36	41	8	8	8	9	9	9	9	9	9	9	10
20	16	36	31	8	8	8	8	8	8	9	9	9	9	9
20	6	36	21	8	8	8	8	9	9	9	9	9	9	9
20	33	42	67	8	9	9	9	9	9	9	9	9	10	10
20	32	42	60	8	9	9	9	9	9	9	9	9	10	10
20	30	42	51	8	8	9	9	9	9	9	9	9	10	10
20	27	42	41	8	8	9	9	9	9	9	9	9	9	10
20	22	42	31	9	9	9	9	9	9	9	9	9	9	10
20	12	42	21	9	9	9	9	9	9	9	9	9	9	9
20	40	50	60	9	9	9	9	10	10	10	10	10	11	11
20	38	50	51	9	9	9	9	9	9	10	10	10	10	11
20	35	50	41	9	9	9	9	9	9	9	10	10	10	10
20	30	50	31	9	9	9	9	9	9	10	10	10	10	10
20	20	50	21	9	9	9	9	9	9	9	9	10	10	10
20	10	50	17	9	9	9	9	9	9	10	10	10	10	10
20	48	58	60	9	10	10	10	10	10	10	11	12	12	13
20	46	58	51	9	10	10	10	10	10	10	11	11	12	12
20	43	58	41	10	10	10	10	10	10	10	10	11	11	12
20	38	58	31	10	10	10	10	10	10	10	10	10	11	12
20	28	58	21	10	10	10	10	10	10	10	10	11	11	11
20	18	58	17	10	10	10	10	10	10	10	10	10	11	11
20	56	68	51	10	10	11	11	12	12	13	14	14	15	15
20	53	68	41	10	10	10	11	11	11	12	13	13	15	15
20	48	68	31	10	10	10	11	11	11	12	13	13	14	15
20	38	68	21	11	11	11	11	11	11	11	11	12	12	13
20	28	68	17	11	11	11	11	11	11	11	11	11	12	13
20	8	68	13	11	11	11	11	11	11	12	12	12	13	13
20	66	78	51	12	12	12	13	14	14	15	16	17	17	17
20	63	78	41	12	12	12	13	14	14	15	15	17	17	17
20	58	78	31	11	12	12	13	13	14	14	15	16	16	17
20	48	78	21	11	11	11	11	12	13	14	14	15	15	15
20	38	78	17	11	11	11	12	12	13	13	14	14	15	15
20	18	78	13	12	12	13	13	13	13	13	14	14	14	14
20	78	90	51	15	16	17	18	19	19	19	20	20	21	21
20	75	90	41	15	16	17	18	19	19	19	19	20	21	21
20	70	90	31	14	15	16	17	17	18	18	19	20	20	20
20	60	90	21	14	15	16	17	17	17	17	19	19	21	21
20	50	90	17	13	13	13	13	14	15	15	15	15	16	17
20	30	90	13	12	13	13	14	15	15	16	17	17	18	18

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1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Bowstring Joist (SPBW) Tables

Span ft	End Depth in	Center Depth in	Top Chord Radius ft	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
				300	350	400	450	500	550	600	650	700	750	800
				Joist Self-Weight - Pounds per Linear Foot (**plf**)										
30	14	20	225	8	9	10	11	13	13	14	15	16	17	19
30	13	20	193	8	9	10	11	13	13	14	15	16	19	19
30	11	20	150	8	9	10	12	13	13	14	15	16	18	19
30	9	20	123	8	9	10	12	13	13	14	16	16	18	19
30	7	20	104	8	9	10	12	13	14	14	16	16	18	19
30	5	20	91	8	9	10	12	13	14	14	16	16	18	19
30	19	26	193	8	8	9	9	10	11	12	13	13	14	15
30	17	26	150	8	8	9	9	10	11	12	13	13	15	15
30	15	26	123	8	8	9	9	10	11	12	13	13	15	15
30	13	26	104	8	8	9	9	10	11	12	13	13	15	15
30	11	26	91	8	8	9	9	10	11	13	13	13	15	15
30	7	26	72	8	8	9	9	10	11	13	13	13	15	15
30	23	32	150	8	8	9	9	10	10	11	12	12	13	14
30	21	32	123	8	8	9	9	10	10	11	11	12	13	14
30	19	32	104	8	8	8	9	10	10	11	11	12	13	14
30	17	32	91	8	8	8	9	10	10	11	11	12	13	13
30	13	32	72	8	8	8	9	10	10	11	11	12	13	14
30	10	32	62	8	8	8	9	9	10	11	11	12	13	13
30	29	40	123	8	9	9	9	10	10	11	12	12	13	13
30	27	40	104	8	9	9	9	10	10	11	12	12	13	13
30	25	40	91	8	9	9	9	10	10	11	12	13	13	13
30	21	40	72	8	8	9	9	9	10	11	11	12	13	13
30	18	40	62	8	8	9	9	9	10	11	11	12	13	13
30	10	40	46	8	8	8	9	9	10	10	11	12	12	13
30	37	48	123	9	9	9	10	11	11	12	12	13	14	14
30	35	48	104	9	9	9	10	10	11	11	12	13	14	14
30	33	48	91	9	9	9	10	10	11	11	12	13	14	14
30	29	48	72	9	9	9	10	10	10	11	12	13	13	14
30	26	48	62	9	9	9	9	10	10	11	12	13	13	14
30	18	48	46	9	9	9	9	10	10	11	12	13	13	13
30	45	58	104	10	10	10	11	11	12	12	13	14	15	15
30	43	58	91	10	10	10	11	11	11	12	12	14	14	15
30	39	58	72	10	10	10	11	11	12	12	12	14	14	14
30	36	58	62	9	9	10	10	11	11	12	13	13	14	14
30	28	58	46	9	10	10	10	10	11	12	13	13	14	14
30	13	58	32	9	9	9	10	10	11	11	12	13	13	14
30	53	68	91	11	11	11	11	12	13	14	15	16	17	17
30	49	68	72	10	11	11	11	12	13	13	14	14	16	16
30	46	68	62	10	11	11	11	11	12	13	13	14	15	16
30	38	68	46	10	10	11	11	12	12	13	13	14	15	15
30	23	68	32	10	11	11	11	11	12	12	13	14	15	15
30	8	68	25	10	10	10	11	11	12	12	13	14	14	15
30	65	80	91	12	13	14	15	15	16	17	18	18	19	20
30	61	80	72	12	12	13	14	15	16	16	18	18	18	19
30	58	80	62	12	12	13	14	14	15	16	17	18	18	19
30	50	80	46	12	12	12	12	13	14	14	15	16	17	18
30	35	80	32	11	12	12	12	12	13	13	14	15	15	16
30	20	80	25	12	12	12	12	13	13	14	14	16	16	16
30	77	92	91	16	17	18	18	18	19	20	21	21	21	22
30	73	92	72	15	16	17	18	18	19	20	21	21	21	22
30	70	92	62	15	16	17	17	19	19	20	20	21	21	22
30	62	92	46	14	14	15	16	16	18	18	19	19	20	20
30	47	92	32	13	13	13	14	14	15	16	16	18	18	19
30	32	92	25	13	14	14	14	14	15	15	16	16	17	17
30	87	106	72	20	21	22	22	22	23	24	24	25	26	26
30	84	106	62	20	21	21	21	22	23	24	24	24	24	25
30	76	106	46	18	19	20	20	20	21	22	23	23	23	23
30	61	106	32	16	18	19	19	19	19	19	20	21	22	22
30	46	106	25	16	16	17	17	17	18	19	19	20	22	22
30	16	106	19	17	18	19	19	19	19	19	19	20	20	20

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1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Bowstring Joist (SPBW) Tables

Span ft	End Depth in	Center Depth in	Top Chord Radius ft	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
				300	350	400	450	500	550	600	650	700	750	800
				Joist Self-Weight - Pounds per Linear Foot (**plf**)										
40	19	24	480	11	13	14	16	17	19	20	22	25	25	27
40	17	24	343	11	13	14	16	17	19	20	22	25	25	27
40	14	24	240	11	13	14	16	17	19	21	23	25	26	27
40	12	24	201	11	13	14	16	17	19	21	23	25	26	27
40	9	24	161	11	13	14	16	18	19	21	24	25	26	28
40	7	24	142	11	13	14	16	18	19	21	23	25	26	28
40	20	30	240	9	10	12	13	15	16	17	18	20	21	21
40	18	30	201	9	10	13	13	15	16	17	18	20	21	21
40	15	30	161	9	10	13	13	15	16	17	18	20	21	21
40	13	30	142	9	10	13	13	15	16	17	18	20	21	21
40	10	30	121	9	11	13	13	14	16	17	19	20	21	21
40	5	30	97	10	11	12	14	14	16	17	19	20	21	22
40	26	38	201	9	10	11	11	13	14	15	16	17	17	19
40	23	38	161	9	9	11	11	12	14	15	16	17	17	19
40	21	38	142	9	9	10	11	12	14	15	15	17	17	19
40	18	38	121	9	9	10	11	13	14	15	16	17	17	19
40	13	38	97	8	9	10	11	13	14	15	15	17	18	19
40	8	38	81	8	10	10	11	13	13	15	15	17	17	19
40	31	46	161	9	10	10	12	13	14	14	15	15	17	17
40	29	46	142	9	10	10	12	13	14	14	15	15	17	17
40	26	46	121	9	9	10	11	12	13	14	15	16	16	17
40	21	46	97	9	9	10	11	12	13	14	15	16	16	17
40	16	46	81	9	9	10	11	12	13	14	14	16	17	17
40	6	46	62	9	9	10	11	13	13	14	14	15	17	17
40	41	56	161	10	11	12	12	13	14	14	15	16	16	18
40	39	56	142	10	11	11	12	13	14	14	15	16	16	18
40	36	56	121	10	11	11	12	13	14	15	15	16	16	18
40	31	56	97	10	10	11	12	14	14	14	15	16	16	16
40	26	56	81	9	10	11	12	13	14	15	15	15	16	16
40	16	56	62	9	10	10	11	12	13	14	15	16	17	17
40	49	66	142	11	11	12	13	13	14	15	16	16	17	18
40	46	66	121	11	11	12	13	13	14	15	15	15	17	17
40	41	66	97	10	11	12	13	13	14	15	15	16	16	17
40	36	66	81	10	11	12	13	13	15	15	15	16	17	17
40	26	66	62	10	11	12	13	13	15	15	16	17	17	18
40	6	66	43	10	10	11	12	13	14	15	16	16	17	17
40	61	78	142	12	14	14	16	16	17	19	19	19	20	21
40	58	78	121	12	13	14	15	16	17	19	19	19	20	20
40	53	78	97	12	12	13	14	15	16	17	17	19	19	20
40	48	78	81	12	13	13	14	15	15	16	17	17	18	20
40	38	78	62	11	12	13	14	14	15	15	16	17	18	19
40	18	78	43	11	12	13	13	15	15	16	17	18	18	19
40	70	90	121	15	16	17	18	19	20	20	21	21	23	24
40	65	90	97	13	14	15	16	18	19	19	20	20	21	22
40	60	90	81	13	14	15	17	17	18	19	20	20	20	21
40	50	90	62	13	13	14	15	16	16	17	18	21	21	21
40	30	90	43	13	13	14	14	15	16	17	17	19	20	21
40	10	90	33	13	13	14	15	15	16	16	18	20	20	20
40	84	104	121	20	21	22	22	23	24	25	25	25	27	28
40	79	104	97	19	20	21	21	22	23	25	25	25	26	27
40	74	104	81	19	20	20	21	22	22	23	25	25	25	26
40	64	104	62	16	17	18	19	20	21	22	22	22	23	24
40	44	104	43	16	16	17	17	18	19	19	23	23	23	23
40	24	104	33	16	16	17	17	19	19	19	21	21	22	23
40	100	120	121	25	26	27	27	28	29	31	32	32	32	33
40	95	120	97	25	26	26	28	29	29	30	31	32	32	34
40	90	120	81	25	26	26	27	28	29	29	30	31	32	32
40	80	120	62	23	24	25	25	26	27	28	29	29	30	30
40	60	120	43	21	22	23	23	23	23	24	25	27	27	27
40	40	120	33	19	19	20	21	22	24	24	24	24	25	26

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1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

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Bowstring Joist (SPBW) Tables

Span ft	End Depth in	Center Depth in	Top Chord Radius ft	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
				300	350	400	450	500	550	600	650	700	750	800
				Joist Self-Weight - Pounds per Linear Foot (**plf**)										
50	22	28	625	14	16	18	20	23	24	27	29	31	32	35
50	19	28	417	14	16	18	21	24	25	27	29	31	33	36
50	16	28	313	14	16	19	21	24	25	27	29	32	35	36
50	12	28	235	14	16	19	21	24	26	28	29	32	34	36
50	9	28	198	15	17	18	21	25	26	27	30	32	34	36
50	6	28	171	15	17	18	21	25	26	28	30	32	34	37
50	27	36	417	12	13	15	17	19	20	22	23	25	28	28
50	24	36	313	12	13	15	17	19	20	22	25	25	28	28
50	20	36	235	13	13	15	17	18	20	21	25	25	28	28
50	17	36	198	13	13	15	17	18	20	21	25	25	28	28
50	14	36	171	13	13	15	17	18	20	21	25	27	28	28
50	11	36	151	13	13	15	17	19	20	21	25	27	28	28
50	28	44	235	11	12	14	15	16	18	19	20	21	24	25
50	25	44	198	11	12	14	15	16	18	19	20	21	23	25
50	22	44	171	11	12	14	15	16	18	19	20	21	23	25
50	19	44	151	10	13	14	15	16	17	19	20	21	25	25
50	13	44	122	11	13	14	15	16	17	19	20	21	25	25
50	7	44	103	11	12	13	16	16	17	20	21	21	24	25
50	38	54	235	11	12	13	15	16	17	18	19	20	21	22
50	35	54	198	11	12	13	15	16	17	18	19	20	21	22
50	32	54	171	11	12	13	15	16	17	18	19	20	21	22
50	29	54	151	11	12	13	15	16	17	18	19	20	21	21
50	23	54	122	11	12	13	14	16	16	18	19	20	21	21
50	17	54	103	11	12	13	14	15	17	18	19	19	20	21
50	45	64	198	12	12	14	15	16	17	17	18	20	20	21
50	42	64	171	12	12	13	15	15	17	17	18	19	20	20
50	39	64	151	12	12	13	15	15	17	17	19	19	20	20
50	33	64	122	12	13	14	15	16	16	17	18	19	20	20
50	27	64	103	12	13	13	15	16	17	17	18	18	20	20
50	14	64	77	12	12	13	15	16	17	17	18	19	19	20
50	57	76	198	14	14	16	16	17	18	19	20	20	22	22
50	54	76	171	13	14	15	16	17	17	18	20	20	22	22
50	51	76	151	13	14	15	15	17	18	18	20	22	22	22
50	45	76	122	13	14	15	16	16	17	19	20	20	21	22
50	39	76	103	13	14	15	16	17	17	18	19	20	20	22
50	26	76	77	13	14	15	16	16	17	17	18	20	20	21
50	68	90	171	16	16	17	18	20	21	21	22	24	25	26
50	65	90	151	15	16	17	18	19	20	20	22	22	24	25
50	59	90	122	15	15	16	17	18	20	20	21	22	22	23
50	53	90	103	14	14	15	17	17	18	20	21	21	22	22
50	40	90	77	15	15	16	16	17	18	20	20	22	22	22
50	15	90	53	14	15	16	16	17	18	20	20	20	21	22
50	82	104	171	21	22	22	22	24	25	25	26	27	30	30
50	79	104	151	19	20	21	22	22	23	23	25	26	27	29
50	73	104	122	19	21	22	22	23	24	25	25	26	28	29
50	67	104	103	18	19	20	21	23	23	23	24	25	26	27
50	54	104	77	17	18	18	19	20	22	22	23	23	24	24
50	29	104	53	17	17	18	19	20	21	21	22	22	23	25
50	95	120	151	27	27	27	28	29	29	31	31	33	34	35
50	89	120	122	25	26	26	27	29	29	29	30	31	33	35
50	83	120	103	25	25	25	26	27	29	29	29	30	31	33
50	70	120	77	21	22	23	24	25	25	27	28	28	29	29
50	45	120	53	21	22	23	24	25	25	26	27	28	29	29
50	20	120	42	20	21	22	23	23	24	24	25	26	27	27
50	111	136	151	31	33	33	34	36	37	39	39	39	41	43
50	105	136	122	31	32	33	33	34	36	37	39	39	39	41
50	99	136	103	30	31	32	32	33	35	36	36	37	38	38
50	86	136	77	31	31	32	33	33	33	34	36	37	38	38
50	61	136	53	24	25	27	27	28	29	30	31	31	31	32
50	36	136	42	27	27	28	28	28	28	29	31	32	32	32

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1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Bowstring Joist (SPBW) Tables

Span ft	End Depth in	Center Depth in	Top Chord Radius ft	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
				300	350	400	450	500	550	600	650	700	750	800
				Joist Self-Weight - Pounds per Linear Foot (**plf**)										
60	25	32	772	17	20	23	27	28	31	34	36	39	44	48
60	21	32	491	17	20	24	28	29	32	34	37	40	46	50
60	17	32	361	18	20	24	27	29	32	36	37	40	46	50
60	13	32	285	18	20	24	26	29	32	36	37	40	46	51
60	10	32	246	18	20	25	26	29	33	36	39	41	46	50
60	6	32	209	18	20	25	27	30	32	36	38	45	46	51
60	29	40	491	15	17	19	21	23	26	28	30	33	34	37
60	25	40	361	15	17	20	21	23	25	28	29	33	36	36
60	21	40	285	15	17	20	22	25	25	28	30	33	36	36
60	18	40	246	16	17	20	22	25	27	28	30	33	36	36
60	14	40	209	15	18	19	21	26	27	28	30	33	36	36
60	10	40	181	16	17	20	22	26	27	28	30	33	35	38
60	31	50	285	14	16	18	19	20	22	24	25	27	29	31
60	28	50	246	14	16	18	19	20	22	24	25	27	29	31
60	24	50	209	14	16	18	19	21	22	25	25	29	29	30
60	20	50	181	14	16	18	20	21	22	25	25	28	29	30
60	13	50	147	14	17	19	20	20	22	25	25	27	29	31
60	5	50	122	15	17	18	19	21	23	26	27	28	30	32
60	41	60	285	14	15	16	18	19	20	21	23	24	26	28
60	38	60	246	14	15	16	18	19	20	21	23	24	26	28
60	34	60	209	14	15	16	18	19	20	21	22	24	26	27
60	30	60	181	14	15	16	18	19	20	21	23	24	26	27
60	23	60	147	15	15	16	18	19	20	21	26	26	26	27
60	15	60	122	14	15	16	18	19	20	21	23	25	28	28
60	50	72	246	15	16	17	18	19	20	21	22	25	25	26
60	46	72	209	15	16	17	18	19	20	21	22	25	25	26
60	42	72	181	15	16	17	18	18	20	21	22	24	25	26
60	35	72	147	15	16	16	17	18	20	21	21	25	25	25
60	27	72	122	15	16	17	18	18	19	21	22	24	25	26
60	12	72	93	16	16	17	18	18	19	21	21	25	26	26
60	64	86	246	17	17	18	19	20	22	23	24	26	29	29
60	60	86	209	17	17	17	18	19	21	22	23	25	27	28
60	56	86	181	16	17	18	18	19	21	22	23	25	26	28
60	49	86	147	16	17	18	19	20	21	22	23	25	26	26
60	41	86	122	16	16	17	18	19	20	21	23	24	25	26
60	26	86	93	16	17	18	18	19	20	21	21	23	24	25
60	74	100	209	23	24	24	25	25	26	27	28	29	29	29
60	70	100	181	24	24	24	25	25	25	27	28	29	29	29
60	63	100	147	24	24	24	24	24	26	26	26	28	28	30
60	55	100	122	23	23	24	24	24	25	25	26	28	28	29
60	40	100	93	23	23	23	23	24	24	25	26	27	28	28
60	10	100	64	23	23	23	23	23	24	25	26	27	27	28
60	90	116	209	27	27	29	31	31	32	32	33	34	36	36
60	86	116	181	27	27	29	29	30	31	32	33	34	34	36
60	79	116	147	26	28	28	28	29	31	31	31	31	32	34
60	71	116	122	26	28	28	28	29	29	30	31	32	32	32
60	56	116	93	27	27	27	28	28	28	30	30	31	31	31
60	26	116	64	26	26	26	27	27	27	28	29	30	30	31
60	102	132	181	32	33	34	34	35	37	38	40	40	40	41
60	95	132	147	31	32	34	34	34	35	36	38	39	39	39
60	87	132	122	31	31	33	34	34	36	36	37	37	39	40
60	72	132	93	29	31	31	31	31	32	33	34	35	35	36
60	42	132	64	29	29	31	31	31	33	33	34	34	34	34
60	12	132	50	29	30	30	30	30	31	33	33	33	34	36
60	118	148	181	38	39	41	42	43	43	45	46	51	51	51
60	111	148	147	38	39	40	41	42	44	44	45	45	46	48
60	103	148	122	37	38	39	39	40	42	43	44	44	44	46
60	88	148	93	35	35	37	37	37	37	38	40	42	42	42
60	58	148	64	35	35	36	36	36	37	38	39	39	40	42
60	28	148	50	33	34	34	34	35	37	37	37	38	40	40

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1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Bowstring Joist (SPBW) Tables

Span ft	End Depth in	Center Depth in	Top Chord Radius ft	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
				300	350	400	450	500	550	600	650	700	750	800
				Joist Self-Weight - Pounds per Linear Foot (**plf**)										
70	27	36	817	21	25	29	32	36	39	46	50	50	54	58
70	23	36	566	21	25	29	32	36	39	46	50	50	54	58
70	19	36	433	22	26	29	32	36	39	46	50	50	54	58
70	14	36	335	22	27	29	33	36	39	46	50	50	54	58
70	10	36	284	22	26	29	31	36	39	46	50	50	55	58
70	5	36	238	22	26	29	31	36	43	49	53	53	58	61
70	33	46	566	20	21	22	26	28	30	33	34	37	40	42
70	29	46	433	20	21	22	26	28	30	33	35	37	40	42
70	24	46	335	19	21	22	28	28	30	33	35	37	40	42
70	20	46	284	20	21	24	28	28	30	33	35	36	40	47
70	15	46	238	20	21	22	28	28	30	33	35	39	40	46
70	11	46	211	20	21	23	27	30	32	33	35	38	40	47
70	36	58	335	20	20	21	22	24	25	28	30	32	34	36
70	32	58	284	20	20	21	22	25	25	28	29	32	34	35
70	27	58	238	20	21	22	22	25	25	28	29	32	33	36
70	23	58	211	22	22	22	22	25	25	25	29	32	33	36
70	14	58	169	21	21	21	22	25	27	28	29	32	35	37
70	6	58	144	21	21	22	23	25	27	29	31	32	34	38
70	48	70	335	21	21	21	22	23	24	25	28	30	32	33
70	44	70	284	21	21	21	22	23	24	25	27	30	31	33
70	39	70	238	21	21	21	21	22	24	25	27	30	31	32
70	35	70	211	21	21	21	21	23	24	26	27	29	31	32
70	26	70	169	21	21	21	21	22	25	26	27	29	31	32
70	18	70	144	21	21	21	23	23	26	26	27	29	30	32
70	58	84	284	22	22	22	23	24	25	26	27	29	30	33
70	53	84	238	21	22	22	23	24	25	26	27	28	30	32
70	49	84	211	21	22	22	23	23	24	26	26	28	30	32
70	40	84	169	21	22	22	23	23	25	25	26	28	30	31
70	32	84	144	21	21	22	23	23	24	26	27	27	29	31
70	14	84	108	21	21	22	22	23	25	25	28	28	28	30
70	72	98	284	24	24	25	25	26	27	29	29	30	31	34
70	67	98	238	23	23	24	25	26	26	28	28	30	32	34
70	63	98	211	23	23	24	25	25	26	28	28	30	33	33
70	54	98	169	23	23	24	25	25	26	27	28	28	31	33
70	46	98	144	23	24	24	24	24	26	27	28	28	29	32
70	28	98	108	23	23	23	24	24	25	26	27	29	29	30
70	81	112	238	27	28	28	29	30	30	31	32	33	35	37
70	77	112	211	26	27	27	29	29	30	31	32	32	33	35
70	68	112	169	26	27	27	28	28	29	30	31	32	33	34
70	60	112	144	25	25	27	27	28	29	30	30	32	32	35
70	42	112	108	25	26	26	27	27	28	29	30	30	32	32
70	7	112	74	25	25	26	27	29	30	30	30	31	32	33
70	95	126	238	31	31	32	33	33	35	35	36	38	38	40
70	91	126	211	30	30	33	33	33	34	36	36	37	39	39
70	82	126	169	30	30	31	32	33	34	34	34	37	37	38
70	74	126	144	29	30	30	30	31	32	33	33	34	35	37
70	56	126	108	28	29	29	31	31	31	32	34	34	34	35
70	21	126	74	28	28	28	30	31	31	32	32	33	33	34
70	109	140	238	36	36	36	36	39	39	40	41	42	44	44
70	105	140	211	35	35	36	38	38	41	41	41	43	44	46
70	96	140	169	34	35	36	36	38	38	39	40	42	42	44
70	88	140	144	34	34	34	36	36	36	38	39	40	40	43
70	70	140	108	32	34	34	34	34	35	36	37	37	38	39
70	35	140	74	30	30	32	32	33	35	35	35	36	38	38
70	119	154	211	41	41	43	45	46	46	47	49	53	53	54
70	110	154	169	39	39	40	42	44	44	44	46	47	47	52
70	102	154	144	40	41	41	42	43	43	43	43	48	48	48
70	84	154	108	38	38	39	39	40	40	40	41	43	45	45
70	49	154	74	35	36	37	37	39	39	39	40	41	41	43
70	14	154	58	34	34	35	37	37	38	40	40	40	41	43

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1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Bowstring Joist (SPBW) Tables

Span ft	End Depth in	Center Depth in	Top Chord Radius ft	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
				300	350	400	450	500	550	600	650	700	750	800
				Joist Self-Weight - Pounds per Linear Foot (**plf**)										
80	30	40	960	26	30	34	39	45	50	50	58	62	65	70
80	25	40	641	26	30	34	39	44	50	50	58	62	65	70
80	20	40	481	27	30	35	39	45	50	50	58	62	65	70
80	15	40	385	26	31	34	42	45	49	50	58	62	66	70
80	10	40	321	26	31	34	42	47	49	53	58	64	65	70
80	5	40	276	26	31	34	42	48	49	53	58	65	65	73
80	35	50	641	21	24	26	30	33	36	38	42	47	51	51
80	30	50	481	22	26	28	30	32	36	38	41	51	51	51
80	25	50	385	21	26	29	30	33	36	40	42	51	51	51
80	20	50	321	22	26	29	32	35	36	39	42	51	51	51
80	15	50	276	22	26	28	30	35	38	41	41	51	51	51
80	10	50	242	21	26	28	32	35	38	42	42	54	54	54
80	42	62	481	20	21	23	26	28	30	33	36	38	41	42
80	37	62	385	20	21	23	26	28	29	32	35	38	41	42
80	32	62	321	21	21	23	28	28	29	32	37	38	41	46
80	27	62	276	21	21	23	26	28	30	32	37	38	41	43
80	22	62	242	22	23	25	28	28	29	32	36	38	41	46
80	12	62	194	21	22	25	27	28	32	32	38	39	45	47
80	51	76	385	21	22	23	25	26	28	31	33	35	36	39
80	46	76	321	21	22	23	24	28	28	30	33	35	36	39
80	41	76	276	21	22	23	24	26	28	30	33	35	36	39
80	36	76	242	21	22	23	26	26	28	30	33	35	36	38
80	26	76	194	23	23	24	26	26	28	30	32	35	36	38
80	16	76	163	22	23	24	26	28	29	29	34	36	37	40
80	60	90	321	22	23	24	26	26	28	30	32	34	36	38
80	55	90	276	22	22	23	25	26	27	29	32	34	36	37
80	50	90	242	22	22	24	25	26	28	29	31	34	35	37
80	40	90	194	22	23	24	24	26	27	30	31	33	36	36
80	30	90	163	22	23	23	24	27	28	30	30	33	35	35
80	10	90	123	23	23	23	26	27	28	31	31	32	36	36
80	74	104	321	25	26	26	27	30	30	31	33	35	37	38
80	69	104	276	25	25	26	27	29	29	31	33	35	37	38
80	64	104	242	25	25	26	26	28	29	30	33	34	36	38
80	54	104	194	24	25	25	26	28	29	29	32	34	35	37
80	44	104	163	24	24	25	26	27	28	30	30	33	35	36
80	24	104	123	24	24	25	27	27	28	30	30	33	34	36
80	88	118	321	29	30	30	31	32	33	34	36	38	39	41
80	83	118	276	28	29	29	31	32	32	34	35	37	39	39
80	78	118	242	28	29	30	30	32	32	33	35	36	39	40
80	68	118	194	27	28	29	30	31	32	32	35	37	38	40
80	58	118	163	27	27	28	29	30	31	31	33	35	38	39
80	38	118	123	26	27	28	29	30	31	31	33	33	36	38
80	97	132	276	33	33	34	35	36	38	39	40	42	43	43
80	92	132	242	32	33	34	35	35	37	37	40	40	43	43
80	82	132	194	31	33	33	36	36	36	36	38	40	41	43
80	72	132	163	30	32	32	33	35	35	35	37	39	41	41
80	52	132	123	30	30	31	33	33	34	36	36	38	40	41
80	12	132	85	28	30	32	32	32	34	35	36	37	37	40
80	111	146	276	37	39	40	42	43	44	45	47	48	49	51
80	106	146	242	36	38	39	39	40	41	43	44	45	47	49
80	96	146	194	36	37	38	39	39	40	41	43	46	46	47
80	86	146	163	36	36	37	38	38	38	40	41	43	44	46
80	66	146	123	34	36	36	36	39	39	39	40	42	43	45
80	26	146	85	32	33	35	35	36	37	37	39	40	41	41
80	125	160	276	42	42	44	46	47	47	48	50	54	54	54
80	120	160	242	42	44	44	47	47	49	50	52	54	54	54
80	110	160	194	42	43	44	45	46	48	48	48	50	52	53
80	100	160	163	39	41	41	42	44	45	47	47	47	49	51
80	80	160	123	39	42	42	42	42	42	43	45	46	47	49
80	40	160	85	37	37	37	41	41	42	43	43	45	46	46

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Bowstring Joist (SPBW) Tables

Span ft	End Depth in	Center Depth in	Top Chord Radius ft	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
				300	350	400	450	500	550	600	650	700	750	800
				Joist Self-Weight - Pounds per Linear Foot (**plf**)										
90	35	46	1105	27	31	35	39	44	48	52	55	62	66	69
90	29	46	715	28	36	36	41	46	51	55	58	65	70	73
90	24	46	553	28	33	36	45	46	51	55	58	65	70	73
90	18	46	435	30	32	38	44	46	51	58	61	69	69	77
90	12	46	359	29	32	37	43	49	54	58	61	65	70	73
90	7	46	313	29	32	37	43	49	53	57	61	65	73	73
90	41	58	715	23	26	29	32	36	39	42	52	52	52	56
90	36	58	553	23	26	29	32	36	39	42	51	52	52	56
90	30	58	435	26	29	29	32	36	40	42	52	52	52	56
90	24	58	359	25	29	29	33	37	40	42	51	51	52	56
90	19	58	313	25	28	31	34	37	40	47	51	51	52	56
90	13	58	272	25	28	30	33	37	44	47	54	55	56	55
90	50	72	553	23	24	27	29	31	34	37	40	43	49	50
90	44	72	435	24	24	27	29	31	34	38	39	42	49	49
90	38	72	359	25	25	29	29	30	33	37	39	42	48	49
90	33	72	313	25	26	27	29	31	33	37	39	42	48	48
90	27	72	272	25	25	28	29	32	36	37	39	42	48	48
90	16	72	219	25	25	28	29	33	35	38	44	47	48	48
90	58	86	435	25	25	26	28	29	32	34	37	41	41	44
90	52	86	359	25	25	25	27	30	32	34	37	40	42	43
90	47	86	313	25	25	27	27	30	31	34	37	40	42	44
90	41	86	272	25	25	25	27	30	31	34	36	39	41	43
90	30	86	219	24	26	27	29	29	32	34	38	39	41	42
90	19	86	184	26	26	26	29	29	32	36	38	41	41	42
90	66	100	359	27	27	27	28	30	33	35	37	39	41	44
90	61	100	313	27	27	27	28	29	33	35	37	38	41	44
90	55	100	272	26	26	27	28	29	32	35	37	38	41	44
90	44	100	219	26	26	27	28	29	32	34	37	37	40	43
90	33	100	184	27	27	28	29	29	31	33	37	37	39	43
90	10	100	139	27	27	27	29	31	32	35	37	39	41	42
90	80	114	359	29	30	30	31	32	35	36	38	39	41	43
90	75	114	313	29	30	30	31	32	34	36	37	39	40	43
90	69	114	272	29	29	30	30	32	33	36	37	39	41	43
90	58	114	219	28	29	29	29	31	33	35	37	38	41	42
90	47	114	184	28	28	29	30	31	33	33	36	39	40	42
90	24	114	139	28	28	28	30	31	32	34	36	37	40	42
90	94	128	359	33	33	35	35	36	37	40	42	43	45	47
90	89	128	313	33	33	34	34	36	37	37	40	42	46	46
90	83	128	272	32	32	33	34	35	37	39	41	42	44	44
90	72	128	219	31	32	33	34	34	35	37	40	42	43	43
90	61	128	184	30	32	32	33	34	36	37	39	41	42	44
90	38	128	139	30	30	31	32	33	34	35	38	39	41	41
90	103	142	313	37	37	37	39	40	42	45	45	47	48	51
90	97	142	272	36	36	37	38	40	42	44	44	47	48	48
90	86	142	219	36	36	37	37	38	39	41	43	45	45	47
90	75	142	184	34	34	37	37	38	40	41	43	44	47	47
90	52	142	139	33	35	35	36	37	37	38	41	43	44	45
90	7	142	96	34	35	36	37	38	39	40	41	41	44	47
90	117	156	313	39	40	41	42	44	45	48	50	53	56	56
90	111	156	272	39	41	42	44	45	45	47	50	50	53	55
90	100	156	219	40	40	40	41	43	45	46	47	48	49	54
90	89	156	184	39	39	40	43	43	44	46	46	50	50	51
90	66	156	139	37	37	39	39	41	42	44	46	47	47	49
90	21	156	96	36	37	39	39	39	41	42	42	44	44	51
90	131	170	313	47	49	51	51	53	54	58	59	59	63	63
90	125	170	272	46	48	50	51	51	52	54	61	61	61	62
90	114	170	219	45	45	47	48	49	49	51	53	55	59	60
90	103	170	184	44	44	44	45	47	48	49	50	52	54	55
90	80	170	139	41	42	42	46	46	47	48	48	53	53	54
90	35	170	96	40	40	41	42	42	44	45	45	47	49	56

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1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Bowstring Joist (SPBW) Tables

Span ft	End Depth in	Center Depth in	Top Chord Radius ft	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**) 300	350	400	450	500	550	600	650	700	750	800
				Joist Self-Weight - Pounds per Linear Foot (**plf**)										
100	38	50	1251	31	35	44	48	52	56	59	66	70	78	87
100	31	50	790	32	36	45	51	55	58	62	70	73	83	89
100	25	50	601	33	38	44	50	55	61	65	71	73	83	93
100	19	50	485	32	38	47	53	58	58	65	73	74	83	91
100	13	50	407	32	38	47	54	57	58	65	73	73	85	93
100	6	50	343	33	37	48	54	57	57	65	74	74	86	97
100	43	62	790	26	29	33	37	41	47	52	52	60	60	64
100	37	62	601	29	29	35	37	40	48	52	52	60	60	64
100	31	62	485	26	31	35	39	41	47	52	52	59	60	63
100	25	62	407	29	31	36	39	45	47	52	52	59	59	63
100	18	62	343	29	31	35	38	45	47	51	52	60	60	66
100	12	62	302	28	31	36	38	45	50	54	58	62	66	66
100	51	76	601	24	27	31	34	39	40	43	49	54	54	58
100	45	76	485	26	27	31	34	39	39	42	49	53	54	58
100	39	76	407	24	29	31	33	38	39	42	49	53	54	57
100	32	76	343	26	29	30	35	39	41	43	49	53	53	57
100	26	76	302	26	29	32	33	37	41	42	48	53	53	57
100	14	76	245	25	28	32	35	38	44	46	52	56	57	57
100	59	90	485	25	26	29	32	35	37	40	43	45	50	51
100	53	90	407	27	28	31	31	34	37	40	43	48	51	51
100	46	90	343	25	28	28	31	34	37	40	43	48	51	51
100	40	90	302	27	27	30	31	33	36	39	42	44	50	50
100	28	90	245	27	27	30	31	33	38	41	47	48	48	50
100	15	90	203	27	27	30	33	35	39	41	47	51	53	54
100	73	104	485	28	28	29	31	35	37	40	42	45	50	50
100	67	104	407	28	28	29	31	34	37	40	40	44	46	50
100	60	104	343	27	28	29	31	34	37	40	41	44	49	49
100	54	104	302	27	27	29	31	33	36	39	41	44	46	49
100	42	104	245	28	28	28	31	34	36	40	40	43	48	51
100	29	104	203	29	29	30	33	36	36	39	40	43	48	50
100	81	118	407	31	31	32	33	36	38	39	42	45	47	52
100	74	118	343	30	31	32	33	35	38	39	42	44	47	51
100	68	118	302	30	30	31	32	35	38	40	41	44	46	51
100	56	118	245	30	31	31	33	34	37	39	41	43	45	50
100	43	118	203	29	30	31	32	34	37	38	41	44	45	50
100	18	118	154	31	32	32	34	36	38	39	42	47	47	49
100	95	132	407	34	35	36	37	40	42	42	45	48	48	55
100	88	132	343	34	34	35	36	38	41	42	44	46	49	52
100	82	132	302	33	34	35	36	38	40	42	43	45	49	52
100	70	132	245	33	33	34	35	37	39	41	43	44	47	50
100	57	132	203	32	32	34	35	36	39	40	42	45	45	51
100	32	132	154	31	32	33	34	36	39	39	41	44	45	50
100	109	146	407	38	41	41	43	45	47	48	50	50	56	57
100	102	146	343	37	40	40	41	43	46	47	48	50	55	55
100	96	146	302	37	39	40	40	41	44	46	49	49	50	55
100	84	146	245	38	38	39	40	42	44	45	47	50	54	56
100	71	146	203	36	37	38	39	40	43	45	45	48	50	55
100	46	146	154	34	35	36	38	39	40	42	44	46	51	51
100	116	160	343	42	42	45	45	46	48	51	53	56	59	59
100	110	160	302	41	41	45	47	47	47	51	51	54	57	59
100	98	160	245	40	43	43	44	46	48	49	50	51	56	58
100	85	160	203	41	42	43	43	45	47	49	53	53	54	57
100	60	160	154	38	39	40	41	43	45	47	48	50	51	56
100	10	160	106	38	39	41	43	44	44	44	46	50	52	54
100	130	174	343	49	51	52	54	54	57	62	62	63	65	67
100	124	174	302	48	51	52	53	53	55	57	62	63	64	66
100	112	174	245	47	47	49	50	51	52	53	55	62	62	64
100	99	174	203	44	46	46	46	47	51	53	53	54	61	62
100	74	174	154	44	45	45	48	49	50	51	53	54	55	62
100	24	174	106	43	46	47	47	47	48	49	55	55	55	56

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1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Bowstring Joist (SPBW) Tables

Span ft	End Depth in	Center Depth in	Top Chord Radius ft	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
				300	350	400	450	500	550	600	650	700	750	800
				Joist Self-Weight - Pounds per Linear Foot (**plf**)										
110	42	56	1297	34	39	46	51	55	63	66	73	79	83	93
110	35	56	865	34	39	46	51	55	62	66	74	79	83	94
110	29	56	673	34	44	46	54	58	62	66	74	79	83	92
110	22	56	535	35	44	49	54	58	65	69	74	78	83	92
110	15	56	444	35	44	49	54	58	65	69	73	86	90	102
110	8	56	380	36	43	49	54	58	65	68	73	86	90	102
110	47	68	865	30	32	38	41	48	52	56	60	65	68	72
110	41	68	673	29	32	38	41	48	52	56	60	64	68	72
110	34	68	535	31	32	40	41	47	52	56	60	64	68	72
110	27	68	444	31	34	39	46	47	52	56	60	67	71	76
110	20	68	380	31	34	39	45	51	55	59	63	67	71	75
110	13	68	332	30	34	39	45	50	55	59	62	66	70	75
110	53	80	673	28	31	34	38	42	49	49	55	58	63	65
110	46	80	535	30	31	36	38	41	49	49	54	58	62	66
110	39	80	444	28	33	34	40	42	49	49	54	57	61	65
110	32	80	380	30	33	35	40	41	47	53	53	57	61	65
110	25	80	332	30	32	36	40	46	52	53	53	61	61	65
110	11	80	266	29	32	35	39	45	51	56	57	60	65	68
110	58	92	535	28	30	32	36	39	42	48	51	55	56	59
110	51	92	444	30	32	32	35	39	43	45	51	55	56	59
110	44	92	380	30	31	34	36	39	42	48	50	55	56	60
110	37	92	332	30	33	34	38	42	48	48	50	55	55	59
110	23	92	266	30	32	34	37	41	47	51	54	54	59	59
110	10	92	225	31	32	34	37	40	46	51	52	58	61	62
110	70	104	535	30	32	33	35	39	41	44	49	51	53	58
110	63	104	444	31	31	33	35	39	41	43	49	51	53	58
110	56	104	380	31	31	33	35	38	40	43	49	51	53	58
110	49	104	332	31	33	33	34	40	40	43	49	51	52	58
110	35	104	266	31	32	34	36	39	42	43	48	50	52	60
110	22	104	225	32	32	34	37	41	41	42	52	54	56	59
110	75	116	444	32	34	36	37	39	41	44	47	51	54	54
110	68	116	380	32	33	35	36	38	40	43	46	51	53	54
110	61	116	332	32	33	35	36	38	40	43	46	51	53	54
110	47	116	266	32	32	34	36	37	40	43	46	51	52	53
110	34	116	225	32	34	36	37	39	42	42	48	50	52	52
110	6	116	170	32	35	36	38	39	41	47	51	53	55	55
110	87	128	444	35	36	38	39	41	42	45	49	53	53	54
110	80	128	380	35	36	37	39	40	42	44	48	52	53	54
110	73	128	332	34	35	37	39	41	41	44	47	52	53	55
110	59	128	266	35	35	37	38	39	41	44	45	52	52	54
110	46	128	225	33	37	39	39	39	40	43	46	51	52	53
110	18	128	170	36	37	37	40	40	42	48	50	50	51	57
110	99	140	444	39	39	40	42	44	45	47	50	55	56	58
110	92	140	380	38	38	40	41	43	44	47	50	54	56	57
110	85	140	332	37	38	40	42	43	44	46	48	54	55	56
110	71	140	266	37	38	40	41	43	44	44	47	53	55	55
110	58	140	225	39	39	39	40	42	43	46	47	53	54	55
110	30	140	170	39	39	41	42	43	45	46	46	51	53	53
110	111	152	444	42	44	48	48	48	51	51	54	58	60	61
110	104	152	380	42	44	45	46	47	50	50	53	58	59	60
110	97	152	332	41	43	44	45	47	48	51	51	57	59	59
110	83	152	266	40	41	42	44	47	47	49	51	56	56	59
110	70	152	225	40	42	43	45	46	46	48	50	54	56	58
110	42	152	170	40	40	42	43	45	45	46	48	52	54	56
110	123	164	444	46	46	48	49	52	53	56	59	60	62	66
110	116	164	380	46	47	49	51	51	51	55	57	59	64	64
110	109	164	332	46	46	47	48	51	51	52	57	59	63	64
110	95	164	266	44	46	46	49	49	51	51	53	59	60	61
110	82	164	225	43	44	46	48	48	50	51	56	59	59	60
110	54	164	170	42	43	44	47	47	49	49	53	55	58	58

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Bowstring Joist (SPBW) Tables

Span ft	End Depth in	Center Depth in	Top Chord Radius ft	300 plf	350 plf	400 plf	450 plf	500 plf	550 plf	600 plf	650 plf	700 plf	750 plf	800 plf
120	45.0	60	1441	38	47	51	59	63	71	76	83	94	100	101
120	37.5	60	983	38	47	51	59	63	71	76	83	94	100	100
120	30.0	60	721	38	46	54	59	63	74	75	83	91	102	111
120	22.5	60	585	38	49	54	58	65	74	76	86	93	102	110
120	15.0	60	482	38	49	54	58	65	74	82	85	101	101	109
120	7.5	60	418	42	49	54	58	65	74	82	86	102	102	109
120	49.5	72	983	33	37	41	48	53	57	61	65	72	76	80
120	42.0	72	721	33	37	41	48	52	56	61	65	72	81	81
120	34.5	72	585	32	39	46	51	52	60	60	71	71	80	80
120	27.0	72	482	34	38	46	51	56	59	64	71	76	80	80
120	19.5	72	418	34	38	45	51	55	59	64	70	75	79	85
120	12.0	72	363	34	38	49	50	55	59	66	70	75	86	87
120	54.0	84	721	30	36	38	43	49	54	55	59	63	66	73
120	46.5	84	585	30	34	40	42	49	54	55	59	63	66	73
120	39.0	84	482	32	36	40	48	49	54	58	58	66	66	73
120	31.5	84	418	32	36	40	48	52	53	57	62	69	73	73
120	24.0	84	363	31	36	39	47	52	57	58	58	69	69	77
120	9.0	84	291	31	36	43	52	52	56	60	64	67	72	76
120	58.5	96	585	32	33	37	40	43	49	51	56	59	60	67
120	51.0	96	482	32	35	39	41	43	49	51	55	60	60	67
120	43.5	96	418	32	33	39	39	43	48	51	56	59	60	67
120	36.0	96	363	33	35	38	42	48	48	50	55	59	60	71
120	21.0	96	291	33	35	38	41	50	50	50	62	63	66	71
120	6.0	96	244	32	36	43	44	49	51	53	61	64	65	73
120	70.5	108	585	32	34	37	40	43	46	51	53	59	62	63
120	63.0	108	482	32	36	37	40	42	46	51	53	59	61	63
120	55.5	108	418	34	34	36	42	42	45	51	53	58	61	62
120	48.0	108	363	34	35	38	41	42	45	50	52	58	61	62
120	33.0	108	291	33	35	38	39	48	48	50	52	57	61	61
120	18.0	108	244	34	34	39	41	47	51	53	56	63	64	64
120	82.5	120	585	34	35	38	40	42	47	51	54	56	57	64
120	75.0	120	482	34	36	38	40	43	47	51	53	55	56	64
120	67.5	120	418	36	36	37	40	43	46	51	53	55	57	64
120	60.0	120	363	35	35	37	39	42	46	51	53	55	57	64
120	45.0	120	291	35	37	37	41	42	45	51	52	54	56	63
120	30.0	120	244	36	37	38	40	44	50	52	52	54	57	63
120	87.0	132	482	37	39	40	44	44	47	50	53	55	57	63
120	79.5	132	418	36	39	40	41	43	47	50	53	55	57	62
120	72.0	132	363	38	38	39	41	43	46	49	52	54	57	61
120	57.0	132	291	38	39	39	42	43	46	48	53	54	56	61
120	42.0	132	244	37	37	39	39	42	45	52	52	54	55	61
120	12.0	132	185	37	39	42	42	43	49	53	53	53	60	60
120	99.0	144	482	40	43	44	47	47	50	52	57	58	60	62
120	91.5	144	418	41	42	43	47	47	49	52	57	57	59	62
120	84.0	144	363	40	41	43	44	46	48	52	56	56	59	63
120	69.0	144	291	42	42	43	44	46	47	49	55	57	58	61
120	54.0	144	244	39	40	43	43	45	47	53	54	55	57	62
120	24.0	144	185	40	41	43	43	45	51	53	53	54	60	60
120	111.0	156	482	43	45	46	49	49	51	54	58	61	62	64
120	103.5	156	418	43	44	47	48	48	50	54	57	60	61	63
120	96.0	156	363	42	43	46	48	48	51	54	56	59	61	61
120	81.0	156	291	43	43	45	46	48	49	53	57	58	58	62
120	66.0	156	244	43	44	45	47	47	49	52	55	56	59	60
120	36.0	156	185	44	44	45	45	48	52	52	55	56	57	62
120	123.0	168	482	46	48	50	51	62	62	62	62	64	65	69
120	115.5	168	418	48	50	50	50	53	54	61	62	63	66	69
120	108.0	168	363	47	48	50	51	52	53	60	62	64	66	68
120	93.0	168	291	45	46	49	50	50	52	55	61	62	62	64
120	78.0	168	244	44	46	49	49	49	50	59	59	59	61	62
120	48.0	168	185	44	47	47	49	49	54	54	56	57	61	62

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Bowstring Joist (SPBW) Tables

Span ft	End Depth in	Center Depth in	Top Chord Radius ft	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
				300	350	400	450	500	550	600	650	700	750	800
				Joist Self-Weight - Pounds per Linear Foot (**plf**)										
130	50	66	1585	43	45	53	60	64	71	76	80	89	97	108
130	42	66	1057	40	47	56	59	66	74	79	84	94	101	113
130	34	66	794	45	47	55	63	66	75	79	84	93	111	113
130	25	66	620	44	50	58	62	66	74	87	91	102	111	112
130	17	66	519	44	49	58	62	66	74	86	91	102	110	114
130	9	66	447	48	50	58	66	70	74	85	90	102	110	122
130	54	78	1057	36	39	48	53	58	62	65	72	78	81	86
130	46	78	794	38	40	48	53	57	65	69	72	81	81	86
130	37	78	620	38	40	52	57	60	65	69	77	81	81	86
130	29	78	519	38	45	51	56	60	65	68	76	80	80	94
130	21	78	447	37	44	51	56	60	67	67	75	87	87	94
130	13	78	393	38	44	51	55	59	67	67	75	87	87	103
130	58	90	794	33	39	48	50	54	58	59	66	70	74	77
130	49	90	620	35	41	41	49	54	58	58	66	70	74	82
130	41	90	519	33	38	47	49	54	58	63	66	74	79	82
130	33	90	447	34	40	46	53	58	61	62	70	70	79	82
130	25	90	393	34	40	46	52	57	61	62	69	76	78	81
130	9	90	316	36	43	52	52	60	60	64	72	76	77	88
130	70	102	794	33	37	41	44	50	57	57	61	65	69	76
130	61	102	620	35	38	41	45	50	56	57	61	67	68	75
130	53	102	519	32	37	43	44	49	56	60	61	68	68	74
130	45	102	447	34	39	40	49	49	56	60	60	68	68	74
130	37	102	393	34	39	42	49	54	55	60	65	72	72	75
130	21	102	316	34	38	42	50	52	59	62	64	70	71	78
130	73	114	620	34	37	40	44	47	52	54	62	63	67	71
130	65	114	519	36	36	40	43	47	52	55	60	63	64	71
130	57	114	447	37	38	44	50	50	52	54	62	62	65	70
130	49	114	393	36	37	43	44	49	51	54	61	62	71	72
130	33	114	316	35	37	42	49	53	53	53	61	61	70	74
130	17	114	265	35	38	46	48	52	54	57	64	66	68	73
130	85	126	620	36	39	41	45	48	52	55	57	65	66	69
130	77	126	519	38	38	41	44	47	53	54	57	65	65	69
130	69	126	447	38	38	40	43	47	52	54	56	64	64	68
130	61	126	393	36	40	43	44	47	52	54	57	64	65	68
130	45	126	316	39	39	42	45	52	53	53	56	64	64	73
130	29	126	265	38	39	47	49	51	51	53	62	63	71	72
130	89	138	519	41	41	43	45	49	54	56	57	63	68	69
130	81	138	447	39	40	43	45	47	50	56	57	60	68	69
130	73	138	393	40	42	42	45	48	53	55	57	62	67	68
130	57	138	316	40	40	41	44	47	53	54	56	61	66	70
130	41	138	265	41	41	43	45	47	53	53	57	60	67	69
130	8	138	200	40	46	46	48	54	54	57	61	64	71	72
130	101	150	519	43	45	46	48	50	54	58	60	63	68	69
130	93	150	447	42	44	45	47	50	55	57	60	64	67	68
130	85	150	393	42	44	46	47	50	53	56	59	62	66	67
130	69	150	316	42	45	45	47	49	53	57	58	60	65	66
130	53	150	265	44	44	45	45	48	52	56	57	62	64	65
130	20	150	200	42	44	46	51	54	54	54	56	63	63	72
130	113	162	519	45	48	49	51	53	59	61	62	64	69	71
130	105	162	447	45	48	49	50	53	59	60	61	63	68	70
130	97	162	393	46	48	48	50	53	55	59	60	64	67	69
130	81	162	316	46	46	46	49	50	55	57	61	63	67	67
130	65	162	265	44	45	47	49	50	54	55	59	62	66	67
130	32	162	200	46	49	49	52	52	55	55	60	66	67	72
130	125	174	519	54	54	55	56	59	65	66	67	72	73	77
130	117	174	447	52	53	54	55	58	65	65	68	71	71	76
130	109	174	393	50	51	52	53	54	57	64	66	67	72	73
130	93	174	316	49	50	51	53	55	60	62	64	64	69	71
130	77	174	265	50	50	50	51	53	58	60	61	64	67	70
130	44	174	200	49	51	53	53	56	56	60	62	65	68	71

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Bowstring Joist (SPBW) Tables

Span ft	End Depth in	Center Depth in	Top Chord Radius ft	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**) 300	350	400	450	500	550	600	650	700	750	800
				Joist Self-Weight - Pounds per Linear Foot (**plf**)										
140	53	70	1730	45	53	57	64	71	76	88	96	97	108	117
140	44	70	1132	47	52	59	67	74	80	93	101	101	113	124
140	35	70	841	46	55	59	67	75	87	102	103	111	113	124
140	26	70	670	50	55	59	66	75	86	103	103	111	123	133
140	18	70	568	50	55	58	66	74	86	102	102	110	122	133
140	9	70	485	50	58	66	70	74	85	102	102	110	122	132
140	56	82	1132	39	48	53	58	62	69	72	80	85	94	102
140	47	82	841	38	48	53	57	66	73	78	81	85	94	113
140	38	82	670	41	52	57	60	61	73	77	81	86	104	113
140	30	82	568	41	51	56	60	65	72	76	88	94	105	112
140	21	82	485	40	51	56	60	67	71	76	88	92	104	112
140	12	82	423	44	51	56	59	67	75	75	87	92	103	111
140	68	94	1132	36	41	50	55	59	63	66	74	75	83	88
140	59	94	841	39	43	48	55	59	64	66	73	74	83	87
140	50	94	670	38	42	48	54	59	63	71	80	80	82	87
140	42	94	568	38	47	53	59	62	67	71	73	80	82	87
140	33	94	485	37	46	53	58	62	66	70	77	79	90	95
140	24	94	423	37	46	52	57	61	65	69	77	78	89	95
140	71	106	841	36	41	46	50	57	60	62	68	70	77	78
140	62	106	670	38	44	44	50	57	61	61	68	70	76	77
140	54	106	568	35	44	50	50	61	61	61	71	71	76	80
140	45	106	485	37	43	49	54	56	65	66	68	77	79	79
140	36	106	423	37	42	49	53	60	64	65	72	76	80	80
140	19	106	342	36	41	52	52	59	62	66	71	75	79	87
140	74	118	670	36	41	46	47	52	59	62	64	71	72	78
140	66	118	568	36	40	50	50	52	59	62	64	71	74	78
140	57	118	485	39	43	44	50	52	59	63	63	70	73	77
140	48	118	423	36	44	50	54	57	58	62	71	73	73	77
140	31	118	342	37	47	49	53	56	63	66	70	74	78	83
140	13	118	284	36	46	48	54	54	65	65	68	73	76	81
140	86	130	670	39	42	45	48	53	56	59	66	67	70	77
140	78	130	568	38	41	47	48	53	55	58	65	66	70	75
140	69	130	485	41	44	44	48	52	54	57	65	69	70	76
140	60	130	423	41	44	44	53	55	57	57	65	68	69	76
140	43	130	342	40	44	46	51	52	54	64	68	68	73	75
140	25	130	284	38	43	49	54	55	58	63	68	71	71	80
140	98	142	670	42	44	46	49	55	57	60	64	70	73	74
140	90	142	568	42	44	47	50	54	57	59	64	69	72	74
140	81	142	485	43	43	47	49	55	56	58	64	69	73	73
140	72	142	423	44	46	46	49	55	56	58	64	68	72	74
140	55	142	342	43	45	47	53	53	55	62	62	70	70	74
140	37	142	284	42	45	47	53	57	59	61	62	70	70	77
140	102	154	568	45	48	48	51	54	58	61	64	68	73	76
140	93	154	485	47	47	48	51	55	59	60	65	67	75	75
140	84	154	423	44	46	47	50	54	58	59	62	67	72	75
140	67	154	342	44	47	47	50	55	56	59	63	66	74	74
140	49	154	284	45	48	49	54	54	61	62	62	72	72	75
140	14	154	216	44	45	50	56	56	58	65	65	70	75	79
140	114	166	568	49	50	51	54	57	62	64	66	70	72	79
140	105	166	485	48	50	51	53	60	62	63	67	70	74	79
140	96	166	423	49	49	50	52	59	61	62	67	69	73	78
140	79	166	342	47	48	49	52	58	60	60	65	67	72	76
140	61	166	284	49	49	49	55	56	58	63	63	68	70	78
140	26	166	216	53	54	54	57	57	57	65	68	73	77	77
140	126	178	568	54	56	57	60	64	67	69	72	74	79	83
140	117	178	485	52	54	54	58	62	66	68	72	73	79	79
140	108	178	423	52	54	55	57	65	65	66	71	73	78	78
140	91	178	342	52	52	54	56	61	63	67	69	72	75	79
140	73	178	284	50	53	53	55	59	61	64	69	69	74	77
140	38	178	216	54	54	59	60	64	65	65	70	70	75	75

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Bowstring Joist (SPBW) Tables

Span ft	End Depth in	Center Depth in	Top Chord Radius ft	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
				300	350	400	450	500	550	600	650	700	750	800
				Joist Self-Weight - Pounds per Linear Foot (**plf**)										
150	57	76	1777	48	57	61	68	75	84	93	101	114	124	124
150	48	76	1207	48	56	60	69	75	84	93	101	114	124	124
150	39	76	914	47	56	64	72	75	88	104	112	113	124	124
150	29	76	720	51	59	64	72	79	87	103	111	123	123	124
150	20	76	605	50	59	66	74	79	87	103	111	122	123	133
150	10	76	514	50	58	66	74	86	86	103	110	122	122	133
150	58	86	1207	42	54	55	62	69	73	81	86	95	103	115
150	49	86	914	48	53	57	66	66	72	81	86	94	115	115
150	39	86	720	42	57	61	61	73	77	89	94	105	113	114
150	30	86	605	47	56	60	65	72	76	89	94	105	113	114
150	20	86	514	49	56	60	67	75	76	88	103	103	112	124
150	11	86	453	49	56	60	67	75	84	87	103	103	123	123
150	68	96	1207	40	49	55	59	63	66	75	82	83	96	103
150	59	96	914	42	48	55	59	67	67	80	82	83	96	103
150	49	96	720	39	52	58	58	63	71	80	82	92	107	115
150	40	96	605	41	51	59	62	70	70	79	82	82	106	114
150	30	96	514	41	51	58	62	69	70	77	89	91	105	114
150	21	96	453	44	51	57	61	68	73	77	88	89	105	113
150	69	106	914	40	44	51	57	61	65	69	76	84	84	90
150	59	106	720	39	44	56	61	65	69	69	76	80	84	90
150	50	106	605	42	49	51	60	60	72	73	82	84	84	91
150	40	106	514	41	49	55	61	65	71	73	80	83	93	107
150	31	106	453	40	48	54	60	64	71	75	80	91	92	107
150	12	106	363	39	53	53	62	62	70	74	79	90	90	106
150	79	116	914	40	44	51	53	59	63	70	71	77	79	86
150	69	116	720	40	47	52	53	61	62	70	73	77	78	86
150	60	116	605	42	43	51	53	59	62	75	77	77	85	86
150	50	116	514	42	43	50	58	61	67	74	79	83	86	86
150	41	116	453	41	49	54	58	66	67	74	76	76	81	85
150	22	116	363	45	47	53	56	64	65	72	76	81	88	93
150	79	126	720	43	44	54	54	56	64	65	72	76	80	81
150	70	126	605	40	47	48	53	56	64	65	72	76	80	81
150	60	126	514	43	46	51	59	61	63	73	75	75	79	84
150	51	126	453	42	46	55	55	55	69	71	71	82	83	83
150	32	126	363	43	49	57	57	59	68	71	75	80	83	83
150	14	126	306	41	47	55	55	66	66	69	77	77	82	90
150	89	136	720	42	46	51	55	56	60	67	71	76	78	79
150	80	136	605	41	49	49	54	56	59	67	70	75	78	78
150	70	136	514	44	48	49	58	58	61	66	73	74	77	83
150	61	136	453	44	48	54	55	55	66	70	70	74	77	82
150	42	136	363	43	52	53	57	60	60	70	74	75	76	81
150	24	136	306	43	49	56	56	59	64	71	72	79	81	85
150	99	146	720	44	47	51	55	59	62	70	70	74	80	81
150	90	146	605	45	49	50	56	58	61	69	71	73	78	81
150	80	146	514	47	47	55	55	57	62	68	72	72	78	80
150	71	146	453	46	49	54	54	56	61	68	71	73	78	79
150	52	146	363	47	53	54	60	61	61	67	76	77	78	85
150	34	146	306	45	51	58	58	61	66	72	75	78	84	84
150	109	156	720	46	47	51	56	60	62	67	73	75	77	83
150	100	156	605	45	48	50	55	59	62	67	72	76	76	83
150	90	156	514	44	47	57	57	58	61	65	71	75	75	82
150	81	156	453	47	50	50	57	58	60	66	70	74	76	81
150	62	156	363	48	49	55	55	57	60	64	73	76	76	80
150	44	156	306	48	53	56	60	61	61	69	77	78	79	79
150	110	166	605	49	50	54	57	63	63	67	70	78	80	83
150	100	166	514	47	52	53	60	61	62	68	69	77	79	82
150	91	166	453	46	49	52	59	60	62	65	70	76	78	81
150	72	166	363	50	51	52	59	59	61	68	68	76	79	79
150	54	166	306	51	56	58	58	64	64	64	75	79	79	82
150	16	166	231	53	53	60	62	62	69	71	73	80	82	83

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

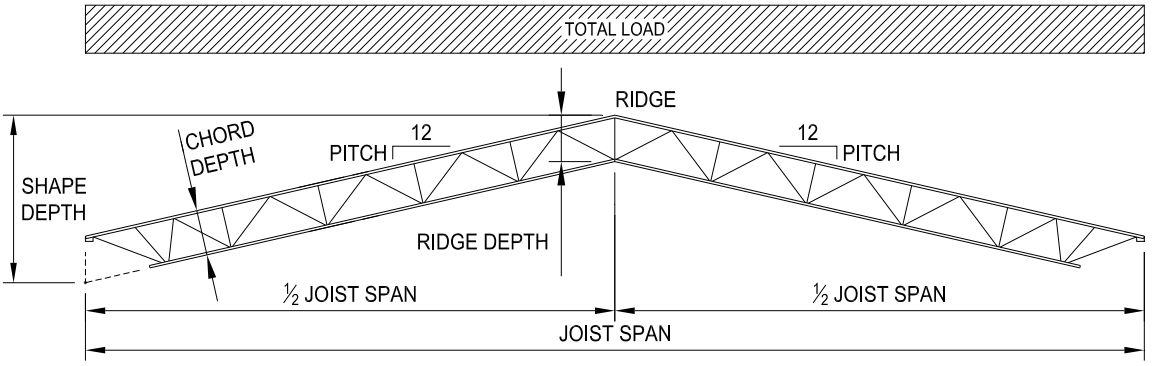
Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Scissor Joist (SPSC) Tables

The following weight tables are representative of SP-Series joist designs for Scissor Joists with parameters shown in the diagram below. The maximum allowable Live Load deflection is L/240 for a Live Load equal to 75 percent of the Total Load listed in the table. The tables also give bridging requirements per Section 904.5(d), the required seat depth for the given profile, as well as the estimated self-weight in pounds per linear foot. This catalog provides two design examples for reference and clarification on design issues. The following tables are not representative of any limits or constraints on design or constructability by NMBS. The SP-Series Scissor joists in the following tables are designed assuming pinned-roller supports. If this design results in a predicted approximate horizontal deflection, δ_x, greater than two inches at the roller support, the approximate weight is flagged with the notation, δ_x>2. The specifying professional should do further investigation into the actual horizontal deflection and consider alternatives as explained in HORIZONTAL REACTIONS on page 14. For further information, please contact your nearest NMBS representative or visit www.newmill.com.

ALL TABLES ARE BASED ON ASD



SCISSOR JOIST (SPSC)

Scissor Joist (SPSC) Tables

Span ft	Chord Depth in	Ridge Depth in	Top Chord Pitch in/ft	Shape Depth in	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
					300	350	400	450	500	550	600	650	700	750	800
					Joist Self-Weight - Pounds per Linear Foot (**plf**)										
10	10	10.0	0.500	13	7	7	7	7	7	7	7	7	7	7	7
10	10	10.0	0.750	14	7	7	7	7	7	7	7	7	7	7	7
10	10	10.0	1.000	15	7	7	7	7	7	7	7	7	7	7	7
10	10	10.1	1.500	18	7	7	7	7	7	7	7	7	7	7	7
10	10	10.3	3.000	25	8	8	8	8	8	8	8	8	9	9	9
10	10	11.2	6.000	41	10	10	10	10	10	10	10	10	10	10	10
10	14	14.0	0.500	17	7	7	7	7	7	7	7	7	7	7	7
10	14	14.0	0.750	18	7	7	7	7	7	7	7	7	7	7	7
10	14	14.0	1.000	19	7	7	7	7	7	7	7	7	7	7	7
10	14	14.1	1.500	22	7	7	7	7	7	7	7	7	7	7	7
10	14	14.4	3.000	29	7	7	7	7	7	7	7	7	7	7	8
10	14	15.7	6.000	46	8	8	8	8	8	8	8	8	8	8	8
10	18	18.0	0.500	21	7	7	7	7	7	7	7	7	7	7	7
10	18	18.0	0.750	22	7	7	7	7	7	7	7	7	7	7	7
10	18	18.1	1.000	23	7	7	7	7	7	7	7	7	7	7	7
10	18	18.1	1.500	26	7	7	7	7	7	7	7	7	7	7	7
10	18	18.6	3.000	34	7	7	7	7	7	7	7	7	7	7	7
10	18	20.1	6.000	50	9	9	9	9	9	9	9	10	10	10	10
10	22	22.0	0.500	25	7	7	7	7	7	7	7	7	7	7	7
10	22	22.0	0.750	26	7	7	7	7	7	7	7	7	7	7	7
10	22	22.1	1.000	27	7	7	7	7	7	7	7	7	7	7	7
10	22	22.2	1.500	30	7	7	7	7	7	7	7	7	7	7	7
10	22	22.7	3.000	38	7	7	7	7	7	7	7	7	7	7	8
10	22	24.6	6.000	55	8	8	8	8	8	8	9	9	9	9	10
10	26	26.0	0.500	29	7	7	7	7	7	7	7	7	7	7	7
10	26	26.1	0.750	30	7	7	7	7	7	7	7	7	7	7	7
10	26	26.1	1.000	31	7	7	7	7	7	7	7	7	7	7	7
10	26	26.2	1.500	34	7	7	7	7	7	7	7	7	7	7	7
10	26	26.8	3.000	42	8	8	8	8	8	8	8	8	8	8	8
10	26	29.1	6.000	59	8	8	8	8	8	8	8	8	8	9	9
10	30	30.0	0.500	33	7	7	7	7	7	7	7	7	7	7	7
10	30	30.1	0.750	34	7	7	7	7	7	7	7	7	7	7	7
10	30	30.1	1.000	35	7	7	7	7	7	7	7	7	7	7	7
10	30	30.2	1.500	38	7	7	7	7	7	7	7	7	7	7	7
10	30	30.9	3.000	46	7	7	7	7	7	7	7	7	7	7	7
10	30	33.5	6.000	64	8	8	8	8	8	8	8	8	8	9	9
10	34	34.0	0.500	37	7	7	7	7	7	7	7	7	7	7	7
10	34	34.1	0.750	38	7	7	7	7	7	7	7	7	7	7	7
10	34	34.1	1.000	39	7	7	7	7	7	7	7	7	7	7	7
10	34	34.3	1.500	42	7	7	7	7	7	7	7	7	7	7	7
10	34	35.0	3.000	50	7	7	7	7	7	7	7	7	7	7	8
10	34	38.0	6.000	68	8	8	8	8	8	8	9	9	9	9	10
10	38	38.0	0.500	41	7	7	7	7	7	7	7	8	8	8	8
10	38	38.1	0.750	42	7	7	7	7	7	7	7	8	8	8	8
10	38	38.1	1.000	43	6	7	7	7	7	7	7	8	8	8	8
10	38	38.3	1.500	46	7	7	7	7	7	7	8	8	8	8	8
10	38	39.2	3.000	54	7	7	7	7	8	8	8	9	9	9	10
10	38	42.5	6.000	72	8	8	9	9	10	10	11	11	11	12	12
10	42	42.0	0.500	45	7	7	7	7	7	7	8	8	8	8	9
10	42	42.1	0.750	46	7	7	7	7	7	7	8	8	8	8	9
10	42	42.1	1.000	47	7	7	7	7	7	8	8	8	8	8	9
10	42	42.3	1.500	50	7	7	7	7	7	8	8	8	8	9	9
10	42	43.3	3.000	58	7	7	7	8	8	8	8	9	9	9	10
10	42	47.0	6.000	77	9	9	9	10	10	11	11	12	12	12	12
10	46	46.0	0.500	49	7	7	7	7	7	8	8	8	8	8	9
10	46	46.1	0.750	50	7	7	7	7	7	8	8	8	8	8	9
10	46	46.2	1.000	51	7	7	7	7	7	8	8	8	8	9	9
10	46	46.4	1.500	54	7	7	7	7	8	8	8	8	9	9	9
10	46	47.4	3.000	62	8	8	8	8	9	9	9	10	10	10	10
10	46	51.4	6.000	81	10	10	10	11	11	12	12	13	13	13	14

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Horizontal Deflection – Joist designs marked with the note 'δ_x**>2**' have a horizontal slip greater than 2". (Reference page 14)

Scissor Joist (SPSC) Tables

Span	Chord Depth	Ridge Depth	Top Chord Pitch	Shape Depth	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
					300	350	400	450	500	550	600	650	700	750	800
ft	in	in	in/ft	in	Joist Self-Weight - Pounds per Linear Foot (**plf**)										
20	10	10.0	0.500	15	7	8	10	11	12	13	15	16	19	19	20
20	10	10.0	0.750	18	7	8	10	11	12	14	15	16	19	19	20
20	10	10.0	1.000	20	7	8	10	11	12	14	15	16	19	20	20
20	10	10.1	1.500	25	8	9	10	12	13	14	15	17	19	20	21
20	10	10.3	3.000	40	8	10	11	12	13	15	16	19	20	20	21
20	10	11.2	6.000	71	9	10	12	14	15	16	18	21	21	23	25
20	14	14.0	0.500	19	7	7	7	7	8	9	10	10	11	12	13
20	14	14.0	0.750	22	7	7	7	7	8	9	10	10	11	12	13
20	14	14.0	1.000	24	7	7	7	7	8	9	10	10	11	12	13
20	14	14.1	1.500	29	7	7	7	7	8	9	10	10	11	12	13
20	14	14.4	3.000	44	7	7	7	8	9	10	10	11	11	13	13
20	14	15.7	6.000	76	8	8	9	10	10	11	12	13	14	14	15
20	18	18.0	0.500	23	7	7	7	7	7	8	8	9	10	10	11
20	18	18.0	0.750	26	7	7	7	7	7	8	9	9	10	10	11
20	18	18.1	1.000	28	7	7	7	7	7	8	9	9	10	10	11
20	18	18.1	1.500	33	7	7	7	7	7	8	9	9	10	10	11
20	18	18.6	3.000	49	7	7	7	8	8	8	9	9	10	11	11
20	18	20.1	6.000	80	7	8	8	9	9	10	10	11	11	13	13
20	22	22.0	0.500	27	7	7	7	7	7	8	8	8	9	10	10
20	22	22.0	0.750	30	7	7	7	7	7	8	8	9	9	10	10
20	22	22.1	1.000	32	7	7	7	7	7	8	8	9	9	10	11
20	22	22.2	1.500	37	7	7	7	7	7	8	8	9	10	10	11
20	22	22.7	3.000	53	8	8	8	8	8	9	10	10	11	11	12
20	22	24.6	6.000	85	8	9	9	10	10	10	11	12	13	13	13
20	26	26.0	0.500	31	7	7	7	7	8	8	8	9	9	10	10
20	26	26.1	0.750	34	7	7	7	7	8	8	8	9	9	9	10
20	26	26.1	1.000	36	7	7	7	7	8	8	9	9	10	10	10
20	26	26.2	1.500	41	7	7	7	7	8	8	9	9	10	10	11
20	26	26.8	3.000	57	7	7	8	8	8	9	9	9	10	11	11
20	26	29.1	6.000	89	8	9	9	9	10	10	11	12	12	13	13
20	30	30.0	0.500	35	7	7	7	7	8	8	9	9	10	10	11
20	30	30.1	0.750	38	7	7	7	7	8	8	9	9	10	10	11
20	30	30.1	1.000	40	7	7	7	7	8	8	9	9	10	10	11
20	30	30.2	1.500	45	7	7	7	7	8	8	9	9	10	11	11
20	30	30.9	3.000	61	7	7	8	8	8	9	10	10	11	12	12
20	30	33.5	6.000	94	9	10	10	11	11	12	12	13	14	14	15
20	34	34.0	0.500	39	7	7	7	8	8	9	9	9	10	11	11
20	34	34.1	0.750	42	7	7	8	8	8	9	9	10	10	11	11
20	34	34.1	1.000	44	7	7	8	8	8	9	9	10	11	11	12
20	34	34.3	1.500	49	7	8	8	8	8	9	9	10	11	12	12
20	34	35.0	3.000	65	8	8	8	9	9	9	10	11	11	12	13
20	34	38.0	6.000	98	10	10	11	11	12	12	13	13	15	15	16
20	38	38.0	0.500	43	7	7	8	8	9	9	10	10	11	12	12
20	38	38.1	0.750	46	7	8	8	9	9	9	10	10	11	12	12
20	38	38.1	1.000	48	7	8	8	9	9	9	10	10	12	12	12
20	38	38.3	1.500	53	8	8	8	9	9	10	10	10	12	12	12
20	38	39.2	3.000	69	8	9	9	9	10	10	11	11	13	13	13
20	38	42.5	6.000	102	11	11	12	12	13	14	15	15	16	17	17
20	42	42.0	0.500	47	8	8	9	9	9	9	10	11	12	12	12
20	42	42.1	0.750	50	8	8	9	9	9	10	10	11	12	13	13
20	42	42.1	1.000	52	8	8	9	9	9	10	11	11	12	13	13
20	42	42.3	1.500	57	8	9	9	9	10	10	11	11	12	12	12
20	42	43.3	3.000	73	8	9	9	10	11	11	12	12	13	13	13
20	42	47.0	6.000	107	11	11	12	13	14	14	15	15	15	16	18
20	46	46.0	0.500	51	8	9	9	9	10	10	11	11	12	12	13
20	46	46.1	0.750	54	8	9	9	9	10	11	11	11	12	13	14
20	46	46.2	1.000	56	8	9	9	9	10	11	11	12	12	13	14
20	46	46.4	1.500	61	9	9	9	10	11	11	12	12	12	14	14
20	46	47.4	3.000	77	9	9	10	11	11	12	12	13	13	15	15
20	46	51.4	6.000	111	12	13	13	14	14	15	16	17	18	18	18

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Horizontal Deflection – Joist designs marked with the note 'δ_x**>2**' have a horizontal slip greater than 2". (Reference page 14)

Scissor Joist (SPSC) Tables

Span ft	Chord Depth in	Ridge Depth in	Top Chord Pitch in/ft	Shape Depth in	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
					300	350	400	450	500	550	600	650	700	750	800
					Joist Self-Weight - Pounds per Linear Foot (**plf**)										
30	16	16.0	0.500	24	9	10	12	13	15	16	18	20	21	22	24
30	16	16.0	0.750	27	9	10	12	13	15	16	19	20	21	22	24
30	16	16.1	1.000	31	9	10	12	13	15	16	19	20	21	23	24
30	16	16.1	1.500	39	9	10	12	13	15	17	19	20	21	23	25
30	16	16.5	3.000	61	9	11	13	14	16	18	19	21	22	25	26
30	16	17.9	6.000	108	11	13	15	17	19	21	23	24	27	29	30
30	22	22.0	0.500	30	7	8	9	10	11	13	14	14	16	16	18
30	22	22.0	0.750	33	7	8	9	10	11	13	14	14	16	16	18
30	22	22.1	1.000	37	7	8	9	10	12	13	14	14	16	17	18
30	22	22.2	1.500	45	8	9	9	11	12	13	14	15	16	17	18
30	22	22.7	3.000	68	8	9	10	11	12	13	14	16	17	18	19
30	22	24.6	6.000	115	9	10	12	13	14	15	16	18	18	20	22
30	28	28.0	0.500	36	7	8	9	10	11	12	13	13	14	15	16
30	28	28.1	0.750	39	7	8	9	10	11	12	13	13	14	15	16
30	28	28.1	1.000	43	7	8	9	10	11	12	13	13	14	16	16
30	28	28.2	1.500	51	8	8	9	10	11	12	13	13	15	16	17
30	28	28.9	3.000	74	8	9	10	11	12	12	13	15	15	17	17
30	28	31.3	6.000	121	9	10	11	12	13	14	15	16	17	18	19
30	34	34.0	0.500	42	8	8	9	10	11	11	13	13	14	15	16
30	34	34.1	0.750	45	8	8	9	10	11	12	13	14	14	15	16
30	34	34.1	1.000	49	8	8	9	10	11	12	13	14	14	16	16
30	34	34.3	1.500	57	8	8	9	10	11	12	12	14	14	16	17
30	34	35.0	3.000	80	9	10	10	11	12	13	14	15	16	17	18
30	34	38.0	6.000	128	11	11	12	14	14	16	16	18	18	20	21
30	40	40.0	0.500	48	8	9	10	11	12	12	13	14	15	16	17
30	40	40.1	0.750	51	9	9	10	11	12	12	13	14	15	16	17
30	40	40.1	1.000	55	9	9	10	11	12	13	13	15	15	17	17
30	40	40.3	1.500	63	9	9	10	12	12	13	13	15	15	17	17
30	40	41.2	3.000	86	9	10	11	12	13	13	14	16	16	16	18
30	40	44.7	6.000	135	12	12	13	14	16	16	17	18	20	20	21
30	46	46.0	0.500	54	9	10	10	11	12	12	14	15	15	15	17
30	46	46.1	0.750	57	9	10	11	11	12	13	14	15	15	16	17
30	46	46.2	1.000	61	9	10	11	11	12	13	14	15	15	16	17
30	46	46.4	1.500	69	10	10	11	12	13	13	14	15	16	17	17
30	46	47.4	3.000	92	10	11	12	13	13	15	16	17	17	18	20
30	46	51.4	6.000	141	14	14	15	15	17	17	18	20	21	21	23
30	52	52.0	0.500	60	10	11	12	12	13	14	15	16	17	17	19
30	52	52.1	0.750	63	10	11	12	13	13	14	15	16	17	17	19
30	52	52.2	1.000	67	10	11	12	13	13	14	15	17	17	18	19
30	52	52.4	1.500	75	11	12	12	13	14	14	16	17	17	18	20
30	52	53.6	3.000	99	12	12	13	14	16	16	16	18	20	20	21
30	52	58.1	6.000	148	17	17	17	17	20	21	21	22	24	25	27
30	58	58.1	0.500	66	11	12	13	14	14	16	17	17	18	19	21
30	58	58.1	0.750	69	11	12	13	14	15	16	17	17	18	19	21
30	58	58.2	1.000	73	11	13	14	14	15	16	17	17	19	21	21
30	58	58.5	1.500	81	12	13	14	15	15	17	17	18	20	21	21
30	58	59.8	3.000	105	13	14	15	17	17	17	20	20	21	21	23
30	58	64.8	6.000	155	20	21	21	21	21	23	25	27	27	29	29
30	64	64.1	0.500	72	13	14	15	15	16	16	18	19	19	19	19
30	64	64.1	0.750	75	13	14	15	15	16	16	18	19	19	19	20
30	64	64.2	1.000	79	14	14	15	17	17	17	19	19	19	19	20
30	64	64.5	1.500	87	14	14	15	16	17	18	19	19	19	20	22
30	64	66.0	3.000	111	16	16	17	18	19	19	20	21	22	22	24
30	64	71.6	6.000	162	21	21	21	21	22	24	25	27	27	27	29
30	70	70.1	0.500	78	15	15	16	17	17	19	20	20	20	22	23
30	70	70.1	0.750	81	14	14	15	16	17	17	19	19	19	21	23
30	70	70.2	1.000	85	15	15	15	16	17	19	19	19	19	21	23
30	70	70.5	1.500	93	15	15	16	16	17	19	19	19	20	22	23
30	70	72.2	3.000	117	20	20	20	20	20	21	22	24	24	25	26
30	70	78.3	6.000	168	21	21	22	27	27	27	27	27	29	31	31

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Horizontal Deflection – Joist designs marked with the note 'δ_x**>2**' have a horizontal slip greater than 2". (Reference page 14)

Scissor Joist (SPSC) Tables

Span ft	Chord Depth in	Ridge Depth in	Top Chord Pitch in/ft	Shape Depth in	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
					300	350	400	450	500	550	600	650	700	750	800
					Joist Self-Weight - Pounds per Linear Foot (**plf**)										
40	20	20.0	0.500	30	13	16	18	20	22	24	27	28	31	33	36
40	20	20.0	0.750	35	13	16	18	20	22	24	27	30	31	35	36
40	20	20.1	1.000	40	13	16	18	20	22	24	27	30	31	35	36
40	20	20.2	1.500	50	13	16	19	20	23	25	27	30	31	35	37
40	20	20.6	3.000	81	14	16	19	21	24	26	29	30	33	36	39
40	20	22.4	6.000	142	$17_{\delta x>2}$	$20_{\delta x>2}$	$22_{\delta x>2}$	$25_{\delta x>2}$	$28_{\delta x>2}$	$31_{\delta x>2}$	$33_{\delta x>2}$	$36_{\delta x>2}$	$40_{\delta x>2}$	$42_{\delta x>2}$	$48_{\delta x>2}$
40	28	28.0	0.500	38	10	12	13	14	16	17	19	20	22	22	24
40	28	28.1	0.750	43	10	12	13	14	16	17	19	20	22	22	24
40	28	28.1	1.000	48	10	12	13	14	16	17	19	20	21	22	24
40	28	28.2	1.500	58	10	12	13	15	16	17	19	20	22	23	24
40	28	28.9	3.000	89	11	12	14	16	18	18	20	22	22	24	26
40	28	31.3	6.000	151	13	14	16	17	20	20	22	24	27	27	29
40	36	36.0	0.500	46	10	11	12	13	15	15	17	18	19	21	21
40	36	36.1	0.750	51	10	11	12	13	15	15	17	18	19	21	21
40	36	36.1	1.000	56	10	11	12	14	15	16	17	18	19	21	21
40	36	36.3	1.500	66	10	11	12	13	15	17	17	18	19	21	21
40	36	37.1	3.000	97	10	12	13	14	15	16	18	19	21	22	23
40	36	40.2	6.000	160	12	13	15	17	18	19	21	22	24	26	26
40	44	44.0	0.500	54	10	12	13	14	15	16	17	18	19	22	22
40	44	44.1	0.750	59	10	12	13	14	15	16	17	19	19	22	22
40	44	44.2	1.000	64	11	13	13	14	15	17	17	19	20	22	22
40	44	44.3	1.500	74	11	13	13	14	15	17	17	19	21	22	22
40	44	45.4	3.000	105	12	13	14	15	17	17	19	21	21	22	23
40	44	49.2	6.000	169	15	15	17	18	20	21	22	24	26	26	29
40	52	52.0	0.500	62	11	12	13	14	15	16	18	19	21	22	22
40	52	52.1	0.750	67	12	12	13	14	16	16	18	19	21	22	23
40	52	52.2	1.000	72	12	13	13	14	16	16	18	20	21	22	23
40	52	52.4	1.500	82	12	13	14	14	16	17	18	20	21	22	23
40	52	53.6	3.000	114	13	14	14	16	17	19	20	20	22	24	25
40	52	58.1	6.000	178	17	17	18	20	20	22	24	25	26	29	29
40	60	60.1	0.500	70	14	15	16	16	18	18	20	21	22	22	24
40	60	60.1	0.750	75	14	15	16	17	18	19	21	21	22	23	24
40	60	60.2	1.000	80	15	15	17	18	18	19	21	21	22	23	26
40	60	60.5	1.500	90	15	16	17	18	19	21	21	21	23	23	26
40	60	61.8	3.000	122	16	16	18	19	20	21	21	23	25	27	27
40	60	67.1	6.000	187	22	22	22	22	25	25	27	28	29	31	32
40	68	68.1	0.500	78	15	16	17	17	19	20	21	22	24	25	26
40	68	68.1	0.750	83	15	16	17	17	19	20	21	22	24	25	27
40	68	68.2	1.000	88	16	16	17	18	20	21	21	23	25	25	27
40	68	68.5	1.500	99	16	16	17	19	20	21	21	23	25	26	28
40	68	70.1	3.000	130	18	18	19	21	21	22	24	26	27	28	29
40	68	76.0	6.000	196	24	24	25	27	29	30	30	31	33	35	40
40	76	76.1	0.500	86	17	17	19	20	22	23	23	24	26	27	29
40	76	76.1	0.750	91	17	17	19	20	22	23	23	24	26	28	28
40	76	76.3	1.000	96	17	18	19	20	22	23	24	25	26	29	30
40	76	76.6	1.500	107	18	19	19	22	22	23	24	26	28	29	30
40	76	78.3	3.000	138	21	21	22	22	24	25	27	29	29	29	32
40	76	85.0	6.000	205	30	30	30	30	31	31	33	35	41	41	42
40	84	84.1	0.500	94	21	21	23	24	24	25	27	27	28	30	30
40	84	84.2	0.750	99	21	21	24	24	24	25	27	28	29	30	30
40	84	84.3	1.000	104	21	21	23	24	24	27	27	28	29	30	30
40	84	84.7	1.500	115	23	23	23	24	25	27	28	29	30	30	31
40	84	86.6	3.000	147	23	23	23	26	28	29	29	29	31	33	38
40	84	93.9	6.000	214	40	40	41	41	41	41	42	42	42	42	46
40	92	92.1	0.500	102	24	24	25	25	26	27	29	30	31	31	32
40	92	92.2	0.750	107	24	24	25	26	27	29	29	30	30	32	32
40	92	92.3	1.000	112	24	24	24	26	27	29	30	30	30	32	33
40	92	92.7	1.500	123	24	24	24	27	29	30	30	30	32	33	34
40	92	94.8	3.000	155	29	29	29	29	30	30	31	33	38	38	38
40	92	102.9	6.000	223	41	41	41	41	41	41	41	42	46	46	54

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Horizontal Deflection – Joist designs marked with the note 'δ_x**>2**' have a horizontal slip greater than 2". (Reference page 14)

Scissor Joist (SPSC) Tables

Span ft	Chord Depth in	Ridge Depth in	Top Chord Pitch in/ft	Shape Depth in	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
					300	350	400	450	500	550	600	650	700	750	800
					Joist Self-Weight - Pounds per Linear Foot (**plf**)										
50	26	26.0	0.500	39	16	18	20	22	25	27	30	31	35	38	40
50	26	26.1	0.750	45	16	18	20	22	25	27	30	32	35	38	40
50	26	26.1	1.000	51	16	18	20	22	25	27	30	33	35	38	40
50	26	26.2	1.500	64	16	18	20	22	25	28	30	33	35	38	44
50	26	26.8	3.000	102	16	18	21	24	26	29	32	34	37	41	45
50	26	29.1	6.000	179	$19_{\delta x>2}$	$21_{\delta x>2}$	$25_{\delta x>2}$	$28_{\delta x>2}$	$32_{\delta x>2}$	$35_{\delta x>2}$	$39_{\delta x>2}$	$40_{\delta x>2}$	$44_{\delta x>2}$	$49_{\delta x>2}$	$54_{\delta x>2}$
50	36	36.0	0.500	49	12	14	16	18	20	22	22	24	27	29	29
50	36	36.1	0.750	55	12	14	16	18	20	22	24	24	27	29	29
50	36	36.1	1.000	61	12	15	17	18	20	22	24	24	27	29	29
50	36	36.3	1.500	74	13	15	17	18	20	22	24	26	27	30	31
50	36	37.1	3.000	112	13	15	17	18	21	22	24	26	29	29	31
50	36	40.2	6.000	190	16	18	20	22	$23_{\delta x>2}$	$25_{\delta x>2}$	$28_{\delta x>2}$	$30_{\delta x>2}$	$33_{\delta x>2}$	$33_{\delta x>2}$	$36_{\delta x>2}$
50	46	46.0	0.500	59	12	14	15	17	18	19	21	21	23	25	25
50	46	46.1	0.750	65	12	14	15	17	18	19	21	21	23	25	25
50	46	46.2	1.000	71	12	13	15	17	18	19	21	23	23	25	27
50	46	46.4	1.500	84	12	13	15	17	19	20	21	23	25	25	27
50	46	47.4	3.000	122	13	15	16	18	20	21	23	24	26	27	29
50	46	51.4	6.000	201	15	17	19	21	23	25	26	28	30	31	33
50	56	56.0	0.500	69	14	15	17	18	19	22	23	24	25	27	29
50	56	56.1	0.750	75	14	15	17	18	19	22	23	24	26	27	29
50	56	56.2	1.000	81	14	15	17	18	19	22	23	24	26	27	29
50	56	56.4	1.500	94	14	15	17	18	21	22	24	24	26	29	29
50	56	57.7	3.000	133	15	17	18	21	21	23	26	26	28	30	31
50	56	62.6	6.000	213	20	23	23	24	26	28	30	31	32	34	36
50	66	66.1	0.500	79	16	17	18	19	21	22	23	25	26	28	30
50	66	66.1	0.750	85	16	17	18	19	21	22	23	25	26	28	30
50	66	66.2	1.000	91	17	18	18	19	21	22	23	25	28	28	30
50	66	66.5	1.500	104	17	18	18	21	21	23	25	25	28	29	30
50	66	68.0	3.000	143	19	20	21	21	24	24	27	28	29	31	34
50	66	73.8	6.000	224	23	24	26	28	30	30	32	34	39	40	41
50	76	76.1	0.500	89	20	21	22	23	24	25	27	27	29	31	31
50	76	76.1	0.750	95	20	21	22	23	24	25	27	28	29	31	31
50	76	76.3	1.000	101	20	21	22	23	24	25	27	28	30	31	31
50	76	76.6	1.500	114	21	21	23	23	25	27	28	28	30	31	33
50	76	78.3	3.000	153	23	23	24	24	26	28	30	30	32	32	34
50	76	85.0	6.000	235	31	31	31	31	31	35	41	41	41	41	41
50	86	86.1	0.500	99	21	22	24	24	26	27	27	29	31	31	32
50	86	86.2	0.750	105	22	23	24	24	26	27	29	30	31	31	34
50	86	86.3	1.000	111	22	23	24	25	26	27	29	31	32	32	34
50	86	86.7	1.500	124	24	24	25	26	27	29	30	31	32	33	36
50	86	88.6	3.000	164	30	30	30	31	31	31	32	35	41	41	41
50	86	96.2	6.000	246	43	43	43	44	44	44	44	44	49	50	54
50	96	96.1	0.500	109	26	26	27	30	31	33	34	35	37	37	42
50	96	96.2	0.750	115	26	26	27	30	32	33	34	35	37	42	43
50	96	96.3	1.000	121	26	26	29	31	32	33	34	35	37	42	43
50	96	96.7	1.500	134	31	31	31	32	32	33	35	37	42	42	43
50	96	99.0	3.000	174	32	32	32	33	34	37	42	42	43	43	44
50	96	107.3	6.000	257	57	57	57	57	57	57	58	59	59	59	60
50	106	106.1	0.500	119	38	38	38	38	38	38	39	41	46	46	46
50	106	106.2	0.750	125	37	37	37	37	37	39	40	45	45	45	45
50	106	106.4	1.000	131	37	37	37	37	37	39	40	45	45	45	46
50	106	106.8	1.500	144	37	37	37	37	39	40	45	45	45	45	45
50	106	109.3	3.000	184	45	45	45	45	45	46	46	46	49	49	50
50	106	118.5	6.000	269	60	60	60	60	60	60	60	60	60	60	61
50	116	116.1	0.500	129	36	36	36	36	37	38	43	43	43	44	44
50	116	116.2	0.750	135	36	36	36	36	37	39	43	43	43	44	48
50	116	116.4	1.000	141	35	35	35	35	37	38	43	43	43	43	47
50	116	116.9	1.500	154	43	43	43	43	43	43	43	43	43	47	47
50	116	119.6	3.000	195	47	47	47	47	47	47	47	51	51	55	58
50	116	129.7	6.000	280	61	61	61	61	61	61	61	61	61	61	75

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Horizontal Deflection – Joist designs marked with the note 'δ_x**>2**' have a horizontal slip greater than 2". (Reference page 14)

Scissor Joist (SPSC) Tables

Span ft	Chord Depth in	Ridge Depth in	Top Chord Pitch in/ft	Shape Depth in	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
					300	350	400	450	500	550	600	650	700	750	800
					Joist Self-Weight - Pounds per Linear Foot (**plf**)										
60	30	30.0	0.500	45	19	22	25	28	31	35	38	44	49	49	53
60	30	30.1	0.750	53	19	22	25	28	31	35	38	44	49	49	53
60	30	30.1	1.000	60	19	23	25	28	31	35	38	44	49	49	54
60	30	30.2	1.500	75	20	23	26	29	32	35	38	45	49	49	54
60	30	30.9	3.000	121	20	23	27	30	33	37	41	45	50	54	55
60	30	33.5	6.000	214	$23_{\delta x>2}$	$27_{\delta x>2}$	$31_{\delta x>2}$	$35_{\delta x>2}$	$40_{\delta x>2}$	$44_{\delta x>2}$	$49_{\delta x>2}$	$54_{\delta x>2}$	$58_{\delta x>2}$	$62_{\delta x>2}$	$66_{\delta x>2}$
60	40	40.0	0.500	55	16	18	20	22	24	27	29	32	32	35	38
60	40	40.1	0.750	63	16	18	20	22	25	27	29	32	32	35	38
60	40	40.1	1.000	70	16	18	20	22	25	27	29	32	34	35	38
60	40	40.3	1.500	85	16	18	21	22	25	27	29	32	34	37	38
60	40	41.2	3.000	131	18	19	23	25	27	30	31	34	36	38	44
60	40	44.7	6.000	225	$19_{\delta x>2}$	$22_{\delta x>2}$	$24_{\delta x>2}$	$27_{\delta x>2}$	$30_{\delta x>2}$	$33_{\delta x>2}$	$34_{\delta x>2}$	$37_{\delta x>2}$	$39_{\delta x>2}$	$46_{\delta x>2}$	$47_{\delta x>2}$
60	50	50.0	0.500	65	15	18	19	22	22	24	26	29	30	32	34
60	50	50.1	0.750	73	15	18	19	22	22	24	26	29	30	32	35
60	50	50.2	1.000	80	15	18	19	22	22	24	26	29	31	32	35
60	50	50.4	1.500	95	15	18	20	22	22	24	27	29	31	33	36
60	50	51.5	3.000	142	16	18	21	22	24	26	29	31	32	35	38
60	50	55.9	6.000	236	19	23	24	27	$29_{\delta x>2}$	$32_{\delta x>2}$	$33_{\delta x>2}$	$36_{\delta x>2}$	$38_{\delta x>2}$	$45_{\delta x>2}$	$46_{\delta x>2}$
60	60	60.1	0.500	75	17	18	20	22	23	24	27	29	31	32	34
60	60	60.1	0.750	83	17	18	20	22	23	26	27	29	30	32	34
60	60	60.2	1.000	90	17	19	20	22	24	26	27	29	31	32	34
60	60	60.5	1.500	105	18	19	21	22	24	26	29	30	31	32	34
60	60	61.8	3.000	152	18	20	21	23	26	28	30	31	32	34	35
60	60	67.1	6.000	247	22	23	26	28	30	31	33	36	42	42	43
60	70	70.1	0.500	85	19	20	23	23	25	28	29	31	32	32	34
60	70	70.1	0.750	93	20	20	23	23	25	27	29	31	31	32	34
60	70	70.2	1.000	100	20	20	23	23	25	28	29	32	32	32	34
60	70	70.5	1.500	116	20	21	23	23	26	28	29	32	32	34	36
60	70	72.2	3.000	162	24	24	25	27	29	30	32	34	36	41	41
60	70	78.3	6.000	258	26	32	32	32	33	34	37	43	44	44	45
60	80	80.1	0.500	95	22	24	24	26	27	29	30	32	34	36	36
60	80	80.2	0.750	103	22	24	24	26	27	29	30	32	34	36	40
60	80	80.3	1.000	110	23	24	24	27	29	30	31	32	34	36	40
60	80	80.6	1.500	126	24	24	25	27	29	30	31	34	36	40	41
60	80	82.5	3.000	172	24	26	27	29	30	30	32	36	41	41	41
60	80	89.4	6.000	269	42	42	42	42	43	43	43	44	48	49	53
60	90	90.1	0.500	105	28	29	30	31	33	34	34	36	38	43	43
60	90	90.2	0.750	113	28	29	30	31	33	34	34	36	38	42	43
60	90	90.3	1.000	120	28	29	30	33	34	34	36	38	38	42	43
60	90	90.7	1.500	136	28	30	31	33	34	34	36	38	42	43	43
60	90	92.8	3.000	183	33	34	34	34	36	37	42	43	43	43	43
60	90	100.6	6.000	281	48	48	48	48	48	49	53	53	57	57	61
60	100	100.1	0.500	115	30	30	33	34	35	35	37	39	43	43	43
60	100	100.2	0.750	123	30	31	32	34	35	35	37	39	43	43	43
60	100	100.3	1.000	130	30	31	33	34	35	35	37	39	43	43	43
60	100	100.8	1.500	146	35	35	35	35	36	37	39	43	44	44	44
60	100	103.1	3.000	193	37	37	37	37	40	45	45	46	46	49	50
60	100	111.8	6.000	292	60	60	60	60	60	60	60	60	61	61	62
60	110	110.1	0.500	125	35	35	35	35	35	37	39	44	44	45	45
60	110	110.2	0.750	133	35	36	36	36	36	38	39	44	45	45	45
60	110	110.4	1.000	140	36	36	36	36	38	40	45	45	46	46	46
60	110	110.9	1.500	156	37	37	37	37	39	41	45	46	46	46	50
60	110	113.4	3.000	203	44	44	44	45	45	45	46	50	54	54	58
60	110	123.0	6.000	303	63	63	63	63	63	64	64	64	66	66	71
60	120	120.1	0.500	135	54	54	54	54	54	54	54	54	58	58	58
60	120	120.2	0.750	143	54	54	54	54	54	54	54	54	58	58	61
60	120	120.4	1.000	150	54	54	54	54	54	54	54	54	58	58	61
60	120	120.9	1.500	166	54	54	54	54	54	54	54	57	57	61	61
60	120	123.7	3.000	214	61	61	61	61	62	62	63	64	64	64	64
60	120	134.2	6.000	314	80	80	80	80	80	80	80	80	81	81	81

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Horizontal Deflection – Joist designs marked with the note 'δ_x**>2**' have a horizontal slip greater than 2". (Reference page 14)

Scissor Joist (SPSC) Tables

Span ft	Chord Depth in	Ridge Depth in	Top Chord Pitch in/ft	Shape Depth in	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
					300	350	400	450	500	550	600	650	700	750	800
					Joist Self-Weight - Pounds per Linear Foot (**plf**)										
70	36	36.0	0.500	54	21	25	27	32	35	39	45	50	50	54	57
70	36	36.1	0.750	62	21	25	29	32	35	39	45	50	50	54	58
70	36	36.1	1.000	71	22	25	29	32	36	39	45	49	50	54	58
70	36	36.3	1.500	89	22	25	29	32	36	39	45	50	50	54	58
70	36	37.1	3.000	142	23	26	31	34	37	41	47	51	55	59	63
70	36	40.2	6.000	250	$26_{\delta x>2}$	$30_{\delta x>2}$	$35_{\delta x>2}$	$39_{\delta x>2}$	$44_{\delta x>2}$	$50_{\delta x>2}$	$55_{\delta x>2}$	$59_{\delta x>2}$	$63_{\delta x>2}$	$67_{\delta x>2}$	$71_{\delta x>2}$
70	46	46.0	0.500	64	18	22	24	27	30	32	34	36	39	45	47
70	46	46.1	0.750	72	19	22	24	27	30	32	35	37	39	45	47
70	46	46.2	1.000	81	19	22	24	27	30	33	35	37	39	45	47
70	46	46.4	1.500	99	19	23	24	28	30	33	36	38	44	45	47
70	46	47.4	3.000	152	20	23	25	28	31	34	36	39	45	46	48
70	46	51.4	6.000	261	$23_{\delta x>2}$	$26_{\delta x>2}$	$29_{\delta x>2}$	$32_{\delta x>2}$	$35_{\delta x>2}$	$38_{\delta x>2}$	$42_{\delta x>2}$	$47_{\delta x>2}$	$49_{\delta x>2}$	$50_{\delta x>2}$	$56_{\delta x>2}$
70	56	56.0	0.500	74	18	20	22	24	27	30	32	35	37	39	44
70	56	56.1	0.750	82	18	20	22	24	27	30	32	35	37	39	44
70	56	56.2	1.000	91	18	21	22	26	27	30	32	36	37	43	44
70	56	56.4	1.500	109	18	21	23	26	29	31	32	36	38	44	44
70	56	57.7	3.000	163	20	22	24	27	30	33	35	38	43	45	45
70	56	62.6	6.000	273	$23_{\delta x>2}$	$26_{\delta x>2}$	$30_{\delta x>2}$	$32_{\delta x>2}$	$34_{\delta x>2}$	$39_{\delta x>2}$	$45_{\delta x>2}$	$47_{\delta x>2}$	$47_{\delta x>2}$	$49_{\delta x>2}$	$54_{\delta x>2}$
70	66	66.1	0.500	84	18	21	22	24	27	29	30	32	34	37	42
70	66	66.1	0.750	92	18	21	22	24	27	29	30	33	35	37	43
70	66	66.2	1.000	101	19	21	22	26	28	30	30	33	35	42	43
70	66	66.5	1.500	119	19	21	23	26	28	30	30	33	35	42	43
70	66	68.0	3.000	173	22	23	25	28	30	32	34	40	41	42	44
70	66	73.8	6.000	284	26	29	31	31	35	41	42	43	$44_{\delta x>2}$	50	$51_{\delta x>2}$
70	76	76.1	0.500	94	21	24	24	26	28	31	32	32	35	37	42
70	76	76.1	0.750	102	22	24	24	27	30	32	32	34	36	37	42
70	76	76.3	1.000	111	23	24	25	27	30	32	32	34	37	42	42
70	76	76.6	1.500	129	23	24	25	27	30	32	32	34	37	42	42
70	76	78.3	3.000	183	25	26	28	29	32	33	36	36	42	43	43
70	76	85.0	6.000	295	33	34	34	36	38	44	46	47	51	51	56
70	86	86.1	0.500	104	25	26	27	29	31	34	35	36	38	43	44
70	86	86.2	0.750	112	25	27	28	29	31	35	35	36	38	43	44
70	86	86.3	1.000	121	26	27	28	30	31	35	36	38	38	43	44
70	86	86.7	1.500	139	27	27	29	31	32	35	36	38	43	44	44
70	86	88.6	3.000	194	33	33	33	33	37	41	42	42	42	47	47
70	86	96.2	6.000	306	47	47	48	48	48	49	53	57	58	62	62
70	96	96.1	0.500	114	33	35	37	38	38	40	42	46	47	47	47
70	96	96.2	0.750	122	33	36	37	38	38	42	46	46	47	47	47
70	96	96.3	1.000	131	33	36	37	38	40	42	46	46	47	47	51
70	96	96.7	1.500	149	38	38	38	38	40	42	46	47	47	47	51
70	96	99.0	3.000	204	38	38	39	41	46	47	47	47	51	51	55
70	96	107.3	6.000	317	61	61	61	61	61	61	62	62	62	63	63
70	106	106.1	0.500	124	40	40	40	41	42	44	49	49	49	49	53
70	106	106.2	0.750	132	40	40	40	41	42	44	49	49	49	49	53
70	106	106.4	1.000	141	40	40	40	40	44	48	49	49	49	49	53
70	106	106.8	1.500	159	41	41	41	43	45	49	50	50	50	53	54
70	106	109.3	3.000	214	49	49	49	49	49	49	49	53	53	57	61
70	106	118.5	6.000	329	69	69	69	69	69	69	70	70	71	71	76
70	116	116.1	0.500	134	42	42	43	44	46	50	51	51	51	55	55
70	116	116.2	0.750	142	43	43	43	44	46	50	51	51	51	55	55
70	116	116.4	1.000	151	42	42	43	44	50	50	50	51	55	55	58
70	116	116.9	1.500	169	50	50	50	50	50	50	51	51	55	55	59
70	116	119.6	3.000	225	51	51	51	51	51	52	56	59	59	63	63
70	116	129.7	6.000	340	74	74	74	74	75	75	75	75	75	89	90
70	126	126.1	0.500	144	49	49	49	49	49	49	49	49	53	54	57
70	126	126.2	0.750	152	49	49	49	49	49	49	49	49	53	54	57
70	126	126.4	1.000	161	49	49	49	49	49	49	49	53	53	57	57
70	126	127.0	1.500	179	49	49	49	49	49	49	53	54	57	57	61
70	126	129.9	3.000	235	63	63	63	63	63	63	63	64	64	64	64
70	126	140.9	6.000	351	88	88	88	89	89	89	89	89	89	89	89

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Horizontal Deflection – Joist designs marked with the note 'δ_x**>2**' have a horizontal slip greater than 2". (Reference page 14)

Scissor Joist (SPSC) Tables

Span ft	Chord Depth in	Ridge Depth in	Top Chord Pitch in/ft	Shape Depth in	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
					300	350	400	450	500	550	600	650	700	750	800
					Joist Self-Weight - Pounds per Linear Foot (**plf**)										
80	40	40.0	0.500	60	25	29	33	37	45	49	50	54	61	65	69
80	40	40.1	0.750	70	25	29	33	37	45	49	50	57	61	65	69
80	40	40.1	1.000	80	25	30	33	37	45	50	50	57	61	65	69
80	40	40.3	1.500	100	26	30	35	39	45	50	54	58	62	65	69
80	40	41.2	3.000	161	$27_{\delta x>2}$	$31_{\delta x>2}$	$36_{\delta x>2}$	$40_{\delta x>2}$	$45_{\delta x>2}$	51	$55_{\delta x>2}$	59	$63_{\delta x>2}$	$67_{\delta x>2}$	$74_{\delta x>2}$
80	40	44.7	6.000	285	$30_{\delta x>2}$	$36_{\delta x>2}$	$41_{\delta x>2}$	$49_{\delta x>2}$	$54_{\delta x>2}$	$59_{\delta x>2}$	$63_{\delta x>2}$	$67_{\delta x>2}$	$75_{\delta x>2}$	$78_{\delta x>2}$	$84_{\delta x>2}$
80	50	50.0	0.500	70	22	25	28	31	34	38	45	47	51	52	56
80	50	50.1	0.750	80	22	25	28	33	35	39	45	47	51	55	56
80	50	50.2	1.000	90	22	25	28	33	35	39	45	47	51	55	56
80	50	50.4	1.500	110	23	25	29	33	36	39	45	47	52	56	56
80	50	51.5	3.000	172	24	27	30	33	35	38	46	48	48	57	57
80	50	55.9	6.000	296	$28_{\delta x>2}$	$31_{\delta x>2}$	$33_{\delta x>2}$	$37_{\delta x>2}$	$40_{\delta x>2}$	$47_{\delta x>2}$	$49_{\delta x>2}$	$50_{\delta x>2}$	$56_{\delta x>2}$	$61_{\delta x>2}$	$65_{\delta x>2}$
80	60	60.1	0.500	80	22	24	27	30	32	36	39	44	45	46	48
80	60	60.1	0.750	90	22	24	27	30	32	36	39	44	45	47	48
80	60	60.2	1.000	100	22	24	27	30	33	36	39	44	45	47	48
80	60	60.5	1.500	120	22	25	27	30	33	36	39	44	45	47	52
80	60	61.8	3.000	182	22	27	29	31	35	38	43	45	46	51	53
80	60	67.1	6.000	307	$27_{\delta x>2}$	$29_{\delta x>2}$	$32_{\delta x>2}$	$35_{\delta x>2}$	$43_{\delta x>2}$	$46_{\delta x>2}$	$46_{\delta x>2}$	$48_{\delta x>2}$	$54_{\delta x>2}$	$55_{\delta x>2}$	$61_{\delta x>2}$
80	70	70.1	0.500	90	22	23	26	29	31	34	37	43	43	45	46
80	70	70.1	0.750	100	23	24	26	29	31	34	37	43	43	45	46
80	70	70.2	1.000	110	23	24	26	29	31	34	37	43	43	45	46
80	70	70.5	1.500	131	23	24	27	30	31	34	37	43	43	45	46
80	70	72.2	3.000	192	25	26	29	31	35	41	42	44	44	50	51
80	70	78.3	6.000	318	32	$32_{\delta x>2}$	$34_{\delta x>2}$	$38_{\delta x>2}$	$45_{\delta x>2}$	$46_{\delta x>2}$	$47_{\delta x>2}$	$53_{\delta x>2}$	$55_{\delta x>2}$	$59_{\delta x>2}$	$61_{\delta x>2}$
80	80	80.1	0.500	100	25	27	28	30	33	35	37	42	44	45	46
80	80	80.2	0.750	110	25	27	28	31	34	35	37	42	44	45	46
80	80	80.3	1.000	120	26	27	30	32	34	35	37	42	44	45	47
80	80	80.6	1.500	141	26	28	30	32	35	37	42	43	44	45	50
80	80	82.5	3.000	202	26	29	31	33	37	42	42	42	44	49	50
80	80	89.4	6.000	329	43	44	44	45	45	45	50	$55_{\delta x>2}$	$56_{\delta x>2}$	$60_{\delta x>2}$	$62_{\delta x>2}$
80	90	90.1	0.500	110	29	31	33	34	35	36	38	43	43	45	47
80	90	90.2	0.750	120	29	32	33	34	36	38	43	43	43	45	50
80	90	90.3	1.000	130	29	32	33	35	36	38	43	43	44	45	51
80	90	90.7	1.500	151	30	32	35	35	36	38	43	43	44	45	51
80	90	92.8	3.000	213	34	35	35	37	43	44	44	44	48	50	54
80	90	100.6	6.000	341	50	51	51	52	52	56	57	61	65	66	66
80	100	100.1	0.500	120	34	36	38	39	41	42	47	47	47	48	52
80	100	100.2	0.750	130	34	36	38	39	41	47	47	47	47	51	52
80	100	100.3	1.000	140	34	37	38	39	42	47	47	47	48	51	52
80	100	100.8	1.500	161	38	38	38	40	42	47	47	47	51	51	52
80	100	103.1	3.000	223	42	42	44	46	51	51	51	56	56	60	60
80	100	111.8	6.000	352	65	65	66	66	66	67	67	67	68	68	68
80	110	110.1	0.500	130	40	41	41	42	44	48	48	49	49	53	53
80	110	110.2	0.750	140	40	41	41	42	44	48	48	49	53	53	53
80	110	110.4	1.000	150	40	41	41	42	48	48	48	49	53	53	57
80	110	110.9	1.500	171	40	41	41	44	48	48	48	52	53	56	57
80	110	113.4	3.000	233	55	55	55	55	56	59	59	63	67	67	67
80	110	123.0	6.000	363	70	71	71	71	71	71	71	71	76	77	86
80	120	120.1	0.500	140	57	57	57	57	57	57	58	62	62	66	66
80	120	120.2	0.750	150	57	57	57	57	57	57	58	62	66	66	70
80	120	120.4	1.000	160	57	57	57	57	57	57	61	62	66	66	70
80	120	120.9	1.500	181	57	57	57	57	57	57	61	65	66	70	70
80	120	123.7	3.000	244	69	69	69	69	70	70	70	70	70	70	70
80	120	134.2	6.000	374	86	86	86	86	86	86	87	87	87	87	87
80	130	130.1	0.375	145	51	51	52	58	58	58	59	63	63	67	68
80	130	130.2	0.625	155	58	58	58	58	58	58	58	62	62	67	67
80	130	130.3	0.875	165	58	58	58	58	58	58	58	63	66	67	71
80	130	130.7	1.250	181	58	58	58	58	58	58	62	63	67	67	71
80	130	131.8	2.000	212	60	60	60	60	60	72	72	72	73	73	73
80	130	137.0	4.000	297	71	72	72	72	72	72	72	72	72	72	77

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Horizontal Deflection – Joist designs marked with the note 'δ_x**>2**' have a horizontal slip greater than 2". (Reference page 14)

Scissor Joist (SPSC) Tables

Span	Chord Depth	Ridge Depth	Top Chord Pitch	Shape Depth	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
					300	350	400	450	500	550	600	650	700	750	800
ft	in	in	in/ft	in	Joist Self-Weight - Pounds per Linear Foot (**plf**)										
90	46	46.0	0.500	69	28	32	36	41	46	50	54	58	62	69	73
90	46	46.1	0.750	80	28	32	36	41	46	50	54	58	65	69	73
90	46	46.2	1.000	91	28	32	36	41	46	51	55	59	66	69	73
90	46	46.4	1.500	114	28	32	36	45	46	51	55	59	66	70	74
90	46	47.4	3.000	182	$30_{\delta x>2}$	$33_{\delta x>2}$	$39_{\delta x>2}$	$45_{\delta x>2}$	$51_{\delta x>2}$	$51_{\delta x>2}$	$59_{\delta x>2}$	$63_{\delta x>2}$	$67_{\delta x>2}$	$71_{\delta x>2}$	$79_{\delta x>2}$
90	46	51.4	6.000	321	$34_{\delta x>2}$	$38_{\delta x>2}$	$45_{\delta x>2}$	$50_{\delta x>2}$	$55_{\delta x>2}$	$63_{\delta x>2}$	$67_{\delta x>2}$	$71_{\delta x>2}$	$79_{\delta x>2}$	$84_{\delta x>2}$	$89_{\delta x>2}$
90	56	56.0	0.500	79	24	29	33	36	39	45	47	52	56	56	63
90	56	56.1	0.750	90	24	29	33	36	39	45	47	56	56	60	63
90	56	56.2	1.000	101	25	29	33	36	39	46	48	56	56	60	64
90	56	56.4	1.500	124	26	30	33	36	44	46	48	56	56	60	64
90	56	57.7	3.000	193	27	30	34	39	45	47	49	57	58	62	66
90	56	62.6	6.000	333	$33_{\delta x>2}$	$34_{\delta x>2}$	$40_{\delta x>2}$	$48_{\delta x>2}$	$49_{\delta x>2}$	$51_{\delta x>2}$	$57_{\delta x>2}$	$66_{\delta x>2}$	$66_{\delta x>2}$	$71_{\delta x>2}$	$75_{\delta x>2}$
90	66	66.1	0.500	89	25	27	30	33	38	43	45	47	49	56	57
90	66	66.1	0.750	100	25	27	30	33	38	44	45	47	52	57	57
90	66	66.2	1.000	111	25	27	32	33	38	44	45	47	52	57	60
90	66	66.5	1.500	134	24	27	32	34	38	44	45	47	53	57	61
90	66	68.0	3.000	203	26	29	32	37	43	45	46	52	54	58	62
90	66	73.8	6.000	344	$31_{\delta x>2}$	$35_{\delta x>2}$	$38_{\delta x>2}$	$45_{\delta x>2}$	$47_{\delta x>2}$	$49_{\delta x>2}$	$54_{\delta x>2}$	$60_{\delta x>2}$	$62_{\delta x>2}$	$67_{\delta x>2}$	$71_{\delta x>2}$
90	76	76.1	0.500	99	24	28	30	33	36	39	46	46	47	53	54
90	76	76.1	0.750	110	24	28	30	33	36	39	46	46	47	53	54
90	76	76.3	1.000	121	24	28	30	34	36	39	46	46	47	53	54
90	76	76.6	1.500	144	26	28	32	34	38	44	46	46	48	53	55
90	76	78.3	3.000	213	28	30	32	36	43	45	47	47	52	54	60
90	76	85.0	6.000	355	$34_{\delta x>2}$	$36_{\delta x>2}$	$40_{\delta x>2}$	$46_{\delta x>2}$	$47_{\delta x>2}$	$54_{\delta x>2}$	$55_{\delta x>2}$	$59_{\delta x>2}$	$61_{\delta x>2}$	$66_{\delta x>2}$	$69_{\delta x>2}$
90	86	86.1	0.500	109	26	28	30	34	35	37	43	44	46	51	52
90	86	86.2	0.750	120	27	28	31	34	35	37	43	44	46	50	52
90	86	86.3	1.000	131	27	28	31	34	37	42	43	44	46	50	52
90	86	86.7	1.500	154	27	30	31	35	37	42	43	45	50	51	52
90	86	88.6	3.000	224	34	34	36	42	42	43	48	50	54	55	60
90	86	96.2	6.000	366	49	49	49	50	54	59	$59_{\delta x>2}$	$63_{\delta x>2}$	$64_{\delta x>2}$	$65_{\delta x>2}$	$70_{\delta x>2}$
90	96	96.0	0.375	113	37	38	40	41	43	48	48	49	53	53	57
90	96	96.1	0.625	124	37	39	40	41	43	48	48	49	53	53	57
90	96	96.3	0.875	136	37	39	40	41	47	48	48	49	53	53	57
90	96	96.5	1.250	153	37	40	40	43	48	48	48	53	53	57	57
90	96	97.3	2.000	187	40	40	42	43	48	48	49	53	54	57	61
90	96	101.2	4.000	281	49	49	49	50	51	55	55	59	63	64	64
90	106	106.1	0.375	123	42	42	42	45	50	51	51	51	55	55	59
90	106	106.1	0.625	134	42	42	42	45	50	50	51	54	55	58	59
90	106	106.3	0.875	146	42	42	44	45	50	50	51	54	55	59	59
90	106	106.6	1.250	163	42	42	44	46	50	51	51	54	55	58	63
90	106	107.5	2.000	197	43	43	46	51	51	51	55	55	59	59	63
90	106	111.7	4.000	292	51	52	52	52	56	57	61	65	65	65	66
90	116	116.1	0.375	133	48	48	50	52	56	56	56	60	60	64	64
90	116	116.2	0.625	144	48	48	50	56	56	56	56	60	64	64	68
90	116	116.3	0.875	156	48	48	51	56	56	56	60	60	63	64	68
90	116	116.6	1.250	173	48	48	56	56	56	56	60	60	64	68	68
90	116	117.6	2.000	208	56	56	56	56	56	60	60	64	68	68	68
90	116	122.3	4.000	302	68	69	69	69	69	69	69	69	70	75	75
90	126	126.1	0.375	143	50	50	58	58	58	58	62	62	65	65	69
90	126	126.2	0.625	154	57	58	58	58	58	58	62	62	65	69	69
90	126	126.3	0.875	166	57	58	58	58	58	58	62	65	65	69	69
90	126	126.7	1.250	183	58	58	58	58	58	62	62	65	69	69	69
90	126	127.7	2.000	218	58	58	58	58	62	62	65	69	69	69	69
90	126	132.8	4.000	313	70	70	70	70	70	70	70	70	71	76	76
90	136	136.1	0.375	153	53	53	61	61	61	61	65	65	68	68	72
90	136	136.2	0.625	164	60	60	60	60	60	60	64	64	67	67	71
90	136	136.4	0.875	176	60	60	60	60	60	60	64	67	67	71	71
90	136	136.7	1.250	193	60	60	60	60	60	64	64	67	71	71	71
90	136	137.9	2.000	228	70	70	70	71	71	71	71	71	71	71	72
90	136	143.4	4.000	323	72	72	72	72	72	72	72	72	73	78	78

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Horizontal Deflection – Joist designs marked with the note 'δ_x**>2**' have a horizontal slip greater than 2". (Reference page 14)

Scissor Joist (SPSC) Tables

Span ft	Chord Depth in	Ridge Depth in	Top Chord Pitch in/ft	Shape Depth in	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
					300	350	400	450	500	550	600	650	700	750	800
					Joist Self-Weight - Pounds per Linear Foot (**plf**)										
100	50	50.0	0.500	75	32	36	44	50	54	58	62	66	73	78	82
100	50	50.1	0.750	88	32	36	44	50	54	58	62	69	73	78	90
100	50	50.2	1.000	100	32	36	44	50	54	58	62	69	73	78	91
100	50	50.4	1.500	125	32	36	44	50	55	58	62	70	73	82	91
100	50	51.5	3.000	202	$33_{\delta x>2}$	$39_{\delta x>2}$	$45_{\delta x>2}$	$51_{\delta x>2}$	$56_{\delta x>2}$	$60_{\delta x>2}$	$67_{\delta x>2}$	$71_{\delta x>2}$	$79_{\delta x>2}$	$84_{\delta x>2}$	$93_{\delta x>2}$
100	50	55.9	6.000	356	$38_{\delta x>2}$	$46_{\delta x>2}$	$50_{\delta x>2}$	$60_{\delta x>2}$	$63_{\delta x>2}$	$72_{\delta x>2}$	$76_{\delta x>2}$	$84_{\delta x>2}$	$90_{\delta x>2}$	$99_{\delta x>2}$	$107_{\delta x>2}$
100	58	58.1	0.500	83	29	33	36	45	47	52	56	60	63	67	70
100	58	58.1	0.750	96	30	33	38	45	47	52	56	60	63	67	71
100	58	58.2	1.000	108	30	33	38	45	47	55	56	60	64	67	71
100	58	58.5	1.500	133	30	35	38	46	47	56	56	60	64	67	71
100	58	59.8	3.000	210	$31_{\delta x>2}$	$36_{\delta x>2}$	$39_{\delta x>2}$	$46_{\delta x>2}$	$48_{\delta x>2}$	$57_{\delta x>2}$	$57_{\delta x>2}$	$61_{\delta x>2}$	$69_{\delta x>2}$	$69_{\delta x>2}$	$77_{\delta x>2}$
100	58	64.8	6.000	365	$35_{\delta x>2}$	$45_{\delta x>2}$	$47_{\delta x>2}$	$50_{\delta x>2}$	$56_{\delta x>2}$	$65_{\delta x>2}$	$65_{\delta x>2}$	$70_{\delta x>2}$	$74_{\delta x>2}$	$80_{\delta x>2}$	$84_{\delta x>2}$
100	66	66.0	0.375	85	28	32	36	39	45	48	53	57	61	65	68
100	66	66.1	0.625	97	28	33	36	39	45	48	57	57	61	65	69
100	66	66.2	0.875	110	28	33	36	39	45	48	57	57	61	65	69
100	66	66.4	1.250	129	28	33	36	40	46	49	57	57	62	65	69
100	66	66.9	2.000	167	30	33	36	44	46	49	57	58	62	69	70
100	66	69.6	4.000	270	$32_{\delta x>2}$	$36_{\delta x>2}$	$40_{\delta x>2}$	$46_{\delta x>2}$	$48_{\delta x>2}$	$55_{\delta x>2}$	$60_{\delta x>2}$	$64_{\delta x>2}$	$68_{\delta x>2}$	$72_{\delta x>2}$	$73_{\delta x>2}$
100	74	74.0	0.375	93	27	31	34	38	45	46	48	53	58	61	62
100	74	74.1	0.625	105	27	31	34	38	45	46	48	53	58	62	65
100	74	74.2	0.875	118	27	32	35	38	45	46	48	53	58	62	65
100	74	74.4	1.250	137	27	32	35	38	45	46	51	53	62	62	65
100	74	75.0	2.000	175	29	32	35	43	45	47	52	53	62	62	66
100	74	78.0	4.000	278	$31_{\delta x>2}$	$34_{\delta x>2}$	$38_{\delta x>2}$	$45_{\delta x>2}$	$46_{\delta x>2}$	$52_{\delta x>2}$	$53_{\delta x>2}$	$59_{\delta x>2}$	$64_{\delta x>2}$	$68_{\delta x>2}$	$68_{\delta x>2}$
100	82	82.0	0.375	101	28	32	34	38	44	46	48	53	54	63	63
100	82	82.1	0.625	113	29	32	34	38	44	46	48	53	55	62	63
100	82	82.2	0.875	126	29	34	34	38	44	46	48	53	55	63	63
100	82	82.4	1.250	145	29	34	36	38	44	46	48	53	55	63	67
100	82	83.1	2.000	183	31	34	36	43	45	47	52	54	59	63	67
100	82	86.4	4.000	286	33	37	39	45	47	53	$54_{\delta x>2}$	$59_{\delta x>2}$	65	69	70
100	90	90.0	0.375	109	31	34	34	37	43	45	47	51	52	57	59
100	90	90.1	0.625	121	31	34	36	37	43	45	47	51	52	57	59
100	90	90.2	0.875	134	31	34	36	37	43	45	47	51	52	57	62
100	90	90.5	1.250	153	33	34	36	42	43	45	50	51	55	57	63
100	90	91.2	2.000	191	33	34	37	42	44	45	51	51	56	61	63
100	90	94.9	4.000	295	36	38	45	46	47	53	58	60	65	67	67
100	98	98.0	0.375	117	39	40	41	43	48	49	49	53	53	57	62
100	98	98.1	0.625	129	39	40	41	43	48	49	49	53	57	57	62
100	98	98.3	0.875	142	39	40	41	48	49	49	53	53	57	57	62
100	98	98.5	1.250	161	40	40	43	48	49	49	53	53	57	61	62
100	98	99.4	2.000	199	40	41	43	48	49	53	53	57	57	61	63
100	98	103.3	4.000	303	48	49	49	49	54	54	58	62	63	63	69
100	106	106.1	0.375	125	41	42	43	50	50	50	54	54	58	58	62
100	106	106.1	0.625	137	41	41	43	50	50	50	54	54	58	58	62
100	106	106.3	0.875	150	41	41	45	50	50	50	54	54	58	58	62
100	106	106.6	1.250	169	42	42	45	50	50	50	54	58	58	62	63
100	106	107.5	2.000	207	42	44	50	51	51	55	55	59	63	63	63
100	106	111.7	4.000	312	51	52	52	52	56	61	65	65	66	66	71
100	114	114.1	0.375	133	50	50	53	58	58	58	62	62	66	70	70
100	114	114.2	0.625	145	50	52	53	58	58	58	62	66	66	70	70
100	114	114.3	0.875	158	50	52	53	58	58	62	62	66	66	70	71
100	114	114.6	1.250	177	50	52	58	58	58	62	62	66	70	70	71
100	114	115.6	2.000	216	58	58	58	58	62	62	66	70	70	71	71
100	114	120.2	4.000	320	72	72	72	73	73	73	74	74	80	80	89
100	122	122.1	0.375	141	49	51	57	58	58	62	62	66	69	69	69
100	122	122.2	0.625	153	57	57	57	58	58	62	62	66	69	69	70
100	122	122.3	0.875	166	57	57	57	58	58	62	65	66	69	69	70
100	122	122.7	1.250	185	57	57	57	58	62	62	65	69	69	69	70
100	122	123.7	2.000	224	57	57	57	58	62	66	69	69	69	69	74
100	122	128.6	4.000	329	74	74	74	74	75	75	76	76	81	82	90

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Horizontal Deflection – Joist designs marked with the note 'δ_x**>2**' have a horizontal slip greater than 2". (Reference page 14)

Scissor Joist (SPSC) Tables

Span ft	Chord Depth in	Ridge Depth in	Top Chord Pitch in/ft	Shape Depth in	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
					300	350	400	450	500	550	600	650	700	750	800
					Joist Self-Weight - Pounds per Linear Foot (**plf**)										
110	56	56.0	0.375	77	35	40	46	51	55	63	67	74	79	83	92
110	56	56.1	0.625	90	35	40	47	51	55	63	70	74	79	83	92
110	56	56.1	0.875	104	36	40	47	51	56	63	70	74	79	83	92
110	56	56.3	1.250	125	36	40	47	52	56	63	70	74	79	84	92
110	56	56.8	2.000	167	36	45	47	56	60	64	71	75	80	92	93
110	56	59.0	4.000	279	$39_{\delta x>2}$	$45_{\delta x>2}$	$49_{\delta x>2}$	$57_{\delta x>2}$	$62_{\delta x>2}$	$69_{\delta x>2}$	$74_{\delta x>2}$	$82_{\delta x>2}$	$87_{\delta x>2}$	$95_{\delta x>2}$	$103_{\delta x>2}$
110	64	64.0	0.375	85	32	36	44	47	56	56	63	67	71	76	79
110	64	64.1	0.625	98	32	38	44	47	56	56	63	67	71	76	80
110	64	64.2	0.875	112	32	38	44	48	56	56	64	67	72	76	80
110	64	64.3	1.250	133	32	38	44	48	56	56	64	68	72	76	80
110	64	64.9	2.000	175	34	38	45	48	56	57	61	68	72	77	81
110	64	67.5	4.000	287	$35_{\delta x>2}$	$45_{\delta x>2}$	$46_{\delta x>2}$	$50_{\delta x>2}$	$58_{\delta x>2}$	$63_{\delta x>2}$	$67_{\delta x>2}$	$71_{\delta x>2}$	$79_{\delta x>2}$	$80_{\delta x>2}$	$92_{\delta x>2}$
110	72	72.0	0.375	93	32	36	40	46	49	57	58	62	69	69	73
110	72	72.1	0.625	106	32	36	40	46	49	57	58	62	69	69	73
110	72	72.2	0.875	120	32	36	40	46	49	57	58	62	69	69	78
110	72	72.4	1.250	141	32	37	44	46	49	58	62	62	69	70	78
110	72	73.0	2.000	183	33	37	45	46	50	58	62	63	70	70	79
110	72	75.9	4.000	296	$35_{\delta x>2}$	$45_{\delta x>2}$	$47_{\delta x>2}$	$48_{\delta x>2}$	$55_{\delta x>2}$	$64_{\delta x>2}$	$64_{\delta x>2}$	$69_{\delta x>2}$	$72_{\delta x>2}$	$78_{\delta x>2}$	$82_{\delta x>2}$
110	80	80.0	0.375	101	33	35	39	45	47	52	54	61	62	66	70
110	80	80.1	0.625	114	33	35	39	45	47	52	54	61	65	66	70
110	80	80.2	0.875	128	33	35	39	45	46	52	54	62	65	66	70
110	80	80.4	1.250	149	33	35	39	45	47	52	54	62	66	66	70
110	80	81.1	2.000	191	33	35	44	45	47	53	58	62	66	66	75
110	80	84.3	4.000	304	$36_{\delta x>2}$	$43_{\delta x>2}$	$45_{\delta x>2}$	$47_{\delta x>2}$	$52_{\delta x>2}$	$58_{\delta x>2}$	$60_{\delta x>2}$	$68_{\delta x>2}$	$69_{\delta x>2}$	$74_{\delta x>2}$	$78_{\delta x>2}$
110	88	88.0	0.375	109	34	34	38	45	47	48	53	59	63	67	68
110	88	88.1	0.625	122	34	34	38	45	47	52	53	59	63	67	68
110	88	88.2	0.875	136	34	36	39	45	47	52	53	59	63	67	68
110	88	88.5	1.250	157	34	36	39	45	47	52	54	59	67	68	68
110	88	89.2	2.000	199	35	36	44	45	47	52	58	60	67	68	69
110	88	92.8	4.000	313	37	$44_{\delta x>2}$	$45_{\delta x>2}$	$47_{\delta x>2}$	$53_{\delta x>2}$	$58_{\delta x>2}$	$60_{\delta x>2}$	$66_{\delta x>2}$	$70_{\delta x>2}$	$76_{\delta x>2}$	$76_{\delta x>2}$
110	96	96.0	0.375	117	39	41	43	47	48	52	52	58	59	67	68
110	96	96.1	0.625	131	39	41	43	47	48	52	52	57	63	67	68
110	96	96.3	0.875	144	39	41	47	47	48	52	52	57	63	67	68
110	96	96.5	1.250	165	39	41	47	47	48	52	56	58	63	67	68
110	96	97.3	2.000	207	40	43	47	48	52	52	56	62	63	68	73
110	96	101.2	4.000	321	50	50	51	55	56	60	$64_{\delta x>2}$	$66_{\delta x>2}$	$69_{\delta x>2}$	78	$78_{\delta x>2}$
110	104	104.1	0.375	125	41	43	49	49	49	53	54	57	63	65	65
110	104	104.1	0.625	139	41	43	49	49	49	53	54	57	63	65	65
110	104	104.3	0.875	152	41	42	49	49	49	53	57	57	63	65	65
110	104	104.6	1.250	173	41	44	49	49	53	53	57	61	63	65	65
110	104	105.4	2.000	215	42	44	49	49	53	57	58	61	63	65	70
110	104	109.6	4.000	330	50	50	51	55	59	63	63	64	70	72	81
110	112	112.1	0.375	133	50	51	57	57	58	62	62	66	70	70	71
110	112	112.2	0.625	147	50	53	57	58	58	62	66	66	70	70	71
110	112	112.3	0.875	160	50	53	57	58	58	62	66	66	70	71	71
110	112	112.6	1.250	181	50	53	57	58	62	62	66	70	70	71	75
110	112	113.5	2.000	224	58	58	58	58	62	66	70	70	71	71	76
110	112	118.1	4.000	338	71	71	71	71	71	72	72	73	78	78	87
110	120	120.1	0.375	141	51	54	59	59	63	63	66	71	71	72	72
110	120	120.2	0.625	155	59	59	59	59	63	63	67	71	71	72	72
110	120	120.3	0.875	168	59	59	59	59	63	63	67	71	72	72	77
110	120	120.6	1.250	189	59	59	59	59	63	67	67	71	72	72	77
110	120	121.7	2.000	232	59	59	59	63	63	67	71	71	72	78	78
110	120	126.5	4.000	346	73	73	73	74	74	74	75	80	81	90	90
110	128	128.1	0.375	149	52	60	60	60	60	64	68	69	72	73	73
110	128	128.2	0.625	163	60	60	60	60	64	64	68	72	72	73	74
110	128	128.3	0.875	176	60	60	60	60	64	64	68	72	72	73	74
110	128	128.7	1.250	197	60	60	60	60	64	68	68	72	73	73	78
110	128	129.8	2.000	240	62	62	62	66	66	73	74	74	75	80	80
110	128	134.9	4.000	355	74	74	74	74	75	75	76	81	82	91	91

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Horizontal Deflection – Joist designs marked with the note 'δ_x**>2**' have a horizontal slip greater than 2". (Reference page 14)

Scissor Joist (SPSC) Tables

Span ft	Chord Depth in	Ridge Depth in	Top Chord Pitch in/ft	Shape Depth in	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
					300	350	400	450	500	550	600	650	700	750	800
					Joist Self-Weight - Pounds per Linear Foot (**plf**)										
120	60	60.0	0.375	83	39	47	52	56	63	71	74	83	92	100	101
120	60	60.1	0.625	98	39	47	52	56	63	71	74	83	92	100	101
120	60	60.2	0.875	113	39	47	52	56	63	71	79	83	92	100	101
120	60	60.3	1.250	135	39	47	52	56	63	71	79	84	92	100	101
120	60	60.8	2.000	181	44	47	56	60	64	71	80	84	93	101	113
120	60	63.2	4.000	303	$45_{\delta x>2}$	$49_{\delta x>2}$	$58_{\delta x>2}$	$62_{\delta x>2}$	$70_{\delta x>2}$	$77_{\delta x>2}$	$82_{\delta x>2}$	$95_{\delta x>2}$	$103_{\delta x>2}$	$104_{\delta x>2}$	$116_{\delta x>2}$
120	68	68.0	0.375	91	35	44	48	56	56	64	68	71	80	80	92
120	68	68.1	0.625	106	35	44	48	56	56	64	68	72	80	80	92
120	68	68.2	0.875	121	35	44	48	56	57	64	68	72	80	88	93
120	68	68.4	1.250	143	37	44	48	56	60	64	68	72	80	88	93
120	68	68.9	2.000	189	37	45	48	57	61	68	69	77	78	89	94
120	68	71.7	4.000	312	$46_{\delta x>2}$	$47_{\delta x>2}$	$55_{\delta x>2}$	$60_{\delta x>2}$	$64_{\delta x>2}$	$72_{\delta x>2}$	$73_{\delta x>2}$	$81_{\delta x>2}$	$85_{\delta x>2}$	$94_{\delta x>2}$	$98_{\delta x>2}$
120	76	76.0	0.375	99	34	40	46	50	57	58	65	69	72	78	81
120	76	76.1	0.625	114	35	40	46	50	57	58	65	69	73	78	81
120	76	76.2	0.875	129	35	40	46	50	57	62	65	69	73	78	82
120	76	76.4	1.250	151	35	40	46	50	58	62	66	69	73	78	82
120	76	77.0	2.000	197	36	45	46	50	58	62	69	70	74	79	90
120	76	80.1	4.000	320	$44_{\delta x>2}$	$47_{\delta x>2}$	$48_{\delta x>2}$	$56_{\delta x>2}$	$64_{\delta x>2}$	$68_{\delta x>2}$	$72_{\delta x>2}$	$78_{\delta x>2}$	$82_{\delta x>2}$	$91_{\delta x>2}$	$94_{\delta x>2}$
120	84	84.0	0.375	107	33	39	45	47	53	58	62	66	70	70	78
120	84	84.1	0.625	122	33	39	45	47	53	58	62	66	69	70	78
120	84	84.2	0.875	137	33	39	45	47	54	58	62	66	70	75	78
120	84	84.5	1.250	159	35	39	46	47	54	62	62	66	70	75	79
120	84	85.2	2.000	205	35	44	46	47	54	62	63	67	70	75	79
120	84	88.5	4.000	329	$43_{\delta x>2}$	$46_{\delta x>2}$	$52_{\delta x>2}$	$53_{\delta x>2}$	$60_{\delta x>2}$	$68_{\delta x>2}$	$69_{\delta x>2}$	$74_{\delta x>2}$	$78_{\delta x>2}$	$87_{\delta x>2}$	$91_{\delta x>2}$
120	92	92.0	0.375	115	35	39	45	47	50	55	63	64	68	72	77
120	92	92.1	0.625	130	35	39	45	47	53	55	63	67	68	72	77
120	92	92.2	0.875	145	35	39	46	47	53	55	63	67	68	72	77
120	92	92.5	1.250	167	36	39	46	47	53	55	63	67	68	72	77
120	92	93.3	2.000	213	36	44	46	47	54	59	64	68	69	77	77
120	92	97.0	4.000	337	49	$50_{\delta x>2}$	$54_{\delta x>2}$	$55_{\delta x>2}$	$60_{\delta x>2}$	$65_{\delta x>2}$	$70_{\delta x>2}$	$76_{\delta x>2}$	$77_{\delta x>2}$	$90_{\delta x>2}$	$90_{\delta x>2}$
120	100	100.0	0.375	123	41	42	49	49	49	55	60	65	69	69	78
120	100	100.1	0.625	138	41	44	49	49	53	55	60	68	69	69	78
120	100	100.3	0.875	153	41	44	49	49	53	55	60	68	69	70	78
120	100	100.5	1.250	176	42	44	49	49	53	55	60	69	69	70	78
120	100	101.4	2.000	221	43	49	50	50	54	59	65	69	70	75	79
120	100	105.4	4.000	345	51	52	56	$60_{\delta x>2}$	$64_{\delta x>2}$	$66_{\delta x>2}$	$68_{\delta x>2}$	$77_{\delta x>2}$	$78_{\delta x>2}$	$87_{\delta x>2}$	$91_{\delta x>2}$
120	108	108.1	0.375	131	42	45	50	50	54	54	59	64	69	69	75
120	108	108.1	0.625	146	42	45	50	50	54	54	59	65	69	69	75
120	108	108.3	0.875	161	43	45	50	50	54	58	59	65	69	70	75
120	108	108.6	1.250	184	43	49	50	50	54	58	59	65	69	74	75
120	108	109.5	2.000	229	45	50	50	54	54	58	63	65	65	74	76
120	108	113.8	4.000	354	68	69	69	69	69	70	71	77	86	86	$86_{\delta x>2}$
120	116	116.1	0.375	139	50	53	58	58	62	62	66	70	70	71	75
120	116	116.2	0.625	154	51	53	58	58	62	66	66	70	70	71	75
120	116	116.3	0.875	169	51	57	58	58	62	65	69	70	70	75	76
120	116	116.6	1.250	192	51	58	58	62	62	66	70	70	70	75	75
120	116	117.6	2.000	238	58	58	58	62	66	66	70	70	75	76	84
120	116	122.3	4.000	362	71	71	71	72	72	73	78	78	87	87	88
120	124	124.0	0.250	139	53	55	60	60	64	68	68	72	73	74	79
120	124	124.1	0.500	154	59	60	60	60	64	68	68	72	73	74	79
120	124	124.2	0.750	169	59	60	60	61	64	68	72	72	73	79	79
120	124	124.4	1.000	184	59	60	60	64	64	68	72	72	73	79	79
120	124	125.0	1.500	215	59	60	60	64	68	68	72	73	73	79	87
120	124	127.8	3.000	308	71	71	72	72	73	73	73	78	78	86	87
120	132	132.0	0.250	147	53	56	61	61	65	65	69	73	73	74	80
120	132	132.1	0.500	162	60	61	61	61	65	69	69	73	73	74	80
120	132	132.3	0.750	177	60	60	61	61	65	69	69	73	73	74	79
120	132	132.5	1.000	192	60	60	61	61	65	68	72	73	73	74	80
120	132	133.0	1.500	223	62	62	62	66	70	70	74	74	75	81	81
120	132	136.1	3.000	316	72	72	73	73	74	74	74	79	79	88	89

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Horizontal Deflection – Joist designs marked with the note 'δ_x**>2**' have a horizontal slip greater than 2". (Reference page 14)

Scissor Joist (SPSC) Tables

Span ft	Chord Depth in	Ridge Depth in	Top Chord Pitch in/ft	Shape Depth in	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
					300	350	400	450	500	550	600	650	700	750	800
					Joist Self-Weight - Pounds per Linear Foot (**plf**)										
130	66	66.0	0.375	90	45	47	56	64	67	71	80	92	93	101	112
130	66	66.1	0.625	107	45	47	56	64	67	71	80	92	93	101	112
130	66	66.2	0.875	123	45	48	56	64	68	71	80	92	93	101	112
130	66	66.4	1.250	148	46	48	56	64	68	71	80	93	93	101	113
130	66	66.9	2.000	197	46	48	57	64	68	80	81	94	94	102	113
130	66	69.6	4.000	330	$48_{\delta x>2}$	$54_{\delta x>2}$	$63_{\delta x>2}$	$70_{\delta x>2}$	$74_{\delta x>2}$	$80_{\delta x>2}$	$88_{\delta x>2}$	$97_{\delta x>2}$	$105_{\delta x>2}$	$117_{\delta x>2}$	$118_{\delta x>2}$
130	72	72.0	0.375	96	43	46	56	56	64	68	72	80	92	93	101
130	72	72.1	0.625	113	43	46	56	60	64	68	76	80	89	93	101
130	72	72.2	0.875	129	43	46	56	60	64	68	76	80	89	93	101
130	72	72.4	1.250	154	44	47	56	60	68	68	77	80	89	94	102
130	72	73.0	2.000	203	44	47	57	61	69	69	77	81	90	94	103
130	72	75.9	4.000	336	$47_{\delta x>2}$	$53_{\delta x>2}$	$59_{\delta x>2}$	$64_{\delta x>2}$	$72_{\delta x>2}$	$73_{\delta x>2}$	$81_{\delta x>2}$	$93_{\delta x>2}$	$98_{\delta x>2}$	$99_{\delta x>2}$	$118_{\delta x>2}$
130	78	78.0	0.375	102	40	46	49	58	61	65	69	77	81	89	94
130	78	78.1	0.625	119	40	46	49	58	61	68	69	77	81	89	94
130	78	78.2	0.875	135	40	46	49	58	61	69	69	77	81	89	94
130	78	78.4	1.250	160	40	46	49	58	61	69	69	77	82	90	94
130	78	79.1	2.000	209	45	46	49	58	62	69	70	78	82	90	95
130	78	82.2	4.000	342	$46_{\delta x>2}$	$52_{\delta x>2}$	$55_{\delta x>2}$	$68_{\delta x>2}$	$68_{\delta x>2}$	$72_{\delta x>2}$	$78_{\delta x>2}$	$90_{\delta x>2}$	$93_{\delta x>2}$	$94_{\delta x>2}$	$99_{\delta x>2}$
130	84	84.0	0.375	108	39	46	48	58	58	63	70	73	79	82	91
130	84	84.1	0.625	125	39	46	48	58	58	63	70	73	79	82	91
130	84	84.2	0.875	141	39	46	48	58	62	63	70	73	79	91	91
130	84	84.5	1.250	166	39	46	49	58	62	63	70	74	79	91	91
130	84	85.2	2.000	215	40	46	49	59	63	67	71	79	80	92	92
130	84	88.5	4.000	349	$46_{\delta x>2}$	$53_{\delta x>2}$	$55_{\delta x>2}$	$68_{\delta x>2}$	$69_{\delta x>2}$	$70_{\delta x>2}$	$79_{\delta x>2}$	$83_{\delta x>2}$	$92_{\delta x>2}$	$95_{\delta x>2}$	$96_{\delta x>2}$
130	90	90.0	0.375	114	38	46	47	54	58	62	66	70	75	79	91
130	90	90.1	0.625	131	38	46	47	54	58	62	67	70	75	80	91
130	90	90.2	0.875	147	38	46	47	54	62	62	67	70	75	80	91
130	90	90.5	1.250	172	38	46	48	54	62	66	67	71	76	88	92
130	90	91.2	2.000	221	43	46	48	55	63	67	67	76	77	88	92
130	90	94.9	4.000	355	$46_{\delta x>2}$	$49_{\delta x>2}$	$55_{\delta x>2}$	$62_{\delta x>2}$	$70_{\delta x>2}$	$71_{\delta x>2}$	$71_{\delta x>2}$	$80_{\delta x>2}$	$93_{\delta x>2}$	$93_{\delta x>2}$	$97_{\delta x>2}$
130	96	96.0	0.375	120	43	48	48	53	55	64	68	68	77	77	89
130	96	96.1	0.625	137	43	48	48	53	59	64	68	68	77	77	89
130	96	96.3	0.875	153	43	48	48	54	59	64	68	69	77	77	89
130	96	96.5	1.250	178	47	48	48	54	59	67	68	69	77	85	89
130	96	97.3	2.000	227	48	48	52	54	60	68	68	74	77	86	90
130	96	101.2	4.000	361	$49_{\delta x>2}$	$53_{\delta x>2}$	$54_{\delta x>2}$	$63_{\delta x>2}$	$65_{\delta x>2}$	$70_{\delta x>2}$	$75_{\delta x>2}$	$76_{\delta x>2}$	$89_{\delta x>2}$	$89_{\delta x>2}$	$93_{\delta x>2}$
130	102	102.0	0.250	118	43	49	49	50	55	61	69	69	73	78	79
130	102	102.1	0.500	135	43	49	49	50	55	61	69	69	73	78	78
130	102	102.2	0.750	151	45	49	49	53	55	61	69	69	73	78	86
130	102	102.4	1.000	167	45	49	49	53	55	61	69	69	77	78	86
130	102	102.8	1.500	200	45	49	49	53	59	61	69	69	78	78	87
130	102	105.1	3.000	300	51	52	55	59	64	70	71	77	88	89	92
130	108	108.0	0.250	124	44	50	50	51	56	61	69	70	71	79	79
130	108	108.1	0.500	141	46	50	51	54	56	61	69	70	71	79	79
130	108	108.2	0.750	157	46	50	51	54	56	62	69	70	71	79	87
130	108	108.4	1.000	173	46	50	50	54	56	62	70	71	75	79	87
130	108	108.8	1.500	206	51	51	51	55	60	66	70	71	76	79	88
130	108	111.3	3.000	306	52	52	56	60	65	67	72	77	78	90	90
130	114	114.0	0.250	130	53	57	58	62	62	66	70	70	71	76	88
130	114	114.1	0.500	147	52	57	57	62	65	66	70	70	75	76	88
130	114	114.2	0.750	163	52	57	58	62	65	66	70	70	75	76	88
130	114	114.4	1.000	179	57	57	58	62	65	69	70	70	75	76	88
130	114	114.9	1.500	212	57	58	58	62	66	70	70	71	76	85	88
130	114	117.5	3.000	313	60	60	64	69	73	73	73	78	87	88	93
130	120	120.0	0.250	136	54	59	59	63	67	67	71	71	76	76	85
130	120	120.1	0.500	153	58	59	59	63	67	70	71	71	76	76	85
130	120	120.2	0.750	169	58	59	59	63	67	70	71	71	76	84	85
130	120	120.4	1.000	185	59	59	63	63	67	70	71	71	76	84	85
130	120	120.9	1.500	218	59	59	63	66	67	71	71	76	76	84	85
130	120	123.7	3.000	319	70	70	70	71	71	72	77	78	86	86	86

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Horizontal Deflection – Joist designs marked with the note 'δ_x**>2**' have a horizontal slip greater than 2". (Reference page 14)

Scissor Joist (SPSC) Tables

Span ft	Chord Depth in	Ridge Depth in	Top Chord Pitch in/ft	Shape Depth in	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
					300	350	400	450	500	550	600	650	700	750	800
					Joist Self-Weight - Pounds per Linear Foot (**plf**)										
140	70	70.0	0.375	96	48	56	60	67	72	80	92	93	101	112	123
140	70	70.1	0.625	114	48	56	60	67	72	80	92	101	101	112	123
140	70	70.2	0.875	131	48	56	60	68	72	80	93	101	101	113	123
140	70	70.4	1.250	158	48	56	60	68	72	80	93	101	112	113	124
140	70	71.0	2.000	211	48	57	$61_{\delta x>2}$	$68_{\delta x>2}$	$77_{\delta x>2}$	85	$93_{\delta x>2}$	102	113	$114_{\delta x>2}$	124
140	70	73.8	4.000	354	$54_{\delta x>2}$	$62_{\delta x>2}$	$67_{\delta x>2}$	$74_{\delta x>2}$	$80_{\delta x>2}$	$92_{\delta x>2}$	$97_{\delta x>2}$	$105_{\delta x>2}$	$117_{\delta x>2}$	$128_{\delta x>2}$	$129_{\delta x>2}$
140	76	76.0	0.375	102	47	53	57	65	69	72	81	93	94	102	113
140	76	76.1	0.625	120	47	53	57	65	69	73	81	93	94	102	114
140	76	76.2	0.875	137	47	53	57	65	69	77	81	94	94	102	114
140	76	76.4	1.250	164	47	53	57	65	69	78	81	94	95	102	114
140	76	77.0	2.000	217	48	57	61	69	70	78	82	95	95	114	115
140	76	80.1	4.000	360	$52_{\delta x>2}$	$58_{\delta x>2}$	$67_{\delta x>2}$	$71_{\delta x>2}$	$77_{\delta x>2}$	$80_{\delta x>2}$	$92_{\delta x>2}$	$97_{\delta x>2}$	$98_{\delta x>2}$	$117_{\delta x>2}$	$118_{\delta x>2}$
140	82	82.0	0.250	100	46	49	58	61	69	73	77	81	94	94	102
140	82	82.1	0.500	117	46	49	58	61	69	69	77	81	94	94	102
140	82	82.2	0.750	135	46	49	58	61	69	70	78	89	94	94	113
140	82	82.3	1.000	152	46	49	58	61	69	70	78	89	94	95	114
140	82	82.6	1.500	188	46	48	58	62	69	70	78	90	95	95	114
140	82	84.5	3.000	295	$47_{\delta x>2}$	$53_{\delta x>2}$	$62_{\delta x>2}$	$67_{\delta x>2}$	$71_{\delta x>2}$	$76_{\delta x>2}$	$80_{\delta x>2}$	$92_{\delta x>2}$	$96_{\delta x>2}$	$97_{\delta x>2}$	$116_{\delta x>2}$
140	88	88.0	0.250	106	45	48	54	62	66	70	74	79	90	96	96
140	88	88.1	0.500	123	45	49	54	62	66	70	78	79	90	96	96
140	88	88.2	0.750	141	45	49	54	62	66	70	79	79	91	96	96
140	88	88.3	1.000	158	46	49	54	63	66	71	79	79	91	96	97
140	88	88.7	1.500	194	46	49	54	63	67	71	79	80	91	97	97
140	88	90.7	3.000	301	$47_{\delta x>2}$	$54_{\delta x>2}$	$59_{\delta x>2}$	$68_{\delta x>2}$	$68_{\delta x>2}$	$72_{\delta x>2}$	$81_{\delta x>2}$	$90_{\delta x>2}$	$94_{\delta x>2}$	$99_{\delta x>2}$	$111_{\delta x>2}$
140	94	94.0	0.250	112	45	48	51	59	64	71	71	80	81	92	97
140	94	94.1	0.500	129	45	48	51	59	64	71	71	80	81	92	97
140	94	94.2	0.750	147	45	48	55	59	64	71	71	80	81	93	97
140	94	94.3	1.000	164	45	48	55	60	64	71	71	80	89	93	97
140	94	94.7	1.500	200	46	48	55	63	68	71	72	81	89	93	98
140	94	96.9	3.000	307	48	$52_{\delta x>2}$	$58_{\delta x>2}$	$67_{\delta x>2}$	$68_{\delta x>2}$	$74_{\delta x>2}$	$77_{\delta x>2}$	$90_{\delta x>2}$	$91_{\delta x>2}$	$94_{\delta x>2}$	$106_{\delta x>2}$
140	100	100.0	0.250	118	48	48	50	55	63	68	72	77	80	89	93
140	100	100.1	0.500	135	48	48	53	55	63	68	72	77	80	89	93
140	100	100.2	0.750	153	48	48	53	55	64	68	72	77	80	89	93
140	100	100.3	1.000	170	48	48	53	59	67	68	72	77	88	89	93
140	100	100.8	1.500	206	48	49	54	59	67	68	72	77	89	89	93
140	100	103.1	3.000	313	49	53	$59_{\delta x>2}$	$64_{\delta x>2}$	$69_{\delta x>2}$	$70_{\delta x>2}$	$78_{\delta x>2}$	$87_{\delta x>2}$	$91_{\delta x>2}$	$92_{\delta x>2}$	$95_{\delta x>2}$
140	106	106.0	0.250	124	50	50	54	56	65	69	70	78	79	91	92
140	106	106.1	0.500	141	50	50	54	56	65	70	70	78	79	91	92
140	106	106.2	0.750	159	50	50	54	60	69	70	70	78	79	91	92
140	106	106.4	1.000	176	50	50	54	60	69	70	70	78	87	91	92
140	106	106.8	1.500	212	50	50	55	60	65	70	75	78	87	91	92
140	106	109.3	3.000	319	51	55	59	64	$66_{\delta x>2}$	71	$76_{\delta x>2}$	88	$89_{\delta x>2}$	$93_{\delta x>2}$	$94_{\delta x>2}$
140	112	112.0	0.250	130	58	58	62	62	66	70	71	79	79	92	92
140	112	112.1	0.500	147	58	58	62	66	66	70	71	79	79	92	92
140	112	112.2	0.750	165	58	58	62	66	70	70	71	79	79	91	92
140	112	112.4	1.000	182	58	59	62	66	70	71	71	79	87	92	93
140	112	112.9	1.500	218	58	59	62	66	70	71	76	79	88	92	93
140	112	115.4	3.000	325	60	63	67	71	72	73	78	89	90	94	96
140	118	118.0	0.250	136	59	59	60	64	67	71	72	72	80	89	93
140	118	118.1	0.500	153	59	59	60	64	67	71	72	76	80	89	93
140	118	118.2	0.750	171	59	59	60	64	68	71	72	77	80	89	94
140	118	118.4	1.000	188	59	60	63	64	67	71	72	77	80	89	94
140	118	118.9	1.500	224	59	59	64	67	71	71	72	77	89	90	94
140	118	121.6	3.000	332	73	73	74	74	74	79	80	89	93	95	99
140	124	124.0	0.250	142	59	60	64	64	68	72	72	77	78	89	90
140	124	124.1	0.500	159	59	60	64	67	68	72	72	77	78	89	90
140	124	124.2	0.750	177	59	60	64	67	71	72	72	78	86	89	90
140	124	124.4	1.000	194	59	60	64	67	71	72	73	78	86	89	90
140	124	125.0	1.500	230	60	60	64	67	71	72	78	78	86	89	90
140	124	127.8	3.000	338	74	75	75	75	75	81	81	90	91	96	96

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Horizontal Deflection – Joist designs marked with the note 'δ_x**>2**' have a horizontal slip greater than 2". (Reference page 14)

Scissor Joist (SPSC) Tables

Span ft	Chord Depth in	Ridge Depth in	Top Chord Pitch in/ft	Shape Depth in	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
					300	350	400	450	500	550	600	650	700	750	800
					Joist Self-Weight - Pounds per Linear Foot (**plf**)										
150	76	76.0	0.250	95	48	57	65	71	80	84	93	101	113	113	124
150	76	76.1	0.500	114	48	57	64	71	80	85	93	101	113	113	124
150	76	76.1	0.750	132	48	57	65	71	80	88	93	101	113	113	124
150	76	76.3	1.000	151	49	57	68	72	80	88	93	102	113	114	125
150	76	76.6	1.500	189	49	61	68	72	77	89	94	102	114	124	125
150	76	78.3	3.000	303	$54_{\delta x>2}$	$62_{\delta x>2}$	$69_{\delta x>2}$	$74_{\delta x>2}$	$82_{\delta x>2}$	$91_{\delta x>2}$	$96_{\delta x>2}$	$115_{\delta x>2}$	$116_{\delta x>2}$	$127_{\delta x>2}$	$127_{\delta x>2}$
150	82	82.0	0.250	101	48	58	62	69	73	81	94	95	103	114	115
150	82	82.1	0.500	120	48	58	62	69	73	82	94	95	103	114	115
150	82	82.2	0.750	138	48	58	62	69	73	82	94	95	103	115	115
150	82	82.3	1.000	157	48	58	62	70	78	82	94	95	103	115	115
150	82	82.6	1.500	195	48	58	62	70	78	82	95	96	115	115	116
150	82	84.5	3.000	310	$53_{\delta x>2}$	$63_{\delta x>2}$	$67_{\delta x>2}$	$71_{\delta x>2}$	$80_{\delta x>2}$	$92_{\delta x>2}$	$97_{\delta x>2}$	$97_{\delta x>2}$	$117_{\delta x>2}$	$118_{\delta x>2}$	$118_{\delta x>2}$
150	88	88.0	0.250	107	47	54	62	69	70	78	90	95	95	114	115
150	88	88.1	0.500	126	47	54	62	69	70	78	90	95	95	115	115
150	88	88.2	0.750	144	47	54	62	69	70	78	90	95	95	115	115
150	88	88.3	1.000	163	47	54	62	69	70	78	90	95	96	115	116
150	88	88.7	1.500	201	47	54	62	70	70	79	91	95	96	115	116
150	88	90.7	3.000	316	$52_{\delta x>2}$	$59_{\delta x>2}$	$67_{\delta x>2}$	$71_{\delta x>2}$	$76_{\delta x>2}$	$88_{\delta x>2}$	$92_{\delta x>2}$	$93_{\delta x>2}$	$109_{\delta x>2}$	$117_{\delta x>2}$	$118_{\delta x>2}$
150	94	94.0	0.250	113	48	49	59	63	71	71	79	92	96	97	116
150	94	94.1	0.500	132	48	53	59	63	71	71	79	92	96	97	116
150	94	94.2	0.750	150	48	53	63	67	71	71	80	92	96	97	116
150	94	94.3	1.000	169	48	53	63	67	71	76	80	92	97	97	116
150	94	94.7	1.500	207	48	53	63	67	71	76	80	92	97	98	117
150	94	96.9	3.000	322	$53_{\delta x>2}$	$60_{\delta x>2}$	$68_{\delta x>2}$	$69_{\delta x>2}$	$77_{\delta x>2}$	$82_{\delta x>2}$	$91_{\delta x>2}$	$95_{\delta x>2}$	$100_{\delta x>2}$	$111_{\delta x>2}$	$120_{\delta x>2}$
150	100	100.0	0.250	119	49	51	56	65	69	72	80	81	93	98	99
150	100	100.1	0.500	138	49	51	56	65	69	72	81	89	93	98	99
150	100	100.2	0.750	156	49	54	56	65	69	72	81	90	93	98	99
150	100	100.3	1.000	175	49	54	60	68	69	72	81	90	94	98	110
150	100	100.8	1.500	213	49	54	60	69	69	73	81	90	94	99	111
150	100	103.1	3.000	328	$51_{\delta x>2}$	$60_{\delta x>2}$	$66_{\delta x>2}$	$70_{\delta x>2}$	$71_{\delta x>2}$	$79_{\delta x>2}$	$92_{\delta x>2}$	$92_{\delta x>2}$	$96_{\delta x>2}$	$101_{\delta x>2}$	$113_{\delta x>2}$
150	106	106.0	0.250	125	50	50	57	64	68	72	77	89	90	93	98
150	106	106.1	0.500	144	50	54	60	68	68	72	77	89	90	94	98
150	106	106.2	0.750	162	50	53	60	68	68	72	77	89	90	94	98
150	106	106.4	1.000	181	50	54	60	68	69	72	78	89	90	94	109
150	106	106.8	1.500	219	50	54	60	68	69	78	78	90	90	94	110
150	106	109.3	3.000	334	54	$58_{\delta x>2}$	$65_{\delta x>2}$	$70_{\delta x>2}$	$71_{\delta x>2}$	$79_{\delta x>2}$	$88_{\delta x>2}$	$92_{\delta x>2}$	$93_{\delta x>2}$	$107_{\delta x>2}$	$112_{\delta x>2}$
150	112	112.0	0.250	131	58	59	63	66	70	71	79	80	92	96	96
150	112	112.1	0.500	150	58	62	66	70	70	71	79	88	92	96	96
150	112	112.2	0.750	168	58	62	66	70	70	71	79	88	91	96	96
150	112	112.4	1.000	187	59	63	66	70	71	71	79	88	92	94	97
150	112	112.9	1.500	225	59	63	67	71	71	76	80	89	92	94	108
150	112	115.4	3.000	340	63	67	71	72	$72_{\delta x>2}$	$77_{\delta x>2}$	$89_{\delta x>2}$	$90_{\delta x>2}$	$94_{\delta x>2}$	$107_{\delta x>2}$	$110_{\delta x>2}$
150	118	118.0	0.250	137	59	59	63	67	71	71	75	81	93	94	97
150	118	118.1	0.500	156	59	60	63	67	71	71	80	81	93	94	97
150	118	118.2	0.750	174	59	60	63	67	71	72	80	81	93	94	97
150	118	118.4	1.000	193	59	63	67	71	71	72	81	81	93	94	98
150	118	118.9	1.500	231	59	63	67	71	71	72	81	89	93	94	98
150	118	121.6	3.000	347	72	73	73	74	79	80	91	$92_{\delta x>2}$	$96_{\delta x>2}$	$109_{\delta x>2}$	$113_{\delta x>2}$
150	124	124.0	0.250	143	61	61	65	69	72	73	78	81	90	95	96
150	124	124.1	0.500	162	61	61	65	69	72	73	78	81	90	95	96
150	124	124.2	0.750	180	61	65	68	72	72	73	78	81	90	95	96
150	124	124.4	1.000	199	61	65	68	72	73	73	78	90	90	96	96
150	124	125.0	1.500	237	61	65	68	72	73	73	78	90	91	96	97
150	124	127.8	3.000	353	73	74	74	75	75	80	89	93	94	99	$110_{\delta x>2}$
150	130	130.0	0.250	149	61	62	66	69	73	73	74	79	92	93	97
150	130	130.1	0.500	168	61	62	66	69	73	73	74	79	92	93	97
150	130	130.3	0.750	187	61	62	66	69	73	73	79	79	92	93	97
150	130	130.5	1.000	205	61	65	69	73	73	73	79	80	92	93	97
150	130	131.0	1.500	244	62	65	69	73	73	74	79	89	93	94	98
150	130	134.0	3.000	359	74	74	75	76	76	81	90	91	95	96	111

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

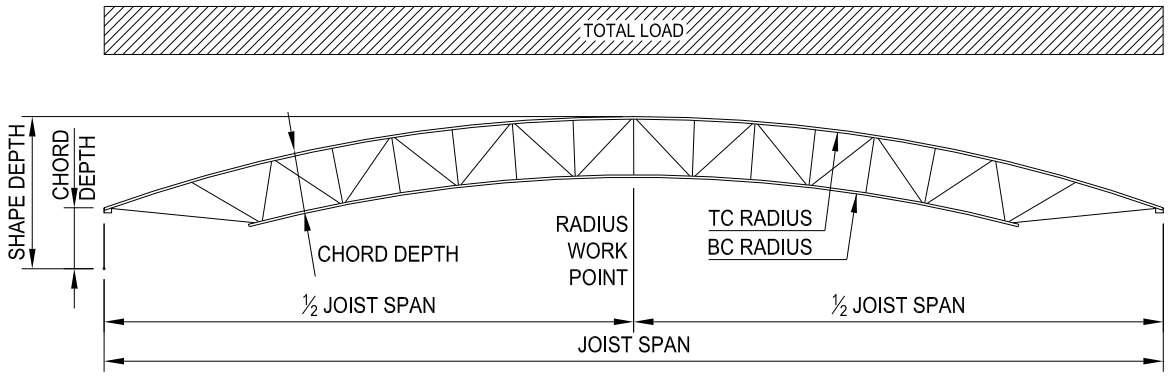
Minimum 5"	7½"	10"	Maximum 12½"

Horizontal Deflection – Joist designs marked with the note 'δ_x**>2**' have a horizontal slip greater than 2". (Reference page 14)

Arch Joist (SPAC) Tables

The following weight tables are representative of SP-Series joist designs for Arch Joists with parameters shown in the diagram below. Note that the Arch Joists' standard designs may include extra bottom chord verticals. The maximum allowable Live Load deflection is L/240 for a Live Load equal to 75 percent of the Total Load listed in the table. The tables also give bridging requirements per Section 904.5(d), the required seat depth for the given profile, as well as the estimated self-weight in pounds per linear foot. This catalog provides two design examples for reference and clarification on design issues. The following tables are not representative of any limits or constraints on design or constructability per NMBS. The SP-Series Arch joists in the following tables are designed assuming pinned-roller supports. If this design results in a predicted approximate horizontal deflection, δ_x, greater than two inches at the roller support, the approximate weight is flagged with the notation, δ_x>2. The specifying professional should do further investigation into the actual horizontal deflection and consider alternatives as explained in HORIZONTAL REACTIONS on page 14. For further information, please contact your nearest NMBS representative or visit www.newmill.com.

ALL TABLES ARE BASED ON ASD



ARCH JOIST (SPAC)

Arch Joist (SPAC) Tables

Span ft	Chord Depth in	Top Chord Radius ft	Bottom Chord Radius ft	Shape Depth in	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
					300	350	400	450	500	550	600	650	700	750	800
					Joist Self-Weight - Pounds per Linear Foot (**plf**)										
10	10	60	59	13	10	10	10	10	10	10	10	10	10	10	10
10	10	40	39	14	10	10	10	10	10	10	10	10	10	10	10
10	10	30	29	15	10	10	10	10	10	10	10	10	10	10	10
10	10	20	19	18	10	10	10	10	10	10	10	10	10	10	10
10	10	11	10	25	11	11	11	11	11	11	11	11	11	11	11
10	10	6	5	40	13	13	13	13	13	13	13	13	13	13	13
10	14	60	59	17	9	9	9	9	9	9	9	9	9	9	9
10	14	40	39	18	9	9	9	9	9	9	9	9	9	9	9
10	14	30	29	19	9	9	9	9	9	9	9	10	10	10	10
10	14	20	19	22	10	10	10	10	10	10	10	10	10	10	10
10	14	11	9	29	11	11	11	11	11	11	11	11	11	11	11
10	14	6	5	44	12	12	12	12	12	12	12	12	12	12	12
10	18	60	59	21	9	9	9	9	9	9	9	9	9	9	9
10	18	40	39	22	9	9	9	9	9	9	9	9	9	9	9
10	18	30	29	23	9	9	9	9	9	9	9	9	9	9	9
10	18	20	19	26	9	9	9	9	9	9	9	9	9	9	9
10	18	11	9	33	10	10	10	10	10	10	10	10	10	10	10
10	18	6	5	48	12	12	12	12	12	12	12	12	12	12	12
10	22	60	58	25	9	9	9	9	9	9	9	9	9	9	9
10	22	40	38	26	9	9	9	9	9	9	9	9	9	9	9
10	22	30	28	27	9	9	9	9	9	9	9	9	9	9	9
10	22	20	18	30	9	9	9	9	9	9	9	9	9	9	9
10	22	11	9	37	10	10	10	10	10	10	10	10	10	10	10
10	22	6	4	52	12	12	12	12	12	12	12	12	12	12	12
10	26	60	58	29	9	9	9	9	9	9	9	9	9	9	9
10	26	40	38	30	9	9	9	9	9	9	9	9	9	9	9
10	26	30	28	31	9	9	9	9	9	9	9	9	9	9	9
10	26	20	18	34	9	9	9	9	9	9	9	9	9	9	9
10	26	11	8	41	10	10	10	10	10	10	10	10	10	10	10
10	26	6	4	56	11	11	11	11	11	11	11	11	11	11	11
10	30	60	58	33	9	9	9	9	9	9	9	9	9	9	9
10	30	40	38	34	9	9	9	9	9	9	9	9	9	9	9
10	30	30	28	35	9	9	9	9	9	9	9	9	9	9	9
10	30	20	18	38	9	9	9	9	9	9	9	9	9	9	9
10	30	11	8	45	10	10	10	10	10	10	10	10	10	10	10
10	30	6	4	60	11	11	11	12	12	12	12	12	12	12	12
10	34	60	57	37	9	9	9	9	9	9	9	9	9	9	9
10	34	40	37	38	9	9	9	9	9	9	9	9	9	9	9
10	34	30	27	39	9	9	9	9	9	9	9	9	9	9	9
10	34	20	17	42	9	9	9	9	9	9	9	9	9	9	9
10	34	11	8	49	10	10	10	10	10	10	10	10	10	10	10
10	34	6	3	64	11	11	11	12	12	12	12	12	12	12	12
10	38	60	57	41	8	8	9	9	9	9	9	9	9	9	9
10	38	40	37	42	8	8	8	8	8	8	8	8	9	9	9
10	38	30	27	43	8	8	8	8	8	8	8	8	8	9	9
10	38	20	17	46	8	8	8	8	8	8	8	8	8	8	9
10	38	11	7	53	9	9	9	9	9	9	9	9	9	9	9
10	38	6	3	68	11	11	12	12	12	12	12	12	12	12	12
10	42	60	57	45	9	9	9	9	9	9	9	9	9	9	9
10	42	40	37	46	9	9	9	9	9	9	9	9	9	9	9
10	42	30	27	47	9	9	9	9	9	9	9	9	9	9	9
10	42	20	17	50	9	9	9	9	9	9	9	9	9	9	9
10	42	11	7	57	9	9	9	9	9	9	9	9	9	9	9
10	42	6	3	72	11	12	12	12	12	12	12	12	12	12	12
10	46	60	56	49	9	9	9	9	9	9	9	9	9	9	9
10	46	40	36	50	9	9	9	9	9	9	9	9	9	9	9
10	46	30	26	51	9	9	9	9	9	9	9	9	9	9	9
10	46	20	16	54	9	9	9	9	9	9	9	9	9	9	9
10	46	11	7	61	9	9	9	9	9	9	9	9	9	10	10
10	46	6	2	76	11	11	11	11	11	11	11	11	11	11	11

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Horizontal Deflection – Joist designs marked with the note 'δ_x**>2**' have a horizontal slip greater than 2". (Reference page 14)

Arch Joist (SPAC) Tables

Span	Chord Depth	Top Chord Radius	Bottom Chord Radius	Shape Depth	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
					300	350	400	450	500	550	600	650	700	750	800
ft	in	ft	ft	in	Joist Self-Weight - Pounds per Linear Foot (**plf**)										
20	10	120	119	15	9	9	10	11	12	13	14	16	18	18	20
20	10	80	79	18	9	9	10	11	12	13	15	16	17	18	20
20	10	60	60	20	9	9	10	11	12	13	15	16	17	18	20
20	10	41	40	25	10	10	10	11	13	14	15	16	18	19	20
20	10	21	20	40	10	10	11	12	13	15	16	17	18	20	21
20	10	13	12	70	11	12	13	14	17	17	18	20	22	23	24
20	14	120	119	19	9	9	9	9	9	9	10	11	11	13	13
20	14	80	79	22	9	9	9	9	9	9	10	11	12	13	13
20	14	60	59	24	9	9	9	9	9	10	10	11	12	13	13
20	14	41	39	29	9	9	9	9	10	10	11	11	12	13	14
20	14	21	20	44	10	10	10	10	11	11	13	13	14	15	15
20	14	13	11	74	11	12	12	12	13	14	15	16	18	18	19
20	18	120	119	23	9	9	9	9	9	9	9	10	10	10	11
20	18	80	79	26	9	9	9	9	9	9	9	10	10	11	11
20	18	60	59	28	9	9	9	9	9	9	9	10	10	11	11
20	18	41	39	33	9	9	9	9	9	10	10	10	11	11	12
20	18	21	20	48	10	10	10	10	10	11	11	11	12	13	13
20	18	13	11	78	11	11	11	12	12	13	14	14	16	16	18
20	22	120	118	27	9	9	9	9	9	9	9	10	10	10	10
20	22	80	78	30	9	9	9	9	9	10	10	10	10	10	10
20	22	60	59	32	9	9	9	9	9	10	10	10	10	10	10
20	22	41	39	37	9	9	9	9	9	10	10	10	10	10	11
20	22	21	19	52	10	10	10	10	10	11	11	11	11	11	12
20	22	13	11	82	11	11	11	11	12	12	13	14	14	14	16
20	26	120	118	31	9	9	9	9	9	9	9	9	9	10	10
20	26	80	78	34	9	9	9	9	9	9	9	10	10	10	10
20	26	60	58	36	9	9	9	9	9	10	10	10	10	10	11
20	26	41	38	41	9	9	9	9	9	10	10	10	10	10	11
20	26	21	19	56	10	10	10	10	10	10	10	10	11	11	12
20	26	13	10	86	11	11	11	11	12	12	13	14	14	14	16
20	30	120	118	35	9	9	9	9	9	9	10	10	10	10	11
20	30	80	78	38	9	9	9	9	9	9	10	10	10	10	11
20	30	60	58	40	9	9	9	9	9	9	10	10	10	10	11
20	30	41	38	45	9	9	9	9	9	10	10	10	10	11	11
20	30	21	19	60	10	10	10	10	10	10	10	10	11	11	11
20	30	13	10	90	11	11	11	12	12	12	13	14	14	14	16
20	34	120	117	39	9	9	9	9	10	10	11	11	12	12	13
20	34	80	77	42	9	9	9	9	10	10	11	11	12	12	13
20	34	60	58	44	9	9	9	9	10	10	11	11	12	12	13
20	34	41	38	49	9	9	9	9	10	10	11	11	12	12	13
20	34	21	18	64	10	10	10	10	10	11	11	11	12	13	13
20	34	13	10	94	11	12	13	13	13	15	16	16	16	17	18
20	38	120	117	43	9	9	9	9	10	11	11	11	12	12	13
20	38	80	77	46	9	9	9	10	10	10	11	12	12	12	13
20	38	60	57	48	9	9	9	10	10	10	11	12	12	12	13
20	38	41	37	53	9	9	9	10	10	11	11	12	12	12	13
20	38	21	18	68	10	10	10	10	10	11	12	12	12	12	12
20	38	13	9	98	11	11	12	13	13	13	15	15	15	16	17
20	42	120	117	47	9	9	9	10	10	10	11	11	12	12	13
20	42	80	77	50	9	9	9	10	10	10	11	12	12	12	13
20	42	60	57	52	9	9	9	10	10	10	11	12	12	12	13
20	42	41	37	57	9	9	9	10	10	10	11	12	12	12	13
20	42	21	18	72	10	10	10	10	10	11	12	12	12	13	14
20	42	13	9	102	11	12	12	13	14	14	14	16	16	16	16
20	46	120	116	51	9	9	9	10	10	10	11	11	12	12	13
20	46	80	76	54	9	9	9	10	10	10	11	12	12	12	13
20	46	60	57	56	10	10	10	10	10	10	11	12	12	12	13
20	46	41	37	61	10	10	10	10	10	10	11	12	12	12	13
20	46	21	17	76	10	10	10	10	11	11	12	12	13	13	14
20	46	13	9	106	11	12	12	13	13	14	14	14	16	16	16

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

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Minimum 5"	7½"	10"	Maximum 12½"

Horizontal Deflection – Joist designs marked with the note 'δ_x**>2**' have a horizontal slip greater than 2". (Reference page 14)

Arch Joist (SPAC) Tables

Span ft	Chord Depth in	Top Chord Radius ft	Bottom Chord Radius ft	Shape Depth in	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
					300	350	400	450	500	550	600	650	700	750	800
					Joist Self-Weight - Pounds per Linear Foot (**plf**)										
30	16	180	179	23	10	11	12	14	15	17	18	19	21	22	24
30	16	120	119	27	10	11	13	14	15	17	18	19	21	22	24
30	16	91	89	31	10	11	13	14	16	17	18	19	21	23	25
30	16	61	60	39	10	12	13	15	17	18	19	20	21	24	25
30	16	32	31	61	11	13	15	17	17	19	20	21	24	25	28
30	16	19	17	106	14	$15_{\delta x>2}$	$17_{\delta x>2}$	$18_{\delta x>2}$	$21_{\delta x>2}$	$22_{\delta x>2}$	$24_{\delta x>2}$	$26_{\delta x>2}$	$28_{\delta x>2}$	$29_{\delta x>2}$	$31_{\delta x>2}$
30	22	180	178	29	9	9	10	11	12	13	14	15	16	16	18
30	22	120	119	33	9	9	10	11	12	13	15	15	16	17	18
30	22	91	89	37	9	9	10	11	12	13	15	16	17	17	19
30	22	61	59	45	9	10	10	11	13	13	15	16	16	19	19
30	22	32	30	67	10	11	13	13	14	16	17	18	19	20	21
30	22	19	17	112	13	14	15	17	17	19	21	22	24	24	26
30	28	180	178	35	9	9	10	10	11	12	12	13	14	16	16
30	28	120	118	39	9	9	9	10	11	12	13	14	14	16	16
30	28	91	88	43	9	9	10	11	11	12	13	14	15	16	17
30	28	61	59	51	9	10	10	11	12	13	13	14	15	16	17
30	28	32	30	73	10	11	11	13	14	15	16	16	18	19	19
30	28	19	16	118	13	14	15	17	18	19	20	22	23	24	26
30	34	180	177	41	9	9	10	10	11	11	13	13	14	14	15
30	34	120	118	45	9	9	9	10	11	11	13	13	14	15	16
30	34	91	88	49	9	10	10	10	11	11	13	13	15	15	16
30	34	61	58	57	9	10	10	10	11	12	13	13	14	15	17
30	34	32	29	79	10	10	11	12	13	14	15	16	16	17	18
30	34	19	16	124	13	14	15	16	17	18	18	20	21	24	24
30	40	180	177	47	9	10	10	11	11	12	14	14	15	15	16
30	40	120	117	51	10	10	10	11	12	12	14	14	15	15	16
30	40	91	87	55	10	10	10	11	12	12	14	14	15	15	16
30	40	61	58	63	10	10	11	11	12	12	13	14	14	15	16
30	40	32	29	85	10	11	12	13	13	14	15	16	16	17	18
30	40	19	15	130	14	14	16	17	18	19	21	21	23	23	25
30	46	180	176	53	10	10	10	11	12	12	13	14	15	15	16
30	46	120	117	57	10	10	10	11	12	12	14	14	15	15	16
30	46	91	87	61	10	11	11	11	12	13	15	15	15	15	17
30	46	61	57	69	10	11	12	12	13	14	15	16	16	16	18
30	46	32	28	91	11	11	12	13	13	14	15	16	16	17	17
30	46	19	15	136	14	14	16	17	17	18	20	21	24	24	24
30	52	180	176	59	11	12	13	14	15	16	16	17	18	19	19
30	52	120	116	63	11	12	13	14	14	16	16	17	17	19	19
30	52	91	86	67	11	12	13	14	15	15	15	16	17	19	19
30	52	61	57	75	12	12	14	14	15	16	16	16	18	19	20
30	52	32	28	97	12	13	14	15	16	17	18	18	19	21	21
30	52	19	14	142	16	18	19	22	23	24	24	26	26	28	30
30	58	180	175	65	12	12	14	14	14	16	16	17	18	19	19
30	58	120	116	69	12	12	14	14	14	15	16	17	18	19	19
30	58	91	86	73	13	13	14	14	14	15	16	17	18	19	19
30	58	61	56	81	13	13	14	14	15	15	16	17	18	18	19
30	58	32	27	103	13	13	14	16	16	16	17	18	19	21	21
30	58	19	14	148	16	17	18	20	22	23	25	25	26	26	28
30	64	180	175	71	13	13	14	14	15	16	17	18	18	19	19
30	64	120	115	75	13	13	14	14	15	15	16	17	18	19	19
30	64	91	85	79	13	13	14	14	15	15	16	17	19	19	19
30	64	61	56	87	13	13	14	14	14	15	16	17	18	19	19
30	64	32	27	109	13	15	15	15	16	16	17	19	19	20	20
30	64	19	13	154	17	17	19	20	21	22	23	23	24	26	26
30	70	180	174	77	14	14	15	15	16	17	17	18	19	20	21
30	70	120	115	81	14	14	15	15	16	17	17	18	19	20	20
30	70	91	85	85	14	14	15	15	16	17	17	18	19	20	20
30	70	61	55	93	14	14	15	15	16	17	17	18	19	19	20
30	70	32	26	115	13	14	15	15	16	17	18	19	19	19	20
30	70	19	13	160	17	18	18	19	21	22	23	23	23	25	26

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Horizontal Deflection – Joist designs marked with the note 'δ_x**>2**' have a horizontal slip greater than 2". (Reference page 14)

Arch Joist (SPAC) Tables

Span	Chord Depth	Top Chord Radius	Bottom Chord Radius	Shape Depth	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
					300	350	400	450	500	550	600	650	700	750	800
ft	in	ft	ft	in	Joist Self-Weight - Pounds per Linear Foot (**plf**)										
40	20	240	239	30	13	15	17	20	21	24	27	28	31	33	36
40	20	161	159	35	13	15	17	19	21	24	27	28	31	33	36
40	20	121	119	40	14	16	17	19	21	24	27	28	31	33	36
40	20	81	80	50	14	17	18	20	22	24	27	28	31	33	36
40	20	43	41	80	15	18	20	23	25	27	28	31	34	36	38
40	20	25	23	140	$19_{\delta x>2}$	$20_{\delta x>2}$	$23_{\delta x>2}$	$26_{\delta x>2}$	$29_{\delta x>2}$	$32_{\delta x>2}$	$35_{\delta x>2}$	$38_{\delta x>2}$	$39_{\delta x>2}$	$41_{\delta x>2}$	$48_{\delta x>2}$
40	28	240	238	38	10	12	13	16	16	18	19	21	22	23	25
40	28	161	158	43	10	12	13	16	16	18	19	21	23	25	25
40	28	121	119	48	11	12	15	15	16	18	19	21	23	24	25
40	28	81	79	58	11	13	15	16	18	19	20	22	24	25	27
40	28	43	40	88	14	16	17	19	21	22	24	25	27	27	30
40	28	25	23	148	17	19	22	24	25	28	29	31	34	35	37
40	36	240	237	46	10	11	12	15	15	16	17	18	20	20	22
40	36	161	158	51	10	11	12	14	15	16	17	18	20	21	22
40	36	121	118	56	11	11	13	16	16	16	17	19	20	21	22
40	36	81	78	66	11	12	13	16	16	16	18	19	21	22	23
40	36	43	40	96	13	15	16	17	18	20	22	23	24	27	28
40	36	25	22	156	16	18	20	23	25	25	28	28	31	32	34
40	44	240	237	54	11	12	13	15	15	15	17	18	20	20	21
40	44	161	157	59	11	12	13	15	15	15	17	18	19	20	22
40	44	121	117	64	11	12	13	15	15	15	17	18	19	21	22
40	44	81	78	74	11	12	13	15	15	16	18	18	20	21	22
40	44	43	39	104	14	14	16	17	18	19	20	23	24	25	27
40	44	25	21	164	17	20	21	23	24	25	27	29	30	33	33
40	52	240	236	62	11	12	14	14	15	16	17	18	19	21	21
40	52	161	156	67	11	12	14	14	15	16	17	18	21	21	21
40	52	121	117	72	12	12	14	14	15	16	17	19	21	21	21
40	52	81	77	82	12	12	14	15	15	16	18	19	21	22	22
40	52	43	38	112	13	15	16	18	19	20	22	23	24	24	27
40	52	25	21	172	19	20	23	23	25	27	27	29	32	33	33
40	60	240	235	70	14	14	15	15	17	18	19	20	22	22	23
40	60	161	156	75	14	14	15	15	17	18	19	21	23	23	24
40	60	121	116	80	14	14	16	16	17	19	21	22	22	23	24
40	60	81	76	90	15	15	17	17	18	19	21	22	23	24	26
40	60	43	38	120	15	16	17	18	19	21	22	23	24	24	26
40	60	25	20	180	19	21	23	25	25	27	29	30	31	32	34
40	68	240	235	78	13	14	18	20	20	20	22	23	25	26	27
40	68	161	155	83	13	13	18	20	20	20	22	23	26	27	27
40	68	121	115	88	13	14	17	19	20	20	22	23	26	26	28
40	68	81	76	98	13	14	18	20	20	21	23	25	27	27	29
40	68	43	37	128	14	19	20	23	23	24	26	26	28	30	31
40	68	25	19	188	24	27	29	32	33	34	36	37	44	44	45
40	76	240	234	86	15	18	19	19	20	22	23	24	26	26	28
40	76	161	154	91	15	17	19	19	20	22	23	24	26	26	27
40	76	121	115	96	15	17	19	19	19	21	23	25	26	26	27
40	76	81	75	106	16	17	19	21	22	22	23	25	27	28	29
40	76	43	36	136	14	15	20	22	23	23	24	26	28	29	30
40	76	25	19	196	23	26	27	30	31	32	34	35	37	42	43
40	84	240	233	94	16	18	20	21	21	22	24	25	27	27	28
40	84	161	154	99	16	18	20	21	21	22	24	25	27	27	27
40	84	121	114	104	16	18	20	20	21	22	23	25	26	27	27
40	84	81	74	114	16	18	20	20	20	22	24	25	26	27	27
40	84	43	36	144	16	19	20	21	22	24	25	27	28	28	29
40	84	25	18	204	24	24	26	28	30	32	32	34	35	37	43
40	92	240	233	102	18	19	21	21	21	23	25	26	28	28	28
40	92	161	153	107	18	20	21	21	21	23	25	26	28	28	28
40	92	121	113	112	18	20	21	21	21	23	25	26	28	28	28
40	92	81	74	122	19	19	21	21	21	22	24	26	27	27	28
40	92	43	35	152	18	20	21	21	23	24	26	28	28	28	30
40	92	25	17	212	24	26	28	30	30	32	33	34	35	36	38

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Horizontal Deflection – Joist designs marked with the note 'δ_x**>2**' have a horizontal slip greater than 2". (Reference page 14)

Arch Joist (SPAC) Tables

Span ft	Chord Depth in	Top Chord Radius ft	Bottom Chord Radius ft	Shape Depth in	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**) 300	350	400	450	500	550	600	650	700	750	800
					Joist Self-Weight - Pounds per Linear Foot (**plf**)										
50	26	301	298	38	16	18	20	22	24	27	30	31	35	38	40
50	26	201	199	45	17	18	21	24	25	29	30	33	35	38	40
50	26	151	149	51	16	18	21	23	26	27	31	34	35	38	40
50	26	102	99	64	16	19	21	25	27	29	30	33	35	38	40
50	26	53	51	101	19	21	25	28	30	32	35	37	39	46	46
50	26	31	29	176	$22_{\delta x>2}$	$26_{\delta x>2}$	$29_{\delta x>2}$	$32_{\delta x>2}$	$35_{\delta x>2}$	$38_{\delta x>2}$	$41_{\delta x>2}$	$46_{\delta x>2}$	$48_{\delta x>2}$	$50_{\delta x>2}$	$55_{\delta x>2}$
50	36	301	298	48	15	15	16	19	20	22	23	25	27	29	31
50	36	201	198	55	13	16	17	19	20	23	24	25	27	31	31
50	36	151	148	61	14	16	17	19	20	22	24	27	28	29	31
50	36	102	99	74	14	17	18	20	22	24	25	27	29	31	32
50	36	53	50	111	17	19	22	24	26	27	29	31	34	36	38
50	36	31	28	186	22	25	28	29	$31_{\delta x>2}$	$33_{\delta x>2}$	$36_{\delta x>2}$	$40_{\delta x>2}$	$46_{\delta x>2}$	$47_{\delta x>2}$	$48_{\delta x>2}$
50	46	301	297	58	14	14	15	17	18	20	21	22	23	25	26
50	46	201	197	65	14	14	15	17	18	21	22	22	24	26	27
50	46	151	147	71	15	15	16	18	18	21	22	22	24	26	27
50	46	102	98	84	15	15	16	18	20	22	22	24	25	27	27
50	46	53	49	121	16	17	20	22	24	25	27	29	29	32	34
50	46	31	27	196	22	23	26	28	30	33	33	36	39	40	46
50	56	301	296	68	13	16	16	17	19	22	22	23	24	26	26
50	56	201	196	75	13	16	16	17	19	22	22	23	25	26	27
50	56	151	146	81	13	16	16	17	19	22	22	23	24	27	27
50	56	102	97	94	16	16	17	18	20	22	23	23	25	27	28
50	56	53	48	131	16	19	21	22	24	25	27	30	30	31	32
50	56	31	27	206	23	26	28	29	32	33	35	38	44	44	46
50	66	301	295	78	16	16	17	18	19	21	22	23	25	26	27
50	66	201	195	85	15	15	17	18	19	22	22	23	25	26	28
50	66	151	146	91	15	15	17	18	20	21	22	24	25	26	28
50	66	102	96	104	15	16	17	19	20	22	23	24	26	26	28
50	66	53	48	141	19	20	22	23	25	27	28	30	30	32	33
50	66	31	26	216	24	26	28	30	33	34	36	37	38	45	46
50	76	301	294	88	15	16	20	21	22	22	25	27	29	29	31
50	76	201	194	95	15	16	20	21	22	22	25	27	29	29	31
50	76	151	145	101	16	16	19	21	22	23	25	26	28	29	30
50	76	102	95	114	16	16	19	21	22	23	25	27	28	29	30
50	76	53	47	151	16	20	23	23	25	25	27	29	30	32	32
50	76	31	25	226	25	27	29	31	34	34	36	38	45	46	47
50	86	301	293	98	17	17	25	27	28	30	31	33	35	40	40
50	86	201	194	105	18	18	24	26	27	30	30	32	33	39	40
50	86	151	144	111	18	18	24	26	28	29	30	32	34	38	39
50	86	102	94	124	17	18	25	27	29	30	31	32	34	39	40
50	86	53	46	161	18	26	28	30	32	33	34	36	37	42	42
50	86	31	24	236	33	36	38	44	45	46	47	52	56	57	62
50	96	301	293	109	20	24	26	28	29	29	31	33	38	39	39
50	96	201	193	115	20	25	26	29	29	29	31	33	38	38	39
50	96	151	143	121	20	25	26	29	29	29	31	33	38	38	38
50	96	102	94	134	22	23	28	30	32	34	34	36	37	38	43
50	96	53	45	171	22	26	29	32	33	35	35	38	39	39	45
50	96	31	23	246	34	35	38	40	46	47	48	48	52	53	57
50	106	301	292	119	22	26	27	29	30	30	32	34	39	39	40
50	106	201	192	125	22	26	27	29	31	31	32	33	39	39	40
50	106	151	142	131	22	26	27	30	31	31	32	34	39	39	40
50	106	102	93	144	24	26	27	31	31	31	32	35	40	40	40
50	106	53	44	181	25	25	32	33	35	37	37	39	40	42	47
50	106	31	22	256	34	37	38	40	42	49	49	49	49	54	56
50	116	301	291	129	29	29	30	32	33	33	35	37	42	42	42
50	116	201	191	135	29	29	30	32	33	33	35	36	42	42	42
50	116	151	141	141	29	29	30	33	33	33	35	36	42	42	42
50	116	102	92	154	29	29	30	32	33	33	34	36	42	42	42
50	116	53	43	191	27	29	31	33	33	35	37	41	42	42	42
50	116	31	22	266	36	38	40	42	42	45	51	51	51	52	56

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Horizontal Deflection – Joist designs marked with the note 'δ_x**>2**' have a horizontal slip greater than 2". (Reference page 14)

Arch Joist (SPAC) Tables

Span	Chord Depth	Top Chord Radius	Bottom Chord Radius	Shape Depth	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
					300	350	400	450	500	550	600	650	700	750	800
ft	in	ft	ft	in	Joist Self-Weight - Pounds per Linear Foot (**plf**)										
60	30	361	358	45	20	22	25	28	31	35	38	44	49	49	53
60	30	241	238	52	20	23	26	29	32	35	38	44	49	49	53
60	30	181	179	60	20	23	26	29	32	36	38	44	49	49	53
60	30	122	119	75	21	25	27	30	33	36	39	45	49	49	53
60	30	64	61	120	23	27	30	34	37	39	46	51	54	58	$59_{\delta x>2}$
60	30	38	35	210	$28_{\delta x>2}$	$31_{\delta x>2}$	$35_{\delta x>2}$	$38_{\delta x>2}$	$41_{\delta x>2}$	$48_{\delta x>2}$	$50_{\delta x>2}$	$55_{\delta x>2}$	$59_{\delta x>2}$	$59_{\delta x>2}$	$67_{\delta x>2}$
60	40	361	357	55	16	18	21	22	25	28	30	32	33	36	38
60	40	241	238	62	17	19	21	24	25	28	31	32	35	36	39
60	40	181	178	70	17	19	22	24	27	28	31	33	35	36	39
60	40	122	119	85	18	21	22	24	27	29	32	34	36	38	44
60	40	64	60	130	22	24	27	29	32	35	37	39	45	46	47
60	40	38	34	220	$27_{\delta x>2}$	$31_{\delta x>2}$	$32_{\delta x>2}$	$37_{\delta x>2}$	$40_{\delta x>2}$	$47_{\delta x>2}$	$47_{\delta x>2}$	$48_{\delta x>2}$	$54_{\delta x>2}$	$59_{\delta x>2}$	$59_{\delta x>2}$
60	50	361	356	65	16	17	19	21	23	25	27	28	31	33	34
60	50	241	237	72	16	18	20	22	23	25	28	28	31	33	35
60	50	181	177	80	16	18	20	23	23	25	28	29	32	33	35
60	50	122	118	95	17	20	21	23	25	28	28	30	33	34	36
60	50	64	60	140	21	23	25	27	30	32	35	37	38	44	44
60	50	38	33	230	26	28	33	35	$36_{\delta x>2}$	$39_{\delta x>2}$	$46_{\delta x>2}$	$47_{\delta x>2}$	$48_{\delta x>2}$	$53_{\delta x>2}$	$55_{\delta x>2}$
60	60	361	356	75	16	18	19	22	23	25	27	29	30	32	33
60	60	241	236	82	16	18	20	23	23	25	27	29	31	32	33
60	60	181	176	90	17	18	20	23	24	25	28	30	30	33	34
60	60	122	117	105	18	20	21	23	25	27	28	30	32	34	36
60	60	64	59	150	22	24	26	27	32	32	34	37	37	43	45
60	60	38	33	240	28	30	33	35	38	45	46	48	48	53	53
60	70	361	355	85	17	19	21	23	24	25	28	29	32	33	34
60	70	241	235	92	17	19	21	23	24	25	28	30	32	33	34
60	70	181	175	100	18	19	21	23	24	26	28	30	32	33	33
60	70	122	116	115	19	21	22	24	26	27	29	31	33	34	34
60	70	64	58	160	23	24	26	28	30	32	33	35	38	39	44
60	70	38	32	250	28	32	34	36	38	45	46	47	49	54	55
60	80	361	354	95	17	21	22	23	26	28	30	30	31	33	35
60	80	241	234	103	18	21	22	24	26	28	30	30	31	33	36
60	80	181	175	110	18	21	23	24	26	28	30	31	31	34	36
60	80	122	115	125	18	21	23	25	27	29	30	31	33	35	36
60	80	64	57	170	24	26	28	30	32	32	35	38	38	44	45
60	80	38	31	260	32	34	37	39	45	46	48	49	54	54	60
60	90	361	353	105	22	25	25	27	30	31	33	33	35	37	43
60	90	241	233	113	22	24	25	27	30	31	33	34	35	37	42
60	90	181	174	120	22	24	25	28	30	31	33	33	35	37	43
60	90	122	114	135	22	24	25	28	30	31	33	33	35	38	43
60	90	64	56	180	25	27	29	30	33	34	35	37	38	44	44
60	90	38	30	270	33	36	37	39	46	47	48	49	54	59	61
60	100	361	352	115	22	24	24	34	36	41	42	42	43	46	47
60	100	241	233	123	22	24	24	34	37	41	42	42	43	47	48
60	100	181	173	130	23	24	24	35	36	42	43	43	44	48	48
60	100	122	114	145	23	25	25	36	38	43	44	44	45	49	50
60	100	64	55	190	25	26	37	39	44	45	47	48	52	52	57
60	100	38	29	280	48	50	51	55	60	66	70	70	70	76	78
60	110	361	351	125	25	26	29	30	40	45	45	46	47	50	51
60	110	241	232	133	25	26	29	30	40	45	46	46	47	51	51
60	110	181	172	140	25	28	29	30	41	45	46	47	48	52	52
60	110	122	113	155	27	28	29	30	41	47	47	48	48	52	53
60	110	64	55	200	27	28	30	40	42	46	48	49	49	54	54
60	110	38	28	290	43	49	50	56	57	62	66	68	72	72	72
60	120	361	351	135	30	31	33	38	42	43	43	43	47	48	51
60	120	241	231	143	31	33	36	38	42	43	43	43	48	48	51
60	120	181	171	150	31	33	36	38	43	43	44	44	48	48	51
60	120	122	112	165	31	32	37	39	44	44	45	48	49	53	53
60	120	64	54	210	32	34	38	40	46	51	51	52	53	54	59
60	120	38	28	300	45	53	53	53	59	61	66	69	69	70	72

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Horizontal Deflection – Joist designs marked with the note 'δ_x**>2**' have a horizontal slip greater than 2". (Reference page 14)

Arch Joist (SPAC) Tables

Span	Chord Depth	Top Chord Radius	Bottom Chord Radius	Shape Depth	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
					300	350	400	450	500	550	600	650	700	750	800
ft	in	ft	ft	in	Joist Self-Weight - Pounds per Linear Foot (**plf**)										
70	36	421	418	53	22	25	29	32	36	38	45	49	50	54	57
70	36	281	278	62	23	26	30	33	35	38	45	49	50	57	57
70	36	211	208	71	25	26	30	33	35	38	45	49	50	54	57
70	36	142	139	89	24	28	30	34	37	45	49	49	54	57	61
70	36	74	71	141	27	31	$35_{\delta x>2}$	$38_{\delta x>2}$	$44_{\delta x>2}$	$46_{\delta x>2}$	$50_{\delta x>2}$	$54_{\delta x>2}$	$55_{\delta x>2}$	$62_{\delta x>2}$	$66_{\delta x>2}$
70	36	44	41	246	$33_{\delta x>2}$	$37_{\delta x>2}$	$46_{\delta x>2}$	$48_{\delta x>2}$	$50_{\delta x>2}$	$59_{\delta x>2}$	$63_{\delta x>2}$	$64_{\delta x>2}$	$72_{\delta x>2}$	$75_{\delta x>2}$	$76_{\delta x>2}$
70	46	421	417	63	20	21	25	27	30	32	35	37	41	46	46
70	46	281	277	72	19	23	25	27	31	32	35	37	40	46	51
70	46	211	208	81	20	23	26	28	31	34	37	38	45	46	50
70	46	142	138	99	21	25	27	30	32	35	38	40	46	51	51
70	46	74	71	151	25	28	32	35	38	44	45	47	51	55	56
70	46	44	40	256	$32_{\delta x>2}$	$34_{\delta x>2}$	$39_{\delta x>2}$	$46_{\delta x>2}$	$47_{\delta x>2}$	$49_{\delta x>2}$	$55_{\delta x>2}$	$63_{\delta x>2}$	$64_{\delta x>2}$	$68_{\delta x>2}$	$72_{\delta x>2}$
70	56	421	416	73	18	21	23	25	28	29	32	34	37	40	45
70	56	281	276	82	19	21	23	25	28	30	33	34	37	40	46
70	56	211	207	91	19	22	25	27	28	30	33	36	39	39	46
70	56	142	138	109	21	23	26	28	31	33	36	38	39	45	47
70	56	74	70	161	24	27	31	32	35	38	44	46	47	51	55
70	56	44	39	266	33	$35_{\delta x>2}$	$39_{\delta x>2}$	$46_{\delta x>2}$	$47_{\delta x>2}$	$47_{\delta x>2}$	$53_{\delta x>2}$	$59_{\delta x>2}$	$64_{\delta x>2}$	$68_{\delta x>2}$	$68_{\delta x>2}$
70	66	421	415	83	19	21	23	25	27	29	31	32	35	38	44
70	66	281	276	92	19	21	23	25	27	29	32	33	36	38	44
70	66	211	206	101	19	23	24	25	28	30	31	33	36	39	44
70	66	142	137	119	21	23	25	28	30	31	32	36	39	40	45
70	66	74	69	171	25	27	32	32	34	37	43	45	45	47	52
70	66	44	38	276	33	36	39	46	47	48	54	56	65	69	69
70	76	421	414	93	19	22	24	26	28	30	33	34	36	38	39
70	76	281	275	102	19	22	24	26	28	30	33	34	36	39	40
70	76	211	205	111	19	22	24	26	28	31	33	34	36	39	41
70	76	142	136	129	22	24	26	28	29	31	34	34	37	40	41
70	76	74	68	181	26	29	31	33	36	39	41	46	46	47	49
70	76	44	37	286	33	37	39	46	48	49	53	55	61	69	69
70	86	421	414	104	22	24	25	28	29	31	33	35	36	39	45
70	86	281	274	112	22	24	25	28	29	31	33	35	36	38	45
70	86	211	204	121	22	25	26	28	29	32	34	35	36	39	45
70	86	142	135	139	23	26	27	29	30	33	34	36	37	40	46
70	86	74	67	191	27	29	32	34	35	37	40	46	47	47	48
70	86	44	37	296	36	38	42	49	50	50	57	61	66	70	70
70	96	421	413	114	23	27	30	31	33	35	37	42	43	44	44
70	96	281	273	122	23	27	30	32	34	35	37	42	44	44	44
70	96	211	203	131	24	28	30	32	34	35	38	44	44	44	45
70	96	142	134	149	24	29	30	33	34	37	39	44	45	46	46
70	96	74	66	201	31	34	35	38	39	45	46	47	48	51	52
70	96	44	36	306	41	49	50	51	57	57	62	67	72	72	73
70	106	421	412	124	32	33	36	36	38	40	44	44	44	45	45
70	106	281	272	132	32	35	36	36	38	39	44	45	46	47	51
70	106	211	203	141	32	35	36	36	38	40	46	47	48	48	52
70	106	142	133	159	27	32	34	36	36	41	46	46	46	47	48
70	106	74	66	211	33	36	37	40	42	47	48	49	51	54	54
70	106	44	35	316	42	49	51	52	57	58	63	68	72	72	72
70	116	421	411	134	29	32	32	34	35	37	50	54	55	59	59
70	116	281	271	142	29	32	32	34	35	37	51	56	56	60	60
70	116	211	202	151	29	32	32	34	35	38	52	56	56	61	62
70	116	142	133	169	30	32	33	34	36	38	54	57	58	63	63
70	116	74	65	221	34	34	37	38	40	57	60	64	65	69	69
70	116	44	34	326	60	64	70	74	74	79	82	94	94	97	97
70	126	421	410	144	33	35	37	39	40	41	52	56	56	60	62
70	126	281	271	152	34	36	39	39	40	41	53	57	58	61	61
70	126	211	201	161	36	37	39	39	40	41	54	58	58	62	63
70	126	142	132	179	36	37	39	39	41	43	55	59	59	64	65
70	126	74	64	231	37	38	38	40	42	59	59	62	67	68	71
70	126	44	33	336	45	62	66	71	76	76	81	81	93	93	96

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Horizontal Deflection – Joist designs marked with the note 'δ_x**>2**' have a horizontal slip greater than 2". (Reference page 14)

Arch Joist (SPAC) Tables

Span	Chord Depth	Top Chord Radius	Bottom Chord Radius	Shape Depth	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
					300	350	400	450	500	550	600	650	700	750	800
ft	in	ft	ft	in	Joist Self-Weight - Pounds per Linear Foot (**plf**)										
80	40	481	478	60	26	30	33	37	45	49	50	57	58	65	65
80	40	321	318	70	26	30	35	38	45	49	50	54	58	65	68
80	40	242	238	80	27	32	35	39	45	49	53	57	58	65	69
80	40	163	159	100	27	32	36	39	45	53	57	57	64	65	69
80	40	85	82	160	$32_{\delta x>2}$	$35_{\delta x>2}$	$43_{\delta x>2}$	$46_{\delta x>2}$	$50_{\delta x>2}$	$58_{\delta x>2}$	$58_{\delta x>2}$	$62_{\delta x>2}$	$70_{\delta x>2}$	$70_{\delta x>2}$	$78_{\delta x>2}$
80	40	50	47	280	$40_{\delta x>2}$	$46_{\delta x>2}$	$50_{\delta x>2}$	$59_{\delta x>2}$	$63_{\delta x>2}$	$64_{\delta x>2}$	$72_{\delta x>2}$	$75_{\delta x>2}$	$81_{\delta x>2}$	$85_{\delta x>2}$	$99_{\delta x>2}$
80	50	481	477	70	23	26	28	31	35	39	40	46	51	51	58
80	50	321	317	80	23	27	30	32	35	39	45	46	51	55	55
80	50	242	238	90	24	27	30	34	36	40	46	51	51	55	55
80	50	163	158	110	25	27	32	35	38	45	46	51	55	55	59
80	50	85	81	170	30	32	38	44	45	47	55	55	59	67	67
80	50	50	46	290	$36_{\delta x>2}$	$41_{\delta x>2}$	$47_{\delta x>2}$	$49_{\delta x>2}$	$55_{\delta x>2}$	$64_{\delta x>2}$	$65_{\delta x>2}$	$72_{\delta x>2}$	$72_{\delta x>2}$	$76_{\delta x>2}$	$82_{\delta x>2}$
80	60	481	476	80	22	25	27	30	33	36	39	45	46	48	52
80	60	321	316	90	23	25	28	31	33	37	40	46	46	48	52
80	60	242	237	100	23	26	28	32	34	37	39	46	47	52	52
80	60	163	158	120	25	28	30	33	36	39	46	47	47	51	55
80	60	85	80	180	30	31	37	43	45	46	51	56	59	60	64
80	60	50	45	300	$37_{\delta x>2}$	$45_{\delta x>2}$	$48_{\delta x>2}$	$48_{\delta x>2}$	$55_{\delta x>2}$	$64_{\delta x>2}$	$68_{\delta x>2}$	$69_{\delta x>2}$	$73_{\delta x>2}$	$73_{\delta x>2}$	$82_{\delta x>2}$
80	70	481	475	90	22	24	27	30	32	34	36	39	44	46	47
80	70	321	315	100	23	26	28	31	33	34	37	40	45	46	47
80	70	242	236	110	23	26	29	31	34	36	39	40	45	47	48
80	70	163	157	130	25	28	31	34	37	38	41	46	48	50	54
80	70	85	79	190	30	33	35	38	46	46	48	53	57	62	62
80	70	50	44	310	37	46	$48_{\delta x>2}$	$49_{\delta x>2}$	$55_{\delta x>2}$	$61_{\delta x>2}$	$70_{\delta x>2}$	$70_{\delta x>2}$	$70_{\delta x>2}$	$71_{\delta x>2}$	$79_{\delta x>2}$
80	80	481	474	100	25	26	28	31	33	35	38	44	45	46	47
80	80	321	315	110	25	26	28	31	33	36	39	44	46	47	47
80	80	242	235	120	24	26	29	32	33	36	39	45	47	47	48
80	80	163	156	140	26	29	31	33	35	38	40	46	46	48	49
80	80	85	78	200	31	33	37	43	45	46	46	51	57	61	65
80	80	50	43	320	39	46	48	54	59	61	70	70	70	75	79
80	90	481	473	110	25	27	30	32	33	36	39	44	46	46	48
80	90	321	314	120	25	28	30	32	34	36	40	46	46	47	48
80	90	242	234	130	25	28	30	33	35	36	39	45	47	48	48
80	90	163	155	150	27	30	32	34	35	37	40	46	47	48	49
80	90	85	78	210	31	34	36	40	46	47	47	52	54	62	62
80	90	50	43	330	41	47	50	55	59	65	70	71	71	76	77
80	100	481	473	120	26	31	33	34	36	38	44	44	44	45	50
80	100	321	313	130	26	31	33	35	37	39	44	45	46	48	51
80	100	242	233	140	27	31	34	36	38	40	46	47	48	48	52
80	100	163	154	160	31	33	36	37	41	44	48	48	49	51	58
80	100	85	77	220	37	38	40	44	49	51	51	56	57	61	65
80	100	50	42	340	44	51	53	58	63	65	73	73	73	79	82
80	110	481	472	130	32	33	35	36	37	39	44	46	46	46	51
80	110	321	312	140	32	33	35	36	37	39	45	45	45	46	51
80	110	242	233	150	31	32	35	36	37	40	45	45	46	47	51
80	110	163	153	170	31	35	36	37	39	41	46	47	47	49	54
80	110	85	76	230	38	38	43	49	50	50	51	56	60	64	64
80	110	50	41	350	52	54	55	60	64	70	75	76	76	81	81
80	120	481	471	140	34	36	46	47	52	52	52	56	56	60	61
80	120	321	311	150	34	36	46	47	52	52	52	56	56	60	62
80	120	242	232	160	34	36	46	52	52	52	52	56	57	62	66
80	120	163	153	180	36	38	46	52	52	54	58	62	62	66	70
80	120	85	75	240	37	47	52	52	54	56	59	63	64	69	73
80	120	50	40	360	56	58	63	67	72	78	78	83	83	92	95
80	130	641	630	145	39	41	43	43	43	47	52	52	52	53	70
80	130	385	374	155	39	41	42	43	45	47	51	52	52	53	72
80	130	276	265	165	39	41	41	41	44	46	51	52	52	52	73
80	130	194	183	180	37	40	42	42	45	52	52	52	53	53	73
80	130	123	113	210	38	40	42	44	46	52	53	54	54	58	78
80	130	67	56	290	41	45	47	48	49	80	80	89	92	95	95

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Horizontal Deflection – Joist designs marked with the note 'δ_x**>2**' have a horizontal slip greater than 2". (Reference page 14)

Arch Joist (SPAC) Tables

Span	Chord Depth	Top Chord Radius	Bottom Chord Radius	Shape Depth	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
					300	350	400	450	500	550	600	650	700	750	800
ft	in	ft	ft	in	Joist Self-Weight - Pounds per Linear Foot (**plf**)										
90	46	541	537	68	28	33	36	44	50	50	54	58	65	69	73
90	46	361	358	80	30	34	38	45	50	50	55	62	62	72	73
90	46	272	268	91	30	35	38	45	50	54	58	62	65	69	73
90	46	183	179	114	32	35	39	50	50	54	62	62	69	73	78
90	46	96	92	181	$36_{\delta x>2}$	$43_{\delta x>2}$	$46_{\delta x>2}$	$51_{\delta x>2}$	$55_{\delta x>2}$	$62_{\delta x>2}$	$67_{\delta x>2}$	$70_{\delta x>2}$	$75_{\delta x>2}$	$83_{\delta x>2}$	$87_{\delta x>2}$
90	46	56	52	316	$47_{\delta x>2}$	$49_{\delta x>2}$	$59_{\delta x>2}$	$64_{\delta x>2}$	$68_{\delta x>2}$	$72_{\delta x>2}$	$81_{\delta x>2}$	$85_{\delta x>2}$	$95_{\delta x>2}$	$100_{\delta x>2}$	$100_{\delta x>2}$
90	56	541	536	78	27	30	33	36	40	46	51	52	56	59	63
90	56	361	357	90	28	30	33	37	45	47	51	55	56	63	63
90	56	272	267	101	28	30	35	38	45	47	51	55	56	63	66
90	56	183	178	124	29	33	36	43	47	51	55	56	63	63	70
90	56	96	91	191	35	38	44	47	55	56	$60_{\delta x>2}$	$67_{\delta x>2}$	$67_{\delta x>2}$	$71_{\delta x>2}$	79
90	56	56	52	326	$46_{\delta x>2}$	$48_{\delta x>2}$	$55_{\delta x>2}$	$64_{\delta x>2}$	$68_{\delta x>2}$	$72_{\delta x>2}$	$73_{\delta x>2}$	$82_{\delta x>2}$	$86_{\delta x>2}$	$95_{\delta x>2}$	$100_{\delta x>2}$
90	66	541	535	88	25	28	31	34	37	40	46	48	52	56	57
90	66	361	356	100	26	29	33	35	39	45	47	48	52	56	57
90	66	272	266	111	27	30	33	35	39	45	46	48	56	57	60
90	66	183	177	134	28	31	35	38	44	46	48	56	56	60	64
90	66	96	90	201	32	37	44	45	47	56	60	61	65	68	68
90	66	56	51	336	$46_{\delta x>2}$	$48_{\delta x>2}$	$54_{\delta x>2}$	$56_{\delta x>2}$	$65_{\delta x>2}$	$69_{\delta x>2}$	$73_{\delta x>2}$	$79_{\delta x>2}$	$83_{\delta x>2}$	$92_{\delta x>2}$	$96_{\delta x>2}$
90	76	541	535	98	24	28	32	34	37	40	45	47	48	50	57
90	76	361	355	110	26	29	32	34	37	40	46	48	50	50	58
90	76	272	266	121	26	29	33	34	37	40	46	48	49	54	58
90	76	183	176	144	28	31	34	37	40	46	48	49	57	57	58
90	76	96	89	211	33	35	45	46	48	53	58	62	65	66	69
90	76	56	50	346	$46_{\delta x>2}$	$48_{\delta x>2}$	$54_{\delta x>2}$	$55_{\delta x>2}$	$66_{\delta x>2}$	$70_{\delta x>2}$	$70_{\delta x>2}$	$71_{\delta x>2}$	$79_{\delta x>2}$	$83_{\delta x>2}$	$93_{\delta x>2}$
90	86	541	534	109	26	29	31	34	36	38	44	46	47	48	53
90	86	361	354	120	27	29	32	34	37	39	45	47	47	49	55
90	86	272	265	131	27	29	34	34	37	39	45	47	48	49	54
90	86	183	176	154	29	31	34	36	39	45	47	48	50	54	58
90	86	96	88	221	34	37	44	46	47	52	54	62	66	66	66
90	86	56	49	356	47	50	55	57	$63_{\delta x>2}$	$71_{\delta x>2}$	$71_{\delta x>2}$	$71_{\delta x>2}$	$80_{\delta x>2}$	$81_{\delta x>2}$	$94_{\delta x>2}$
90	96	721	713	113	30	33	35	37	40	45	46	47	49	54	54
90	96	433	425	124	30	34	35	38	40	45	47	48	50	53	55
90	96	310	302	135	31	34	36	38	41	46	47	49	49	54	56
90	96	218	210	152	32	36	37	39	42	47	48	49	50	55	60
90	96	139	131	186	36	37	41	47	47	48	49	55	59	63	67
90	96	75	67	276	49	49	51	60	64	67	67	71	74	79	83
90	106	721	712	123	33	35	37	38	41	47	48	48	53	54	54
90	106	433	424	134	32	35	37	39	42	47	48	49	54	55	59
90	106	310	301	145	33	35	37	40	42	48	49	50	55	55	60
90	106	218	210	162	34	37	39	40	43	49	50	51	55	56	61
90	106	139	130	196	37	39	43	49	50	51	51	56	58	65	69
90	106	75	66	286	48	50	52	56	61	66	70	71	71	79	79
90	116	721	711	133	34	36	38	44	49	49	49	52	54	59	59
90	116	433	424	144	34	36	39	44	49	49	49	53	55	60	60
90	116	310	301	155	34	37	39	44	49	50	51	54	56	60	61
90	116	218	209	172	35	37	39	45	51	52	53	57	57	61	63
90	116	139	129	206	37	44	47	53	53	54	63	63	67	67	71
90	116	75	65	296	50	53	55	60	65	69	73	73	73	77	81
90	126	721	710	143	37	37	42	48	49	49	49	54	55	59	63
90	126	433	423	154	37	37	42	48	49	49	50	55	55	59	64
90	126	310	300	165	38	38	42	49	50	50	51	56	56	60	65
90	126	218	208	182	38	38	43	50	50	51	52	57	58	61	65
90	126	139	128	216	38	44	46	51	52	54	58	58	63	64	67
90	126	75	65	306	55	56	57	62	70	74	74	77	77	84	87
90	136	721	709	153	39	44	46	48	53	53	54	58	59	63	63
90	136	433	422	164	43	44	46	48	52	53	55	58	59	63	63
90	136	310	299	175	43	44	46	48	53	55	55	59	59	63	65
90	136	218	207	192	43	44	46	49	54	55	55	60	61	65	66
90	136	139	127	226	44	44	49	54	55	56	57	62	62	66	66
90	136	75	64	316	51	58	59	63	66	73	77	77	77	80	85

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Horizontal Deflection – Joist designs marked with the note 'δ_x**>2**' have a horizontal slip greater than 2". (Reference page 14)

Arch Joist (SPAC) Tables

Span ft	Chord Depth in	Top Chord Radius ft	Bottom Chord Radius ft	Shape Depth in	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
					300	350	400	450	500	550	600	650	700	750	800
					Joist Self-Weight - Pounds per Linear Foot (**plf**)										
100	50	601	597	75	32	36	45	50	54	58	62	72	73	78	82
100	50	402	397	87	33	38	45	50	54	58	62	72	73	78	82
100	50	302	298	100	34	38	45	50	54	61	62	69	73	78	90
100	50	203	199	125	35	44	46	54	58	62	69	70	78	78	91
100	50	106	102	200	$43_{\delta x>2}$	$47_{\delta x>2}$	$55_{\delta x>2}$	$59_{\delta x>2}$	$63_{\delta x>2}$	$70_{\delta x>2}$	$75_{\delta x>2}$	$83_{\delta x>2}$	$88_{\delta x>2}$	$92_{\delta x>2}$	$93_{\delta x>2}$
100	50	63	58	350	$49_{\delta x>2}$	$59_{\delta x>2}$	$64_{\delta x>2}$	$72_{\delta x>2}$	$72_{\delta x>2}$	$81_{\delta x>2}$	$94_{\delta x>2}$	$95_{\delta x>2}$	$100_{\delta x>2}$	$121_{\delta x>2}$	$121_{\delta x>2}$
100	58	601	596	83	30	34	38	45	47	51	55	63	63	70	71
100	58	402	397	95	30	36	38	46	51	55	56	63	63	70	74
100	58	302	297	108	31	36	38	46	51	55	56	63	70	70	78
100	58	203	198	133	33	37	44	47	55	55	62	70	70	70	78
100	58	106	101	208	$38_{\delta x>2}$	$45_{\delta x>2}$	$48_{\delta x>2}$	$56_{\delta x>2}$	$60_{\delta x>2}$	$67_{\delta x>2}$	$68_{\delta x>2}$	$76_{\delta x>2}$	$80_{\delta x>2}$	$89_{\delta x>2}$	$93_{\delta x>2}$
100	58	63	58	358	$48_{\delta x>2}$	$55_{\delta x>2}$	$64_{\delta x>2}$	$72_{\delta x>2}$	$72_{\delta x>2}$	$82_{\delta x>2}$	$82_{\delta x>2}$	$95_{\delta x>2}$	$96_{\delta x>2}$	$101_{\delta x>2}$	$114_{\delta x>2}$
100	66	801	795	85	29	33	37	40	46	48	52	57	57	64	68
100	66	481	476	97	29	34	37	40	46	48	53	57	64	64	71
100	66	345	339	110	30	34	37	45	48	52	56	57	64	64	71
100	66	243	237	129	32	35	39	46	48	52	56	60	64	68	71
100	66	154	149	166	35	38	44	48	56	56	60	67	68	71	79
100	66	83	78	266	$44_{\delta x>2}$	$46_{\delta x>2}$	$53_{\delta x>2}$	$61_{\delta x>2}$	$65_{\delta x>2}$	$69_{\delta x>2}$	$70_{\delta x>2}$	$78_{\delta x>2}$	$82_{\delta x>2}$	$90_{\delta x>2}$	$91_{\delta x>2}$
100	74	801	795	93	28	31	35	39	45	47	49	57	57	61	62
100	74	481	475	105	29	32	36	40	45	47	49	57	58	62	65
100	74	345	339	118	31	33	36	40	46	49	53	57	58	62	69
100	74	243	236	137	32	35	39	45	47	49	57	57	61	68	69
100	74	154	148	174	33	38	45	47	52	57	61	64	68	69	72
100	74	83	77	274	45	$47_{\delta x>2}$	$52_{\delta x>2}$	$62_{\delta x>2}$	$66_{\delta x>2}$	$66_{\delta x>2}$	$70_{\delta x>2}$	$75_{\delta x>2}$	$79_{\delta x>2}$	$91_{\delta x>2}$	$91_{\delta x>2}$
100	82	801	794	101	29	31	35	38	46	47	48	54	58	62	63
100	82	481	474	113	29	33	35	38	45	47	49	54	58	62	63
100	82	345	338	126	31	34	37	40	46	48	50	58	59	62	63
100	82	243	236	145	32	35	39	45	46	48	54	58	62	62	69
100	82	154	147	182	33	39	45	46	48	57	61	62	66	69	70
100	82	83	77	282	45	47	53	58	66	67	71	76	79	88	92
100	90	801	793	109	30	32	34	38	45	47	48	53	54	59	63
100	90	481	474	121	30	34	34	38	45	47	48	53	55	62	63
100	90	345	337	134	32	34	37	40	46	48	49	55	58	62	63
100	90	243	235	153	34	34	38	45	47	48	53	55	62	62	66
100	90	154	147	190	34	38	45	46	48	54	62	62	66	66	70
100	90	83	76	290	46	49	54	59	68	68	69	77	80	89	92
100	98	801	793	117	32	35	37	40	46	48	49	53	54	59	60
100	98	481	473	129	33	36	37	42	48	49	50	54	55	61	64
100	98	345	337	142	34	37	39	42	47	49	50	55	57	63	65
100	98	243	234	161	36	38	41	47	49	50	55	56	64	64	68
100	98	154	146	198	39	41	47	50	50	55	60	64	68	68	71
100	98	83	75	298	48	51	55	61	69	69	70	78	78	90	90
100	106	801	792	125	35	36	38	41	47	48	50	53	55	59	62
100	106	481	472	137	35	36	39	41	48	48	49	54	56	61	61
100	106	345	336	150	35	37	39	42	48	49	51	55	57	61	65
100	106	243	234	169	36	38	42	48	49	51	52	57	65	65	69
100	106	154	145	206	39	42	49	50	50	55	61	65	68	69	72
100	106	83	75	306	50	57	61	67	71	71	71	79	88	91	92
100	114	801	791	133	33	36	42	49	50	51	56	57	62	62	67
100	114	481	472	145	33	36	43	50	51	52	57	58	62	63	68
100	114	345	335	158	33	36	44	51	52	53	58	58	63	64	72
100	114	243	233	177	34	44	46	52	53	54	58	59	64	68	72
100	114	154	145	214	44	46	52	54	54	59	64	68	70	71	71
100	114	83	74	314	51	57	60	67	71	72	72	80	80	91	95
100	122	801	791	141	34	47	48	53	53	54	58	61	61	65	65
100	122	481	471	153	37	47	48	53	53	54	58	61	61	66	67
100	122	345	335	166	37	47	48	53	53	54	58	62	64	71	71
100	122	243	232	185	37	47	53	53	53	56	64	67	67	71	74
100	122	154	144	222	46	53	54	57	60	62	67	75	75	75	75
100	122	83	73	322	55	61	65	71	75	75	75	84	92	96	99

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Horizontal Deflection – Joist designs marked with the note 'δ_x**>2**' have a horizontal slip greater than 2". (Reference page 14)

Arch Joist (SPAC) Tables

Span ft	Chord Depth in	Top Chord Radius ft	Bottom Chord Radius ft	Shape Depth in	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
					300	350	400	450	500	550	600	650	700	750	800
					Joist Self-Weight - Pounds per Linear Foot (**plf**)										
110	56	881	876	77	35	40	46	51	55	62	70	73	78	83	99
110	56	529	525	90	35	44	50	55	58	62	70	73	78	83	91
110	56	379	374	104	36	44	50	55	62	63	73	82	91	91	99
110	56	267	262	125	38	46	51	55	62	69	70	78	83	98	99
110	56	170	165	166	43	46	55	59	66	70	78	$79_{\delta x>2}$	$91_{\delta x>2}$	$92_{\delta x>2}$	$100_{\delta x>2}$
110	56	92	87	276	$48_{\delta x>2}$	$56_{\delta x>2}$	$64_{\delta x>2}$	$71_{\delta x>2}$	$80_{\delta x>2}$	$81_{\delta x>2}$	$90_{\delta x>2}$	$95_{\delta x>2}$	$114_{\delta x>2}$	$115_{\delta x>2}$	$115_{\delta x>2}$
110	64	881	876	85	33	38	45	48	55	56	63	64	71	79	80
110	64	529	524	98	35	39	45	52	56	56	63	70	71	79	84
110	64	379	374	112	35	39	45	51	56	59	63	70	71	79	80
110	64	267	262	133	36	44	47	55	56	63	67	70	79	79	92
110	64	170	164	174	43	45	55	55	60	67	70	75	79	88	92
110	64	92	86	284	$47_{\delta x>2}$	$57_{\delta x>2}$	$61_{\delta x>2}$	$68_{\delta x>2}$	$69_{\delta x>2}$	$77_{\delta x>2}$	$90_{\delta x>2}$	$90_{\delta x>2}$	$95_{\delta x>2}$	$107_{\delta x>2}$	$115_{\delta x>2}$
110	72	881	875	93	33	36	41	47	49	57	58	65	69	72	73
110	72	529	523	106	33	38	45	47	52	57	58	65	69	72	73
110	72	379	373	120	35	39	45	48	56	57	61	65	72	72	81
110	72	267	261	141	36	41	47	49	57	61	65	69	72	77	81
110	72	170	164	182	39	45	48	57	61	68	68	72	80	81	89
110	72	92	86	292	$47_{\delta x>2}$	$54_{\delta x>2}$	$62_{\delta x>2}$	$67_{\delta x>2}$	$70_{\delta x>2}$	$78_{\delta x>2}$	$87_{\delta x>2}$	$91_{\delta x>2}$	$91_{\delta x>2}$	$96_{\delta x>2}$	$108_{\delta x>2}$
110	80	881	874	101	33	36	40	46	48	54	57	61	62	69	70
110	80	529	523	114	33	37	40	46	48	57	58	62	65	69	73
110	80	379	372	128	34	38	45	47	49	57	62	62	69	69	73
110	80	267	260	149	35	40	46	47	53	57	61	69	69	72	77
110	80	170	163	190	38	46	47	53	61	65	68	69	77	77	89
110	80	92	85	300	$47_{\delta x>2}$	$53_{\delta x>2}$	$62_{\delta x>2}$	$66_{\delta x>2}$	$67_{\delta x>2}$	$75_{\delta x>2}$	$87_{\delta x>2}$	$91_{\delta x>2}$	$92_{\delta x>2}$	$92_{\delta x>2}$	$108_{\delta x>2}$
110	88	881	874	109	32	35	40	46	48	49	55	59	63	67	71
110	88	529	522	122	34	37	40	47	48	51	58	59	63	70	71
110	88	379	372	136	34	38	46	47	49	55	59	62	66	70	70
110	88	267	260	157	36	40	47	48	54	58	62	66	70	70	74
110	88	170	162	198	39	46	47	54	62	62	66	70	70	78	81
110	88	92	84	308	48	53	63	67	$68_{\delta x>2}$	$76_{\delta x>2}$	$80_{\delta x>2}$	$92_{\delta x>2}$	$92_{\delta x>2}$	$92_{\delta x>2}$	$104_{\delta x>2}$
110	96	881	873	117	35	36	41	47	48	49	54	59	63	67	68
110	96	529	521	130	36	38	42	47	48	50	55	63	63	68	68
110	96	379	371	144	37	41	46	47	48	53	55	63	67	68	71
110	96	267	259	165	38	42	47	48	53	55	62	66	67	70	71
110	96	170	162	206	45	47	48	53	58	66	66	67	70	78	79
110	96	92	84	316	50	56	69	69	69	78	81	90	93	94	$94_{\delta x>2}$
110	104	881	872	125	36	38	41	47	49	53	54	59	61	68	69
110	104	529	521	138	36	39	42	48	49	54	55	61	64	68	70
110	104	379	370	152	37	41	48	49	50	55	57	64	69	69	70
110	104	267	258	173	39	47	48	50	54	57	64	68	69	69	73
110	104	170	161	214	47	49	50	55	60	68	68	68	72	77	81
110	104	92	83	324	56	61	66	70	71	79	87	90	94	94	106
110	112	881	872	133	33	42	44	49	51	56	57	63	68	71	71
110	112	529	520	146	34	42	45	50	52	57	58	64	71	71	72
110	112	379	370	160	36	44	49	52	53	57	58	64	70	70	71
110	112	267	258	181	41	48	49	52	56	57	66	70	70	70	74
110	112	170	160	222	50	51	52	58	65	69	70	73	73	82	85
110	112	92	82	332	57	62	68	72	72	77	89	92	96	97	109
110	120	881	871	141	37	42	50	51	52	57	61	62	67	69	72
110	120	529	519	154	36	43	50	52	53	58	62	63	69	73	73
110	120	379	369	168	37	45	51	52	53	58	63	65	72	73	73
110	120	267	257	189	44	51	52	54	58	59	64	72	72	73	73
110	120	170	160	230	51	54	55	60	65	72	72	73	76	81	84
110	120	92	82	340	62	71	74	74	78	86	98	98	99	99	111
110	128	881	870	149	39	44	51	52	53	58	60	64	68	70	72
110	128	529	519	162	39	45	52	53	54	59	61	64	69	71	75
110	128	379	368	176	39	46	52	54	55	60	60	65	71	75	75
110	128	267	256	197	45	48	54	55	56	60	65	67	74	75	75
110	128	170	159	238	47	54	55	60	61	66	73	74	74	78	83
110	128	92	81	348	58	67	76	76	76	84	84	96	100	100	100

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Horizontal Deflection – Joist designs marked with the note 'δ_x**>2**' have a horizontal slip greater than 2". (Reference page 14)

Arch Joist (SPAC) Tables

Span	Chord Depth	Top Chord Radius	Bottom Chord Radius	Shape Depth	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
					300	350	400	450	500	550	600	650	700	750	800
ft	in	ft	ft	in	Joist Self-Weight - Pounds per Linear Foot (**plf**)										
120	60	961	956	83	39	47	51	55	63	70	74	83	99	99	100
120	60	578	573	98	40	47	55	59	63	70	78	83	91	99	100
120	60	414	409	113	45	51	55	62	66	70	78	83	91	99	110
120	60	291	286	135	44	51	55	62	69	73	78	91	91	99	110
120	60	185	180	180	$47_{\delta x>2}$	$55_{\delta x>2}$	$59_{\delta x>2}$	$66_{\delta x>2}$	$70_{\delta x>2}$	$78_{\delta x>2}$	$87_{\delta x>2}$	$92_{\delta x>2}$	$100_{\delta x>2}$	$111_{\delta x>2}$	$112_{\delta x>2}$
120	60	100	95	300	$57_{\delta x>2}$	$64_{\delta x>2}$	$68_{\delta x>2}$	$77_{\delta x>2}$	$90_{\delta x>2}$	$90_{\delta x>2}$	$95_{\delta x>2}$	$115_{\delta x>2}$	$115_{\delta x>2}$	$116_{\delta x>2}$	$138_{\delta x>2}$
120	68	961	955	91	37	46	48	56	56	64	70	75	80	80	92
120	68	578	572	106	38	46	52	56	60	64	74	76	80	92	100
120	68	414	408	121	40	46	52	56	63	67	71	79	80	99	99
120	68	291	285	143	44	47	56	60	63	70	71	79	88	92	100
120	68	185	179	188	45	51	60	67	67	75	79	88	92	93	111
120	68	100	94	308	$53_{\delta x>2}$	$62_{\delta x>2}$	$69_{\delta x>2}$	$75_{\delta x>2}$	$78_{\delta x>2}$	$95_{\delta x>2}$	$95_{\delta x>2}$	$107_{\delta x>2}$	$116_{\delta x>2}$	$116_{\delta x>2}$	$117_{\delta x>2}$
120	76	961	955	99	36	41	47	49	57	58	65	69	72	80	85
120	76	578	571	114	37	41	47	52	57	61	65	72	73	81	81
120	76	414	407	129	38	45	49	56	57	64	68	72	77	81	90
120	76	291	285	151	39	47	49	57	61	65	69	72	80	81	93
120	76	185	179	196	46	47	57	61	68	69	77	81	93	94	94
120	76	100	94	316	$52_{\delta x>2}$	$62_{\delta x>2}$	$66_{\delta x>2}$	$70_{\delta x>2}$	$79_{\delta x>2}$	$87_{\delta x>2}$	$91_{\delta x>2}$	$92_{\delta x>2}$	$108_{\delta x>2}$	$116_{\delta x>2}$	$116_{\delta x>2}$
120	84	961	954	107	35	40	46	49	50	58	62	66	69	73	79
120	84	578	571	122	36	40	46	50	57	58	62	69	69	73	81
120	84	414	407	137	37	45	48	50	58	62	69	69	73	78	81
120	84	291	284	159	39	46	48	57	58	61	69	69	77	81	89
120	84	185	178	204	46	48	54	62	66	70	73	78	82	91	95
120	84	100	93	324	$54_{\delta x>2}$	$63_{\delta x>2}$	$67_{\delta x>2}$	$71_{\delta x>2}$	$76_{\delta x>2}$	$80_{\delta x>2}$	$92_{\delta x>2}$	$93_{\delta x>2}$	$97_{\delta x>2}$	$109_{\delta x>2}$	$117_{\delta x>2}$
120	92	961	953	115	35	39	47	49	51	59	63	64	71	72	80
120	92	578	570	130	38	41	47	50	55	59	63	67	71	72	80
120	92	414	406	145	38	46	48	50	55	63	63	70	71	75	80
120	92	291	283	167	40	47	48	55	59	63	67	70	71	79	83
120	92	185	177	212	47	48	55	63	66	67	70	78	79	90	91
120	92	100	92	332	$53_{\delta x>2}$	$60_{\delta x>2}$	$68_{\delta x>2}$	$68_{\delta x>2}$	$77_{\delta x>2}$	$89_{\delta x>2}$	$92_{\delta x>2}$	$93_{\delta x>2}$	$93_{\delta x>2}$	$109_{\delta x>2}$	$110_{\delta x>2}$
120	100	961	953	123	37	40	47	50	51	57	63	65	69	73	73
120	100	578	569	138	37	42	48	50	51	60	64	65	69	72	73
120	100	414	405	153	40	48	50	51	57	61	64	68	72	73	81
120	100	291	283	175	42	49	50	55	60	64	68	72	73	81	81
120	100	185	177	220	49	50	55	65	68	68	72	73	81	92	93
120	100	100	92	340	56	62	70	$71_{\delta x>2}$	$79_{\delta x>2}$	$91_{\delta x>2}$	$94_{\delta x>2}$	$95_{\delta x>2}$	$96_{\delta x>2}$	$108_{\delta x>2}$	$112_{\delta x>2}$
120	108	961	952	131	38	41	48	49	50	56	61	65	69	69	74
120	108	578	569	146	40	42	48	49	51	57	65	65	70	70	74
120	108	414	405	161	40	48	50	51	56	61	65	69	70	73	74
120	108	291	282	183	42	48	51	55	57	65	69	69	73	78	81
120	108	185	176	228	48	51	56	61	69	69	70	78	81	89	93
120	108	100	91	348	57	68	72	72	80	92	93	96	$97_{\delta x>2}$	$109_{\delta x>2}$	$113_{\delta x>2}$
120	116	961	951	139	38	45	51	53	58	59	64	69	72	72	77
120	116	578	568	154	43	46	52	54	59	60	65	72	73	73	78
120	116	414	404	169	46	51	52	55	59	65	68	73	73	73	81
120	116	291	281	191	50	52	54	59	63	69	72	73	73	81	81
120	116	185	175	236	53	55	59	65	72	73	73	81	81	93	96
120	116	100	90	356	64	69	73	73	81	90	94	97	98	110	110
120	124	1441	1430	139	38	50	55	55	59	59	62	68	70	72	79
120	124	721	711	154	39	50	55	55	59	59	63	69	73	74	79
120	124	482	472	169	48	54	55	55	59	60	65	72	73	74	82
120	124	363	352	184	49	54	55	55	60	65	72	73	73	74	82
120	124	244	233	214	54	54	55	61	69	72	72	76	76	84	86
120	124	128	117	304	61	65	71	75	76	81	92	95	95	98	98
120	132	1441	1430	147	43	53	58	58	62	62	66	69	70	72	75
120	132	721	710	162	45	53	58	58	62	62	66	69	71	75	76
120	132	482	471	177	51	53	58	58	62	62	67	70	75	75	75
120	132	363	352	192	51	57	58	58	62	63	68	74	74	75	75
120	132	244	233	222	57	58	58	63	65	71	74	74	75	78	83
120	132	128	117	312	60	65	69	77	77	78	86	94	97	97	100

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Horizontal Deflection – Joist designs marked with the note 'δ_x**>2**' have a horizontal slip greater than 2". (Reference page 14)

Arch Joist (SPAC) Tables

Span ft	Chord Depth in	Top Chord Radius ft	Bottom Chord Radius ft	Shape Depth in	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
					300	350	400	450	500	550	600	650	700	750	800
					Joist Self-Weight - Pounds per Linear Foot (**plf**)										
130	66	1041	1036	90	45	51	56	63	70	71	79	92	100	100	112
130	66	626	620	107	45	51	56	63	70	79	79	92	100	100	112
130	66	448	443	123	47	55	56	63	71	78	79	92	100	111	112
130	66	315	310	147	47	55	60	67	71	79	92	92	100	112	112
130	66	200	195	196	55	$59_{\delta x>2}$	$67_{\delta x>2}$	$71_{\delta x>2}$	$79_{\delta x>2}$	$87_{\delta x>2}$	$92_{\delta x>2}$	$100_{\delta x>2}$	$112_{\delta x>2}$	$122_{\delta x>2}$	$123_{\delta x>2}$
130	66	108	103	326	$61_{\delta x>2}$	$69_{\delta x>2}$	$78_{\delta x>2}$	$90_{\delta x>2}$	$90_{\delta x>2}$	$95_{\delta x>2}$	$115_{\delta x>2}$	$115_{\delta x>2}$	$116_{\delta x>2}$	$138_{\delta x>2}$	$139_{\delta x>2}$
130	72	1041	1035	96	45	48	56	60	64	71	76	80	92	93	101
130	72	626	620	113	45	48	56	60	67	71	79	80	92	93	101
130	72	448	442	129	46	48	56	63	67	71	80	88	93	100	112
130	72	315	309	153	46	56	60	67	71	76	80	92	93	100	112
130	72	200	194	202	48	60	64	68	76	88	$88_{\delta x>2}$	$93_{\delta x>2}$	$112_{\delta x>2}$	$112_{\delta x>2}$	$113_{\delta x>2}$
130	72	108	102	332	$62_{\delta x>2}$	$66_{\delta x>2}$	$75_{\delta x>2}$	$79_{\delta x>2}$	$91_{\delta x>2}$	$96_{\delta x>2}$	$108_{\delta x>2}$	$116_{\delta x>2}$	$117_{\delta x>2}$	$129_{\delta x>2}$	$140_{\delta x>2}$
130	78	1041	1035	102	40	47	49	57	62	69	72	77	81	93	94
130	78	626	619	119	40	47	52	57	64	69	72	80	81	93	94
130	78	448	442	135	45	48	56	57	65	69	72	80	89	94	94
130	78	315	309	159	46	49	57	61	68	72	77	80	93	93	101
130	78	200	194	208	47	57	61	68	69	77	80	89	94	113	113
130	78	108	102	338	$59_{\delta x>2}$	$67_{\delta x>2}$	$71_{\delta x>2}$	$79_{\delta x>2}$	$91_{\delta x>2}$	$92_{\delta x>2}$	$97_{\delta x>2}$	$109_{\delta x>2}$	$117_{\delta x>2}$	$117_{\delta x>2}$	$118_{\delta x>2}$
130	84	1041	1034	108	40	46	50	58	58	65	70	73	81	82	94
130	84	626	619	125	41	47	50	58	62	69	73	73	81	82	94
130	84	448	441	141	45	48	53	58	62	69	73	78	82	94	94
130	84	315	308	165	46	48	57	61	69	69	73	81	90	94	95
130	84	200	193	214	48	53	61	65	69	77	81	90	94	95	113
130	84	108	101	344	$59_{\delta x>2}$	$67_{\delta x>2}$	$71_{\delta x>2}$	$76_{\delta x>2}$	$88_{\delta x>2}$	$92_{\delta x>2}$	$93_{\delta x>2}$	$109_{\delta x>2}$	$117_{\delta x>2}$	$117_{\delta x>2}$	$129_{\delta x>2}$
130	90	1041	1034	114	40	46	49	54	59	62	70	71	79	82	91
130	90	626	618	131	40	47	49	58	62	66	70	74	79	82	91
130	90	448	441	147	45	47	54	58	62	69	70	78	82	90	91
130	90	315	308	171	46	48	54	62	65	69	73	78	90	90	95
130	90	200	193	220	47	54	62	66	69	77	78	90	91	95	106
130	90	108	101	350	$59_{\delta x>2}$	$67_{\delta x>2}$	$72_{\delta x>2}$	$77_{\delta x>2}$	$89_{\delta x>2}$	$93_{\delta x>2}$	$93_{\delta x>2}$	$109_{\delta x>2}$	$117_{\delta x>2}$	$118_{\delta x>2}$	$129_{\delta x>2}$
130	96	1041	1033	120	42	47	49	55	59	64	68	72	77	80	92
130	96	626	618	137	42	47	50	55	63	67	71	72	80	81	92
130	96	448	440	153	47	48	53	59	63	67	71	75	80	91	92
130	96	315	307	177	48	49	55	63	67	70	71	79	91	91	92
130	96	200	192	226	49	55	63	67	70	76	79	91	91	96	107
130	96	108	100	356	$64_{\delta x>2}$	$69_{\delta x>2}$	$74_{\delta x>2}$	$77_{\delta x>2}$	$89_{\delta x>2}$	$93_{\delta x>2}$	$93_{\delta x>2}$	$110_{\delta x>2}$	$110_{\delta x>2}$	$117_{\delta x>2}$	$130_{\delta x>2}$
130	102	1561	1552	118	40	48	50	51	57	65	66	70	73	78	83
130	102	781	773	135	41	49	51	52	58	65	69	73	74	82	82
130	102	522	514	151	43	50	51	57	64	66	69	73	74	82	85
130	102	393	384	167	48	51	52	57	65	69	73	73	81	82	93
130	102	264	256	200	50	51	57	65	69	73	73	81	82	93	93
130	102	138	130	297	56	62	70	70	78	90	94	94	$94_{\delta x>2}$	$110_{\delta x>2}$	$111_{\delta x>2}$
130	108	1561	1552	124	40	48	50	51	57	65	66	71	74	79	83
130	108	781	772	141	43	48	51	52	57	66	70	71	74	79	82
130	108	522	513	157	43	50	51	57	65	66	70	74	74	82	83
130	108	393	384	173	49	50	52	58	65	69	73	74	82	83	93
130	108	264	255	206	50	51	58	65	69	70	74	82	82	94	95
130	108	138	129	303	57	63	70	70	78	90	94	95	96	111	112
130	114	1561	1551	130	44	50	52	57	59	64	71	72	72	80	81
130	114	781	772	147	45	51	53	58	59	67	71	72	75	81	84
130	114	522	513	163	50	51	54	59	64	72	72	72	76	81	85
130	114	393	383	179	50	53	58	63	68	72	72	75	80	84	93
130	114	264	255	212	53	54	59	68	72	72	75	80	92	95	96
130	114	138	129	309	60	72	72	72	81	93	96	96	97	112	113
130	120	1561	1551	136	45	51	53	58	62	63	68	72	77	77	88
130	120	781	771	153	50	51	54	59	64	65	72	72	78	81	89
130	120	522	512	169	51	52	54	59	65	72	73	73	81	81	92
130	120	393	383	185	51	54	58	64	69	73	73	76	81	84	92
130	120	264	254	218	52	59	63	72	72	73	81	81	92	93	96
130	120	138	128	315	63	69	73	78	82	94	97	98	109	109	113

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Horizontal Deflection – Joist designs marked with the note 'δ_x**>2**' have a horizontal slip greater than 2". (Reference page 14)

Arch Joist (SPAC) Tables

Span ft	Chord Depth in	Top Chord Radius ft	Bottom Chord Radius ft	Shape Depth in	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**) 300	350	400	450	500	550	600	650	700	750	800
					Joist Self-Weight - Pounds per Linear Foot (**plf**)										
140	70	1121	1115	96	48	56	63	67	71	80	92	101	112	112	123
140	70	674	668	114	48	56	63	70	79	80	99	100	111	122	123
140	70	483	477	131	52	56	64	71	79	80	92	100	112	112	123
140	70	340	334	158	56	60	67	71	79	92	93	111	112	123	123
140	70	216	210	210	$56_{\delta x>2}$	$67_{\delta x>2}$	$71_{\delta x>2}$	$79_{\delta x>2}$	$88_{\delta x>2}$	$93_{\delta x>2}$	$112_{\delta x>2}$	$112_{\delta x>2}$	$113_{\delta x>2}$	$123_{\delta x>2}$	$135_{\delta x>2}$
140	70	117	111	350	$66_{\delta x>2}$	$70_{\delta x>2}$	$82_{\delta x>2}$	$91_{\delta x>2}$	$96_{\delta x>2}$	$116_{\delta x>2}$	$116_{\delta x>2}$	$117_{\delta x>2}$	$139_{\delta x>2}$	$140_{\delta x>2}$	$151_{\delta x>2}$
140	76	1121	1115	102	47	53	57	64	72	80	81	93	101	101	113
140	76	674	667	120	48	56	60	67	72	80	81	93	101	112	113
140	76	483	476	137	48	56	60	68	72	80	93	93	101	113	113
140	76	340	333	164	48	57	64	71	77	80	93	93	112	113	113
140	76	216	210	216	56	$61_{\delta x>2}$	$68_{\delta x>2}$	$76_{\delta x>2}$	$80_{\delta x>2}$	$89_{\delta x>2}$	$93_{\delta x>2}$	$112_{\delta x>2}$	$113_{\delta x>2}$	$114_{\delta x>2}$	$124_{\delta x>2}$
140	76	117	110	356	$66_{\delta x>2}$	$70_{\delta x>2}$	$79_{\delta x>2}$	$91_{\delta x>2}$	$92_{\delta x>2}$	$108_{\delta x>2}$	$116_{\delta x>2}$	$117_{\delta x>2}$	$129_{\delta x>2}$	$140_{\delta x>2}$	$150_{\delta x>2}$
140	82	1681	1674	100	46	49	58	61	69	72	78	81	94	94	103
140	82	841	835	117	46	49	58	65	69	73	81	89	94	102	113
140	82	562	555	135	47	56	61	68	69	77	81	93	94	101	113
140	82	423	416	152	47	57	61	68	72	77	81	93	94	112	113
140	82	284	278	187	49	60	65	68	77	80	89	93	112	113	113
140	82	149	142	292	$61_{\delta x>2}$	$65_{\delta x>2}$	$74_{\delta x>2}$	$78_{\delta x>2}$	$90_{\delta x>2}$	$90_{\delta x>2}$	$107_{\delta x>2}$	$114_{\delta x>2}$	$115_{\delta x>2}$	$126_{\delta x>2}$	$137_{\delta x>2}$
140	88	1681	1673	106	46	49	58	62	66	70	74	82	91	95	96
140	88	841	834	123	46	50	58	62	69	73	78	82	94	95	103
140	88	562	555	141	46	50	58	62	70	73	81	90	94	95	103
140	88	423	416	158	48	57	62	69	70	78	81	90	94	102	114
140	88	284	277	193	48	58	65	69	78	81	90	94	94	113	114
140	88	149	141	298	$62_{\delta x>2}$	$67_{\delta x>2}$	$75_{\delta x>2}$	$79_{\delta x>2}$	$91_{\delta x>2}$	$91_{\delta x>2}$	$107_{\delta x>2}$	$115_{\delta x>2}$	$115_{\delta x>2}$	$127_{\delta x>2}$	$127_{\delta x>2}$
140	94	1681	1673	112	42	49	51	59	64	71	72	80	83	92	96
140	94	841	834	129	47	50	58	59	64	71	75	80	83	95	97
140	94	562	554	147	47	50	59	63	70	71	75	82	91	96	96
140	94	423	415	164	48	51	59	63	70	74	79	82	91	96	96
140	94	284	277	199	49	55	63	70	71	79	82	91	95	96	114
140	94	149	141	304	$59_{\delta x>2}$	$67_{\delta x>2}$	$72_{\delta x>2}$	$80_{\delta x>2}$	$91_{\delta x>2}$	$92_{\delta x>2}$	$92_{\delta x>2}$	$108_{\delta x>2}$	$116_{\delta x>2}$	$116_{\delta x>2}$	$117_{\delta x>2}$
140	100	1681	1672	118	47	49	51	59	64	68	72	80	81	92	93
140	100	841	833	135	48	50	56	63	64	71	72	80	84	92	97
140	100	562	554	153	48	51	56	64	68	71	75	80	92	93	97
140	100	423	415	170	49	51	60	64	68	72	80	84	92	93	97
140	100	284	276	205	50	57	64	68	72	80	80	92	92	97	109
140	100	149	140	310	$62_{\delta x>2}$	$70_{\delta x>2}$	$74_{\delta x>2}$	$79_{\delta x>2}$	$90_{\delta x>2}$	$94_{\delta x>2}$	$94_{\delta x>2}$	$110_{\delta x>2}$	$119_{\delta x>2}$	$119_{\delta x>2}$	$120_{\delta x>2}$
140	106	1681	1672	124	48	50	52	57	65	70	73	78	82	91	95
140	106	841	833	141	49	51	56	65	66	70	74	81	83	93	95
140	106	562	553	159	50	51	57	66	70	73	74	82	90	94	95
140	106	423	414	176	50	56	61	69	70	73	81	82	94	94	99
140	106	284	276	211	52	58	65	69	73	79	82	93	94	98	110
140	106	149	140	316	62	70	$70_{\delta x>2}$	$79_{\delta x>2}$	$91_{\delta x>2}$	$95_{\delta x>2}$	$95_{\delta x>2}$	$111_{\delta x>2}$	$111_{\delta x>2}$	$118_{\delta x>2}$	$130_{\delta x>2}$
140	112	1681	1671	130	50	53	54	60	67	71	72	80	81	93	95
140	112	841	832	147	51	53	58	63	68	72	75	80	83	92	96
140	112	562	553	165	53	54	60	68	72	73	75	83	84	94	95
140	112	423	414	182	53	58	64	70	71	75	80	83	94	94	96
140	112	284	275	217	53	59	70	71	74	79	83	94	95	99	100
140	112	149	139	322	67	71	76	79	91	96	96	112	112	119	130
140	118	1681	1671	136	46	53	55	60	65	72	73	76	81	85	94
140	118	841	832	153	51	54	55	61	68	73	73	76	81	85	96
140	118	562	552	171	53	55	60	66	72	73	76	77	84	94	96
140	118	423	413	188	54	56	62	69	73	74	77	85	85	96	96
140	118	284	275	223	55	60	69	73	74	77	85	93	97	97	102
140	118	149	139	328	67	74	74	83	94	98	98	98	114	114	121
140	124	1681	1670	142	55	55	55	58	65	72	73	78	81	90	94
140	124	841	831	159	55	55	59	64	66	73	74	81	82	93	95
140	124	562	552	177	55	55	59	65	73	73	74	82	82	94	97
140	124	423	413	194	55	59	64	69	73	74	77	82	94	94	97
140	124	284	274	229	55	60	68	73	73	81	82	94	97	97	97
140	124	149	138	334	71	75	76	84	96	99	99	111	115	116	123

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Horizontal Deflection – Joist designs marked with the note 'δ_x**>2**' have a horizontal slip greater than 2". (Reference page 14)

Arch Joist (SPAC) Tables

Span	Chord Depth	Top Chord Radius	Bottom Chord Radius	Shape Depth	Top Chord Uniform Load - Pounds per Linear Foot (**plf**) (**ASD**)										
					300	350	400	450	500	550	600	650	700	750	800
ft	in	ft	ft	in	Joist Self-Weight - Pounds per Linear Foot (**plf**)										
150	76	1801	1794	95	52	56	64	71	80	84	93	101	112	123	124
150	76	902	895	114	52	57	68	71	80	92	93	112	113	123	124
150	76	602	596	132	56	60	68	71	80	100	101	112	113	123	124
150	76	453	447	151	56	60	68	76	80	93	100	112	112	123	134
150	76	305	298	189	57	67	71	80	88	93	112	112	123	124	135
150	76	159	153	301	$65_{\delta x>2}$	$69_{\delta x>2}$	$81_{\delta x>2}$	$90_{\delta x>2}$	$94_{\delta x>2}$	$114_{\delta x>2}$	$114_{\delta x>2}$	$115_{\delta x>2}$	$137_{\delta x>2}$	$138_{\delta x>2}$	$158_{\delta x>2}$
150	82	1801	1794	101	49	57	65	69	73	81	94	95	103	114	115
150	82	902	895	120	49	57	65	72	78	81	94	102	113	114	124
150	82	602	596	138	49	57	68	72	81	89	94	102	113	114	124
150	82	453	446	157	57	61	69	72	81	93	94	102	113	114	124
150	82	305	298	195	57	65	69	77	89	94	102	113	114	124	135
150	82	159	153	307	$66_{\delta x>2}$	$69_{\delta x>2}$	$78_{\delta x>2}$	$90_{\delta x>2}$	$95_{\delta x>2}$	$114_{\delta x>2}$	$115_{\delta x>2}$	$125_{\delta x>2}$	$137_{\delta x>2}$	$138_{\delta x>2}$	$148_{\delta x>2}$
150	88	1801	1793	107	48	58	62	69	73	78	82	95	96	114	115
150	88	902	894	126	48	58	62	69	73	81	90	95	103	114	115
150	88	602	595	144	50	58	66	69	78	81	90	95	113	114	115
150	88	453	446	163	54	61	69	70	78	89	94	95	113	114	115
150	88	305	297	201	58	65	69	78	89	90	94	113	114	114	135
150	88	159	152	313	$66_{\delta x>2}$	$75_{\delta x>2}$	$78_{\delta x>2}$	$91_{\delta x>2}$	$91_{\delta x>2}$	$107_{\delta x>2}$	$114_{\delta x>2}$	$115_{\delta x>2}$	$127_{\delta x>2}$	$138_{\delta x>2}$	$148_{\delta x>2}$
150	94	1801	1793	113	48	51	59	64	71	75	83	92	96	97	116
150	94	902	894	132	48	55	63	70	71	79	83	92	96	104	116
150	94	602	595	150	49	59	63	70	71	79	91	96	96	115	116
150	94	453	445	169	50	59	63	70	74	82	91	95	96	115	115
150	94	305	297	207	55	63	70	71	79	90	91	96	114	115	116
150	94	159	152	319	$67_{\delta x>2}$	$71_{\delta x>2}$	$76_{\delta x>2}$	$91_{\delta x>2}$	$92_{\delta x>2}$	$96_{\delta x>2}$	$108_{\delta x>2}$	$116_{\delta x>2}$	$116_{\delta x>2}$	$128_{\delta x>2}$	$139_{\delta x>2}$
150	100	1801	1792	119	50	52	60	64	71	72	81	84	93	98	99
150	100	902	893	138	50	56	64	68	72	75	81	92	97	98	105
150	100	602	594	156	50	57	64	71	72	80	84	92	97	99	116
150	100	453	445	175	51	60	65	72	72	80	92	93	98	116	117
150	100	305	296	213	57	65	68	72	80	92	92	97	116	116	117
150	100	159	151	325	$69_{\delta x>2}$	$70_{\delta x>2}$	$78_{\delta x>2}$	$93_{\delta x>2}$	$93_{\delta x>2}$	$98_{\delta x>2}$	$110_{\delta x>2}$	$118_{\delta x>2}$	$119_{\delta x>2}$	$130_{\delta x>2}$	$141_{\delta x>2}$
150	106	1801	1792	125	49	51	57	64	69	73	81	82	93	93	98
150	106	902	893	144	49	55	64	69	72	73	81	92	94	97	99
150	106	602	594	162	50	57	65	69	73	81	81	93	94	98	110
150	106	453	444	181	51	57	68	69	72	81	92	93	98	98	116
150	106	305	296	219	56	65	69	73	81	93	93	98	109	116	117
150	106	159	151	331	70	$70_{\delta x>2}$	$79_{\delta x>2}$	$91_{\delta x>2}$	$95_{\delta x>2}$	$106_{\delta x>2}$	$111_{\delta x>2}$	$118_{\delta x>2}$	$130_{\delta x>2}$	$130_{\delta x>2}$	$131_{\delta x>2}$
150	112	1801	1791	131	54	54	60	67	72	75	80	84	95	96	100
150	112	902	892	150	54	59	67	71	72	75	83	84	96	96	100
150	112	602	593	168	54	59	69	73	76	81	84	95	95	100	112
150	112	453	444	187	58	64	72	73	76	84	91	95	96	100	112
150	112	305	295	225	58	70	70	75	80	92	94	95	100	111	119
150	112	159	150	337	71	76	$80_{\delta x>2}$	$92_{\delta x>2}$	$96_{\delta x>2}$	$108_{\delta x>2}$	$112_{\delta x>2}$	$120_{\delta x>2}$	$131_{\delta x>2}$	$131_{\delta x>2}$	$132_{\delta x>2}$
150	118	1801	1791	137	53	55	60	68	72	73	76	85	93	96	97
150	118	902	892	156	54	55	61	69	73	76	77	85	96	97	97
150	118	602	593	174	54	60	65	72	73	77	84	86	96	97	101
150	118	453	443	193	55	60	69	73	77	81	85	96	97	101	102
150	118	305	295	231	60	67	74	75	83	86	97	97	98	113	121
150	118	159	150	343	75	75	83	95	98	$99_{\delta x>2}$	$110_{\delta x>2}$	$115_{\delta x>2}$	$122_{\delta x>2}$	$133_{\delta x>2}$	$134_{\delta x>2}$
150	124	1801	1790	143	53	55	60	66	72	73	76	82	94	96	98
150	124	902	891	162	53	59	60	70	73	73	77	85	94	98	99
150	124	602	592	180	55	60	66	73	73	77	82	86	97	98	103
150	124	453	443	199	56	61	73	74	74	82	85	96	97	99	103
150	124	305	294	237	60	66	74	74	82	85	96	97	98	103	114
150	124	159	149	349	74	75	83	95	99	99	114	114	122	134	$135_{\delta x>2}$
150	130	1801	1790	149	54	57	61	66	73	74	75	84	84	97	100
150	130	902	891	168	55	57	62	67	75	75	79	83	87	97	100
150	130	602	592	186	56	61	68	75	75	76	83	87	96	100	100
150	130	453	442	205	56	61	68	75	76	79	84	96	98	100	101
150	130	305	294	243	61	68	75	76	79	84	95	99	100	105	116
150	130	159	149	355	76	76	84	93	97	100	111	116	116	124	136

X-Bridging Requirements – Reference Standard Specification **Section 904.5 Bridging** on page 96

1 row	2 rows	3 rows	4 rows	5 rows	6 rows	7 rows	8 rows	9 rows	10 rows

Bearing Seat Depth – Profiles to the right of a colored line have a seat depth indicated in the chart below

Minimum 5"	7½"	10"	Maximum 12½"

Horizontal Deflection – Joist designs marked with the note 'δ_x**>2**' have a horizontal slip greater than 2". (Reference page 14)

STANDARD SPECIFICATION
SPECIAL PROFILE STEEL JOISTS, SP-SERIES
NEW MILLENNIUM BUILDING SYSTEMS

SECTION 900. SCOPE

This specification covers the design, manufacture and use of **Special Profile Steel Joists, SP-Series**. Load and Resistance Factor Design (LRFD) and Allowable Strength Design (ASD) are included in this specification.

SECTION 901. DEFINITION

The term **"Special Profile Steel Joists, SP-Series"** as used herein, refers to open web, load-carrying members utilizing hot-rolled or cold-formed steel, including cold-formed steel whose yield strength has been attained by cold working. SP-Series steel joists are suitable for the direct support of roof decks in buildings.

The design of SP-Series joists' chord and 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 SP-Series joist chord or web sections shall have a minimum yield strength determined in accordance with one of the procedures specified in Section 902.2, which is equal to the yield strength assumed in the design. SP-Series joists shall be designed in accordance with these specifications to support the loads specified in the joist designation.

The term "Yield Strength" as used herein shall designate the yield level of a material as determined by the applicable method outlined in paragraph 13.1 "Yield Point," and in paragraph 13.2 "Yield Strength," of ASTM A370, *Standard Test Methods and Definitions for Mechanical Testing of Steel Products*, or as specified in Section 902.2 of this specification.

SECTION 902. MATERIALS

902.1 STEEL

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

- 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 and 50
- High-Strength Low-Alloy Structural Steel with 50 ksi (345 MPa) Minimum Yield Point to 4 inches (100 mm) thick, ASTM A588/A588M
- Steel, Sheet and Strip, High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, with Improved 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, 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 proven by tests performed by the producer or manufacturer to have the properties specified in Section 902.2.

902.2 MECHANICAL PROPERTIES

The yield strength used as a basis for the design stresses prescribed in Section 903 shall be either 36 ksi (250 MPa) or 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, the mechanical properties of which 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, the mechanical properties of which 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, A529/A529M, A572/A572M, 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 Specifications 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 the least radius of gyration.

d) If any test specimen fails to pass the requirements of the 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.

902.3 WELDING ELECTRODES

The following electrodes shall be used for arc welding:

a) For connected members both having a specified minimum 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 902.3(a)

Other welding methods, providing equivalent strength as demonstrated by tests, may be used.

902.4 PAINT

The standard shop paint is intended to protect the steel for only a short period of exposure in ordinary atmospheric conditions and shall be considered an impermanent and provisional coating. When specified, the standard shop paint shall conform to one of the following:

a) Steel Structures Painting Council Specification, SSPC No. 15

b) Shall be a shop paint which meets the minimum performance requirements of the above listed specification

SECTION 903. DESIGN AND MANUFACTURE

903.1 METHOD

SP-Series joists shall be designed in accordance with these specifications as simply supported, uniformly loaded trusses supporting a roof deck so constructed as to brace the top chord of the joists against lateral buckling. All joists are designed as pinned at one end and roller bearing on the opposite end to prevent horizontal thrust to the supporting structure. The end fixity conditions of Scissor and Arch joists require special consideration from the specifying professional regarding end anchorage conditions. (See Sections 904.1 and 904.7)

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

a) Where the steel used consists of hot-rolled shapes, bars or plates, use the *American Institute of Steel Construction, Specification for Structural Steel Buildings.*

b) 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.*

Design Basis:

Designs shall be made according to the provisions in this Specification for either Load and Resistance Factor Design (LRFD) or for Allowable Strength Design (ASD).

Load Combinations:

LRFD:

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

1.4D
1.2D + 1.6 (L, or L_r, or S, or R)

ASD:

When load combinations are not specified to NMBS, the required stress shall be computed based on the load combinations as follows:

D
D + (L, or L_r, or S, or R)

Where:

D = dead load due to the weight of the structural elements and the permanent features of the structure
L = live load due to occupancy and movable equipment
L_r = roof live load
S = snow load
R = load due to initial rainwater or ice exclusive of the ponding contribution

The current *ASCE 7, Minimum Design Loads for Buildings and Other Structures* shall be used for LRFD and ASD load combinations. This provision pertains exclusively to the combination of loads and does not imply that NMBS generate or verify load development for SP-Series.

903.2 DESIGN AND ALLOWABLE STRESSES

Design Using Load and Resistance Factor Design (LRFD)

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

f_u = required stress ksi (MPa)
F_n = nominal stress ksi (MPa)
ϕ = resistance factor
ϕF_n = design stress ksi (MPa)

Design Using Allowable Strength Design (ASD)

Joists shall have their components so proportioned that the required stresses, f, shall not exceed F_n/Ω where,

f_u = required stress ksi (MPa)
F_n = nominal stress ksi (MPa)
Ω = safety factor
F_n/Ω = allowable stress ksi (MPa)

Stresses:

(a) Tension: $\phi_t = 0.90$ (LRFD), $\Omega_t = 1.67$ (ASD)

For chords: $F_y = 50$ ksi (345 MPa)
For webs: $F_y = 50$ ksi (345 MPa) or $F_y = 36$ ksi (250 MPa)

Design Stress $= 0.9F_y$ (LRFD) (903.2-1)
Allowable Stress $= 0.6F_y$ (ASD) (903.2-2)

(b) Compression: $\phi_c = 0.90$ (LRFD), $\Omega_c = 1.67$ (ASD)

For members with $\frac{K\ell}{r} \le 4.71\sqrt{\frac{E}{QF_y}}$

$$F_{cr} = Q\left[0.658^{\left(QF_y/F_e\right)}\right]F_y \qquad (903.2\text{-}3)$$

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

$$F_{cr} = 0.877F_e \qquad (903.2\text{-}4)$$

F_e = Elastic buckling stress determined in accordance with Equation 903.2-5

$$F_e = \frac{\pi^2 E}{\left(K\ell/r\right)^2} \qquad (903.2\text{-}5)$$

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

Design Stress $= 0.9F_{cr}$ (LRFD) (903.2-6)
Allowable Stress $= 0.6F_{cr}$ (ASD) (903.2-7)

In the above equations, ℓ is taken as the distance in inches (mm) between panel points for the chord members and the appropriate length for 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 ℓ/r_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 column strength is given in the *AISI North American Specification for the Design of Cold-Formed Steel Structural Members*.

(c) Bending: $\phi_b = 0.90$ (LRFD), $\Omega_b = 1.67$ (ASD)

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)

Design Stress $= 0.9F_y$ (LRFD) (903.2-8)
Allowable Stress $= 0.6F_y$ (ASD) (903.2-9)

For web members of solid round cross section:
$F_y = 50$ ksi (345 MPa) or $F_y = 36$ ksi (250 MPa)

Design Stress $= 1.45F_y$ (LRFD) (903.2-10)
Allowable Stress $= 0.95F_y$ (ASD) (903.2-11)

For bearing plates:
F_y = 50 ksi (345 MPa) or F_y = 36 ksi (250 MPa)

Design Stress = $1.35F_y$ (LRFD) (903.2-12)
Allowable Stress = $0.90F_y$ (ASD) (903.2-13)

(d) Weld Strength:

Shear at throat of fillet welds:

Nominal Shear Stress = $F_{nw} = 0.6F_{exx}$ (903.2-14)

LRFD: $\phi_w = 0.75$

Design Shear Strength =
$\phi R_n = \phi_w F_{nw} A = 0.45F_{exx} A$ (903.2-15)

ASD: $\Omega_w = 2.0$

Allowable Shear Strength =
$R_n/\Omega_w = F_{nw}A/\Omega_w = 0.3F_{exx} A$ (903.2-16)

Where A = effective throat area

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)

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

Divergence Stress: The design of chords formed into arcs through cold rolling shall include a divergence stress in the design. A secondary moment in the chord resulting from the divergence of the actual member from the node-to-node linear design element shall be accounted for in the design.

For chords rolled to a radius, the secondary moment stress shall be equal to:

$$\sigma_{divergence} = \frac{P_r \cdot c}{I_x} \cdot \left(R - \sqrt{R^2 - \frac{d^2}{4}} \right) \quad (903.2\text{-}17)$$

P_r = axial force required in the member

c = distance from neutral axis to the extreme fiber results in two stress values for asymmetric sections such as double angles

I_x = moment of inertia about axis perpendicular to radius of divergence

R = radius of divergence from neutral axis. Usually the radius of cold rolling for Bowstring or Arch Joists

d = straight-line distance from node to node

903.3 MAXIMUM SLENDERNESS RATIOS

The slenderness ratios, 1.0 ℓ/r and 1.0 ℓs/r of members as a whole or any component part shall not exceed the values given in Table 903.3-1, Parts A.

The effective slenderness ratio, Kℓ/r to be used in calculating the nominal stresses F_{cr} and F_e, is the largest value as determined from Table 903.3-1, Parts B and C. See P.N. Chod and T.V. Galambos, *Compression Chords Without Fillers in Longspan Steel Joists, Research Report No. 36,* June 1975 Structural Division, Civil Engineering Department, Washington University, St. Louis, Mo.

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 903.3-1 are defined as follows:

ℓ = length center-to-center of panel points, except ℓ = 36 inches (914 mm) for calculating ℓ/r_y of top chord member.
ℓ_s = maximum length center-to-center between panel point and filler (tie), or between adjacent fillers (ties).
r_x = member radius of gyration in the plane of the joist.
r_y = member radius of gyration out of the plane of the joist.
r_z = least radius of gyration of a member component.

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TABLE 903.3-1

MAXIMUM AND EFFECTIVE SLENDERNESS RATIOS

	$k\ell/r_x$	$k\ell/r_y$	$k\ell/r_z$	$k\ell_s/r_z$
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 sl enderness 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 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.

903.4 MEMBERS

(a) Chords

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

Bottom chords that are rolled for arched chord joist shall be designed to include divergence stress per Equation 903.2-17, in combination with tension forces.

For **LRFD**: $f_{au} + \sigma_{div} \le 0.9 F_y$ (903.4-1)

For **ASD**: $f_a + \sigma_{div} \le 0.6 F_y$ (903.4-2)

The radius of gyration of the top chord about its vertical axis shall not be less than ℓ/120 where ℓ is the spacing in inches (mm) between lines of bridging as specified in Section 904.5(d).

The top chord shall be considered as stayed laterally by the roof deck provided the requirements of Section 904.9(c) of this specification are met.

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

For **LRFD**:

at the panel point: $f_{au} + f_{bu} \le 0.9F_y$ (903.4-3)

at the mid panel:

for $\frac{f_{au}}{\phi_c F_{cr}} \ge 0.2$,

$$\left(\frac{f_{au}}{\phi_c F_{cr}}\right) + \frac{8}{9}\left[\frac{C_m\left(f_{bu} + \sigma_{div}\right)}{\left[1 - \left(\frac{f_{au}}{\phi_c F_e}\right)\right] Q \phi_b F_y}\right] \le 1.0 \qquad (903.4\text{-}4)$$

for $\frac{f_{au}}{\phi_c F_{cr}} < 0.2$,

$$\left(\frac{f_{au}}{2\phi_c F_{cr}}\right) + \left[\frac{C_m\left(f_{bu} + \sigma_{div}\right)}{\left[1 - \left(\frac{f_{au}}{\phi_c F_e}\right)\right] Q \phi_b F_y}\right] \le 1.0 \qquad (903.4\text{-}5)$$

f_{au} = P_u/A, 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)
σ_{div} = divergence stress applied where applicable as defined in Equation 903.2-17
M_u = required flexural strength using LRFD load combinations, kip-in (N-mm)
S = elastic section modulus, in^3 (mm^3)
F_{cr} = nominal axial compressive stress based on ℓ/r as defined in Section 903.2(b), ksi (MPa)
C_m = 1 - 0.3 $f_{au}/\phi F_e$ for end panels
C_m = 1 - 0.4 $f_{au}/\phi F_e$ for interior panels
F_y = specified minimum yield strength, ksi (MPa)

$F_e = \frac{\pi^2 E}{(k\ell / r_x)^2}$, ksi (MPa)

Where ℓ is the panel length, in inches (mm), as defined in Section 903.2(b), and r_x is the radius of gyration about the axis bending.

Q = form factor defined in Section 903.2(b)
A = area of the top chord, $in.^2$ (mm^2)

For **ASD**:

at the panel point: $f_a + f_b \le 0.6F_y$ (903.4-6)

at the mid panel:

for $\frac{f_a}{F_a} \ge 0.2$,

$$\left(\frac{f_a}{F_a}\right) + \frac{8}{9}\left[\frac{C_m\left(f_b + \sigma_{div}\right)}{\left[1 - \left(\frac{1.67 f_a}{F_e}\right)\right] Q F_b}\right] \le 1.0 \qquad (903.4\text{-}7)$$

for $\frac{f_a}{F_a} < 0.2$,

$$\left(\frac{f_a}{2F_a}\right) + \left[\frac{C_m\left(f_b + \sigma_{div}\right)}{\left[1 - \left(\frac{1.67 f_a}{F_e}\right)\right] Q F_b}\right] \le 1.0 \qquad (903.4\text{-}8)$$

f_a = P/A, required compressive stress, ksi (MPa)
P = required axial strength using ASD load combinations, kips (N)
f_b = M/S, required bending stress at the location under consideration, ksi (MPa)
σ_{div} = divergence stress applied where applicable as defined in Equation 903.2-17
M = required flexural strength using ASD load combinations, kip-in (N-mm)
S = elastic Section Modulus, in^3 (mm^3)
F_a = allowable axial compressive stress based on ℓ/r as defined in Section 903.2(b), ksi (MPa)

F_b = 0.6 F_y, allowable bending stress, ksi (MPa)
C_m = 1 - 0.5 f_a/F_e for end panels
C_m = 1 - 0.67 f_a/F_e for interior panels

(b) Web

The vertical shears to be used in the design of the web members shall be determined from full uniform loading, but such vertical shears shall be not less than 25 percent of the end reaction.

Interior vertical web members used in modified Warren-type web systems shall be designed to resist the gravity loads supported by the member plus an additional axial load of 1/2 of 1 percent of the top chord axial force.

(c) Eccentricity

Members connected at a joint shall have their center-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. Ends of joists shall be proportioned to resist bending produced by eccentricity at the support.

(d) Extended Ends

Extended top chords or full depth cantilever ends require the special attention and coordination between the specifying professional and NMBS. The magnitude and location of the loads to be supported, deflection requirements, and proper bracing shall be clearly indicated in the contract documents and joist erection plans.

903.5 CONNECTIONS

(a) Methods

Joist 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 weld 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 spatter that does not interfere with paint coverage is acceptable.

(2) Welding Program

NMBS shall have a program for establishing weld procedures and operator qualification, and for weld sampling and testing. (Refer to Steel Joist Institute *Technical Digest #8, Welding of Open Web Steel Joists*.)

(3) Weld Inspection by Outside Agencies (See Section 904.13 of this specification).

The agency shall arrange for visual inspection to determine that welds meet the acceptance standards of Section 903.5(a)(1). 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 shall develop the maximum force due to any of the design loads, but not less than 50 percent of the strength of the member in tension or compression, whichever force is the controlling factor in the selection of the member.

(2) 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 member strength. Members containing a butt weld splice shall develop an ultimate tensile force of at least 2 x 0.6 F_y 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 NMBS in accordance with the AISC *Steel Construction Manual*. Splices shall be designed for the member forces, but not less than 50 percent of the member strength.

Top chord splices may be designed as "compression only" when the joist is not subject to an in-service net uplift. Most all joists are subject to negative bending moment during hoisting at erection and "compression only" splices shall be designed for these tension forces.

903.6 CAMBER

SP-Series joists are furnished with no camber. NMBS can provide special camber as required by the contract documents. The specifying professional shall give consideration to coordinating joist elevation with adjacent framing. Technical performance requirements shall be coordinated between NMBS and the specifying professional.

903.7 VERIFICATION OF DESIGN & MANUFACTURE

(a) Design Calculations

Design calculations prepared by a professional engineer registered in the state of the NMBS manufacturing plant are available for NMBS SP-Series joists upon request.

SECTION 904. APPLICATION

904.1 USAGE

This specification shall apply to any type of structure where roof decks are to be supported directly by SP-Series joists installed as hereinafter specified. Where SP-Series joists are used other than on simple spans under uniformly distributed loading as prescribed in Section 903.1, they shall be investigated and modified if necessary to limit the required stresses to those listed in Section 903.2.

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 dead loads. The joist is then 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 in the contract documents and on the structural drawings by the specifying professional. The moment plates shall be furnished by other than NMBS.

904.2 SPAN

The term "span" as used herein is defined as shown on the diagram at the right. On beams, the span is to the center line of the supporting steel and on a wall, span is defined as 6" (152 mm) over the support. In each case, the vertical location of the point for determining span is at the top of the joist top chord.

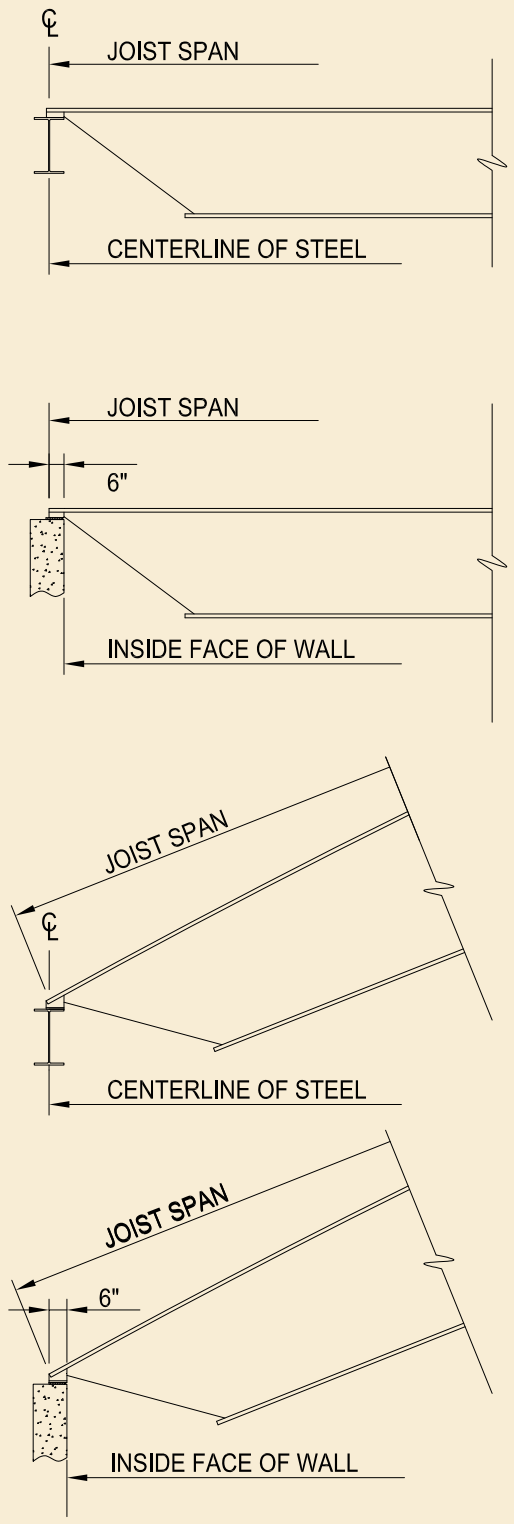
When the bearing points of a SP-Series joist are at different elevations, the span of the joist shall be determined by the length along the slope.

In all cases, the design length of the joist is equal to the span less 4" (102 mm).

904.3 DEPTH

The nominal depth as specified in the designation of SP-Series joists shall be the maximum depth of the joist as measured between the top and bottom chords. When joist geometry consists of parallel chords, (e.g. Scissor or Arch), the measurement shall be made perpendicular to the top and bottom chord. If a profile not conforming to one of the four types or variations in this catalog is used, the nominal depth shall be measured perpendicular to a chord tangent, at a discontinuous panel point, (i.e. top or bottom chord ridge), or at the greatest nominal depth along the span. In any case, dimensions to be used in design shall be as specified in the contract documents.

SP-Series joists may have various chord configurations and may have bearing conditions that cause the excessive pitch in the chords. The design of the joist in all cases shall be comprehensive to meet all SP-Series design requirements set forth in the contract documents.



WHEN SP-SERIES JOISTS BEAR AT DIFFERENT ELEVATIONS, JOIST SPAN IS DEFINED ALONG THE SLOPE. USE THE CENTERLINE OF BEAM FOR STEEL AND 6" OF BEARING ON MASONRY.

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904.4 END SUPPORTS

(a) Masonry and Concrete

SP-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 or 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 SP-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 plate shall be located not more than 1/2 inch (13 mm) from the face of the wall and shall not be less than 9 inches (229 mm) wide perpendicular to the length of the joist. The plate is to be designed by the specifying professional and shall be furnished by other than NMBS.

Where it is deemed necessary to bear less than 6 inches (152 mm) 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 joists must bear a minimum of 4 inches (102 mm) 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. The ends of SP-Series joists shall extend a distance of not less than 4 inches (102 mm) over the steel supports for top chords less than angle size L5" x 5" x ½", otherwise 6 inches (153mm).

904.5 BRIDGING

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

(a) Horizontal

Horizontal bridging shall consist of continuous horizontal steel members with a ℓ/r ratio of the bridging member of not more than 300, where ℓ is the distance in inches (mm) between attachments and r is the least radius of gyration of the bridging member.

(b) Diagonal

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

(c) Bridging Types

For spans less than or equal to 20 feet (6.096 m), welded horizontal bridging may be used. If the joist center of gravity is above the supports, the row of bridging nearest the center is required to be bolted diagonal bridging.

For spans more than 20 feet (6.096 m) all rows shall be bolted diagonal bridging. Where the joist spacing is less than 2/3 times the joist depth at the bridging row, both bolted diagonal bridging and bolted horizontal bridging shall be used.

(d) Quantity and Spacing

The maximum spacing of lines of bridging shall not exceed the values in Table 904.5-1.

TABLE 904.5-1

BRIDGING SPACING AND FORCES		
TOP CHORD LEG SIZE	**MAXIMUM BRIDGING SPACING**	**NOMINAL FORCE REQUIRED**
< 2"	11'-0"	400 lbs.
2"	12'-0"	550 lbs.
2½"	13'-0"	750 lbs.
3"	16'-0"	950 lbs.
3½"	16'-0"	1300 lbs.
4"	21'-0"	1850 lbs.
5"	21'-0"	2300 lbs.
6" x 6" x 0.500"	26'-0"	2800 lbs.
6" x 6" x 0.625"	30'-0"	3450 lbs.
6" x 6" x 0.75"	30'-0"	4050 lbs.
Nominal bracing force is unfactored. 8" chords – contact NMBS		

(e) Connections

Connections to the chords of the steel joists shall be made by positive mechanical means or by welding, and capable of resisting a horizontal force not less than that specified in Table 904.5-1.

(f) 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 hoisting cables are released.

904.6 INSTALLATION OF BRIDGING

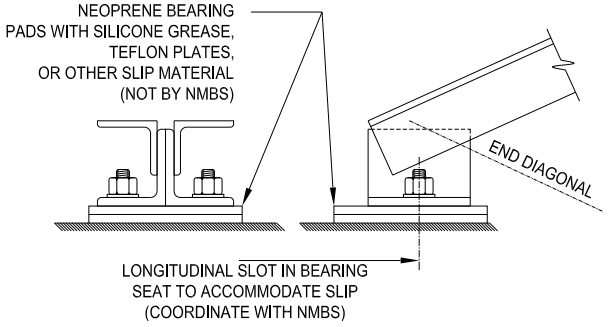
Bridging shall support the top and bottom chords against lateral movement during the construction period and shall hold the steel joists in the approximate position as shown on the joist placement plans.

The ends of all bridging lines terminating at walls or beams shall be anchored to resist the nominal force shown in Table 904.5-1.

904.7 BEARING SEAT ATTACHMENT

CAUTION: Scissor and Arch joists with fixed anchorage conditions may induce a horizontal thrust to the supporting structure. The specifying professional shall give consideration to this thrust at the fixed ends of the joist. Alternatively, roller (slip) end supports result in lateral displacement of the reaction at the roller (slip) end of the joist. Anchorage conditions must be investigated by the specifying professional and the design of the supporting structure shall accommodate appropriate anchorage conditions.

For applicable conditions, horizontal thrust force to be resisted by the joist or allowable lateral slip at the support and design details of end anchorage conditions shall be clearly indicated by the specifying professional on the contract documents.



(a) Masonry and Concrete

Ends of SP-Series joists resting on steel bearing plates on masonry or structural concrete shall be attached thereto 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 (minimum), or the equivalent. Top chords of angle size L5" x 5" x 1/2" or greater shall be attached thereto with minimum of two 1/4 inch fillet welds, 4 inches long, or two 3/4 inch ASTM A325 bolts or equivalent.

(b) Steel

Ends of SP-Series joists resting on steel supports shall be attached thereto 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 (minimum), or the equivalent. Top chords of angle size L5" x 5" x 1/2" or greater shall be attached thereto with minimum of two 1/4 inch fillet welds, 4 inches long, or two 3/4 inch ASTM A325 bolts or equivalent. When SP-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, SP-Series joists shall be anchored to resist such forces (Refer to Section 904.12 Uplift).

904.8 JOIST SPACING

Joists shall be spaced so that the loading on each joist does not exceed the design load (LRFD or ASD) for the particular joist as designated in the contract documents.

904.9 ROOF DECKS

(a) Material

Roof decks may consist of gypsum, formed steel, wood, or other suitable material capable of supporting the required load at the specified joist spacing.

(b) Bearing

Decks shall bear uniformly along the top chords of the joists.

(c) Attachments

The spacing of attachments along the joist top chord shall not exceed 36 inches (914 mm). Such attachments of the deck to the top chord of joists shall be capable of resisting the forces given in Table 904.9-1.

TABLE 904.9-1

DECK ATTACHMENT FORCES	
TOP CHORD LEG	**NOMINAL FORCE REQUIRED**
≤2"	100 PLF
2½"	150 PLF
3"	200 PLF
3½"	200 PLF
4"	300 PLF
5"	400 PLF
6" x 6" x 0.500"	500 PLF
6" x 6" x 0.625"	600 PLF
6" x 6" x 0.75"	700 PLF
Nominal bracing force is unfactored. 8" chords – contact NMBS	

(d) Wood Nailers

Where wood nailers are used, such nailers in conjunction with deck shall be firmly attached to the top chords of the joists in conformance with Section 904.9(c).

904.10 DEFLECTION

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

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 consideration to the effects of deflection.

904.11 PONDING

The ponding investigation shall be performed by the specifying professional. Refer to Steel Joist Institute *Technical Digest #3, Structural Design of Steel Joist Roofs to Resist Ponding Loads* and AISC *Steel Construction Manual*.

904.12 UPLIFT

Where uplift forces due to wind are a design requirement, these forces must be indicated in the contract documents in terms of NET uplift in pounds per square foot (Pascals). The contract documents shall indicate if the net uplift is based upon LRFD or ASD. When these forces are specified, they must be considered in the design of 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. Refer to Steel Joist Institute *Technical Digest #6, Structural Design of Steel Joist Roofs to Resist Uplift Loads*.

904.13 INSPECTION

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

Arrangements shall be made with NMBS for such inspection of the joists at the manufacturing facility by the buyer's inspectors at buyer's expense.

SECTION 905. ERECTION STABILITY AND HANDLING

905.1 STABILITY

When it is necessary for the erector to climb on the SP-Series joists, extreme caution must be exercised since unbridged joists may exhibit some degree of instability under the erector's weight. The degree of instability increases for geometries common with SP-Series joists due to their higher center-of-gravity.

(a) Stability Requirements

(1) Before an employee is allowed on the SP-Series joists: BOTH ends of joists at columns (or joists designated as column joists) shall be attached to its supports. For all other joists a minimum of one end shall be attached before the employee is allowed on the joist. The attachment shall be in accordance with Section 904.7.

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) For SP-Series joists with spans less than or equal to 20 feet (6.096 mm) that are permitted to have horizontal bridging per the restrictions of Section 904.5.(c), only one employee shall be allowed on the joists unless all bridging is installed and anchored.

(3) For SP-Series joists with spans more than 20 feet (6.096m), the following shall apply:

a) All rows of bridging shall be bolted diagonal bridging. Where the joist spacing is less than 2/3 times the joist depth at the bridging row, both bolted diagonal bridging and bolted horizontal bridging shall be used.

b) Hoisting cables shall not be released until all bolted bridging is installed and anchored, unless an alternate method of stabilizing the joist has been provided.

c) No more than one employee shall be allowed on these spans until all bridging is installed and anchored.

(4) When permanent bridging terminus points cannot be used during erection, additional temporary bridging terminus points are required to provide lateral stability.

(5) In the case of bottom chord bearing joists, the ends of the joist must be restrained laterally per Section 904.5(f) before releasing the hoisting cables.

(6) After the 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 904.7.

(b) Landing and Placing Loads

(1) Except as stated in paragraph 905(b)(3) of this section, no "construction loads"[1] are allowed on the SP-Series joists until all bridging is installed and anchored, and all joist bearing seats are attached.

(2) During the construction period, loads placed on the SP-Series joists shall be distributed so as not to exceed the capacity of the 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 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 deck may be placed on SP-Series joists until all bridging has been installed and anchored and all 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 the structure is capable of supporting the load.

b) The bundle of decking is placed on a minimum of three steel joists.

c) The joists supporting the bundle of decking are attached at both ends.

d) All rows of bridging are 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 one foot (0.30 m) of the bearing surface of the joist end.

(5) The edge of the construction load shall be placed within one foot (0.30 m) of the bearing surface of the joist end.

[1] A copy of the *OSHA Steel Erection Standard §1926.757, Open Web Steel Joists*, is included at www.newmill.com for reference. Construction loads are defined therein for joist purposes as "any load other than the weight of the employee(s), the joists and the bridging."

[2] A copy of the *OSHA Steel Erection Standard §1926.757, Open Web Steel Joists*, may be found at www.newmill.com for reference. Qualified person is defined therein as "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."

(c) Field Welding

(1) All field welding shall be performed in accordance with the contract documents. Field welding shall not damage the 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.

(d) Handling

Particular attention should be paid to the erection of SP-Series joists. Care shall be exercised at all times to avoid damage to the joists and accessories.

Each joist shall be adequately braced laterally before any loads are applied. If lateral support is provided by bridging, the bridging lines, as defined in Section 905.1(a)(2) and 905.1(a)(3), must be anchored to prevent lateral movement.

(e) Fall Arrest Systems

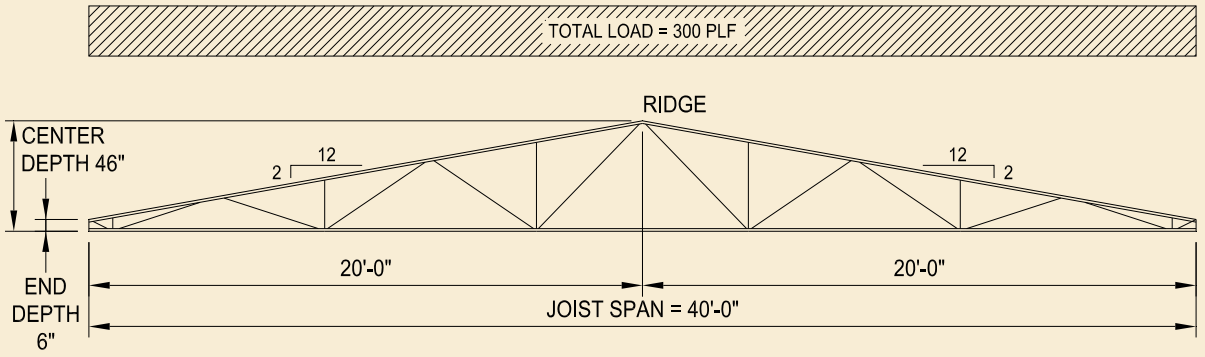
SP-Series joists shall not be used as anchorage points for a fall arrest system unless written direction to do so is obtained from a "qualified person."[2]

SECTION 906.
HOW TO SPECIFY SPECIAL PROFILE JOISTS

The following abbreviated design examples demonstrate the selection of an SP-Series joist from the Weight Tables given all necessary geometry and loading information. The information found in the SP-Series Weight Tables includes the uniform self-weight of the joist as well as bridging and seat-depth requirements. For Scissor (SPSC) and Arch (SPAC) Joists, the table will note if the horizontal deflection is greater than 2". This allowance is for a pin-roller bearing anchorage condition. The horizontal deflection, or slip, is at the roller end.

906.1 GABLE EXAMPLE

ALL TABLES ARE BASED ON ASD



GABLE JOIST (SPGB)

From the above diagram, the following information is used to enter the Gable Joists (SPGB) Tables on page 24.

Span: 40'-0" Center Depth: 46" End Depth: 6" Top Chord Pitch: 2" / foot

Total Load: 300 plf — Total Load is the result of worst-case equivalent uniform load, $W_{eqM\text{-}TL}$, based on investigation of all load cases.

Live Load: 120 plf — SP-Series tables are based on a 0.75 Live to Total Load ratio (300 x 0.75 = 225 plf) and check for a Live Load deflection not to exceed L/240, or 40' x 12 / 240 = 2" maximum deflection for 225 plf. The Live Load in this example, 120 plf, is less than 75 percent of the total load, 225 plf, therefore deflection is within limits.

Uplift Load: 160 plf — Net Uplift is not shown in the above diagram but is called out in the contract documents in the NET UPLIFT plan.

Joist Designation: 46 SPGB 300 / 120 / 160

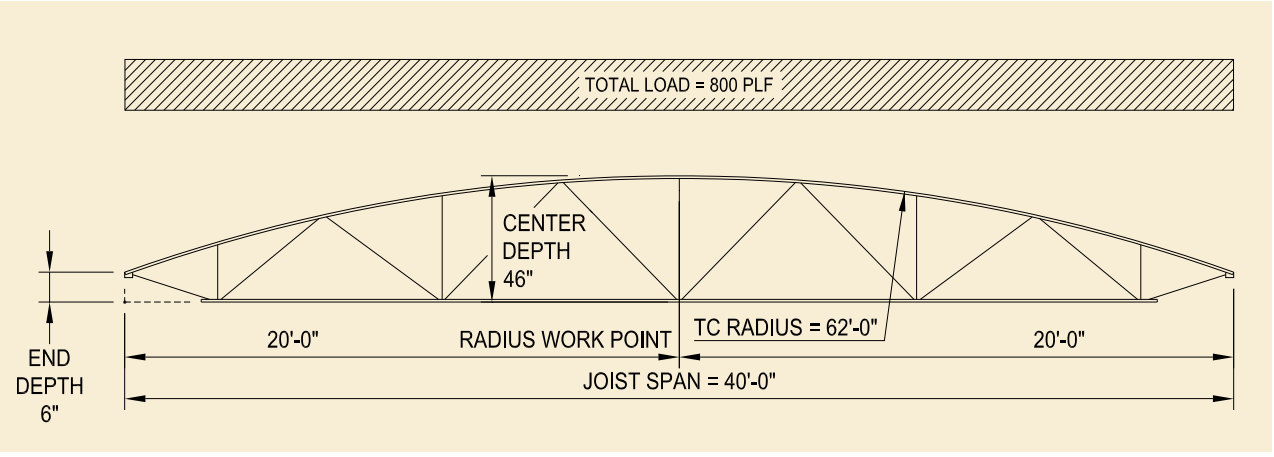
From the information above, the correct geometry is found on page 28.

From the table:
Joist Self-Weight: 8 PLF
Bridging Required: 3 Rows of Bolted X-Bridging
Seat Depth: 5" Deep Seats

Bridging and seat depth information should be noted in the contract documents and reflected in the section details.

906.2 BOWSTRING EXAMPLE

ALL TABLES ARE BASED ON ASD



BOWSTRING JOIST (SPBW)

From the above diagram, the following information is used to enter the Bowstring Joists (SPBW) Tables on page 40.

Span: 40'-0" Center Depth: 46" End Depth: 6" Top Chord Radius: 62'-0"

Total Load: 800 plf — Total Load is the result of worst-case equivalent uniform load, $W_{eqM\text{-}TL}$, based on investigation of all load cases.

Live Load: 400 plf — SP-Series tables are based on a 0.75 Live to Total Load ratio (800 x 0.75 = 600 plf) and check for a Live Load deflection not to exceed L/240, or 40' x 12 / 240 = 2" maximum deflection for 600 plf. The Live Load in this example, 400 plf, is less than 75 percent of the total load, 600 plf, therefore deflection is within limits.

Uplift Load: 220 plf — Net Uplift is not shown in the above diagram but is called out in the contract documents in the NET UPLIFT plan.

Joist Designation: 46 SPBW 800 / 400 / 220

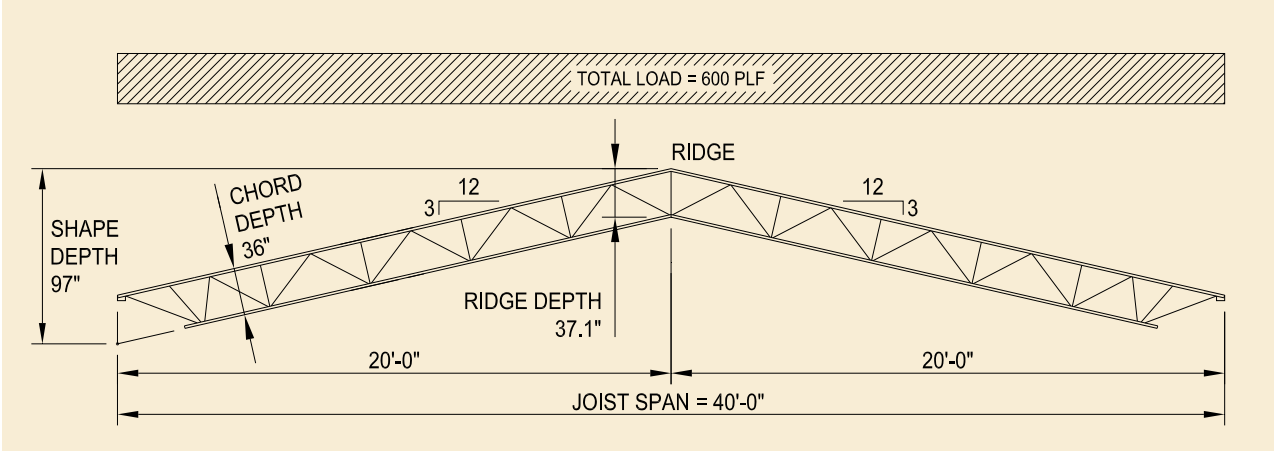
From the information above, the correct geometry is found on page 44.

From the table:	Joist Self-Weight:	17 PLF
	Bridging Required:	3 Rows of Bolted X-Bridging
	Seat Depth:	5" Deep Seats

Bridging and seat depth information should be noted in the contract documents and reflected in the section details.

906.3 SCISSOR EXAMPLE

ALL TABLES ARE BASED ON ASD



SCISSOR JOIST (SPSC)

From the above diagram, the following information is used to enter the Scissor Joists (SPSC) Tables on page 56.

Span: 40'-0" Chord Depth: 36" Shape Depth: 97" Top Chord Pitch: 3" / foot
Ridge Depth: 37.1"

Total Load: 600 plf — Total Load is the result of worst-case equivalent uniform load, $W_{eqM\text{-}TL}$, based on investigation of all load cases.

Live Load: 370 plf — SP-Series tables are based on a 0.75 Live to Total Load ratio (600 x 0.75 = 450 plf) and check for a Live Load deflection not to exceed L/240, or 40' x 12 / 240 = 2" maximum deflection for 450 plf. The Live Load in this example, 370 plf, is less than 75 percent of the total load, 450 plf, therefore deflection is within limits.

Uplift Load: 110 plf — Net Uplift is not shown in the above diagram but is called out in the contract documents in the NET UPLIFT plan.

Joist Designation: 36 SPSC 600 / 370 / 110

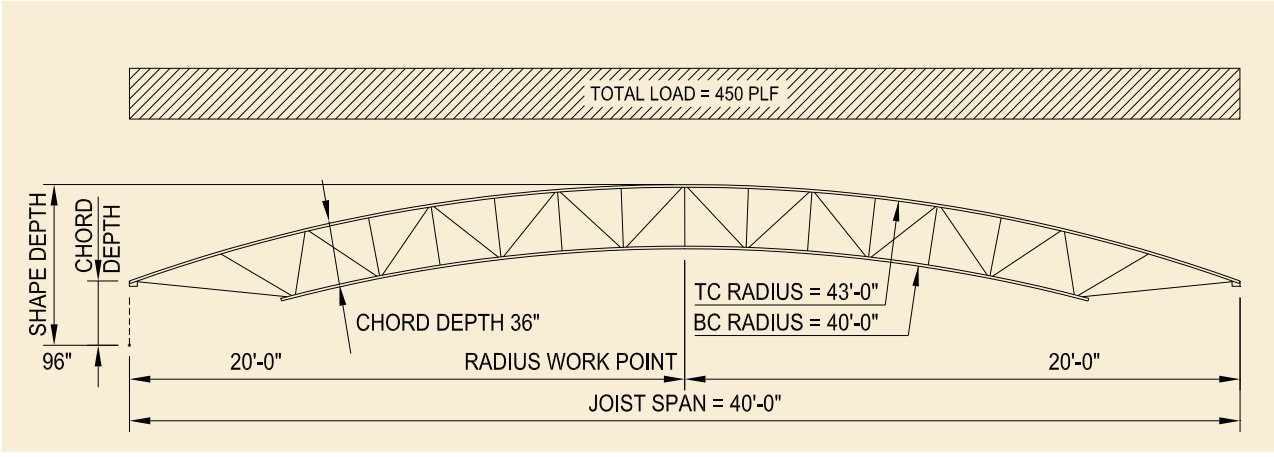
From the information above, the correct geometry is found on page 60.

From the table:	Joist Self-Weight:	18 PLF
	Bridging Required:	2 Rows of Bolted X-Bridging
	Seat Depth:	5 Deep Seats
	Horizontal Deflection:	≤2"; as the note for δ_X>2 is not shown in the cell

Bridging and seat depth information should be noted in the contract documents and reflected in the section details.

906.4 ARCH EXAMPLE

ALL TABLES ARE BASED ON ASD



ARCH JOIST (SPAC)

From the above diagram, the following information is used to enter the Arch Joists (SPAC) Tables on page 72.

Span: 40'-0" Chord Depth: 36" Shape Depth: 96" Top Chord Radius: 43'-0"

Total Load: 450 plf — Total Load is the result of worst-case equivalent uniform load, $W_{eqM\text{-}TL}$, based on investigation of all load cases.

Live Load: 315 plf — SP-Series tables are based on a 0.75 Live to Total Load ratio (450 x 0.75 = 338 plf) and check for a Live Load deflection not to exceed L/240, or 40' x 12 / 240 = 2" maximum deflection for 338 plf. The Live Load in this example, 315 plf, is less than 75 percent of the total load, 338 plf, therefore deflection is within limits.

Uplift Load: 200 plf — Net Uplift is not shown in the above diagram but is called out in the contract documents in the NET UPLIFT plan.

Joist Designation: 36 SPAC 450 / 315 / 200

From the information above, the correct geometry is found on page 76.

From the table:

Joist Self-Weight:	17 PLF
Bridging Required:	2 Rows of Bolted X-Bridging
Seat Depth:	5 Deep Seats
Horizontal Deflection:	≤2"; as the note for x>2 is not shown in the cell

Bridging and seat depth information should be noted in the contract documents and reflected in the section details.

NOTES:

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