LONG-SPAN COMPOSITE SYSTEMS

Featuring Deep-Dek® Composite

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Long-Span Composite Systems

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Table of Contents

System Overview

Composite Slab Span Tables

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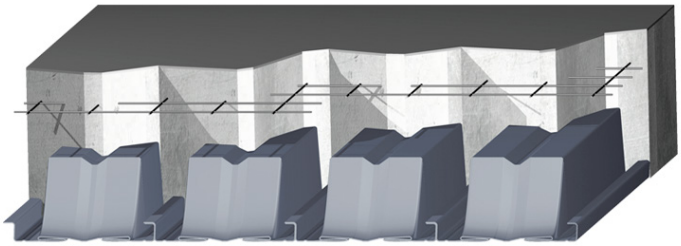
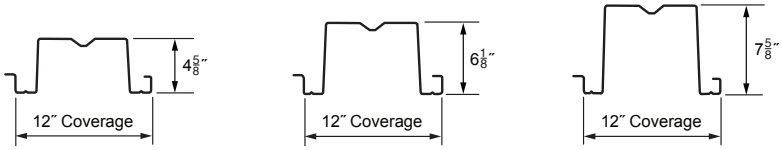
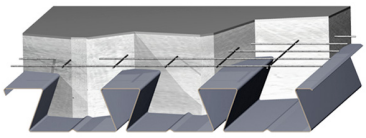
Introduction

Only New Millennium offers you the most complete range of long-span composite systems engineered to optimize the cost and performance of multi-story building projects. System selection should be determined by span, load, fire, vibration and sound control requirements. Additional considerations include aesthetics and overall desired floor depth.

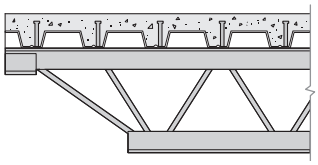




Deep-Dek® Composite 4.5 **Deep-Dek® Composite 6.0** **Deep-Dek® Composite 7.5**



Versa-Dek® Composite



Composite Joists

Learn more about our long-span composite systems www.newmill.com/longspan

LOW-PROFILE SLAB, LONG SPAN

Deep-Dek® Composite is our longest spanning composite floor option. It integrates concrete and deep-ribbed deck profiles with custom side lap treatments to create a unique composite bond. The system is an excellent fit in structures demanding combinations of shallow depth, high-load capacity and stringent serviceability demands.

Consider Deep-Dek® Composite in building markets traditionally served with concrete floors ... whether hollow-core plank, conventional CIP or PT slabs. Placed on steel frames, Deep-Dek® Composite optimizes space design with wide-open, flat ceiling planes devoid of filler beams.

Deep-Dek® Composite construction readily adapts to traditional means and methods. Deck bundles can be placed and spread directly on the frame or the sections can be pre-assembled into panels on the ground then hoisted into position.

Noncombustible, unprotected fire-rated assemblies can be left exposed to create a bold, deep-fluted appearance. Combined with factory installed liner panels and acoustical treatments, Deep-Dek® Composite Cellular Acoustical can control noise reverberation in any space.

Deep-Dek® Composite is versatile and efficient, providing many options for installation, serviceability and finish.

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Advantages

SPACE OPTIMIZATION

- Low-profile slabs as thin as 7" maximize ceiling height and reduce building height
- Spans up to 36' create open interior spaces
- Integrates mechanical, electrical and fire suppression

AESTHETICS AND PERFORMANCE

- Ceiling options: Deep-fluted ribs or smooth cellular
- Noncombustible and not susceptible to termites, mold or dry-rot
- High-performance STC and IIC ratings
- Galvanized coating weight and factory-applied coating options
- Predictable floor vibration performance
- Thermal mass helps regulate room temperatures
- Durable and dimensionally stable

EFFICIENT CONSTRUCTION

- Up to 40% less weight than comparably utilized cast-in-place concrete
- Quick installation including optional field panelized lift-in-place sections
- Integrates with any structural system

APPROVALS AND STANDARDS

- Up to 2-hour UL tested fire-rated assemblies
  - Options for 3- and 4-hour ratings
- Compliant with International Building Code (IBC)
  - ICC ESR-2839
  - Also LA County LARR-25758
- Proven conformance with AISC vibration design standard

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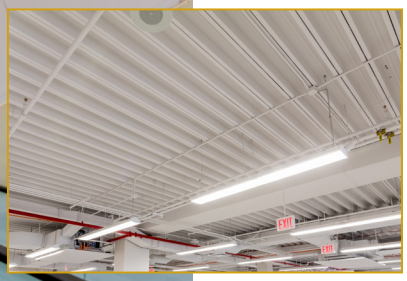
Applications

MULTI-STORY RESIDENTIAL

Managing floor height, fire and sound control, Deep-Dek® Composite is a low-profile composite-floor solution for mid- and high-rise residences. It integrates with any structural system. Engineered floor openings, sleeves, hanging devices and chase-way spaces streamline MEP installations.

100 Norfolk Street | New York, NY
Long-spans and lightweight concrete slabs made possible the architectural vision of this cantilevered building to overcome zoning height restrictions in a crowded neighborhood.



COMMERCIAL

Cost effective and performance optimized for office, retail and academic spaces, Deep-Dek® Composite creates large bays designed for high-load combinations. Architecturally exposed deck options eliminate suspended or furred ceilings.

100 West 125th Street | New York, NY
This 6-story, 200,000-square-foot vertical mall with bay sizes up to 1,300 square feet made room for wide-open retail spaces.

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HEALTHCARE

Designed to meet the specific needs of healthcare facilities, Deep-Dek® Composite provides high-load capacity and assures full flexibility in anticipation of future occupancy changes. Capable of meeting stringent floor vibration criteria and supporting specialized medical equipment, its shallow depth helps match elevations of additions to existing facilities.

Photo credit: W&W Glass

White Plains Hospital | White Plains, NY

The design of this expanded cancer center called for vibration control on office/patient room floors and the support of medical equipment above operating rooms.

RETROFIT

Long-span composite floors are ideal for adaptive re-use of historic buildings. Lightweight deck panels allow for maximum maneuverability without resorting to heavy lifting equipment. Lightweight concrete topping option reduces loads to supports and foundations.

443 Greenwich Street | New York, NY

A breakthrough in space optimization, the integration of shallow depth composite floors helped preserve the original exposed wood timber frame.

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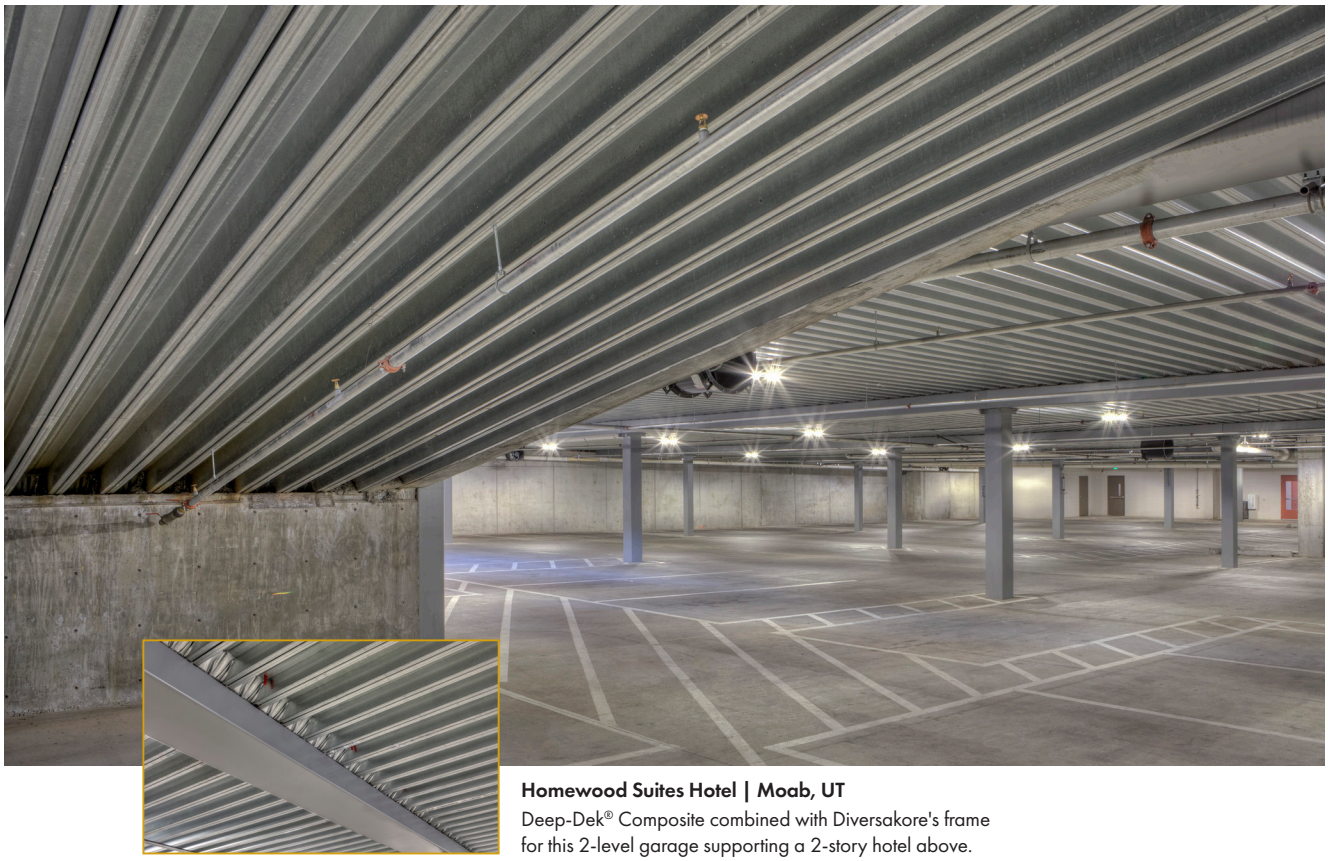
PARKING GARAGES

Co-developed with composite frame system partner Diversakore,® Deep-Dek® Composite combines the best attributes of steel and concrete. The exposed frame, placed in receptive climates, is fire-rated without fire-resistive protections. Minimal 36" deep beams can span up to 62', supporting composite slabs covering 3-car stall widths (27').



Homewood Suites Hotel | Moab, UT
Deep-Dek® Composite combined with Diversakore's frame for this 2-level garage supporting a 2-story hotel above.

Fairfield Inn and Suites | Tulsa, OK
Deep-Dek® Composite's long-span capacity helped achieve an open, fully convertible floor plan below the 3-story wood frame above.

PODIUM SLABS

Deep-Dek® Composite integrated with high-load capacity frames can create wide-open mixed-use spaces below multi-story residences. In-slab thermal separation without resorting to insulated ceilings are attainable.

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HIGH-RISE

Deep-Dek® Composite optimizes the design and construction of high-rise hotels and residences with the Panelized Delivery Method™. Spandrel beams integrated within the slab can eliminate bulkheads supporting glass curtain-walls.

Texaco Oil Building | Houston, TX

The conversion of the historic Texaco Oil Building into 309 high-end rental units brought new life to a long-deserted site in the middle of Houston.

EDUCATION

Open learning environments make academic buildings a perfect fit for Deep-Dek® Composite. Acoustical treatments incorporated in exposed cellular profiles reduce sound reverberation.

Illustration courtesy of CO Architects

University of Arizona Health Sciences Innovation Building | Tucson, AZ

This 220,000-square-foot building features a 3-story tall interior open-learning atrium created by unshored Deep-Dek® Composite Cellular Acoustical floors spanning 24' between 80' long plate girders.

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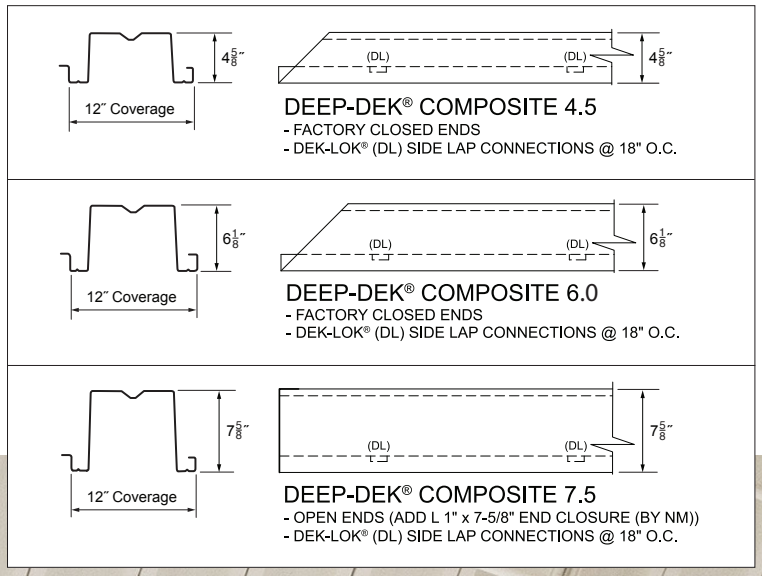
Form and Function

Deep-Dek® Composite integrates normal- or light-density concrete in strengths ranging between 4,000 and 6,000 psi. The 12" wide panels are offered in nominal sizes 4.5 (4-5/8" actual depth), 6.0 (6-1/8") and 7.5 (7-5/8"). Deep-Dek® Composite 4.5 and 6 are manufactured with factory-closed (pressed ends that block fluid-concrete from passing through the flutes and stiffen the ends to increase construction loading capacity.

Deep-Dek® Composite 7.5 is only offered with open ends, requiring closure angle.



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AESTHETIC OPTIONS

The standard underside of Deep-Dek® Composite is deep ribbed.

Options for a smooth, cellular appearance features minimal surface reliefs. Cellular deck has an additional option to address acoustics. This is an integrated solution for entry, lobby or commercial spaces wanting to reduce ambient noise.

Each deck profile can be factory prime-painted and readied for field-applied finish paints after installation. For a flat, smooth ceiling aesthetic, specify Deep-Dek® Composite Cellular. Deep-Dek® Composite Cellular Acoustical adds acoustical treatments to the cell and can dramatically deaden noise reverberation.

Deep-Dek® Composite 6.0

Deep-Dek® Composite Cellular Acoustical

Deep-Dek® Composite 7.5

Exposed Deep-Dek® Composite eliminates dropped, plenum ceilings.

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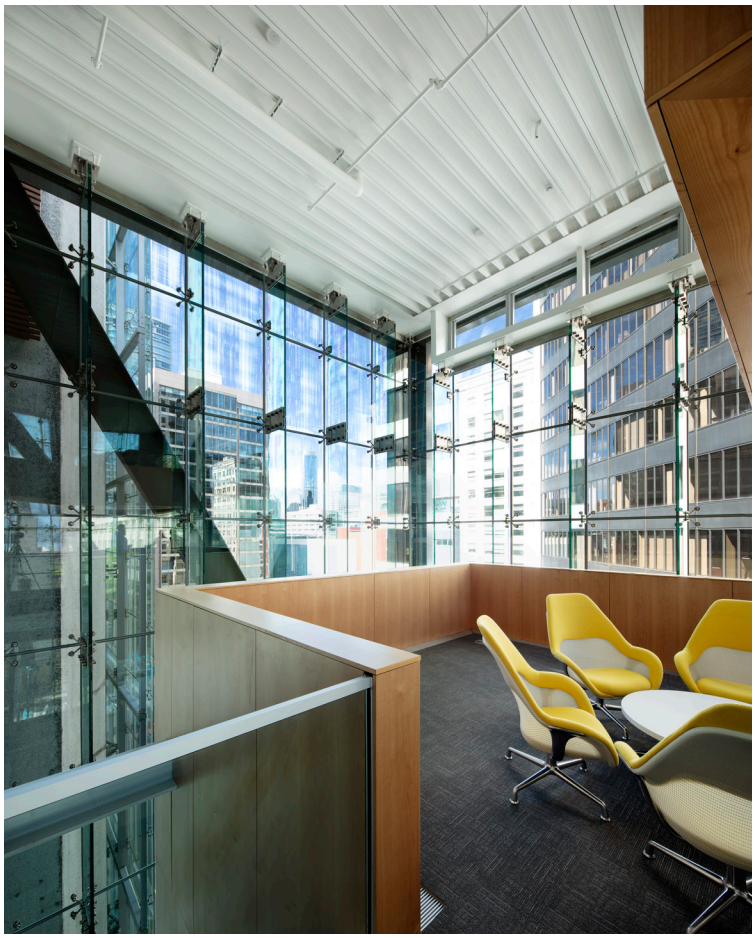

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DESIGN-BUILD ADVANTAGE

Deep-Dek® Composite offers engineered solutions ideal for design-build project delivery. A team consisting of architect, engineer, builder and owner collaborate to select "best value" methods and systems.

Design-build firms pursue projects of every typology. Market specific Deep-Dek® Composite offerings meet their needs, providing custom solutions that transcend the standard composite building approach. Design-build contractors examine facts and draw conclusions that best serve the project goals.

Pre-construction encapsulates features and benefits beyond structure: aesthetics, maintenance, speed, safety, etc. New Millennium aligns with the team's vision to ensure project success.

Selection of "best value" system is based on conclusions drawn from comparative studies of competitive methods. Comparisons include each system's technical merit, constructability, labor and material sources, initial and life-cycle costs, longevity and schedule. Additionally, implementation of green methods, BIM, worker safety and system familiarity can impact decisions.

BUILD ASSISTANCE

New Millennium Building Systems assists builders through the bid and installation phases. Material estimates and pricing are offered at any project stage.

In addition to the Deep-Dek® Composite panel materials, New Millennium offers accessories to complete the installation. They include gage steel pour stop at boundary conditions, end- and side-closures and screw fasteners.

Our estimates do not include accessories to form MEP openings and holes. Additionally, concrete, slab reinforcement and shoring materials are the responsibility of others.

Our Dek-Lok™ HSL side-lap connection tool is supplied, on loan, with every Deep-Dek® Composite sale. Tool quantities are determined based on project size. The side-lap connection is critical to the composite slab's structural performance.

Upon award, we can provide necessary approval and field-use deck placement drawings. Project management services help match manufacturing and delivery schedules with customer needs. Field seminars to familiarize installers with specified floor system are also available upon request.

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Serviceability

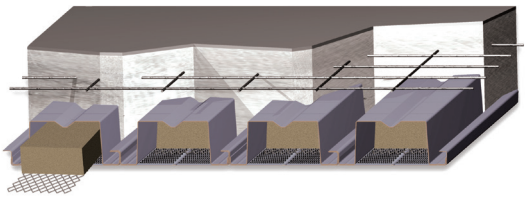
SOUND CONTROL BETWEEN SPACES

Deep-Dek® Composite serves as the base system of sound-absorption-rated floor assemblies. Collateral flooring and ceiling treatments enhance the ratings.

STC refers to Sound Transmission Class. Generally, the STC rating reflects how well the floor assembly reduces airborne noise (energy loss) between spaces. IIC refers to Impact Insulation Class. IIC rating measures the floor assembly's ability to isolate impact footfall noise between spaces. Flooring and ceiling componentry type, arrangement and installation will influence acoustical performance. Decoupling, damping and flanking techniques should also be considered in noise reduction strategies.

IN-SPACE SOUND CONTROL

To control sound reverberation within a space, specify Deep-Dek® Composite Cellular Acoustical. The profile consists of two Deep-Dek® hats factory attached to a 24" wide perforated liner panel. The cellular cavity is filled with acoustical batt insulation placed over lath separators. Field-applied finish paint is applied to the factory prime painted liner after installation.



NOISE REDUCTION COEFFICIENT (NRC) = 1.00

VIBRATION CONTROL

Floor vibration researchers have concluded Deep-Dek® Composite responds predictably to vibration after extensive testing in various span, loading and support configurations.

Vibration studies are available through New Millennium Building Systems. Regular bays consist of long-span composite slabs placed in square or rectangular bays with column supported beams at each corner. Slabs with continuous wall supports are also acceptable. Designs involving irregularly framed bays require finite element analysis.

ESTIMATED STC & IIC RATINGS OF DEEP-DEK® COMPOSITE FLOOR ASSEMBLIES

STC	IIC	
+0	+40	ADD 44 oz. WOVEN CARPET & ⅜" FOAM RUBBER PAD
+0	+25	ADD 20 oz. COMMERCIAL CARPET (GLUE DOWN)
+0	+21	ADD LAMINATE or HARD WOOD FLOORING OVER 6mm RUBBER SOUND MATT
+2	+1	1" ADD PER INCH THICKNESS CONCRETE TOPPING
51	**26**	**BASE SYSTEM:** 3" NWT CONCRETE OVER 4.5 DDC TOTAL DEPTH: 7-⅝"
+2	+1	SUBSTITUTE 6 DDC FOR 4.5 DDC IN ASSEMBLY ABOVE
+1	+4	GYPSUM BOARD CEILING NOT RESILIENTLY SUSPENDED
+10 to 12	+8	GYPSUM BOARD CEILING RESILIENTLY SUSPENDED
+13 to 15	+13	ADD MIN. 2" THICK ACOUSTICAL INSULATION BATTS TO ASSEMBLY ABOVE

NOTES

1. Consult component manufacturers for information regarding sizes, types, spacings and/or installation requirements for all collateral flooring and ceiling materials.
2. STC values for base systems (bare slabs) were calculated as STC=0.1304*W+43.48 in accordance with Section 9.2 of PCI Design Handbook, 6th Edition.
3. IIC values for base systems (bare slabs) were calculated as IIC=(19.4 +0.5*h)+(0.02+0.0036*h)*W. The formula was derived from the data published in Section 9.2 of PCI Design Handbook, 6th Edition.
4. Reference Architectural Acoustics handbook by David Egan for acoustical enhancements provided by floors and ceiling materials.

SPECIAL CONDITIONS

Deep-Dek® Composite has been designed into buildings with unique needs. Consider Deep-Dek® Composite when floors require:

- Sloped surfaces with in-floor drainage
- Thermal separation between conditioned and non-conditioned spaces
- Slab depressions (e.g. shower pans for handicapped access)
- Vibration control for sensitive equipment
- Placement on re-purposed structures

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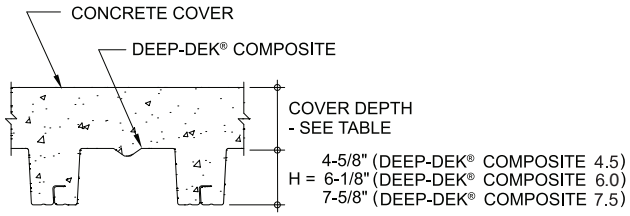
FIRE RESISTANCE RATINGS

Deep-Dek® Composite is noncombustible and fire-tested in accordance with ANSI/UL 263 at Underwriters Laboratory.

Fire ratings are obtained with unprotected or protected ceiling assemblies. The deck, topped with 4.25" light- or normal-weight concrete, provides a 1-hour unprotected endurance rating. Two-hour rated slabs are obtained with 5" concrete cover of either density. Unprotected fire resistance can also be established by rational design in accordance with IBC. This approach allows for a shallower concrete cover and requires reinforcing bars above the deck side lap.

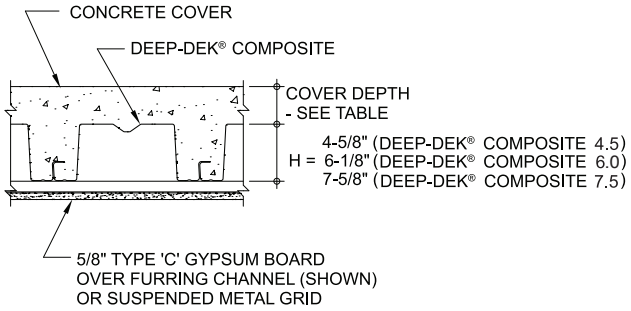
Concrete cover can be further reduced with protected ceiling assemblies consisting of one layer of 5/8" thick gypsum board furred to or suspended from the deck-slab. For example, 2-hour ratings are achieved with only 2" lightweight or 2.5" normal-weight concrete cover when gypsum ceilings protect the slab.

Unprotected Floor Assembly



DESIGN NO.	Restrained Assembly Rating	Concrete Cover Depth[1, 2]	
		LWT	NWT
UL D960 UL D951 ULc F914	1-Hr.	4.25″ [108 mm]	4.25″ [108 mm]
	2-Hr.	5″ [127 mm]	5″ [127 mm]

Protected Floor Assembly



DESIGN NO.	Restrained Assembly Rating	Concrete Cover Depth[1, 2]
		LWT
UL D501/ULc D501 UL D505	2-Hr.	2″ [51 mm]

NOTES:
(1) Concrete properties:
a. Minimum compressive strength = 4,000 PSI
b. Density range:
1) Protected Assemblies: LWT = 112 PCF and NWT = 150 PCF (+/- 3 PCF)
2) Unprotected Assemblies: Between LWT = 110 PCF and NWT = 144 PCF (+/- 3 PCF)

(2) Contact New Millennium for 3- and 4-hour rated assemblies and alternative unprotected designs utilizing IBC equivalent slab design methodology.
(3) Refer to UL/ULc Certification Directory for additional information on the fire-resistance ratings.

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MEP INTEGRATION

Preset pipe sleeves, junction boxes and engineered openings help streamline MEP service installations while deck inserts, and drilled-in hangers are used to suspend services below the floor.

MEP integration is streamlined with preset and built-in features.

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Installation

Deep-Dek® Composite deck sections can be spread directly on the frame or pre-assembled into panels on the ground and crane lifted in place.

The deck sections are self-aligning with nestable side laps. The side laps are intermittently sheared and folded with our Dek-Lok™ HSL tool. The tool is powered by a low-output air compressor. The side-lap formation and connection is critical to achieving composite strength. Steel reinforcement (rebar) is added as specified on drawings.

- Permanent galvanized steel form with factory closed ends
- Provides positive bending reinforcement of composite slab
- Closed ends:
  - eliminate end closure angle and block wet concrete
  - stiffen web to support construction load reaction force
- Deck side-lap formation and connection:
  - are both critical to achieving composite strength
  - locks to concrete for vertical and horizontal restraint

SHORING

Deep-Dek® Composite is commonly line-shored at mid-span, although unshored installations are achievable over mid-range span lengths. Construction stage loading consists of the self-weight of the deck panels and wet concrete (based on specified cover dimension) and superimposed live load for workers and equipment.

Because Deep-Dek® Composite usually has some reserve superimposed load capacity in its unshored state, it may have sufficient strength to support workers needing to access the work surface. Contact New Millennium for unshored load capacities before allowing workers to access unshored Deep-Dek® Composite.

Shoring may be removed after the concrete topping reaches specified strength. In stacked, multi-level shoring installations supporting active concrete pours above, the Shoring System Engineer shall evaluate placement, re-shoring and removal sequencing.

SLAB REINFORCING

Prior to placing concrete, slab reinforcing, as designed by the Slab Engineer, is installed over the deck.

In addition to reinforcement to control temperature-shrinkage (e.g. welded wire fabric), reinforcement may be specified for:

- Slab continuity over supports
- Control of long-term deflection between supports
- Cantilevered slabs
- Diaphragm-shear transfer
- Slab openings and boundary conditions

FAMILIAR TECHNIQUES

The concrete topping is monolithically cast and finished using familiar equipment and techniques. The topping, utilizing either normal- or lightweight concrete (fc=6,000 to 4,000 psi), finishes flat without camber. Minor slab deflection should be anticipated upon release of shoring, however. The depth of the topping slab is influenced by structural and fire-separation need.

Integrated slab-beams can be used to frame floor openings or carry post across the span. Methods include dropped slab-beams consisting of inverted Deep-Dek® Composite panels and flush slab-beams formed with shored steel liner panels or plywood.

Dek-Lok™ HSL side-lap connection tool operation.
The tool is powered by a low-output air compressor.

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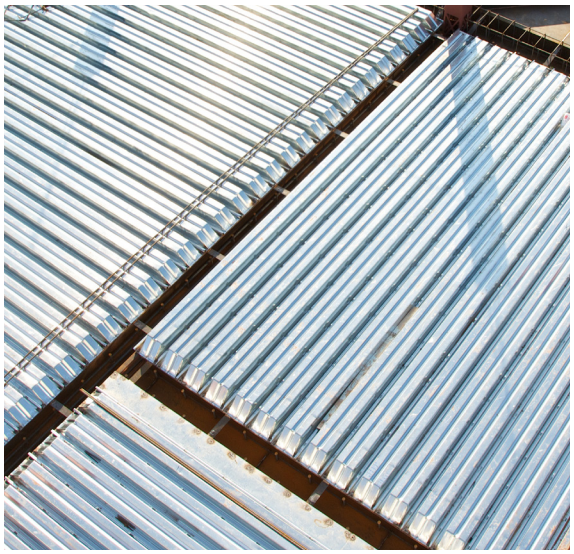

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PANELIZED DELIVERY METHOD™

For high-rise applications designed with Deep-Dek® Composite, builders can utilize our Panelized Delivery Method™ (PDM) for cost-effective installation. By shifting high-risk construction processes to the ground, PDM makes effective use of traditional labor and equipment resources. It also lowers installation costs and improves safety onsite. Options include pre-assembly of deck-only panels or panels combined with support beams.

Faster
At-grade panel assembly is less affected by weather and saves time and energy by not requiring workers to move equipment between floors. Projects facing tight schedules can benefit from PDM.

Safer
This method takes workers off the frame and puts them on the ground in a safer environment. The panels provide an immediate walking platform once in place.

Cost effective
Reduce worker's compensation insurance premiums up to 40%. When workers are not exposed to hazardous conditions, they can work faster, reduce the amount of time it takes to assemble the floor system and decrease overall project costs.

ON-FRAME INSTALLATION

Deep-Dek® Composite can be installed using on-frame installation methods, also known as traditional installation. Once the deck is positioned, powder-actuated fasteners are used to attach the deck ends to the support members. When using Deep-Dek® Composite, side laps are intermittently connected with New Millennium's Dek-Lok™ HSL tool.

See the following page for more information on available framing options.

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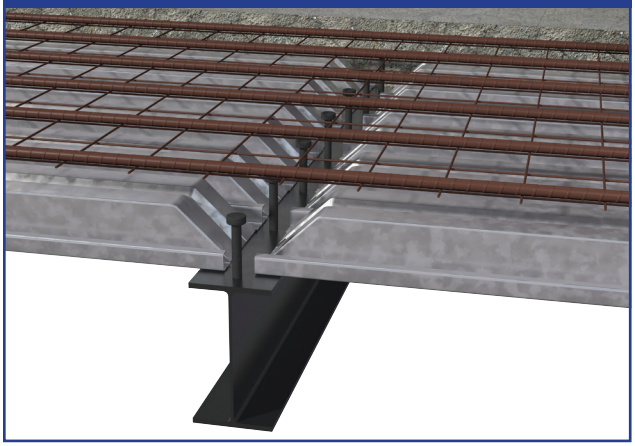
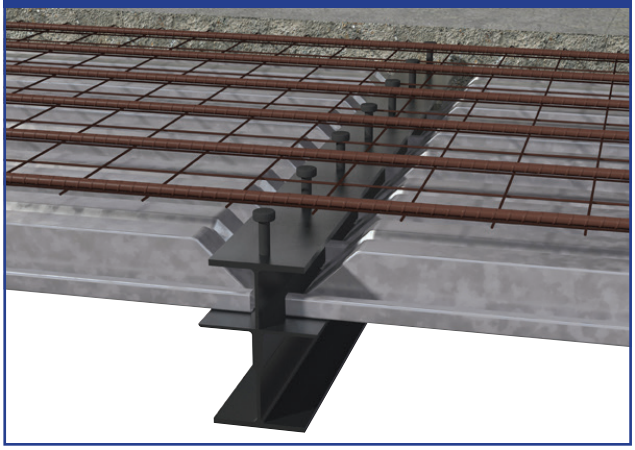
FRAMING OPTIONS

Deep-Dek® Composite integrates with any beam or wall-bearing support system.

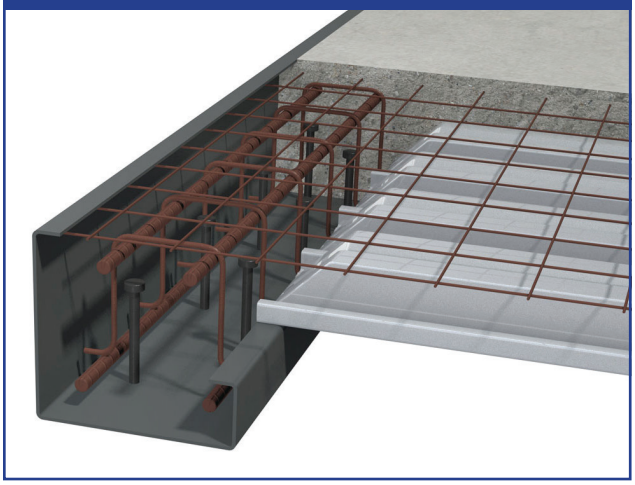
Interior Steel Beam



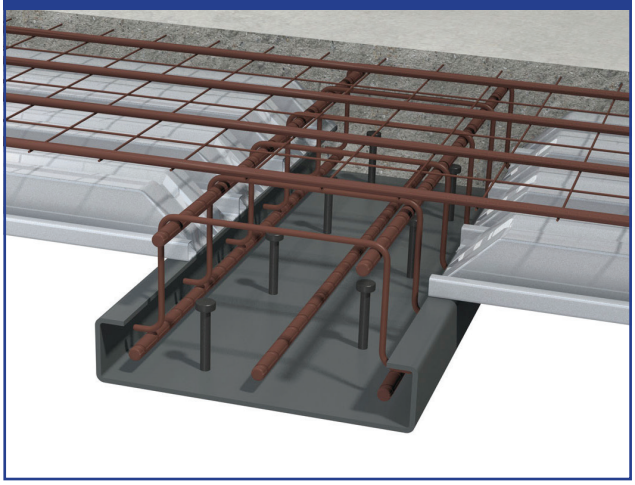
Up-Turned Interior Steel Beam



Exterior Composite Beam



Interior Composite Beam



CMU Bearing Wall

CFS Bearing Wall

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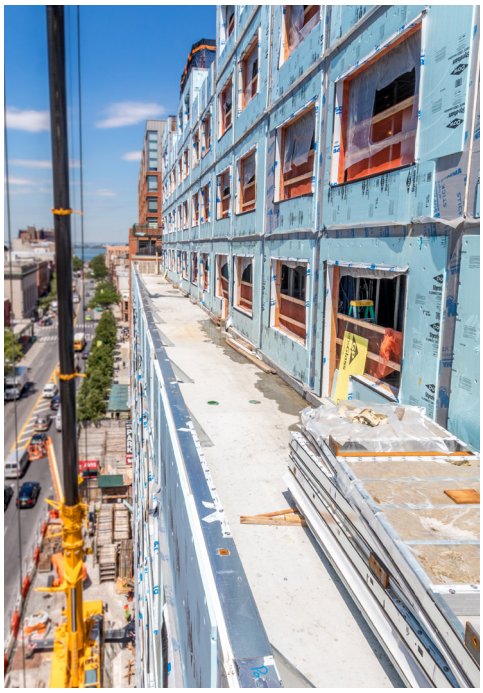

Another example of Deep-Dek® Composite integrating into existing framing structure is this 11-story Brooklyn multi-family residential building combining structural steel frame and CFS bearing walls.

Deep-Dek® Composite integrates with any structural system. In this example, it breathes new life into a historic book bindery. Deep-Dek® Composite replaces the deflecting and decrepit existing floor while preserving the heavy timber construction.

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Sustainability

As life-cycle analysis increasingly becomes the standard on multi-story projects, Deep-Dek® Composite reduces the overall carbon footprint of the structure by efficient use of both recycled steel and concrete. Deck products are fabricated from steel manufactured at mini-mills using scrap steel. Therefore, our product can be used toward points under the Materials and Resources Credit 4, which covers Recycled Content.

Material Usage

- Composite design optimizes material usage
- Lightweight concrete option minimizes support structure
- Deck plenums increase space utilization and long, clear spans permit obstruction-free MEP placement
- Eliminates formwork and waste
- Exposed structure eliminates fireproofing and drop ceiling materials

Air Quality

- Pipe sleeves and hangers eliminate slab core drilling
- Pneumatic deck fastening eliminates welding fumes
- No gypsum or spray-on fire protectant eliminates dust

Energy Usage

- Concrete thermal mass stabilizes room temperatures
- Panelized Delivery Method™ reduces use of man lifts and cranes

LEED V4.-LCA

- Steel produced from up to 80% recycled materials

See the New Millennium website for LEED reports.

For the complete selection of load tables, visit: **www.newmill.com**

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Composite Slab Design

According to the Steel Deck Institute's Code, composite slab design is the responsibility of the Project Structural Engineer of Record.

LOAD TABLE EXAMPLES

This publication includes a very limited selection of load tables for Deep-Dek® Composite slab design. Tables include:

- Deck properties (section properties, strengths and maximum allowable construction stage clear spans)
- Maximum allowable spans based on given superimposed load combinations
- Maximum allowable superimposed uniform loads based on given span lengths
- Composite slab properties (moment of inertia (MOI), positive moment capacity and one-way shear capacities)
- Factored shear bond strength of composite slabs
- Suggested reinforcing steel over supports for continuous spans based on given superimposed load combinations
- Maximum design negative moment capacity as defined by rebar type and spacing, slab depth and concrete strength

COMPLETE LOAD TABLE DESIGN GUIDE

For the complete selection of load tables, please visit the New Millennium website for Deep-Dek® Composite load tables, available as an interactive PDF.

The tables in our design guide cover Deep-Dek® Composite over a range of slab depths. Both normal-weight (145 pcf) and lightweight (110 pcf) concrete density of three strengths (4,000, 5,000 and 6,000 psi) are shown. Deep-Dek® Composite profile depth (4.5, 6 and 7.5) serves as the primary heading for each section of load tables. Service stage deflection limits are based on L/240 total load and L/360 live load.

The maximum span, uniform load and suggested reinforcing steel tables are applicable to single-span slabs and continuous slabs with approximately equal span lengths.

Upon request, we can prepare project specific tables based on alternative criteria. Studies are also available. Please contact us for assistance.

CUSTOM SLAB DESIGNS

Composite slab property tables are used for designs not conforming to the limiting criteria of standard load tables. Examples include continuous slabs with unequal spans and loading, concentrated loads, variable deflection limits, etc. In these and other cases, use a standard beam analysis program to determine strength and stiffness needs based on defined load combinations and patterns. The moment, shear and stiffness requirements obtained from that analysis are then compared to the composite slab properties. Slab deflections, determined using the average of cracked and uncracked MOI as published in the property tables, shall be compared against the required stiffness.

Contact New Millennium for design examples. We can also provide assistance with custom composite slab designs. Vibration and detailed serviceability studies are also available. Please contact us for assistance.

CONSTRUCTION STAGE (NON-COMPOSITE) DECK DESIGN

Maximum unshored clear span values were based on ANSI/SDI C-2017 for the design of deck as a form supporting the weight of deck and fluid concrete plus the worse case effect of either 20 psf uniform or 150 lb. concentrated (on a 1' width) construction live load. Construction stage deck deflection is limited to the lessor of L/180 or 3/4".

The 20 psf construction live load is considered adequate for concrete transport and placement by hose and concrete finishing using hand tools. It may not be adequate for motorized concrete finishers which may require the deck to be designed for heavier construction live loads.

Contact New Millennium for maximum unshored clear spans based on construction live loads or deflection limits different than the criteria listed above.

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Deep-Dek® Composite 4.5

NORMAL-WEIGHT AND LIGHTWEIGHT CONCRETE

PROPERTIES | **SECTION PROPERTIES** | **STRENGTHS (Bare Deck)**

Gage	Thickness (in.)	Coverage (in.)	Weight (psf)	F_y (ksi)	A_s (in.^{2}/ft)	I_D (in.^{4}/ft)		S_p (in.^{3}/ft)	S_n (in.^{3}/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
						single	multi					
20	0.0358	12	3.09	50	0.909	2.677	2.978	0.928	1.162	2847	1859	1729
18	0.0474	12	4.09	50	1.202	3.745	3.939	1.414	1.596	6625	3179	2891
16	0.0598	12	5.16	50	1.516	4.938	4.963	1.947	2.011	11441	4938	4423
14	0.0747	12	6.44	50	1.891	6.191	6.191	2.480	2.507	17853	7512	6645

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending, respectively; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing, respectively.

CONSTRUCTION CLEAR SPANS

	Total Slab Depth, Concrete Weight, Concrete Volume, Min. Required WWF	Gage	Maximum Construction Clear Span (ft.-in.)		
			Single	Double	Triple
Normal-Weight Concrete (145 PCF)	7.625" 55 PSF 1.4 cu.yd/(100sq.ft) 6x6 - W1.4 x W1.4	20	14' - 7"	11' - 7"	12' - 1"
		18	15' - 10"	19' - 2"	18' - 9"
		16	16' - 11"	21' - 1"	19' - 10"
		14	17' - 9"	22' - 2"	20' - 10"
	8.125" 61 PSF 1.55 cu.yd/(100sq.ft) 6x6 - W2.0 x W2.0	20	14' - 3"	10' - 9"	11' - 2"
		18	15' - 5"	17' - 9"	18' - 4"
		16	16' - 6"	20' - 7"	19' - 4"
		14	17' - 4"	21' - 7"	20' - 4"
	8.625" 67 PSF 1.71 cu.yd/(100sq.ft) 6x6 - W2.0 x W2.0	20	13' - 11"	10' - 0"	10' - 5"
		18	15' - 1"	16' - 6"	17' - 3"
		16	16' - 1"	20' - 1"	18' - 11"
		14	17' - 0"	21' - 2"	19' - 11"
	9.125" 73 PSF 1.86 cu.yd/(100sq.ft) 4x4 - W1.4 x W1.4	20	13' - 7"	9' - 4"	9' - 9"
		18	14' - 9"	15' - 6"	16' - 1"
		16	15' - 10"	19' - 8"	18' - 6"
		14	16' - 8"	20' - 9"	19' - 6"
	9.625" 79 PSF 2.02 cu.yd/(100sq.ft) 6x6 - W2.9 x W2.9	20	13' - 1"	8' - 9"	9' - 1"
		18	14' - 6"	14' - 6"	15' - 2"
		16	15' - 6"	19' - 4"	18' - 2"
		14	16' - 4"	20' - 4"	19' - 2"
	10.125" 85 PSF 2.17 cu.yd/(100sq.ft) 6x6 - W2.9 x W2.9	20	12' - 8"	8' - 3"	8' - 7"
		18	14' - 3"	13' - 8"	14' - 3"
		16	15' - 3"	18' - 10"	17' - 11"
		14	16' - 1"	20' - 0"	18' - 10"

	Total Slab Depth, Concrete Weight, Concrete Volume, Min. Required WWF	Gage	Maximum Construction Clear Span (ft.-in.)		
			Single	Double	Triple
Lightweight Concrete (110 PCF)	7.625" 42 PSF 1.4 cu.yd/(100sq.ft) 6x6 - W1.4 x W1.4	20	15' - 7"	14' - 1"	14' - 8"
		18	16' - 10"	21' - 3"	20' - 0"
		16	18' - 0"	22' - 5"	21' - 1"
		14	18' - 11"	23' - 6"	22' - 1"
	8.125" 46 PSF 1.55 cu.yd/(100sq.ft) 6x6 - W2.0 x W2.0	20	15' - 3"	13' - 1"	13' - 8"
		18	16' - 6"	20' - 9"	19' - 6"
		16	17' - 7"	21' - 11"	20' - 7"
		14	18' - 5"	23' - 0"	21' - 7"
	8.625" 51 PSF 1.71 cu.yd/(100sq.ft) 6x6 - W2.0 x W2.0	20	14' - 11"	12' - 3"	12' - 9"
		18	16' - 1"	20' - 3"	19' - 1"
		16	17' - 2"	21' - 5"	20' - 2"
		14	18' - 1"	22' - 6"	21' - 2"
	9.125" 55 PSF 1.86 cu.yd/(100sq.ft) 4x4 - W1.4 x W1.4	20	14' - 7"	11' - 6"	12' - 0"
		18	15' - 9"	19' - 1"	18' - 9"
		16	16' - 10"	21' - 0"	19' - 9"
		14	17' - 9"	22' - 1"	20' - 9"
	9.625" 60 PSF 2.02 cu.yd/(100sq.ft) 6x6 - W2.9 x W2.9	20	14' - 4"	10' - 10"	11' - 4"
		18	15' - 6"	18' - 0"	18' - 5"
		16	16' - 6"	20' - 7"	19' - 5"
		14	17' - 5"	21' - 8"	20' - 5"
	10.125" 64 PSF 2.17 cu.yd/(100sq.ft) 6x6 - W2.9 x W2.9	20	14' - 1"	10' - 3"	10' - 8"
		18	15' - 3"	17' - 0"	17' - 8"
		16	16' - 3"	20' - 3"	19' - 1"
		14	17' - 1"	21' - 4"	20' - 1"

NOTES:

1. Deck section properties are calculated in accordance with AISI S100-07.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 1.5" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI C-2017 design criteria. For maximum clear spans based on different criteria contact New Millennium.
4. Temperature and shrinkage reinforcement in accordance with ANSI/SDI C-2017 shall be provided in the slab.

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Deep-Dek® Composite 4.5

MAXIMUM UNIFORM SUPERIMPOSED SERVICE LOADS

4000 PSI NORMAL-WEIGHT AND LIGHTWEIGHT CONCRETE

	Total Slab Depth, Concrete Weight, Concrete Volume, Min. Required WWF	Gage	Maximum Uniform Superimposed Service Loads (psf)										
			Simple Spans						Continuous Spans Negative Moment Steel Reinforcing Required				
			19' - 0"	20' - 0"	21' - 0"	22' - 0"	23' - 0"	24' - 0"	26' - 0"	27' - 0"	28' - 0"	29' - 0"	30' - 0"
4000 PSI Normal-Weight Concrete (145 PCF)	7.625"	20	71 / 77	53 / 71	- / 65	- / 60	- / 56	- / 50	- / 44	- / 41	-	-	-
	55 PSF	18	84 / 146	63 / 138	47 / 130	- / 123	- / 116	- / 110	43 / 56	- / 49	- / 42	-	-
	1.4 cu.yd/(100sq.ft)	16	96 / 194	74 / 171	56 / 151	41 / 133	- / 118	- / 105	52 / 55	40 / 48	- / 41	-	-
	6x6 - W1.4 x W1.4	14	111 / 230	86 / 203	66 / 180	49 / 160	- / 142	- / 127	54	47	- / 40	-	-
	8.125"	20	85	70 / 78	51 / 72	- / 64	- / 59	- / 55	48	- / 45	- / 42	-	-
	61 PSF	18	107 / 160	83 / 151	62 / 142	46 / 134	- / 127	- / 121	58 / 67	45 / 59	- / 51	- / 44	-
	1.55 cu.yd/(100sq.ft)	16	122 / 234	95 / 222	73 / 211	55 / 201	40 / 191	- / 168	66	54 / 58	42 / 50	- / 44	-
	6x6 - W2.0 x W2.0	14	139 / 263	109 / 232	85 / 206	65 / 183	49 / 163	- / 146	65	57	49	- / 43	-
	8.625"	20	92	82	67 / 76	49 / 70	- / 65	- / 60	52	48	- / 45	- / 42	- / 40
	67 PSF	18	133 / 175	104 / 164	80 / 155	60 / 146	44 / 138	- / 132	76 / 79	60 / 70	46 / 61	- / 53	- / 46
	1.71 cu.yd/(100sq.ft)	16	151 / 255	119 / 241	93 / 230	72 / 219	54 / 209	- / 192	79	69	56 / 60	43 / 53	- / 46
	6x6 - W2.0 x W2.0	14	171 / 299	136 / 265	108 / 235	84 / 209	64 / 187	48 / 167	78	68	59	52	40 / 45
	9.125"	20	97	89	82	65 / 75	47 / 70	- / 65	56	52	49	- / 46	- / 42
	73 PSF	18	164 / 189	129 / 177	101 / 167	78 / 158	58 / 150	42 / 142	93	77 / 82	61 / 72	47 / 63	- / 55
	1.86 cu.yd/(100sq.ft)	16	185 / 275	147 / 261	116 / 248	91 / 236	70 / 226	52 / 210	92	81	71	57 / 63	44 / 55
	4x4 - W1.4 x W1.4	14	208 / 419	167 / 398	133 / 362	106 / 325	82 / 292	63 / 263	91	80	70	62	54
	9.625"	20	105	96	88	81	63 / 75	46 / 69	60	56	51	48	41 / 45
	79 PSF	18	200 / 203	160 / 191	127 / 180	99 / 170	76 / 161	57 / 153	107	95	80 / 84	63 / 74	52 / 65
	2.02 cu.yd/(100sq.ft)	16	224 / 296	180 / 281	144 / 267	114 / 254	90 / 243	69 / 229	107	94	83	73	59 / 64
	6x6 - W2.9 x W2.9	14	251 / 450	203 / 428	164 / 395	131 / 354	104 / 319	81 / 287	106	93	82	72	63
	10.125"	20	112	102	94	87	80	60 / 74	63	58	54	51	48
	85 PSF	18	217	193 / 204	154 / 192	122 / 182	96 / 172	74 / 163	123	109	97	84 / 86	67 / 76
	2.17 cu.yd/(100sq.ft)	16	267 / 317	216 / 300	174 / 285	140 / 272	111 / 259	87 / 247	122	109	96	85	75
	6x6 - W2.9 x W2.9	14	298 / 481	243 / 458	197 / 428	159 / 384	128 / 346	102 / 312	121	108	95	84	74
4000 PSI Lightweight Concrete (110 PCF)	7.625"	20	55 / 80	41 / 73	- / 68	- / 63	- / 58	- / 54	- / 48	- / 45	- / 42	-	-
	42 PSF	18	67 / 149	50 / 140	- / 132	- / 125	- / 118	- / 107	- / 66	- / 59	- / 52	- / 46	- / 41
	1.4 cu.yd/(100sq.ft)	16	77 / 204	60 / 181	45 / 161	- / 143	- / 128	- / 115	42 / 65	- / 58	- / 51	- / 45	- / 40
	6x6 - W1.4 x W1.4	14	89 / 240	70 / 213	54 / 190	40 / 170	- / 152	- / 137	51 / 64	40 / 57	- / 50	- / 45	-
	8.125"	20	72 / 87	54 / 80	40 / 74	- / 69	- / 64	- / 60	- / 52	- / 48	- / 45	- / 42	- / 40
	46 PSF	18	85 / 163	65 / 153	50 / 145	- / 137	- / 130	- / 123	47 / 78	- / 70	- / 62	- / 55	- / 49
	1.55 cu.yd/(100sq.ft)	16	98 / 237	76 / 224	59 / 213	45 / 194	- / 170	- / 149	56 / 77	44 / 69	- / 61	- / 55	- / 49
	6x6 - W2.0 x W2.0	14	112 / 274	88 / 243	69 / 217	53 / 194	40 / 174	- / 157	66 / 76	53 / 68	42 / 60	- / 54	- / 48
	8.625"	20	89 / 95	69 / 87	52 / 81	- / 75	- / 70	- / 65	51 / 55	40 / 52	- / 49	- / 46	- / 43
	51 PSF	18	105 / 177	82 / 167	64 / 157	48 / 149	- / 141	- / 134	60 / 92	48 / 82	- / 73	- / 66	- / 59
	1.71 cu.yd/(100sq.ft)	16	120 / 257	95 / 244	75 / 232	58 / 221	43 / 198	- / 174	71 / 91	57 / 81	45 / 72	- / 65	- / 58
	6x6 - W2.0 x W2.0	14	137 / 309	109 / 277	87 / 247	68 / 222	52 / 199	- / 179	83 / 90	68 / 80	54 / 72	43 / 64	- / 57
	9.125"	20	103	86 / 94	66 / 87	50 / 81	- / 75	- / 68	60	52 / 56	40 / 53	- / 49	- / 47
	55 PSF	18	129 / 192	102 / 180	80 / 170	62 / 161	47 / 153	- / 145	76 / 106	61 / 95	48 / 85	- / 77	- / 69
	1.86 cu.yd/(100sq.ft)	16	147 / 278	117 / 264	93 / 251	73 / 239	56 / 229	42 / 201	89 / 105	73 / 94	59 / 85	46 / 76	- / 68
	4x4 - W1.4 x W1.4	14	166 / 329	134 / 311	107 / 295	85 / 280	67 / 266	51 / 239	103 / 104	85 / 93	70 / 84	56 / 75	44 / 67
	9.625"	20	110	101	84 / 94	65 / 85	49 / 79	- / 73	64	60	54 / 56	42 / 53	- / 50
	60 PSF	18	157 / 206	126 / 194	100 / 183	78 / 173	61 / 164	46 / 156	96 / 122	78 / 109	63 / 98	50 / 88	- / 80
	2.02 cu.yd/(100sq.ft)	16	178 / 299	143 / 284	115 / 270	91 / 257	72 / 246	55 / 232	111 / 121	91 / 109	75 / 98	60 / 88	48 / 79
	6x6 - W2.9 x W2.9	14	201 / 348	163 / 329	131 / 312	106 / 296	84 / 282	66 / 269	120	106 / 108	88 / 97	72 / 87	58 / 78
	10.125"	20	118	109	98	81 / 91	62 / 84	47 / 78	69	64	60	54 / 57	42 / 54
	64 PSF	18	188 / 221	151 / 208	121 / 196	96 / 185	76 / 176	58 / 167	116 / 139	96 / 125	79 / 112	64 / 101	51 / 91
	2.17 cu.yd/(100sq.ft)	16	212 / 320	171 / 304	139 / 289	111 / 275	89 / 263	70 / 252	134 / 138	112 / 124	92 / 112	76 / 101	61 / 91
	6x6 - W2.9 x W2.9	14	238 / 368	194 / 348	158 / 330	128 / 313	103 / 298	82 / 284	137	123	107 / 111	89 / 100	73 / 90

NOTES:

1. The slab weight has been subtracted from the loads listed above.
2. Uniform superimposed service loads were determined by dividing the superimposed LRFD design loads controlled by strength by the load factor of 1.6.
3. Negative moment (top) reinforcement is required over supports of continuous slabs.
4. Continuous spans should be approximately equal with the span length difference not exceeding 20%. Contact New Millennium for unequal span slab design.
5. Where two maximum uniform superimposed service loads are shown, first load is for slabs with no top reinforcing steel within the slab span. Second load is for slabs with top reinforcing steel in the amount of not less than $1.17A_s$ (where A_s is deck area) along the entire slab span for long-term deflection control. This amount of top reinforcing steel results in the long-term deflection coefficient of 0.6.
6. Where only one load is shown, the load is for slabs without top reinforcement. Addition of top reinforcement does not affect the maximum service loads in those cases.
7. Composite slab service stage calculations are based on ANSI/SDI C-2017 and ASCE 3-91.
8. Composite slab service stage tables are based on deflection limits of L/360 under live load and L/240 under total load after attachment of non-structural components. Long-term deflection has been taken into consideration.

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For the complete selection of load tables, visit: **www.newmill.com**

Deep-Dek® Composite 4.5

MAXIMUM ALLOWABLE SPANS OF COMPOSITE SLABS FOR SERVICE STAGE

4000 PSI NORMAL-WEIGHT AND LIGHTWEIGHT CONCRETE

	Total Slab Depth (in.)	Gage	Max. Service Stage Spans (ft-in.)					
			LL=40 psf; SDL=20 psf (88 psf LRFD load)			LL=100 psf; SDL=5 psf (166 psf LRFD load)		
			Single Span	Continuous Span		Single Span	Continuous Span	
				End	Interior		End	Interior
4000 PSI Normal-Weight Concrete (145 PCF)	7.625	20	20' - 9" / 23' - 3"	23' - 3"	27' - 8"	16' - 0"	16' - 0"	19' - 2"
		18	21' - 5" / 27' - 9"	26' - 2"	27' - 7"	20' - 5" / 24' - 11"	21' - 5"	22' - 7"
		16	22' - 0" / 29' - 1"	26' - 0"	27' - 5"	21' - 0" / 24' - 1"	21' - 4"	22' - 6"
		14	22' - 7" / 30' - 6"	25' - 11"	27' - 4"	21' - 7" / 25' - 10"	21' - 3"	22' - 5"
	8.125	20	21' - 8" / 24' - 0"	24' - 0"	28' - 10"	16' - 10"	16' - 10"	20' - 3"
		18	22' - 4" / 28' - 10"	27' - 6"	29' - 0"	21' - 4" / 26' - 0"	22' - 8"	23' - 11"
		16	22' - 11" / 30' - 2"	27' - 5"	28' - 10"	21' - 11" / 27' - 3"	22' - 7"	23' - 10"
		14	23' - 7" / 31' - 8"	27' - 3"	28' - 9"	22' - 7" / 27' - 1"	22' - 6"	23' - 9"
	8.625	20	22' - 6" / 25' - 2"	25' - 2"	30' - 2"	17' - 9"	17' - 9"	21' - 3"
		18	23' - 3" / 30' - 0"	28' - 8" / 28' - 9"	30' - 4"	22' - 3" / 27' - 2"	23' - 11"	25' - 2"
		16	23' - 10" / 31' - 4"	28' - 8"	30' - 3"	22' - 10" / 28' - 5"	23' - 10"	25' - 2"
		14	24' - 6" / 32' - 10"	28' - 7"	30' - 1"	23' - 6" / 28' - 5"	23' - 9"	25' - 1"
	9.125	20	23' - 5" / 26' - 3"	26' - 3"	31' - 6"	18' - 7"	18' - 7"	22' - 3"
		18	24' - 1" / 31' - 1"	29' - 9" / 30' - 1"	31' - 8"	23' - 1" / 28' - 0"	25' - 1"	26' - 6"
		16	24' - 9" / 32' - 6"	29' - 11"	31' - 7"	23' - 9" / 29' - 7"	25' - 1"	26' - 5"
		14	25' - 5" / 34' - 0"	29' - 10"	31' - 5"	24' - 5" / 31' - 0"	25' - 0"	26' - 4"
	9.625	20	24' - 4" / 27' - 4"	27' - 4"	32' - 9"	19' - 1"	19' - 1"	22' - 11"
		18	25' - 0" / 32' - 2"	30' - 11" / 31' - 3"	33' - 0"	24' - 0" / 28' - 9"	26' - 3"	27' - 9"
		16	25' - 8" / 33' - 7"	31' - 2"	32' - 10"	24' - 8" / 30' - 8"	26' - 3"	27' - 8"
		14	26' - 4" / 35' - 2"	31' - 1"	32' - 9"	25' - 4" / 32' - 2"	26' - 2"	27' - 7"
	10.125	20	25' - 2" / 27' - 10"	27' - 10"	33' - 5"	19' - 10"	19' - 10"	23' - 10"
		18	25' - 10" / 33' - 2"	31' - 11" / 32' - 6"	34' - 3"	24' - 11" / 29' - 5"	27' - 5"	28' - 11"
		16	26' - 6" / 34' - 8"	32' - 4"	34' - 1"	25' - 7" / 31' - 9"	27' - 5"	28' - 10"
		14	27' - 3" / 36' - 3"	32' - 3"	34' - 0"	26' - 3" / 33' - 3"	27' - 4"	28' - 9"
4000 PSI Lightweight Concrete (110 PCF)	7.625	20	20' - 0" / 23' - 10"	23' - 10"	28' - 7"	16' - 2"	16' - 2"	19' - 5"
		18	20' - 9" / 27' - 6"	25' - 8" / 27' - 7"	29' - 0"	19' - 8" / 24' - 6"	22' - 2"	23' - 4"
		16	21' - 4" / 29' - 1"	26' - 5" / 27' - 5"	28' - 11"	20' - 3" / 24' - 11"	22' - 1"	23' - 3"
		14	22' - 0" / 30' - 9"	27' - 2" / 27' - 3"	28' - 9"	20' - 10" / 26' - 8"	22' - 0"	23' - 2"
	8.125	20	20' - 11" / 25' - 2"	25' - 2"	30' - 3"	17' - 1"	17' - 1"	20' - 6"
		18	21' - 8" / 28' - 8"	26' - 9" / 29' - 1"	30' - 8"	20' - 7" / 25' - 7"	23' - 6"	24' - 10"
		16	22' - 4" / 30' - 3"	27' - 7" / 28' - 11"	30' - 6"	21' - 2" / 27' - 0"	23' - 6"	24' - 9"
		14	22' - 11" / 32' - 0"	28' - 4" / 28' - 10"	30' - 4"	21' - 10" / 28' - 1"	23' - 5"	24' - 8"
	8.625	20	21' - 10" / 26' - 1"	26' - 1"	31' - 3"	18' - 0"	18' - 0"	21' - 7"
		18	22' - 7" / 29' - 10"	27' - 10" / 30' - 7"	32' - 2"	21' - 5" / 26' - 8"	24' - 11"	26' - 3"
		16	23' - 3" / 31' - 5"	28' - 8" / 30' - 5"	32' - 1"	22' - 1" / 28' - 2"	24' - 10"	26' - 2"
		14	23' - 11" / 33' - 2"	29' - 6" / 30' - 3"	31' - 11"	22' - 9" / 29' - 6"	24' - 9"	26' - 1"
	9.125	20	22' - 8" / 27' - 3"	27' - 3"	32' - 9"	18' - 11"	18' - 11"	22' - 8"
		18	23' - 5" / 30' - 11"	29' - 0" / 32' - 0"	33' - 9"	22' - 4" / 27' - 10"	26' - 2"	27' - 7"
		16	24' - 1" / 32' - 7"	29' - 10" / 31' - 10"	33' - 7"	23' - 0" / 29' - 4"	26' - 2"	27' - 7"
		14	24' - 10" / 34' - 5"	30' - 8" / 31' - 8"	33' - 5"	23' - 8" / 31' - 0"	26' - 1"	27' - 6"
	9.625	20	23' - 7" / 28' - 5"	28' - 5"	34' - 1"	19' - 9"	19' - 9"	23' - 8"
		18	24' - 4" / 32' - 0"	30' - 1" / 33' - 5"	35' - 2"	23' - 3" / 28' - 11"	27' - 6"	29' - 0"
		16	25' - 1" / 33' - 9"	30' - 11" / 33' - 3"	35' - 1"	23' - 11" / 30' - 5"	27' - 5"	28' - 11"
		14	25' - 9" / 35' - 7"	31' - 10" / 33' - 1"	34' - 11"	24' - 7" / 32' - 1"	27' - 4"	28' - 10"
	10.125	20	24' - 5" / 29' - 7"	29' - 7"	35' - 6"	20' - 7"	20' - 7"	24' - 8"
		18	25' - 3" / 33' - 1"	31' - 2" / 34' - 9"	36' - 7"	24' - 1" / 29' - 11"	28' - 9"	30' - 4"
		16	25' - 11" / 34' - 10"	32' - 1" / 34' - 7"	36' - 6"	24' - 10" / 31' - 6"	28' - 8"	30' - 3"
		14	26' - 8" / 36' - 8"	32' - 11" / 34' - 5"	36' - 4"	25' - 6" / 33' - 3"	28' - 7"	30' - 2"

NOTES:

1. Negative moment (top) reinforcement is required over supports of continuous spans.
2. Continuous spans should be approximately equal with the span length difference not exceeding 20%. Contact New Millennium for unequal span slab design.
3. Where two maximum service stage spans are shown, first span is for slabs with no top reinforcing steel within the slab span. Second span is for slabs with top reinforcing steel in the amount of not less than $1.17A_s$ (where A_s is deck area) along the slab span for long-term deflection control. This amount of top reinforcing steel results in the long-term deflection coefficient of 0.6.
4. Where one span is shown, the maximum span is for slabs without top reinforcing steel. Addition of top reinforcing steel does not affect the maximum spans in those cases.
5. Composite slab service stage calculations are based on ANSI/SDI C-2017 and ASCE 3-91.
6. Composite slab service stage tables are based on deflection limits of L/360 under live load and L/240 under total load after attachment of non-structural components. Long-term deflection has been taken into consideration.

For the complete selection of load tables, visit: **www.newmill.com**

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Deep-Dek® Composite 4.5

SUGGESTED REINFORCING STEEL OVER SUPPORTS FOR CONTINUOUS SPANS

4000 PSI NORMAL-WEIGHT AND LIGHTWEIGHT CONCRETE

	Total Slab Depth (in.)	Slab Span (ft)	LL=40 psf, SDL=20 psf (88 psf LRFD factored load)			LL=100 psf, SDL=5 psf (166 psf LRFD factored load)		
			$-WL^2/9$	$-WL^2/10$	$-WL^2/11$	$-WL^2/9$	$-WL^2/10$	$-WL^2/11$
4000 PSI Normal-Weight Concrete (145 PCF)	7.625	24	5@9	5@10	5@11	-	-	-
		26	-	5@8	5@9	-	-	-
		28	-	-	5@8	-	-	-
		30	-	-	-	-	-	-
	8.125	24	5@9	5@10	4@7	-	-	5@7
		26	5@7	5@9	5@10	-	-	-
		28	-	5@7	5@8	-	-	-
		30	-	-	-	-	-	-
	8.625	24	5@10	5@11	4@8	-	5@7	5@8
		26	5@8	5@9	5@10	-	-	-
		28	5@6	5@7	5@8	-	-	-
		30	-	-	5@7	-	-	-
	9.125	24	5@10	5@11	5@11	5@6	5@7	5@8
		26	5@8	5@9	5@10	-	5@6	5@7
		28	5@7	5@8	5@9	-	-	-
		30	-	5@6	5@7	-	-	-
	9.625	24	5@10	5@10	5@11	5@7	5@8	5@9
		26	5@8	5@10	5@11	-	5@6	5@7
		28	5@7	5@8	5@9	-	-	5@6
		30	5@6	5@7	5@8	-	-	-
	10.125	24	5@10	5@10	5@10	5@7	5@8	5@9
		26	5@9	5@10	5@10	5@6	5@7	5@7
		28	5@7	5@8	5@9	-	6@8	5@6
		30	5@6	5@7	5@8	-	-	-
4000 PSI Lightweight Concrete (110 PCF)	7.625	24	5@10	5@11	4@8	-	-	5@7
		26	5@8	5@9	5@10	-	-	-
		28	-	5@8	5@9	-	-	-
		30	-	-	-	-	-	-
	8.125	24	5@10	4@8	4@8	-	5@7	5@8
		26	5@9	5@10	5@11	-	-	-
		28	5@7	5@8	5@9	-	-	-
		30	-	-	5@8	-	-	-
	8.625	24	5@11	4@8	4@8	5@7	5@8	5@9
		26	5@9	5@10	5@11	-	-	5@7
		28	5@8	5@9	5@10	-	-	-
		30	-	5@7	5@8	-	-	-
	9.125	24	5@11	5@11	5@11	5@7	5@8	5@9
		26	5@9	5@11	5@11	-	5@7	5@7
		28	5@8	5@9	5@10	-	-	5@6
		30	5@7	5@8	5@9	-	-	-
	9.625	24	5@10	5@11	5@11	5@8	5@9	5@10
		26	5@10	5@11	5@11	5@6	5@7	5@8
		28	5@8	5@9	5@10	-	5@6	5@7
		30	5@7	5@8	5@9	-	-	-
	10.125	24	5@10	5@10	5@10	5@8	5@9	5@10
		26	5@10	5@10	5@10	5@6	5@7	5@8
		28	5@9	5@10	5@10	6@8	5@6	5@7
		30	5@7	5@8	5@9	-	-	5@6

NOTES:

1. Continuous spans should be approximately equal with the span length difference not exceeding 20%. Slab span can be taken as an average of the adjacent spans. Contact New Millennium for unequal span slab design.
2. Reinforcing over supports should extend a minimum of 0.3 x L on both sides of the supports (L is the longer of the two adjacent spans).
3. Table is based on 60 ksi reinforcing bars and 0.75 in. concrete cover for reinforcing steel over supports.
4. The $-WL^2/9$ columns apply to the interior support of the slab continuous over two spans; the $-WL^2/10$ columns apply to first interior support of the slab continuous over more than two spans; the $-WL^2/11$ columns apply to other interior supports of the slab continuous over more than two spans.

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Deep-Dek® Composite 6.0

NORMAL-WEIGHT AND LIGHTWEIGHT CONCRETE

PROPERTIES | **SECTION PROPERTIES** | **STRENGTHS (Bare Deck)**

Gage	Thickness (in.)	Coverage (in.)	Weight (psf)	F_y (ksi)	A_s (in.^{2}/ft)	I_D (in.^{4}/ft)		S_p (in.^{3}/ft)	S_n (in.^{3}/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
						single	multi					
20	0.0358	12	3.44	50	1.011	5.199	5.668	1.240	1.667	2118	1746	1716
18	0.0474	12	4.55	50	1.338	7.237	7.601	2.068	2.358	4925	3019	2873
16	0.0598	12	5.74	50	1.687	9.522	9.579	2.878	2.971	9909	4724	4398
14	0.0747	12	7.16	50	2.105	11.950	11.95	3.675	3.705	17853	7229	6611

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending, respectively; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing, respectively.

CONSTRUCTION CLEAR SPANS

	Total Slab Depth, Concrete Weight, Concrete Volume, Min. Required WWF	Gage	Maximum Construction Clear Span (ft.-in.)		
			Single	Double	Triple
Normal-Weight Concrete (145 PCF)	9.125"	20	16' - 10"	10' - 8"	11' - 1"
	60 PSF	18	18' - 2"	17' - 8"	18' - 5"
	1.54 cu.yd/(100sq.ft)	16	19' - 5"	24' - 3"	22' - 9"
	6x6 - W1.4 x W1.4	14	20' - 5"	25' - 5"	23' - 11"
	9.625"	20	16' - 5"	9' - 11"	10' - 4"
	66 PSF	18	17' - 10"	16' - 5"	17' - 2"
	1.7 cu.yd/(100sq.ft)	16	19' - 0"	23' - 8"	22' - 3"
	6x6 - W2.0 x W2.0	14	20' - 0"	24' - 11"	23' - 5"
	10.125"	20	15' - 10"	9' - 3"	9' - 8"
	72 PSF	18	17' - 5"	15' - 5"	16' - 0"
	1.85 cu.yd/(100sq.ft)	16	18' - 7"	23' - 3"	21' - 10"
	6x6 - W2.0 x W2.0	14	19' - 7"	24' - 5"	23' - 0"
	10.625"	20	15' - 4"	8' - 8"	9' - 1"
	79 PSF	18	17' - 1"	14' - 5"	15' - 1"
	2.01 cu.yd/(100sq.ft)	16	18' - 3"	21' - 11"	21' - 5"
	4x4 - W1.4 x W1.4	14	19' - 3"	24' - 0"	22' - 7"
	11.125"	20	14' - 11"	8' - 2"	8' - 6"
	85 PSF	18	16' - 10"	13' - 7"	14' - 2"
	2.16 cu.yd/(100sq.ft)	16	17' - 11"	20' - 8"	21' - 1"
	6x6 - W2.9 x W2.9	14	18' - 11"	23' - 7"	22' - 2"
	11.625"	20	14' - 5"	7' - 9"	8' - 1"
	91 PSF	18	16' - 6"	12' - 11"	13' - 5"
	2.31 cu.yd/(100sq.ft)	16	17' - 8"	19' - 7"	20' - 5"
	6x6 - W2.9 x W2.9	14	18' - 8"	23' - 2"	21' - 10"

	Total Slab Depth, Concrete Weight, Concrete Volume, Min. Required WWF	Gage	Maximum Construction Clear Span (ft.-in.)		
			Single	Double	Triple
Lightweight Concrete (110 PCF)	9.125"	20	18' - 0"	13' - 0"	13' - 7"
	46 PSF	18	19' - 5"	21' - 6"	22' - 5"
	1.54 cu.yd/(100sq.ft)	16	20' - 8"	25' - 9"	24' - 3"
	6x6 - W1.4 x W1.4	14	21' - 9"	27' - 0"	25' - 5"
	9.625"	20	17' - 7"	12' - 2"	12' - 8"
	50 PSF	18	19' - 0"	20' - 2"	21' - 0"
	1.7 cu.yd/(100sq.ft)	16	20' - 3"	25' - 3"	23' - 9"
	6x6 - W2.0 x W2.0	14	21' - 3"	26' - 6"	24' - 11"
	10.125"	20	17' - 3"	11' - 5"	11' - 11"
	55 PSF	18	18' - 7"	18' - 11"	19' - 9"
	1.85 cu.yd/(100sq.ft)	16	19' - 10"	24' - 9"	23' - 3"
	6x6 - W2.0 x W2.0	14	20' - 10"	26' - 0"	24' - 5"
	10.625"	20	16' - 11"	10' - 9"	11' - 3"
	60 PSF	18	18' - 3"	17' - 10"	18' - 7"
	2.01 cu.yd/(100sq.ft)	16	19' - 6"	24' - 3"	22' - 10"
	4x4 - W1.4 x W1.4	14	20' - 6"	25' - 6"	24' - 0"
	11.125"	20	16' - 7"	10' - 2"	10' - 7"
	64 PSF	18	17' - 11"	16' - 11"	17' - 7"
	2.16 cu.yd/(100sq.ft)	16	19' - 2"	23' - 11"	22' - 6"
	6x6 - W2.9 x W2.9	14	20' - 2"	25' - 1"	23' - 7"
	11.625"	20	16' - 2"	9' - 8"	10' - 1"
	69 PSF	18	17' - 8"	16' - 0"	16' - 8"
	2.31 cu.yd/(100sq.ft)	16	18' - 10"	23' - 6"	22' - 1"
	6x6 - W2.9 x W2.9	14	19' - 10"	24' - 9"	23' - 3"

NOTES:

1. Deck section properties are calculated in accordance with AISI S100-07.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 1.5" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI C-2017 design criteria. For maximum clear spans based on different criteria contact New Millennium.
4. Temperature and shrinkage reinforcement in accordance with ANSI/SDI C-2017 shall be provided in the slab.

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MAXIMUM UNIFORM SUPERIMPOSED SERVICE LOADS

4000 PSI NORMAL-WEIGHT AND LIGHTWEIGHT CONCRETE

	Total Slab Depth, Concrete Weight, Concrete Volume, Min. Required WWF	Gage	Maximum Uniform Superimposed Service Loads (psf)										
			Simple Spans						Continuous Spans Negative Moment Steel Reinforcing Required				
			22' - 0"	23' - 0"	24' - 0"	25' - 0"	26' - 0"	27' - 0"	29' - 0"	30' - 0"	31' - 0"	32' - 0"	33' - 0"
4000 PSI Normal-Weight Concrete (145 PCF)	9.125"	20	71 / 144	55 / 132	40 / 117	- / 104	- / 93	- / 82	47 / 71	- / 63	- / 56	- / 50	- / 44
	60 PSF	18	85 / 165	66 / 156	50 / 148	- / 141	- / 130	- / 117	55 / 70	43 / 62	- / 55	- / 49	- / 43
	1.54 cu.yd/(100sq.ft)	16	98 / 176	77 / 157	60 / 140	45 / 125	- / 112	- / 100	65 / 69	52 / 62	41 / 55	- / 48	- / 42
	6x6 - W1.4 x W1.4	14	112 / 213	90 / 191	71 / 171	55 / 154	41 / 138	- / 124	68	61	50 / 53	- / 47	- / 41
	9.625"	20	89 / 156	69 / 144	52 / 128	- / 114	- / 101	- / 90	60 / 82	47 / 73	- / 65	- / 58	- / 51
	66 PSF	18	104 / 178	82 / 169	64 / 161	48 / 153	- / 143	- / 129	69 / 81	55 / 72	43 / 64	- / 57	- / 50
	1.7 cu.yd/(100sq.ft)	16	119 / 198	95 / 176	75 / 158	58 / 141	43 / 126	- / 113	80	66 / 71	53 / 63	41 / 56	- / 49
	6x6 - W2.0 x W2.0	14	136 / 237	109 / 212	87 / 191	69 / 171	53 / 154	- / 139	79	70	62	51 / 55	40 / 48
	10.125"	20	108 / 168	85 / 156	65 / 139	49 / 123	- / 110	- / 98	75 / 93	60 / 83	47 / 74	- / 66	- / 59
	72 PSF	18	125 / 192	100 / 182	78 / 173	60 / 165	45 / 156	- / 140	85 / 92	69 / 82	58 / 74	46 / 65	- / 58
	1.85 cu.yd/(100sq.ft)	16	142 / 225	115 / 213	91 / 202	72 / 192	55 / 182	41 / 174	91	82	66 / 73	53 / 65	41 / 57
	6x6 - W2.0 x W2.0	14	162 / 264	131 / 237	106 / 213	85 / 191	66 / 172	51 / 155	90	81	72	64	51 / 56
	10.625"	20	129 / 180	103 / 168	81 / 150	62 / 133	46 / 118	- / 105	92 / 106	75 / 95	60 / 85	47 / 76	- / 67
	79 PSF	18	149 / 206	120 / 195	96 / 186	75 / 177	57 / 169	42 / 152	105	89 / 94	72 / 84	58 / 75	46 / 67
	2.01 cu.yd/(100sq.ft)	16	169 / 241	137 / 228	111 / 216	88 / 205	69 / 196	52 / 187	104	93	82 / 83	67 / 74	53 / 66
	4x4 - W1.4 x W1.4	14	191 / 294	156 / 264	127 / 237	103 / 213	82 / 193	64 / 174	103	92	82	73	64 / 65
	11.125"	20	156 / 192	125 / 181	100 / 160	78 / 143	59 / 127	44 / 113	112 / 119	93 / 107	76 / 96	61 / 86	48 / 77
	85 PSF	18	178 / 220	144 / 208	116 / 198	93 / 189	72 / 180	55 / 164	118	106	90 / 95	73 / 85	59 / 76
	2.16 cu.yd/(100sq.ft)	16	200 / 258	164 / 244	133 / 231	107 / 219	85 / 209	66 / 199	117	105	94	83 / 84	67 / 75
	6x6 - W2.9 x W2.9	14	225 / 366	185 / 349	152 / 333	124 / 319	100 / 297	79 / 271	116	104	93	83	74
	11.625"	20	183 / 204	148 / 193	119 / 171	95 / 152	74 / 135	56 / 120	133	111 / 120	92 / 108	75 / 97	60 / 87
	91 PSF	18	208 / 234	170 / 222	138 / 211	111 / 201	88 / 188	68 / 175	132	119	107	89 / 96	73 / 86
	2.31 cu.yd/(100sq.ft)	16	233 / 274	192 / 259	157 / 245	128 / 233	103 / 222	82 / 212	131	118	106	95	83 / 85
	6x6 - W2.9 x W2.9	14	261 / 389	216 / 371	179 / 354	147 / 339	120 / 320	96 / 291	130	117	105	94	84
4000 PSI Lightweight Concrete (110 PCF)	9.125"	20	55 / 148	42 / 141	- / 128	- / 115	- / 104	- / 93	- / 82	- / 74	- / 67	- / 61	- / 55
	46 PSF	18	67 / 167	52 / 159	40 / 151	- / 144	- / 133	- / 119	44 / 81	- / 73	- / 66	- / 60	- / 54
	1.54 cu.yd/(100sq.ft)	16	78 / 187	62 / 167	48 / 151	- / 136	- / 123	- / 111	53 / 80	43 / 73	- / 65	- / 59	- / 53
	6x6 - W1.4 x W1.4	14	92 / 224	74 / 202	58 / 182	46 / 165	- / 149	- / 135	64 / 79	52 / 71	42 / 64	- / 58	- / 52
	9.625"	20	69 / 161	53 / 153	40 / 140	- / 126	- / 113	- / 102	46 / 94	- / 85	- / 77	- / 70	- / 63
	50 PSF	18	82 / 181	65 / 172	50 / 164	- / 156	- / 149	- / 136	55 / 93	44 / 84	- / 76	- / 69	- / 62
	1.7 cu.yd/(100sq.ft)	16	95 / 210	76 / 188	60 / 170	47 / 153	- / 138	- / 125	65 / 92	53 / 83	43 / 75	- / 68	- / 61
	6x6 - W2.0 x W2.0	14	109 / 249	89 / 224	71 / 203	56 / 183	43 / 166	- / 151	77 / 91	64 / 82	52 / 74	42 / 67	- / 60
	10.125"	20	83 / 173	65 / 163	50 / 152	- / 136	- / 123	- / 111	57 / 106	46 / 96	- / 88	- / 79	- / 72
	55 PSF	18	98 / 195	79 / 185	62 / 176	48 / 168	- / 160	- / 153	67 / 105	55 / 96	44 / 87	- / 79	- / 71
	1.85 cu.yd/(100sq.ft)	16	113 / 228	92 / 216	73 / 205	58 / 195	45 / 185	- / 177	80 / 105	66 / 95	54 / 86	43 / 78	- / 70
	6x6 - W2.0 x W2.0	14	130 / 278	106 / 250	86 / 226	69 / 204	54 / 185	42 / 169	93 / 103	78 / 94	64 / 85	52 / 77	42 / 69
	10.625"	20	100 / 184	79 / 175	62 / 164	48 / 147	- / 133	- / 119	70 / 120	57 / 109	46 / 99	- / 90	- / 82
	60 PSF	18	117 / 209	94 / 199	75 / 189	59 / 180	45 / 172	- / 165	82 / 119	67 / 108	55 / 98	44 / 89	- / 81
	2.01 cu.yd/(100sq.ft)	16	134 / 245	109 / 232	88 / 220	70 / 209	55 / 199	42 / 190	96 / 118	80 / 107	66 / 97	54 / 88	43 / 80
	4x4 - W1.4 x W1.4	14	153 / 309	126 / 278	102 / 251	83 / 228	66 / 207	52 / 188	111 / 117	93 / 106	78 / 96	65 / 87	53 / 79
	11.125"	20	120 / 196	96 / 187	77 / 176	60 / 158	46 / 142	- / 128	86 / 134	71 / 122	58 / 111	47 / 101	- / 92
	64 PSF	18	139 / 224	113 / 212	91 / 202	73 / 192	57 / 184	44 / 176	99 / 133	82 / 121	68 / 110	55 / 100	44 / 91
	2.16 cu.yd/(100sq.ft)	16	159 / 261	130 / 247	106 / 234	86 / 223	68 / 212	53 / 203	115 / 132	96 / 120	81 / 109	67 / 99	54 / 90
	6x6 - W2.9 x W2.9	14	180 / 340	148 / 323	122 / 308	100 / 295	81 / 282	64 / 270	131	112 / 119	94 / 108	79 / 98	65 / 89
	11.625"	20	140 / 209	114 / 198	91 / 188	72 / 169	56 / 152	43 / 137	102 / 149	85 / 136	71 / 124	58 / 113	46 / 103
	69 PSF	18	162 / 238	133 / 225	108 / 214	87 / 204	69 / 195	54 / 187	117 / 149	98 / 135	82 / 123	67 / 112	58 / 102
	2.31 cu.yd/(100sq.ft)	16	184 / 278	152 / 263	125 / 249	102 / 237	82 / 226	65 / 215	135 / 148	114 / 134	96 / 122	80 / 111	66 / 101
	6x6 - W2.9 x W2.9	14	209 / 356	173 / 339	143 / 324	118 / 309	96 / 296	78 / 284	147	132 / 133	112 / 121	95 / 110	79 / 100

NOTES:

1. The slab weight has been subtracted from the loads listed above.
2. Uniform superimposed service loads were determined by dividing the superimposed LRFD design loads controlled by strength by the load factor of 1.6.
3. Negative moment (top) reinforcement is required over supports of continuous slabs. See negative reinforcement table for details.
4. Continuous spans should be approximately equal with the span length difference not exceeding 20%. Contact New Millennium for unequal span slab design.
5. Where two maximum uniform superimposed service loads are shown, first load is for slabs with no top reinforcing steel within the slab span. Second load is for slabs with top reinforcing steel in the amount of not less than $1.17A_s$ (where A_s is deck area) along the entire slab span for long-term deflection control. This amount of top reinforcing steel results in the long-term deflection coefficient of 0.6.
6. Where only one load is shown, the load is for slabs without top reinforcement. Addition of top reinforcement does not affect the maximum service loads in those cases.
7. Composite slab service stage calculations are based on ANSI/SDI C-2017 and ASCE 3-91.
8. Composite slab service stage tables are based on deflection limits of L/360 under live load and L/240 under total load after attachment of non-structural components. Long-term deflection has been taken into consideration.

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Deep-Dek® Composite 6.0

MAXIMUM ALLOWABLE SPANS OF COMPOSITE SLABS FOR SERVICE STAGE

4000 PSI NORMAL-WEIGHT AND LIGHTWEIGHT CONCRETE

	Total Slab Depth (in.)	Gage	Max. Service Stage Spans (ft-in.)					
			LL=40 psf; SDL=20 psf (88 psf LRFD load)			LL=100 psf; SDL=5 psf (166 psf LRFD load)		
			Single Span	Continuous Span		Single Span	Continuous Span	
				End	Interior		End	Interior
4000 PSI Normal-Weight Concrete (145 PCF)	9.125	20	24' - 0" / 30' - 4"	29' - 8" / 31' - 2"	32' - 10"	22' - 11" / 25' - 0"	25' - 8"	27' - 1"
		18	24' - 8" / 31' - 11"	30' - 6" / 31' - 1"	32' - 9"	23' - 7" / 28' - 2"	25' - 7"	27' - 0"
		16	25' - 4" / 32' - 3"	30' - 11"	32' - 7"	24' - 3" / 26' - 8"	25' - 7"	26' - 11"
		14	26' - 1" / 34' - 9"	30' - 9"	32' - 5"	24' - 11" / 28' - 9"	25' - 5"	26' - 10"
	9.625	20	24' - 10" / 31' - 1"	30' - 8" / 32' - 5"	34' - 2"	23' - 9" / 25' - 9"	26' - 10"	28' - 4"
		18	25' - 6" / 32' - 11"	31' - 7" / 32' - 3"	34' - 0"	24' - 5" / 29' - 1"	26' - 10"	28' - 3"
		16	26' - 3" / 33' - 5"	32' - 2"	33' - 11"	25' - 1" / 27' - 9"	26' - 9"	28' - 2"
		14	26' - 11" / 35' - 10"	32' - 0"	33' - 9"	25' - 10" / 29' - 10"	26' - 8"	28' - 1"
	10.125	20	25' - 7" / 31' - 9"	31' - 7" / 33' - 7"	35' - 5"	24' - 6" / 26' - 6"	28' - 0"	29' - 7"
		18	26' - 4" / 33' - 11"	32' - 6" / 33' - 5"	35' - 3"	25' - 3" / 29' - 11"	27' - 11"	29' - 6"
		16	27' - 0" / 35' - 5"	33' - 4"	35' - 2"	25' - 11" / 32' - 3"	27' - 11"	29' - 5"
		14	27' - 9" / 37' - 0"	33' - 2"	35' - 0"	26' - 8" / 31' - 0"	27' - 9"	29' - 3"
	10.625	20	26' - 4" / 32' - 4"	32' - 7" / 34' - 9"	36' - 7"	25' - 4" / 27' - 1"	29' - 2"	30' - 9"
		18	27' - 1" / 34' - 11"	33' - 6" / 34' - 7"	36' - 6"	26' - 1" / 30' - 8"	29' - 1"	30' - 8"
		16	27' - 10" / 36' - 5"	34' - 5" / 34' - 6"	36' - 4"	26' - 9" / 33' - 3"	29' - 0"	30' - 7"
		14	28' - 7" / 38' - 1"	34' - 4"	36' - 2"	27' - 6" / 32' - 2"	28' - 11"	30' - 6"
	11.125	20	27' - 2" / 32' - 10"	33' - 7" / 35' - 10"	37' - 9"	26' - 2" / 27' - 9"	30' - 3"	31' - 11"
		18	27' - 11" / 35' - 11"	34' - 6" / 35' - 9"	37' - 8"	26' - 11" / 31' - 5"	30' - 2"	31' - 10"
		16	28' - 8" / 37' - 5"	35' - 5" / 35' - 7"	37' - 6"	27' - 7" / 34' - 4"	30' - 1"	31' - 9"
		14	29' - 5" / 39' - 2"	35' - 5"	37' - 4"	28' - 4" / 35' - 11"	30' - 0"	31' - 8"
	11.625	20	27' - 11" / 33' - 4"	34' - 6" / 36' - 11"	38' - 11"	26' - 11" / 28' - 3"	31' - 4"	33' - 0"
		18	28' - 9" / 36' - 10"	35' - 6" / 36' - 10"	38' - 9"	27' - 8" / 32' - 0"	31' - 3"	32' - 11"
		16	29' - 5" / 38' - 5"	36' - 5" / 36' - 8"	38' - 8"	28' - 5" / 35' - 4"	31' - 2"	32' - 10"
		14	30' - 2" / 40' - 2"	36' - 6"	38' - 6"	29' - 2" / 36' - 11"	31' - 1"	32' - 9"
4000 PSI Lightweight Concrete (110 PCF)	9.125	20	23' - 2" / 29' - 10"	28' - 7" / 33' - 0"	34' - 4" / 34' - 9"	21' - 11" / 26' - 0"	26' - 8"	28' - 1"
		18	23' - 11" / 31' - 8"	29' - 7" / 32' - 10"	34' - 7"	22' - 9" / 28' - 3"	26' - 7"	28' - 0"
		16	24' - 8" / 33' - 3"	30' - 6" / 32' - 8"	34' - 5"	23' - 5" / 27' - 8"	26' - 6"	27' - 11"
		14	25' - 5" / 34' - 10"	31' - 5" / 32' - 6"	34' - 3"	24' - 2" / 29' - 10"	26' - 5"	27' - 10"
	9.625	20	24' - 0" / 30' - 10"	29' - 8" / 34' - 5"	35' - 7" / 36' - 3"	22' - 9" / 26' - 10"	28' - 0"	29' - 6"
		18	24' - 9" / 32' - 8"	30' - 8" / 34' - 3"	36' - 1"	23' - 7" / 29' - 3"	27' - 11"	29' - 5"
		16	25' - 6" / 34' - 5"	31' - 6" / 34' - 1"	35' - 11"	24' - 3" / 28' - 11"	27' - 10"	29' - 4"
		14	26' - 3" / 36' - 3"	32' - 5" / 33' - 11"	35' - 9"	25' - 0" / 31' - 0"	27' - 8"	29' - 2"
	10.125	20	24' - 9" / 31' - 10"	30' - 7" / 35' - 9"	36' - 9" / 37' - 8"	23' - 7" / 27' - 8"	29' - 1" / 29' - 3"	30' - 10"
		18	25' - 7" / 33' - 9"	31' - 7" / 35' - 7"	37' - 6"	24' - 5" / 30' - 4"	29' - 2"	30' - 9"
		16	26' - 4" / 35' - 6"	32' - 7" / 35' - 5"	37' - 4"	25' - 1" / 31' - 11"	29' - 1"	30' - 8"
		14	27' - 1" / 37' - 5"	33' - 6" / 35' - 3"	37' - 2"	25' - 10" / 32' - 4"	29' - 0"	30' - 6"
	10.625	20	25' - 6" / 32' - 10"	31' - 7" / 37' - 1"	37' - 10" / 39' - 1"	24' - 4" / 28' - 4"	30' - 1" / 30' - 6"	32' - 2"
		18	26' - 5" / 34' - 9"	32' - 7" / 36' - 11"	38' - 11"	25' - 2" / 31' - 4"	30' - 5"	32' - 1"
		16	27' - 2" / 36' - 6"	33' - 7" / 36' - 9"	38' - 9"	25' - 11" / 33' - 0"	30' - 4"	32' - 0"
		14	27' - 11" / 38' - 6"	34' - 6" / 36' - 7"	38' - 6"	26' - 8" / 33' - 7"	30' - 3"	31' - 10"
	11.125	20	26' - 4" / 33' - 9"	32' - 7" / 38' - 4"	39' - 1" / 40' - 5"	25' - 2" / 29' - 1"	31' - 1" / 31' - 9"	33' - 5"
		18	27' - 3" / 35' - 9"	33' - 8" / 38' - 2"	40' - 3"	26' - 0" / 32' - 4"	31' - 8"	33' - 4"
		16	28' - 0" / 37' - 7"	34' - 7" / 38' - 0"	40' - 1"	26' - 9" / 34' - 0"	31' - 7"	33' - 3"
		14	28' - 9" / 39' - 7"	35' - 7" / 37' - 10"	39' - 11"	27' - 7" / 35' - 10"	31' - 5"	33' - 2"
	11.625	20	27' - 1" / 34' - 9"	33' - 6" / 39' - 7"	40' - 3" / 41' - 9"	25' - 11" / 29' - 8"	32' - 1" / 32' - 11"	34' - 8"
		18	28' - 0" / 36' - 8"	34' - 7" / 39' - 5"	41' - 6" / 41' - 7"	26' - 10" / 33' - 4"	32' - 10"	34' - 7"
		16	28' - 10" / 38' - 7"	35' - 7" / 39' - 3"	41' - 5"	27' - 7" / 35' - 1"	32' - 9"	34' - 6"
		14	29' - 7" / 40' - 7"	36' - 7" / 39' - 1"	41' - 3"	28' - 5" / 36' - 11"	32' - 8"	34' - 5"

NOTES:

1. Negative moment (top) reinforcement is required over supports of continuous spans.
2. Continuous spans should be approximately equal with the span length difference not exceeding 20%. Contact New Millennium for unequal span slab design.
3. Where two maximum service stage spans are shown, first span is for slabs with no top reinforcing steel within the slab span. Second span is for slabs with top reinforcing steel in the amount of not less than $1.17A_s$ (where A_s is deck area) along the slab span for long-term deflection control. This amount of top reinforcing steel results in the long-term deflection coefficient of 0.6.
4. Where one span is shown, the maximum span is for slabs without top reinforcing steel. Addition of top reinforcing steel does not affect the maximum spans in those cases.
5. Composite slab service stage calculations are based on ANSI/SDI C-2017 and ASCE 3-91.
6. Composite slab service stage tables are based on deflection limits of L/360 under live load and L/240 under total load after attachment of non-structural components. Long-term deflection has been taken into consideration.

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SUGGESTED REINFORCING STEEL OVER SUPPORTS FOR CONTINUOUS SPANS

4000 PSI NORMAL-WEIGHT AND LIGHTWEIGHT CONCRETE

	Total Slab Depth (in.)	Slab Span (ft)	LL=40 psf, SDL=20 psf (88 psf LRFD factored load)			LL=100 psf, SDL=5 psf (166 psf LRFD factored load)		
			$-WL^2/9$	$-WL^2/10$	$-WL^2/11$	$-WL^2/9$	$-WL^2/10$	$-WL^2/11$
4000 PSI Normal-Weight Concrete (145 PCF)	9.125	27	5@8	5@9	5@10	-	-	5@7
		29	5@7	5@8	5@9	-	-	-
		31	-	5@7	5@7	-	-	-
		33	-	-	5@6	-	-	-
	9.625	27	5@8	5@10	5@11	-	5@6	5@7
		29	5@7	5@8	5@9	-	-	5@6
		31	5@6	5@7	5@8	-	-	-
		33	-	5@6	5@7	-	-	-
	10.125	27	5@9	5@10	5@10	5@6	5@6	5@7
		29	5@7	5@8	5@9	-	-	5@6
		31	5@6	5@7	5@8	-	-	-
		33	-	5@6	5@7	-	-	-
	10.625	27	5@9	5@9	5@10	5@6	5@7	5@8
		29	5@7	5@9	5@10	-	5@6	5@6
		31	5@6	5@7	5@8	-	-	6@8
		33	6@8	5@6	5@7	-	-	-
	11.125	27	5@9	5@9	5@9	5@6	5@7	5@8
		29	5@8	5@9	5@9	6@7	5@6	5@7
		31	5@7	5@7	5@8	-	6@7	5@6
		33	5@6	5@6	5@7	-	-	-
	11.625	27	5@8	5@9	5@9	5@6	5@7	5@8
		29	5@8	5@9	5@9	6@8	5@6	5@7
		31	5@7	5@8	5@8	-	6@7	5@6
		33	5@6	5@7	5@7	-	-	6@7
4000 PSI Lightweight Concrete (110 PCF)	9.125	27	5@9	5@11	5@11	-	5@6	5@7
		29	5@8	5@9	5@10	-	-	-
		31	5@7	5@8	5@9	-	-	-
		33	-	5@6	5@7	-	-	-
	9.625	27	5@10	5@11	5@11	5@6	5@7	5@8
		29	5@8	5@9	5@10	-	-	5@6
		31	5@7	5@8	5@9	-	-	-
		33	5@6	5@7	5@8	-	-	-
	10.125	27	5@10	5@10	5@10	5@6	5@7	5@8
		29	5@8	5@10	5@10	-	5@6	5@7
		31	5@7	5@8	5@9	-	-	5@6
		33	5@6	5@7	5@8	-	-	-
	10.625	27	5@9	5@10	5@10	5@7	5@7	5@8
		29	5@9	5@10	5@10	6@8	5@6	5@7
		31	5@7	5@8	5@9	-	6@8	5@6
		33	5@6	5@7	5@8	-	-	4@3
	11.125	27	5@9	5@9	5@9	5@7	5@8	5@9
		29	5@9	5@9	5@9	5@6	5@7	5@7
		31	5@8	5@9	5@9	4@3	6@8	5@6
		33	5@7	5@7	5@8	-	-	6@8
	11.625	27	5@8	5@9	5@9	5@7	5@8	5@8
		29	5@8	5@9	5@9	5@6	5@7	5@8
		31	5@8	5@9	5@9	6@7	5@6	5@6
		33	5@7	5@8	5@9	-	6@7	5@6

NOTES:

1. Continuous spans should be approximately equal with the span length difference not exceeding 20%. Slab span can be taken as an average of the adjacent spans. Contact New Millennium for unequal span slab design.
2. Reinforcing over supports should extend a minimum of 0.3 x L on both sides of the supports (L is the longer of the two adjacent spans).
3. Table is based on 60 ksi reinforcing bars and 0.75 in. concrete cover for reinforcing steel over supports.
4. The $-WL^2/9$ columns apply to the interior support of the slab continuous over two spans; the $-WL^2/10$ columns apply to first interior support of the slab continuous over more than two spans; the $-WL^2/11$ columns apply to other interior supports of the slab continuous over more than two spans.

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Deep-Dek® Composite 7.5

NORMAL-WEIGHT AND LIGHTWEIGHT CONCRETE

PROPERTIES | **SECTION PROPERTIES** | **STRENGTHS (Bare Deck)**

Gage	Thickness (in.)	Coverage (in.)	Weight (psf)	F_y (ksi)	A_s (in.^{2}/ft)	I_D (in.^{4}/ft)		S_p (in.^{3}/ft)	S_n (in.^{3}/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
						single	multi					
20	0.0358	12	3.79	50	1.113	8.505	9.285	1.558	2.101	1686	716	1705
18	0.0474	12	5.01	50	1.473	12.109	12.51	2.631	2.994	3919	1252	2857
16	0.0598	12	6.32	50	1.857	15.895	15.992	3.884	4.009	7881	1972	4376
14	0.0747	12	7.89	50	2.318	19.952	19.952	4.965	5.000	15392	3035	6582

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending, respectively; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing, respectively.

CONSTRUCTION CLEAR SPANS

	Total Slab Depth, Concrete Weight, Concrete Volume, Min. Required WWF	Gage	Maximum Construction Clear Span (ft.-in.)		
			Single	Double	Triple
Normal-Weight Concrete (145 PCF)	10.125" 60 PSF 1.52 cu.yd/(100sq.ft) 6x6 - W1.4 x W1.4	20	19' - 1"	10' - 8"	11' - 1"
		18	20' - 9"	17' - 8"	18' - 5"
		16	22' - 1"	26' - 9"	25' - 11"
		14	23' - 3"	28' - 11"	27' - 3"
	10.625" 66 PSF 1.68 cu.yd/(100sq.ft) 6x6 - W1.4 x W1.4	20	18' - 5"	9' - 11"	10' - 4"
		18	20' - 3"	16' - 5"	17' - 1"
		16	21' - 7"	24' - 11"	25' - 4"
		14	22' - 9"	28' - 4"	26' - 8"
	11.125" 72 PSF 1.83 cu.yd/(100sq.ft) 6x6 - W2.0 x W2.0	20	17' - 10"	9' - 3"	9' - 8"
		18	19' - 10"	15' - 4"	16' - 0"
		16	21' - 2"	23' - 3"	24' - 3"
		14	22' - 3"	27' - 9"	26' - 1"
	11.625" 78 PSF 1.99 cu.yd/(100sq.ft) 6x6 - W2.0 x W2.0	20	17' - 3"	8' - 8"	9' - 1"
		18	19' - 6"	14' - 5"	15' - 0"
		16	20' - 9"	21' - 10"	22' - 9"
		14	21' - 11"	27' - 3"	25' - 8"
	12.125" 84 PSF 2.14 cu.yd/(100sq.ft) 4x4 - W1.4 x W1.4	20	16' - 9"	8' - 2"	8' - 6"
		18	19' - 2"	13' - 7"	14' - 2"
		16	20' - 5"	20' - 8"	21' - 6"
		14	21' - 6"	26' - 10"	25' - 3"
	12.625" 90 PSF 2.3 cu.yd/(100sq.ft) 6x6 - W2.9 x W2.9	20	16' - 3"	7' - 9"	8' - 1"
		18	18' - 10"	12' - 10"	13' - 5"
		16	20' - 1"	19' - 6"	20' - 4"
		14	21' - 2"	26' - 5"	24' - 10"

	Total Slab Depth, Concrete Weight, Concrete Volume, Min. Required WWF	Gage	Maximum Construction Clear Span (ft.-in.)		
			Single	Double	Triple
Lightweight Concrete (110 PCF)	10.125" 45 PSF 1.52 cu.yd/(100sq.ft) 6x6 - W1.4 x W1.4	20	20' - 4"	13' - 0"	13' - 6"
		18	22' - 1"	21' - 6"	22' - 4"
		16	23' - 6"	29' - 3"	27' - 6"
		14	24' - 8"	30' - 9"	28' - 11"
	10.625" 50 PSF 1.68 cu.yd/(100sq.ft) 6x6 - W1.4 x W1.4	20	19' - 11"	12' - 2"	12' - 8"
		18	21' - 7"	20' - 1"	20' - 11"
		16	23' - 0"	28' - 8"	27' - 0"
		14	24' - 2"	30' - 1"	28' - 4"
	11.125" 54 PSF 1.83 cu.yd/(100sq.ft) 6x6 - W2.0 x W2.0	20	19' - 6"	11' - 5"	11' - 11"
		18	21' - 2"	18' - 10"	19' - 8"
		16	22' - 6"	28' - 1"	26' - 5"
		14	23' - 8"	29' - 6"	27' - 9"
	11.625" 59 PSF 1.99 cu.yd/(100sq.ft) 6x6 - W2.0 x W2.0	20	19' - 1"	10' - 9"	11' - 2"
		18	20' - 9"	17' - 9"	18' - 6"
		16	22' - 2"	26' - 11"	26' - 0"
		14	23' - 3"	29' - 0"	27' - 3"
	12.125" 64 PSF 2.14 cu.yd/(100sq.ft) 4x4 - W1.4 x W1.4	20	18' - 8"	10' - 2"	10' - 7"
		18	20' - 5"	16' - 10"	17' - 6"
		16	21' - 9"	25' - 6"	25' - 6"
		14	22' - 11"	28' - 6"	26' - 10"
	12.625" 68 PSF 2.3 cu.yd/(100sq.ft) 6x6 - W2.9 x W2.9	20	18' - 2"	9' - 8"	10' - 0"
		18	20' - 1"	16' - 0"	16' - 8"
		16	21' - 5"	24' - 2"	25' - 1"
		14	22' - 7"	28' - 1"	26' - 5"

NOTES:

1. Deck section properties are calculated in accordance with AISI S100-07.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 1.5" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI C-2017 design criteria. For maximum clear spans based on different criteria contact New Millennium.
4. Temperature and shrinkage reinforcement in accordance with ANSI/SDI C-2017 shall be provided in the slab.

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Deep-Dek® Composite 7.5

MAXIMUM UNIFORM SUPERIMPOSED SERVICE LOADS

4000 PSI NORMAL-WEIGHT AND LIGHTWEIGHT CONCRETE

	Total Slab Depth, Concrete Weight, Concrete Volume, Min. Required WWF	Gage	Maximum Uniform Superimposed Service Loads (psf)										
			Simple Spans						Continuous Spans Negative Moment Steel Reinforcing Required				
			25' - 0"	26' - 0"	27' - 0"	28' - 0"	29' - 0"	30' - 0"	32' - 0"	33' - 0"	34' - 0"	35' - 0"	36' - 0"
4000 PSI Normal-Weight Concrete (145 PCF)	10.125"	20	58 / 125	44 / 112	- / 100	- / 90	- / 80	- / 72	45 / 73	- / 66	- / 59	- / 53	- / 48
	60 PSF	18	69 / 115	54 / 103	42 / 92	- / 82	- / 73	- / 65	53 / 72	42 / 65	- / 58	- / 52	- / 47
	1.52 cu.yd/(100sq.ft)	16	82 / 147	65 / 132	51 / 119	- / 107	- / 97	- / 87	64 / 71	52 / 64	41 / 57	- / 51	- / 46
	6x6 - W1.4 x W1.4	14	96 / 184	78 / 166	63 / 150	49 / 136	- / 124	- / 112	70	63	52 / 56	42 / 50	- / 45
	10.625"	20	70 / 136	54 / 122	41 / 109	- / 98	- / 88	- / 78	56 / 82	45 / 74	- / 67	- / 60	- / 54
	66 PSF	18	83 / 128	66 / 115	51 / 103	- / 92	- / 82	- / 73	64 / 81	55 / 73	44 / 66	- / 59	- / 53
	1.68 cu.yd/(100sq.ft)	16	96 / 162	78 / 146	62 / 131	48 / 118	- / 106	- / 96	76 / 80	62 / 72	51 / 65	40 / 58	- / 52
	6x6 - W1.4 x W1.4	14	112 / 200	91 / 181	73 / 164	58 / 148	45 / 134	- / 122	79	71	62 / 64	50 / 57	40 / 51
	11.125"	20	85 / 147	67 / 132	52 / 118	- / 106	- / 95	- / 85	68 / 92	56 / 83	44 / 75	- / 68	- / 61
	72 PSF	18	100 / 173	80 / 165	63 / 158	49 / 150	- / 136	- / 123	81 / 91	67 / 82	55 / 74	44 / 67	- / 60
	1.83 cu.yd/(100sq.ft)	16	114 / 179	93 / 161	75 / 145	59 / 130	45 / 118	- / 106	90	76 / 81	62 / 73	50 / 66	40 / 59
	6x6 - W2.0 x W2.0	14	131 / 219	108 / 198	88 / 179	70 / 162	55 / 147	42 / 134	89	80	72	61 / 65	49 / 58
	11.625"	20	100 / 158	80 / 141	63 / 127	48 / 114	- / 102	- / 91	82 / 103	67 / 93	54 / 84	43 / 76	- / 68
	78 PSF	18	117 / 185	95 / 177	76 / 169	59 / 161	45 / 147	- / 133	96 / 102	80 / 92	66 / 83	54 / 75	43 / 67
	1.99 cu.yd/(100sq.ft)	16	134 / 197	110 / 178	89 / 160	71 / 145	55 / 130	42 / 118	101	90 / 91	75 / 82	61 / 74	49 / 66
	6x6 - W2.0 x W2.0	14	153 / 239	126 / 216	103 / 196	84 / 178	67 / 161	52 / 147	99	90	81	73	61 / 65
	12.125"	20	118 / 169	95 / 151	76 / 136	59 / 121	44 / 109	- / 97	97 / 114	81 / 103	66 / 93	53 / 84	#VALUE!
	84 PSF	18	137 / 197	112 / 188	90 / 180	72 / 169	56 / 158	42 / 143	113	95 / 102	79 / 92	65 / 83	53 / 75
	2.14 cu.yd/(100sq.ft)	16	156 / 231	128 / 219	105 / 209	85 / 200	67 / 191	52 / 183	112	101	90 / 91	74 / 82	60 / 74
	4x4 - W1.4 x W1.4	14	177 / 262	147 / 237	121 / 215	99 / 195	80 / 177	63 / 161	111	100	90	81	73
	12.625"	20	140 / 180	114 / 161	91 / 144	72 / 129	56 / 116	41 / 104	115 / 126	97 / 114	#VALUE!	#VALUE!	#VALUE!
	90 PSF	18	160 / 209	132 / 197	107 / 188	86 / 179	68 / 168	52 / 153	125	113	95 / 102	79 / 93	65 / 84
	2.3 cu.yd/(100sq.ft)	16	181 / 245	150 / 233	124 / 222	101 / 212	81 / 203	64 / 194	124	112	101	89 / 92	74 / 83
	6x6 - W2.9 x W2.9	14	204 / 287	171 / 260	142 / 236	117 / 214	96 / 195	77 / 177	123	111	100	90	82
4000 PSI Lightweight Concrete (110 PCF)	10.125"	20	45 / 135	- / 122	- / 111	- / 101	- / 91	- / 83	- / 84	- / 77	- / 70	- / 64	- / 59
	45 PSF	18	56 / 126	45 / 114	- / 103	- / 93	- / 84	- / 76	43 / 83	- / 76	- / 69	- / 63	- / 58
	1.52 cu.yd/(100sq.ft)	16	69 / 158	55 / 143	44 / 130	- / 118	- / 108	- / 98	54 / 82	44 / 75	- / 68	- / 62	- / 57
	6x6 - W1.4 x W1.4	14	83 / 195	68 / 177	55 / 161	44 / 147	- / 134	- / 123	67 / 81	56 / 74	46 / 67	- / 61	- / 56
	10.625"	20	54 / 144	42 / 133	- / 121	- / 110	- / 99	- / 90	43 / 94	- / 86	- / 79	- / 72	- / 66
	50 PSF	18	66 / 140	52 / 127	41 / 114	- / 104	- / 94	- / 85	51 / 93	41 / 85	- / 78	- / 71	- / 65
	1.68 cu.yd/(100sq.ft)	16	79 / 174	64 / 157	51 / 143	40 / 130	- / 118	- / 108	62 / 92	51 / 84	42 / 77	- / 70	- / 64
	6x6 - W1.4 x W1.4	14	93 / 212	77 / 193	62 / 176	50 / 160	- / 146	- / 134	75 / 91	63 / 83	53 / 76	43 / 69	- / 63
	11.125"	20	65 / 155	51 / 144	40 / 131	- / 119	- / 108	- / 98	52 / 105	42 / 96	- / 88	- / 81	- / 74
	54 PSF	18	78 / 176	63 / 168	50 / 161	- / 154	- / 148	- / 136	62 / 104	51 / 95	41 / 87	- / 80	- / 73
	1.83 cu.yd/(100sq.ft)	16	91 / 192	75 / 174	60 / 158	47 / 143	- / 131	- / 119	73 / 103	61 / 94	50 / 86	41 / 79	- / 72
	6x6 - W2.0 x W2.0	14	107 / 232	88 / 211	72 / 192	58 / 175	46 / 160	- / 146	87 / 102	73 / 93	61 / 85	51 / 78	41 / 71
	11.625"	20	77 / 165	61 / 156	48 / 141	- / 128	- / 116	- / 105	62 / 117	51 / 107	42 / 98	- / 90	- / 82
	59 PSF	18	92 / 188	74 / 180	60 / 172	47 / 165	- / 158	- / 147	73 / 116	61 / 106	50 / 97	40 / 89	- / 81
	1.99 cu.yd/(100sq.ft)	16	107 / 211	87 / 192	71 / 174	57 / 159	45 / 145	- / 132	86 / 115	72 / 105	60 / 96	49 / 88	40 / 80
	6x6 - W2.0 x W2.0	14	123 / 253	102 / 230	84 / 210	68 / 192	55 / 175	43 / 161	100 / 114	85 / 104	72 / 95	60 / 87	50 / 79
	12.125"	20	90 / 176	73 / 167	58 / 151	45 / 137	- / 124	- / 112	74 / 124	62 / 118	51 / 108	41 / 99	- / 91
	64 PSF	18	107 / 201	87 / 192	71 / 183	56 / 175	44 / 168	- / 158	86 / 128	72 / 117	62 / 108	51 / 99	42 / 90
	2.14 cu.yd/(100sq.ft)	16	124 / 234	102 / 223	84 / 213	68 / 203	54 / 195	42 / 187	101 / 127	85 / 116	72 / 107	59 / 98	49 / 89
	4x4 - W1.4 x W1.4	14	142 / 277	118 / 252	98 / 230	80 / 210	65 / 192	52 / 176	117 / 126	100 / 115	85 / 105	71 / 96	60 / 88
	12.625"	20	107 / 187	87 / 178	70 / 161	55 / 146	42 / 132	- / 120	88 / 126	74 / 121	62 / 116	50 / 110	40 / 101
	68 PSF	18	125 / 213	103 / 203	84 / 194	68 / 186	54 / 179	41 / 169	104 / 141	89 / 129	75 / 119	62 / 109	51 / 100
	2.3 cu.yd/(100sq.ft)	16	143 / 248	119 / 237	98 / 226	80 / 216	65 / 207	51 / 198	118 / 140	100 / 128	85 / 118	71 / 108	59 / 99
	6x6 - W2.9 x W2.9	14	164 / 304	137 / 276	114 / 252	94 / 230	77 / 211	62 / 193	136 / 139	117 / 127	100 / 117	85 / 107	71 / 98

NOTES:

1. The slab weight has been subtracted from the loads listed above.
2. Uniform superimposed service loads were determined by dividing the superimposed LRFD design loads controlled by strength by the load factor of 1.6.
3. Negative moment (top) reinforcement is required over supports of continuous slabs. See negative reinforcement table for details.
4. Continuous spans should be approximately equal with the span length difference not exceeding 20%. Contact New Millennium for unequal span slab design.
5. Where two maximum uniform superimposed service loads are shown, first load is for slabs with no top reinforcing steel within the slab span. Second load is for slabs with top reinforcing steel in the amount of not less than $1.17A_s$ (where A_s is deck area) along the entire slab span for long-term deflection control. This amount of top reinforcing steel results in the long-term deflection coefficient of 0.6.
6. Where only one load is shown, the load is for slabs without top reinforcement. Addition of top reinforcement does not affect the maximum service loads in those cases.
7. Composite slab service stage calculations are based on ANSI/SDI C-2017 and ASCE 3-91.
8. Composite slab service stage tables are based on deflection limits of L/360 under live load and L/240 under total load after attachment of non-structural components. Long-term deflection has been taken into consideration.

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Deep-Dek® Composite 7.5

MAXIMUM UNIFORM SUPERIMPOSED SERVICE LOADS

4000 PSI NORMAL-WEIGHT AND LIGHTWEIGHT CONCRETE

	Total Slab Depth (in.)	Gage	Max. Service Stage Spans (ft-in.)					
			LL=40 psf; SDL=20 psf (88 psf LRFD load)			LL=100 psf; SDL=5 psf (166 psf LRFD load)		
			Single Span	Continuous Span		Single Span	Continuous Span	
				End	Interior		End	Interior
4000 PSI Normal-Weight Concrete (145 PCF)	10.125	20	26' - 4" / 32' - 5"	32' - 6" / 34' - 9"	36' - 7"	25' - 1" / 26' - 8"	28' - 7"	30' - 2"
		18	27' - 1" / 31' - 6"	33' - 6" / 34' - 7"	36' - 5"	25' - 11" / 25' - 11"	28' - 6"	30' - 0"
		16	27' - 10" / 34' - 4"	34' - 5"	36' - 3"	26' - 8" / 28' - 4"	28' - 5"	29' - 11"
		14	28' - 9" / 37' - 3"	34' - 2"	36' - 1"	27' - 6" / 30' - 10"	28' - 4"	29' - 10"
	10.625	20	27' - 1" / 33' - 1"	33' - 5" / 35' - 10"	37' - 9"	25' - 11" / 27' - 5"	29' - 8"	31' - 4"
		18	27' - 10" / 32' - 5"	34' - 5" / 35' - 8"	37' - 7"	26' - 8" / 26' - 11"	29' - 7"	31' - 3"
		16	28' - 7" / 35' - 2"	35' - 4" / 35' - 6"	37' - 5"	27' - 5" / 29' - 3"	29' - 6"	31' - 2"
		14	29' - 4" / 38' - 1"	35' - 4"	37' - 3"	28' - 2" / 31' - 8"	29' - 5"	31' - 0"
	11.125	20	27' - 10" / 33' - 9"	34' - 5" / 36' - 11"	38' - 11"	26' - 8" / 28' - 2"	30' - 10"	32' - 6"
		18	28' - 7" / 36' - 10"	35' - 4" / 36' - 9"	38' - 9"	27' - 5" / 31' - 9"	30' - 9"	32' - 5"
		16	29' - 4" / 36' - 2"	36' - 3" / 36' - 7"	38' - 7"	28' - 2" / 30' - 3"	30' - 8"	32' - 3"
		14	30' - 2" / 38' - 11"	36' - 5"	38' - 5"	28' - 11" / 32' - 7"	30' - 6"	32' - 2"
	11.625	20	28' - 6" / 34' - 4"	35' - 3" / 38' - 0"	40' - 0"	27' - 5" / 28' - 10"	31' - 11"	33' - 7"
		18	29' - 4" / 37' - 9"	36' - 3" / 37' - 10"	39' - 11"	28' - 2" / 32' - 7"	31' - 10"	33' - 6"
		16	30' - 1" / 37' - 2"	37' - 2" / 37' - 8"	39' - 9"	28' - 11" / 31' - 3"	31' - 8"	33' - 5"
		14	30' - 11" / 39' - 11"	37' - 6"	39' - 6"	29' - 9" / 33' - 7"	31' - 7"	33' - 4"
	12.125	20	29' - 3" / 34' - 10"	36' - 2" / 39' - 0"	41' - 2"	28' - 2" / 29' - 5"	32' - 11"	34' - 9"
		18	30' - 1" / 38' - 8"	37' - 2" / 38' - 10"	41' - 0"	28' - 11" / 33' - 3"	32' - 10"	34' - 7"
		16	30' - 10" / 40' - 4"	38' - 1" / 38' - 9"	40' - 10"	29' - 8" / 36' - 8"	32' - 9"	34' - 6"
		14	31' - 8" / 40' - 11"	38' - 6"	40' - 7"	30' - 6" / 34' - 7"	32' - 8"	34' - 5"
	12.625	20	30' - 0" / 35' - 4"	37' - 1" / 40' - 0"	42' - 2"	28' - 11" / 30' - 0"	34' - 0"	35' - 10"
		18	30' - 10" / 39' - 7"	38' - 1" / 39' - 11"	42' - 0"	29' - 9" / 33' - 11"	33' - 10"	35' - 8"
		16	31' - 7" / 41' - 3"	39' - 1" / 39' - 9"	41' - 11"	30' - 6" / 37' - 5"	33' - 9"	35' - 7"
		14	32' - 5" / 41' - 11"	39' - 7"	41' - 8"	31' - 3" / 35' - 8"	33' - 8"	35' - 6"
4000 PSI Lightweight Concrete (110 PCF)	10.125	20	25' - 5" / 32' - 7"	31' - 5" / 36' - 8"	37' - 8" / 38' - 8"	24' - 1" / 27' - 8"	29' - 8"	31' - 3"
		18	26' - 5" / 33' - 3"	32' - 7" / 36' - 6"	38' - 6"	25' - 0" / 26' - 11"	29' - 7"	31' - 2"
		16	27' - 4" / 36' - 0"	33' - 9" / 36' - 4"	38' - 4"	25' - 11" / 29' - 5"	29' - 6"	31' - 1"
		14	28' - 4" / 37' - 9"	35' - 0" / 36' - 1"	38' - 1"	26' - 11" / 31' - 11"	29' - 4"	30' - 11"
	10.625	20	26' - 1" / 33' - 8"	32' - 3" / 38' - 0"	38' - 9" / 40' - 1"	24' - 10" / 28' - 7"	30' - 8" / 30' - 11"	32' - 7"
		18	27' - 0" / 34' - 4"	33' - 5" / 37' - 10"	39' - 10"	25' - 9" / 28' - 0"	30' - 10"	32' - 6"
		16	27' - 11" / 37' - 2"	34' - 6" / 37' - 8"	39' - 8"	26' - 7" / 30' - 5"	30' - 9"	32' - 4"
		14	28' - 10" / 38' - 11"	35' - 8" / 37' - 5"	39' - 5"	27' - 6" / 32' - 11"	30' - 7"	32' - 3"
	11.125	20	26' - 11" / 34' - 7"	33' - 3" / 39' - 3"	39' - 11" / 41' - 5"	25' - 7" / 29' - 4"	31' - 8" / 32' - 2"	33' - 10"
		18	27' - 10" / 36' - 7"	34' - 4" / 39' - 1"	41' - 3"	26' - 6" / 32' - 11"	32' - 0"	33' - 9"
		16	28' - 8" / 38' - 4"	35' - 4" / 38' - 11"	41' - 0"	27' - 4" / 31' - 6"	31' - 11"	33' - 8"
		14	29' - 6" / 40' - 2"	36' - 6" / 38' - 8"	40' - 9"	28' - 2" / 34' - 0"	31' - 10"	33' - 6"
	11.625	20	27' - 7" / 35' - 6"	34' - 2" / 40' - 6"	41' - 0" / 42' - 9"	26' - 4" / 30' - 2"	32' - 7" / 33' - 4"	35' - 2"
		18	28' - 6" / 37' - 6"	35' - 3" / 40' - 4"	42' - 4" / 42' - 6"	27' - 3" / 33' - 10"	33' - 3"	35' - 0"
		16	29' - 4" / 39' - 6"	36' - 3" / 40' - 2"	42' - 4"	28' - 1" / 32' - 8"	33' - 2"	34' - 11"
		14	30' - 3" / 41' - 5"	37' - 4" / 39' - 11"	42' - 1"	28' - 11" / 35' - 1"	33' - 0"	34' - 9"
	12.125	20	28' - 4" / 36' - 5"	35' - 0" / 41' - 9"	42' - 0" / 44' - 0"	27' - 1" / 30' - 10"	33' - 6" / 34' - 6"	36' - 5"
		18	29' - 3" / 38' - 6"	36' - 2" / 41' - 7"	43' - 5" / 43' - 10"	28' - 0" / 34' - 10"	34' - 5"	36' - 3"
		16	30' - 1" / 40' - 5"	37' - 3" / 41' - 4"	43' - 7"	28' - 10" / 36' - 7"	34' - 4"	36' - 2"
		14	31' - 0" / 42' - 7"	38' - 3" / 41' - 2"	43' - 4"	29' - 8" / 36' - 3"	34' - 2"	36' - 0"
	12.625	20	29' - 1" / 37' - 4"	36' - 0" / 42' - 11"	43' - 2" / 45' - 3"	27' - 10" / 31' - 6"	34' - 5" / 35' - 8"	37' - 7"
		18	30' - 1" / 39' - 5"	37' - 2" / 42' - 9"	44' - 7" / 45' - 1"	28' - 9" / 35' - 8"	35' - 7" / 35' - 7"	37' - 6"
		16	30' - 11" / 41' - 5"	38' - 2" / 42' - 7"	44' - 10"	29' - 7" / 37' - 7"	35' - 5"	37' - 4"
		14	31' - 9" / 43' - 6"	39' - 3" / 42' - 4"	44' - 7"	30' - 6" / 37' - 5"	35' - 4"	37' - 3"

NOTES:

1. Negative moment (top) reinforcement is required over supports of continuous spans.
2. Continuous spans should be approximately equal with the span length difference not exceeding 20%. Contact New Millennium for unequal span slab design.
3. Where two maximum service stage spans are shown, first span is for slabs with no top reinforcing steel within the slab span. Second span is for slabs with top reinforcing steel in the amount of not less than $1.17A_s$ (where A_s is deck area) along the slab span for long-term deflection control. This amount of top reinforcing steel results in the long-term deflection coefficient of 0.6.
4. Where one span is shown, the maximum span is for slabs without top reinforcing steel. Addition of top reinforcing steel does not affect the maximum spans in those cases.
7. Composite slab service stage calculations are based on ANSI/SDI C-2017 and ASCE 3-91.
8. Composite slab service stage tables are based on deflection limits of L/360 under live load and L/240 under total load after attachment of non-structural components. Long-term deflection has been taken into consideration.

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SUGGESTED REINFORCING STEEL OVER SUPPORTS FOR CONTINUOUS SPANS

4000 PSI NORMAL-WEIGHT AND LIGHTWEIGHT CONCRETE

	Total Slab Depth (in.)	Slab Span (ft)	LL=40 psf, SDL=20 psf (88 psf LRFD factored load)			LL=100 psf, SDL=5 psf (166 psf LRFD factored load)		
			$-WL^2/9$	$-WL^2/10$	$-WL^2/11$	$-WL^2/9$	$-WL^2/10$	$-WL^2/11$
4000 PSI Normal-Weight Concrete (145 PCF)	10.125	30	5@7	5@8	5@9	-	-	5@6
		32	5@6	5@7	5@8	-	-	-
		34	-	5@6	5@7	-	-	-
		36	-	-	5@6	-	-	-
	10.625	30	5@8	5@9	5@10	-	6@8	5@6
		32	5@6	5@7	5@8	-	-	-
		34	5@6	5@6	5@7	-	-	-
		36	-	6@8	5@6	-	-	-
	11.125	30	5@8	5@9	5@9	6@7	5@6	5@6
		32	5@7	5@8	5@8	-	-	6@8
		34	5@6	5@6	5@7	-	-	-
		36	-	5@6	5@6	-	-	-
	11.625	30	5@8	5@9	5@9	6@7	5@6	5@7
		32	5@7	5@8	5@9	-	6@7	5@6
		34	5@6	5@7	5@7	-	-	6@7
		36	6@7	5@6	5@6	-	-	-
	12.125	30	5@8	5@8	5@8	6@8	5@6	5@7
		32	5@7	5@8	5@8	6@7	6@7	5@6
		34	5@6	5@7	5@8	-	-	6@7
		36	6@7	5@6	5@7	-	-	-
	12.625	30	5@7	5@8	5@8	6@8	5@6	5@7
		32	5@7	5@8	5@8	6@7	6@8	5@6
		34	5@6	5@7	5@8	-	6@7	6@7
		36	6@8	5@6	5@7	-	-	6@6
4000 PSI Lightweight Concrete (110 PCF)	10.125	30	5@8	5@10	5@10	-	5@6	5@6
		32	5@7	5@8	5@9	-	-	-
		34	5@6	5@7	5@8	-	-	-
		36	-	5@6	5@7	-	-	-
	10.625	30	5@9	5@10	5@10	6@8	5@6	5@7
		32	5@7	5@8	5@9	-	-	5@6
		34	5@6	5@7	5@8	-	-	-
		36	5@6	5@6	5@7	-	-	-
	11.125	30	5@9	5@9	5@9	5@6	5@6	5@7
		32	5@8	5@9	5@9	-	6@8	5@6
		34	5@7	5@8	5@8	-	-	6@7
		36	5@6	5@7	5@7	-	-	-
	11.625	30	5@8	5@9	5@9	5@6	5@7	5@7
		32	5@8	5@9	5@9	6@7	5@6	5@6
		34	5@7	5@8	5@9	-	6@7	6@8
		36	5@6	5@7	5@8	-	-	4@3
	12.125	30	5@8	5@8	5@8	5@6	5@7	5@8
		32	5@8	5@8	5@8	6@7	5@6	5@7
		34	5@7	5@8	5@8	-	6@7	5@6
		36	5@6	5@7	5@8	-	-	6@7
	12.625	30	5@7	5@8	5@8	5@6	5@7	5@8
		32	5@7	5@8	5@8	6@8	5@6	5@7
		34	5@7	5@8	5@8	6@7	6@7	5@6
		36	5@6	5@7	5@8	-	6@6	6@7

NOTES:

1. Continuous spans should be approximately equal with the span length difference not exceeding 20%. Slab span can be taken as an average of the adjacent spans. Contact New Millennium for unequal span slab design.
2. Reinforcing over supports should extend a minimum of 0.3 x L on both sides of the supports (L is the longer of the two adjacent spans).
3. Table is based on 60 ksi reinforcing bars and 0.75 in. concrete cover for reinforcing steel over supports.
4. The $-WL^2/9$ columns apply to the interior support of the slab continuous over two spans; the $-WL^2/10$ columns apply to first interior support of the slab continuous over more than two spans; the $-WL^2/11$ columns apply to other interior supports of the slab continuous over more than two spans.

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