VULCRAFT®

STEEL JOIST & JOIST GIRDER SYSTEMS

v2017.1J

NUCOR®
VULCRAFT/VERCO GROUP

Better Partners. Better Products.
Better Outcomes.™

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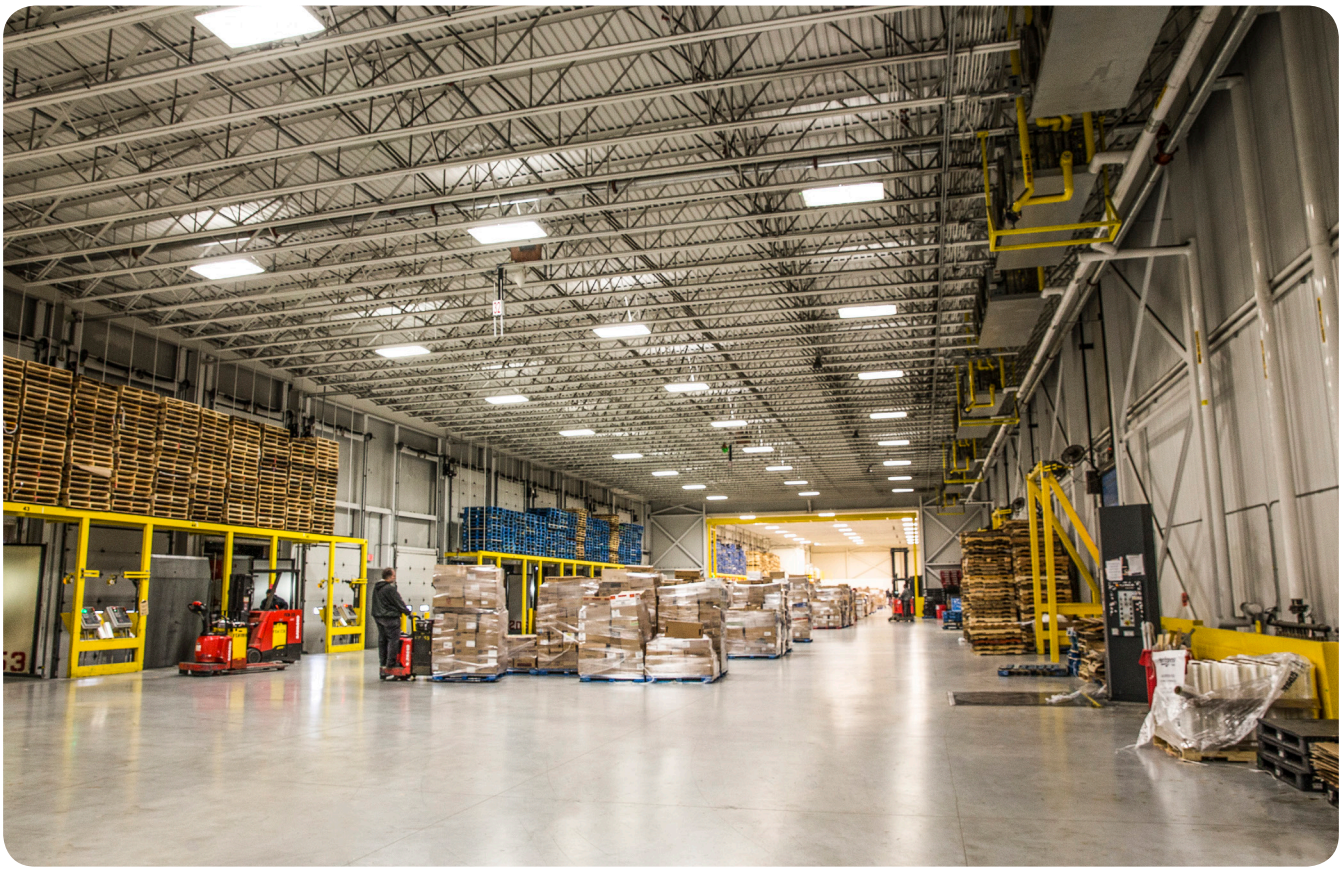

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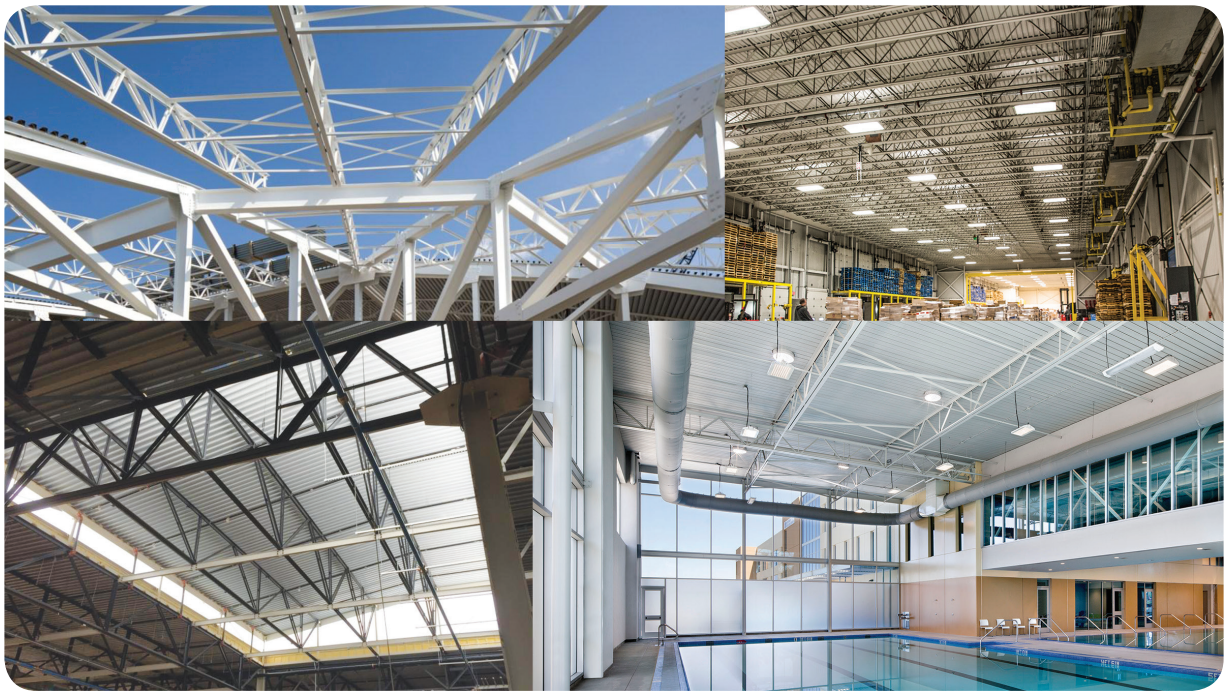
Pages identified with the Steel Joist Institute (SJI) logo (as shown below) are a reproduction of the SJI's 44th EDITION, STANDARD SPECIFICATIONS, Load Tables and Weight Tables for Steel Joists and Joist Girders, provided in this document by Nucor – Vulcraft / Verco Group.



Our Mission

NUCOR IS MADE UP OF MORE THAN 20,000 TEAMMATES WHOSE GOAL IS TO **TAKE CARE OF OUR CUSTOMERS**. WE ARE ACCOMPLISHING THIS BY BEING, **THE SAFEST, HIGHEST QUALITY, LOWEST COST, MOST PRODUCTIVE** and **MOST PROFITABLE**, STEEL AND STEEL PRODUCTS COMPANY IN THE WORLD. WE ARE COMMITTED TO DOING THIS WHILE BEING **CULTURAL AND ENVIRONMENTAL STEWARDS** IN OUR COMMUNITIES WHERE WE LIVE AND WORK. WE ARE SUCCEEDING BY **WORKING TOGETHER**.

Taking care of our customers means all of our customers: Our Employees, Our Shareholders, and the people who purchase and use our products.

Vulcraft Advantage
Better Partners, Better Products, Better Outcomes

Better Partners

It is the level of commitment to our customers that really sets Vulcraft and Verco apart. Our partnership ensures that they win more jobs and complete their work on time and within budget. We know our customers and we understand their business. As a result, our relationships flourish, helping both us and our customers become more profitable.

Better Products

We are proud to be the unrivaled industry leader in product quality, on-time delivery, breadth of offerings, and innovative solutions. We are defined by our unwavering commitment to excellence, and our customers can expect consistent, reliable products every time. They understand that when they work with Vulcraft, they're getting the best products in the business.

Better Outcomes

Our superior product offerings, coupled with a relentless desire to provide an unmatched customer experience through every phase of a project, results in greater success for our customers, which means more jobs, more money and more assurance. Every time. Because ultimately, we aren't just providing a product or service, we're providing a better outcome.

A Word About Quality

In the manufacture of open web steel joists and Joist Girders, there can be no compromise on quality. Your business depends on it. Our reputation and success depends on it. As the largest manufacturer of open web steel joists and Joist Girders in North America, a lot of buildings and a lot of people depend on Vulcraft for consistently high standards of quality demonstrated through reliable performance.

In the manufacture of open web steel joists and Joist Girders, Vulcraft uses high quality steel. Welding to exact specifications is the key to making structurally sound joists and is the most critical step in the entire process. All Vulcraft welders are certified in accordance with the standards of the American Welding Society. All welds are in accordance with the welding criteria specified by the Steel Joist Institute and joists and Joist Girders are manufactured to meet the loading indicated by the specifying professional.

To further ensure the quality of every weld, every Vulcraft Quality Assurance Inspector is also certified to these same high standards. Furthermore, the Quality Assurance Supervisor and all Quality Assurance Inspectors are a part of our Engineering Department and ultimately report to the Engineering Manager. To further manage quality assurance in our manufacturing processes, Vulcraft employs an ongoing program of mechanical testing that includes full scale load tests at our facilities.

As the leading Manufacturer of open web steel joists and Joist Girders in North America, Vulcraft's reputation depends on successfully managed Quality Assurance programs. That is why Quality is important at Vulcraft. You have our word on it.

JOIST SELECTION FLOW CHART

SPAN

↓

FIRE RESISTANCE (MIN. MEMBER SIZES - SJI Technical Digest #10)

↓

MAX/MIN JOIST DEPTH

↓

SPACING

↓

SEAT DEPTH

↓

UNIFORM LOAD

-DL
-LL
-COLLATERAL DL

↓

UPLIFT LOADING (SJI Technical Digest #6)

↓

CONCENTRATED LOADS

-WALL SCREENS (NO OUT OF PLANE LOADS)
-RTU'S
-BRACING LOADS

↓

ZONE LOADS

-DRIFT (SNOW)
-MOVABLE PARTITIONS

↓

OTHER LOADS

-DRAG OR COLLECTOR LOADS
-PONDING (SJI Technical Digest #3)
-END MOMENTS (SJI Technical Digest #11, JG MOMENT CONNECTIONS DESIGN TOOL)
-VIBRATION (AISC DG#11, SJI Technical Digest #5, FloorVibe)

At Vulcraft, we are proud to be one of the oldest operating divisions of Nucor Corporation (www.nucor.com). Nucor offers steel products that range from bar grating to the heaviest hot rolled beam sections produced in North America.

Through implementation and refinement of best practices, we continue to grow as a company. Nucor's pay-for-performance policy reflects a commitment to manufacturing the highest quality products while maintaining a safety record that is the envy of the industry.

Nucor serves the agricultural, automotive, construction, energy, furniture, machinery, metal building, railroad, recreational equipment, shipbuilding, heavy truck, and trailer industries. Which is to say, we are integral to North American industry.

Nucor and its subsidiary divisions manufacture the following:

- Bars (carbon and alloy steel)
- Sheets/Flatrolled
- Open Web Steel Joists
- Steel Decks
- Cold finished steel
- Metal building systems
- Steel Grating
- Wire and wire mesh
- Conduit
- Beams
- Plates
- Joist Girders
- Fabricated concrete reinforcing steel
- Steel fasteners
- Piling
- Expanded metal
- Tube

Vulcraft (www.vulcraft.com) is the largest producer of open web steel joist and Joist Girders in North America. Vulcraft was founded in 1946 in Florence, South Carolina as an industrial steel fabrication facility and in 1954 began exclusively manufacturing long span and short span open web steel joists. It became a member of the Steel Joist Institute in May 1959 and was purchased by Nuclear Corporation of America in September 1962. Since then Vulcraft continued to grow with facilities in Norfolk, Nebraska (1964), Fort Payne, Alabama (1967), Grapeland, Texas (1967), St. Joe, Indiana (1972), Brigham City, Utah (1981), Chemung, New York (2000), Verco Deck Phoenix, Arizona, Fontana, California, Antioch, California (2006), Nucor Detailing Center, Nebraska (2009), Vulcraft Canada, Ontario (2016) and Vulcraft Canada, Alberta (2017).

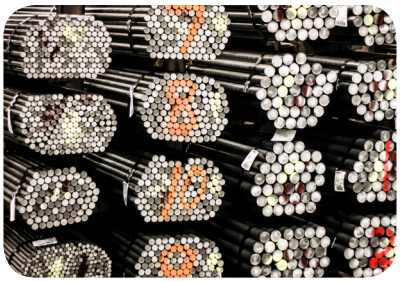
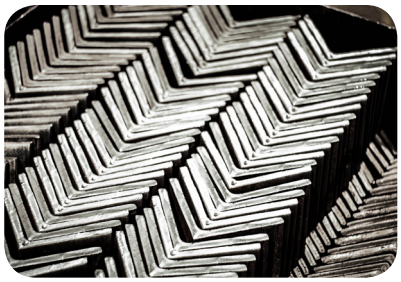
In addition to open web steel joist and Joist Girders Vulcraft manufactures the following products:

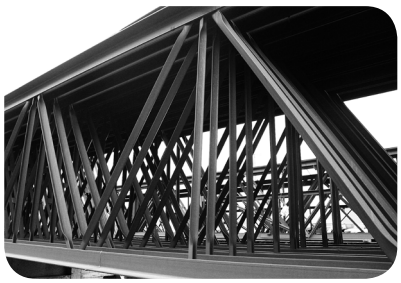
- Roof Deck
  - -1.5B, BI, BA and BIA
  - -1.5F
  - -3N, NI, NA, NIA
  - -PLN3 or N3
  - -Deep VERCOR™
  - -1.5 Cellular
  - -2.0D, DA
  - -1.5PLB and HSB-36
  - -1.5A
  - -PLN or N-24
  - -1.0 E
  - -Shallow VERCOR™
  - -3 Cellular
  - -3.5D, DA

- Non-Composite Floor Deck
  - -0.6C, CSV Conform
  - -1.0C, CSV Conform
  - -1.3C, CSV Conform
  - -2C Conform
  - -Shallow VERCOR
  - -Deep VERCOR
  - -1.5C Conform
  - -3C Conform

- Composite Floor Deck
  - -1.5VL, VLI, VLR
  - -2VLI, PLW2, W2 FORMLOK
  - -3VLI, PLN, N FORMLOK
  - -PLN3 or N3 FORMLOK
  - -1.5PLB, B FORMLOK
  - -PLW3, W3 FORMLOK

- Special Profile Open Web Steel Joists
  - -Single Pitch
  - -Double Pitch
  - -Multiple Pitch
  - -Bowstring
  - -Scissors
  - -Arch Chord
- Ecospan Composite Floor System
- CORTEK Stair Core System
- Grating Fabrication
- Steel Fabrication



BIM

Vulcraft is pairing their proven track record of quality and service with the future of 3D modeling to give fabricators, erectors, general contractors, engineers and architects an edge over competitors in the market. Providing customers with a detailed model that can display a replica of their building, BIM leads to confidence and peace of mind for the life cycle of the project.

Vulcraft's distinct advantages include multiple platforms, including Revit®, Tekla, and SDS/2, designed web layouts, bridging, specialty joist profiles and seat profiles with slots.

NuBIM® for Revit
Our NuBIM for Revit add-in allows users to specify and model all parallel chord joists and Joist Girders available from Vulcraft as well as a number of common special profile joists, Ecospan and composite joists. Users have the ability to apply a variety of common loading conditions to all joists, as well as create load tables and diagrams. All Vulcraft and Verco deck profiles can be added to standard Revit floor and roof components through the add-in also. When your project is complete, a file can be exported containing all information related to our products, which can be sent to your Vulcraft sales rep to aid in the quoting and detailing process.

NuBIM® for Tekla
With the NuBIM for Tekla Plug-In you can now build and manage projects more effectively within Tekla Structures. Vulcraft's Joist Plug-In for Tekla Structures enables you to specify Vulcraft joists during the creation of the building model. The joist parameters from the model can then be exported directly into Vulcraft's Detailing and Design Programs.

Designed Joist
When viewing the BIM provided by Vulcraft engineers, replicas of the steel joists are laid into each aspect of the project. Simple lines, and inexplicable renderings have been replaced with steel joists crafted by Vulcraft to represent the "as-built" product that will be delivered to job sites. Joists manufactured by Vulcraft can be supplied in BIM as they are actually built and put into the field. While viewing the joists in BIM, contractors and other parties have the advantage of reviewing the actual size of the member and panel layouts.

Bridging Components
To further aid the design and construction of every aspect, Vulcraft has developed a bridging component for BIM to accurately depict all structural elements. Not only does the duct work, wiring and piping have to weave around the joists, but also the bridging elements. Having these elements in place leads to decreased errors on the job site and saves valuable time and effort by specialty contractors.

Specialty Joist Profiles
Vulcraft engineers and designers have taken joists to another level offering specialty joist profiles such as bowstrings, arches, scissors joists, double pitch, single pitch, and gable joists. Eliminating guesswork around specialty profiles reduces on-site error, saving money and valuable time and effort. Utilizing these specialty joists in BIM also enhances design review with customers.

Linking Components
Vulcraft can provide a number of things in BIM to benefit individual users. However, when used with an Integrated Project Delivery (IPD) system, BIM leverages the power of modeling to facilitate collaborative decision-making. IPD brings key construction management, fabricators and product manufacturing expertise together with design professionals and the owner earlier in the process. This produces a design that is optimized for quality, aesthetics, constructability, affordability, timeliness and seamless flow into lifecycle management.

To download Vulcraft's BIM tools and for additional information on Vulcraft's BIM capablities, please visit:
http://www.vulcraft.com/bim-technology

Vulcraft/Verco Group –
Vulcraft - Florence, SC; Norfolk, NE; Brigham City, UT; Grapeland, TX; St. Joe, IN; Fort Payne, AL; Chemung, NY; Nisku, AB; Ancaster, ON
Verco Decking, Inc. – Phoenix, AZ; Fontana, CA; Antioch, CA

Joists/Structural Products - The bar steel for Vulcraft joists is typically obtained from one of the ten (10) Nucor bar mills. That would mean that the average recycled content percentage for the Vulcraft group is 94.6%. The post- and pre-consumer recycled content have been calculated to be 83.0% and 11.7% respectively. Specific project information is available from facility representatives.

Deck – Steel for decking produced by Vulcraft facilities is typically obtained from one of the seven (7) Nucor sheet mills. That would mean that the Vulcraft deck products contain 60.6% recycled steel. The post- and pre-consumer recycled content were calculated to be 31.7% and 28.9% respectively. Verco Decking, Inc. may obtain steel from sources outside of Nucor that may contain lower amounts of recycled content. Specific product information regarding Verco Decking, Inc., and individual Vulcraft locations is available from facility representatives.

LEED Information

Nucor can provide a variety of documentation to help projects satisfy LEED credit requirements. Nucor publishes a Corporate Sustainability Report bi-annually which can be found here - http://nucor.com/responsibility/sustainability/performance/.

We continue to develop product-specific Environmental Product Declarations and Health Product Declarations for a variety of product groups. Nucor has participated in multiple industry-wide Environmental Product Declarations which can be used for Nucor products. Additionally Nucor will work individually with any customer requiring product life cycle inventory data or other environmental footprint information.

Additional LEED and/or other environmental information regarding specific Nucor Corporation products for a customer's specific order is available from facility representatives or the corporate office. A current contact list can be found here - http://nucor.com/media/Nucor_LEED_CONTACTS.pdf.
Additional industry information is available online through the Steel Recycling Institute at www.recycle-steel.org.

Regional Materials – LEED 2009 Credit 5; LEED v4 Local Sourcing

Nucor tracks the origin of scrap shipments to our mills. Nucor can approximate the amount of scrap recovered from any project site region. Nucor owns steel and steel products manufacturing facilities throughout the US that are often within 500 miles of the project site. Please refer to the LEED Contact List (http://nucor.com/responsibility/sustainability/compliance/leed/, then click on "LEED Contact"), and contact the specific Nucor representative at the facility directly.

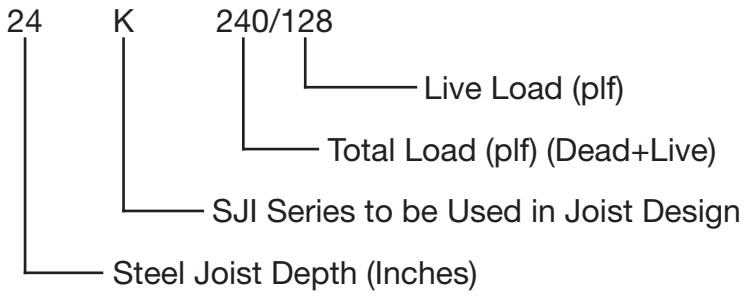
Standard Steel Joist Institute open web steel joists are designed for simple span uniform loads which result in linearly sloped shear diagram for web forces and a parabolic moment diagram for chord forces. Projects often require that the open web joist support loads that are non-uniform or concentrated loads which alter the shape of the shear and moment diagrams. When specifying joists for these loads, the specifying professional should first attempt to specify a larger standard joist or possibly a KCS series joist (K-series Constant Shear). The interior webs for KCS joists are designed for 100% stress reversal and the chords are designed for a flat positive bending moment. The specified joist must have adequate moment and shear resistance throughout the entire length of the joist. To aid the specifying professional, Vulcraft has developed a free Joist Analysis Aid available at www.vulcraft.com. The SJI Code of Standard Practice Section 2.4 provides several options for Specifying Joist Design Loads.

When it becomes unrealistic to select a standard joist to support all the applied loads, Vulcraft will design the open web joists for the loads selected by the specifying professional (Option 5 in the SJI Code of Standard Practice Section 2.4). When choosing this option, it is crucial that the joist design loads be clearly presented with load diagrams or joist schedules so that Vulcraft can estimate and design the joists for the project. Examples of open web joist load diagrams are provided in the SJI Code of Standard Practice. To avoid confusion when using load diagrams, the specifier should avoid indicating web members. This allows Vulcraft to choose an efficient web configuration for the open web joist considering manufacturing efficiency and load carrying capability without questioning the intent of the indicated web members.

Load Combinations

For projects that have wind or seismic loads, it is important that Vulcraft be given the dead load and live load to properly design the open web joist for the building code required load combinations. The traditional SJI joist designation (i.e. 24K4) does not provide this information. The SJI joist designation specifies the total allowable uniform load for a given span and the uniform load which will cause a deflection of L/360 for that span. This does not provide Vulcraft with the actual loads breakdown necessary for the required building code combinations.

As an alternative to the specification of SJI joist designations, it is possible to specify joists using the uniform load per foot designation. This designation follows the format show here:



As can be seen, this designation clearly provides the breakdown necessary for the proper application of the building code required load combinations. In addition, for LH and DLH joists it allows specification of depths not included in the standard load tables. The total load / live load format can also be used for specification of panel point loads on Joist Girders and for the specification of concentrated loads applied to the joists.
The Open Web Joist / Joist Girder table on the following page gives examples of communicating the joist design information using either of the methods described above.

Example Open Web Steel Joist / Joist Girder Table

Mark	Designation[1]	Loading (plf)[2]			Wind Pressure[5]		Add-Load[6] TL/LL (kips)	Bend-Check[7] Load		Top Chord Axial			I_j Minimum Moment of Inertia (in^4)	Remarks
	Joist: (TL/LL in plf) Girders: (TL/LL in kips)	DL (plf)[3]	LL (plf)[4]	Lr/S/R (plf)	Downward W (+) plf	Net Uplift W(-) plf		TC (kips)	BC (kips)	W Wind (kips)	E Seismic (kips)	E_m Seismic (kips)		
J1	28K7	95 for W&E	200 for defl	180		160	0.5/0.0			15	18.5			
J2	28K7	95 for W&E				160				15	18.2	30		
T2	32LH224/128					180				29	23.4			
T2	32LH224/128					160	1.0/1.0	0.5		15	23.4			
T3	32LH224/128					160				15	25.2	50		
T4	32LH09	95				160				15	25.2	50		
G1	30G5N7.1K/3.4K					250				25	125			
G2	30G5N7.1K/3.4K					25				25	125	200		
G3	48G6N11.2K/6.0K					300	2.5	1	0.5	27	125			
G4	48G6N11.2K/6.0K					300				27	125			
G5	52G7N14.4K/6.3K					500				30	125			
G6	52G7N14.4K/6.3K					500				30	125	250		

1 Joist Designations are to include all uniform gravity loads.

2 Loading values are not required if designation loading values are correct for both deflection and load combinations.

3 When Standard SJI Designations are used the Dead Load is required for load combinations with wind or seismic.

4 LL (plf) are to be used for deflection and load combinations if Lr/S/R is not specified, If Lr/S/R is specified that value will be used for load combinations.

5 When no Wind Load is specified it is assumed that it does not govern.

6 Add-Load as defined in the SJI Code of Standard Practice

7 Bend-Check Load as defined in the SJI Code of Standard Practice

8 I_j is the joist gross geometric moment of inertia (not reduced for shear deformation)

Wind Uplift

Net Uplift

It is the responsibility of the specifying professional to determine the net uplift required for joist and Joist Girder design (Reference SJI Specification 5.12, SJI Code of Standard Practice Section 2.10 and SJI Technical Digest 6, "Structural Design of Steel Joists to Resist Uplift Loads"). While it may appear as an easy calculation, it is up to the specifying professional to determine the amount of dead load available to resist wind uplift loading. As an example, a project has a 26 psf dead load for joist design that includes 10 psf collateral load for future equipment. Because the collateral load may not actual be present on all joists, the design professional may determine that it is appropriate to only use a dead load = 26.0 psf - 10 psf = 16 psf in the load combinations with wind uplift loading. When specifying wind uplift loads on the structural plans, if the gross wind uplift load is specified, the specifying professional needs to also call out the dead load D to be used in the load combinations with wind uplift.

Net Uplift on 'K' Series Joist

Typically, the end web of 'K' series joists is a round bar which allows Vulcraft to manufacture these joists with 2 ½" deep bearing seats while maintaining the proper working point for the intersection of the end web and top chord. When net uplift is a design consideration the end web (a tension member under gravity loads) becomes a compression member. These round bars have limited capacity to resist compression and it may become necessary to use double angles. Should this occur it is no longer possible to fit the end webs and the bearing seats into the 2 ½" bearing depth and maintain the correct working point. The table below indicates net uplift reactions that can be reasonably expected to work with the standard 2 ½" bearing depth. If the net uplift reaction exceeds the values shown in this table, 5" bearing depths (like 'LH' series joists) will be required to accommodate the double angle end webs.

Joist Depth (in)	Net Uplift Reaction (kips)
10	3.3
12	3.3
14	2.8
16	7.4
18	6.6
20	5.7
22	4.6
24	3.9
26	4.2
28	3.6
30	3.2

End Anchorage for Uplift

Chapter 5 of SJI Technical Digest 6, "Structural Design of Steel Joists to Resist Uplift Loads" provides the following guidance for end anchorage of steel joists due to uplift forces:

Welded Anchorage

The strength of the joist bearing seat for an uplift combination is a function of both the joist seat thickness and the length of the end anchorage welds. The minimum anchorage welds from the SJI Specifications may not develop the full capacity of the joist seat assembly for the specified uplift resistance. Where appropriate, a longer end anchorage weld length aids Vulcraft in providing an economical design of the joist bearing seat. Vulcraft will provide a seat of sufficient thickness and strength to resist the specified uplift end reaction.

Bolted Anchorage

Typically, joists and Joist Girders with bolted end anchorage also require a final connection by welding in order to provide lateral stability to the supporting member. However, only the bolts are relied on to provide uplift anchorage. The bolt type and diameter designated by the specifying professional shall provide sufficient tensile strength to resist the specified uplift end reaction. Higher strength bolts than the minimums required by the SJI specification may be required.

If the bearing seats are detailed for a bolted connection, bolts must be installed. If the bolts are not installed an equivalent welded connection may be permitted by the specifying professional, provided that the weld is deposited in the slot on the side farthest from the edge of the seat. Additional weld required to meet that specified for the welded connection shall be placed at a location on the seat away from the outer edge of the slot as shown in Figure 5.1.

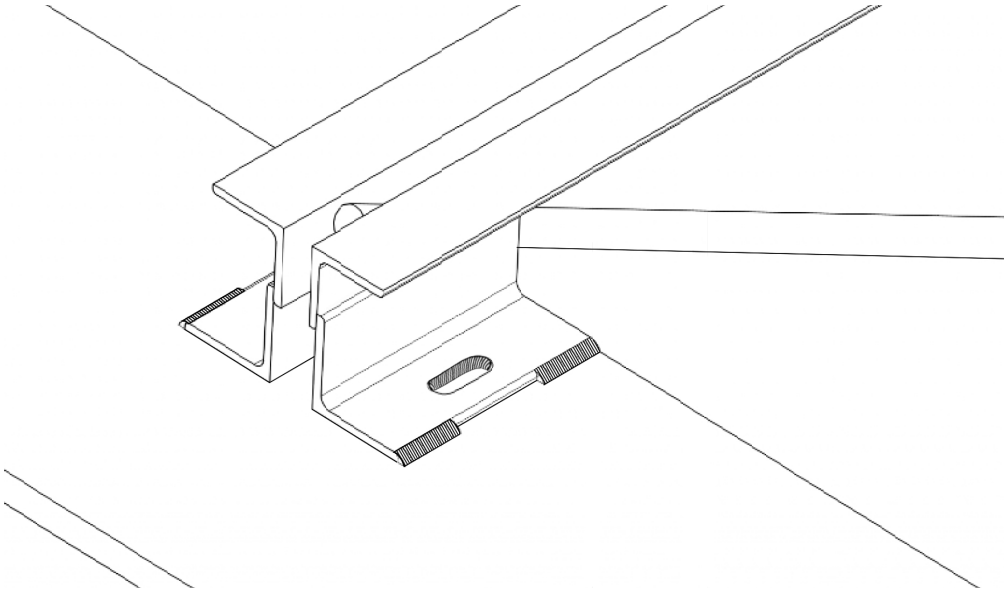
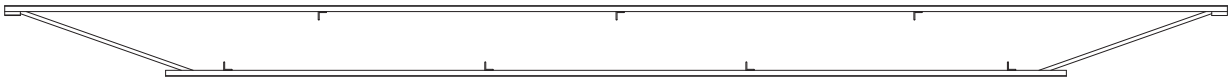
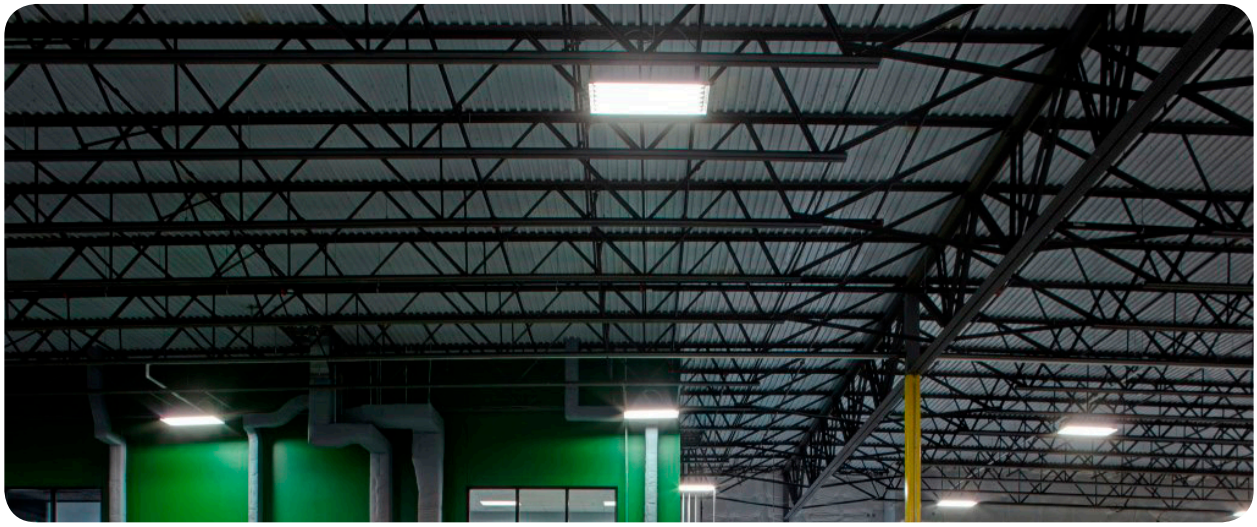


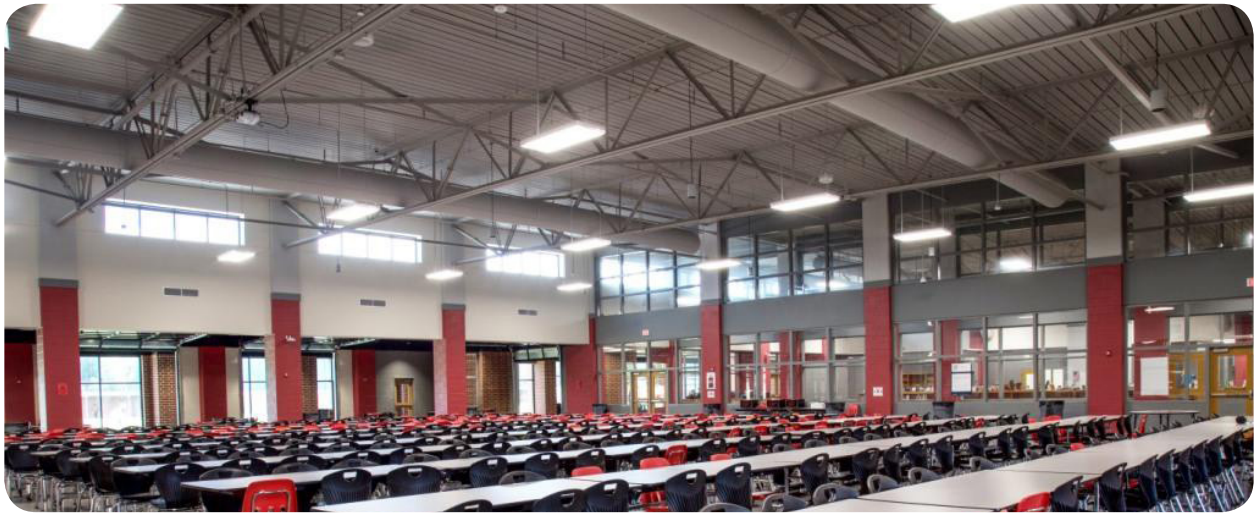
Figure 5.1 Detail for welding bearing seats detailed for a bolted connection

Bridging Requirements for Net Uplift

SJI Specification 5.12 requires where net uplift is a design requirement that a single line of bottom chord bridging shall be provided near the first bottom chord panel points. On Joist Girders , if the ends are not strutted and extended to the column stabilizer plates, bracing shall be provided near the first bottom chord panel points. It should also be noted that per SJI Specification 5.5.3.2 that the bottom chord bridging is permitted to be spaced independently of the row of top chord bridging. In simplified terms, this indicates that bridging need not align from top chord to bottom chord of the joist as shown below.







Open Web Steel Joists and Joist Girders in Moment Resistant Frames

The specifying professional is referred to the SJI Technical Digest 11 “DESIGN OF LATERAL LOAD RESISTING FRAMES USING STEEL JOISTS AND Joist Girders” for a more complete treatment of this topic. Generally, the contract documents specify attachment of the bottom chord only after all dead load has been applied to the member resulting in gravity load or continuity moments due to live load only.

When using open web joists as part of a moment frame, Vulcraft prefers that that joist be called out as LH-Series with 5” minimum bearing depths. Vulcraft has found that the axial loads from wind and or seismic moments will increase some of the components to sizes more commonly used in a LH-Series joist and it will be more economical than modifying a K-Series joist.

When joists or Joist Girders are used as a component of a moment resistant frame, the continuity (usually live load) and lateral (wind and/or seismic) moments must be provided for each end of the affected Joist Girder. Vulcraft will then design the Joist Girder as simply supported for the full gravity load. The end moments are then applied to the Joist Girder using the appropriate load combinations. The critical forces are identified and the Joist Girder members are sized accordingly.

One of the most important considerations of using open web joists or Joist Girders in a moment resistive frame is the connection to the column. As with wide flange connections, special provisions must be made to develop the required moment capacity. As can be seen in Figure 1, the use of standard seats results in an eccentric moment due to the depth of the seat. This moment must be resisted by the weld group connecting the joist or Joist Girder seat to the cap plate of the column.

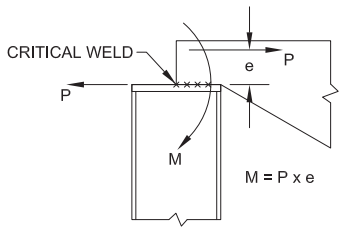


FIGURE 1

Vulcraft has conducted extensive testing of the maximum eccentric top chord force capacity of Joist Girders. Based on this testing the maximum horizontal load for 7 ½” girder bearing seats are presented in Table 1 below.

Table 1

Joist Girder (7.5” Seat) Top Chord Leg Size	ASD P_a* kips	LRFD ϕP_n* kips
2.5”	4	6
3.0”	8	12
3.5” and Larger	10	15

*These values are based on using 3/4 inch A325 bolts and a minimum of two 1/4 inch fillet welds 5 inches long along the sides of the seat. Vulcraft must be notified of seat forces for final seat design.

If the axial load due only to the lateral moment does not exceed the values in Table 1, a strap angle connection as shown in Figure 2 can be used to resist the continuity moments. By tying the Joist Girder top chord ends together, the Joist Girder to cap plate connection need only resist the lateral loads **(the strap angles do not transfer lateral moments)**. The design of such strap angles to resist the continuity moments is the responsibility of the specifying professional.

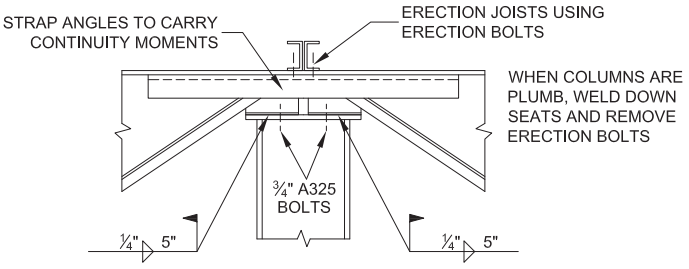


FIGURE 2

When end moments are too large for the seat to resist, it is necessary to utilize a moment plate as shown in Details A-F on page 19. The use of this simple plate virtually eliminates all eccentricity problems.

By using the following equations and Table 2 the specifying professional can determine the minimum top chord width for most Joist Girders. If the end moments are very large, the Joist Girder loads and/or spacing vary, or other special conditions exist, a more exact analysis is required. Once the chord width is known, the specifying professional can easily size the moment plate and its weld requirements to complete the connection detail.

EQUATION 1 (ODD NUMBER OF JOIST SPACES)

$$A = \frac{0.028P}{D}(N^2 - 0.67N + 0.67 - S)$$

EQUATION 2 EVEN NUMBER OF JOIST SPACES)

$$A = \frac{0.028P}{D}(N^2 - 0.67N + 0.67)$$

P= Panel Point Load (kips)
N= Number of joist spaces
S= Joist Spacing (ft)
D= Joist Girder depth (in)

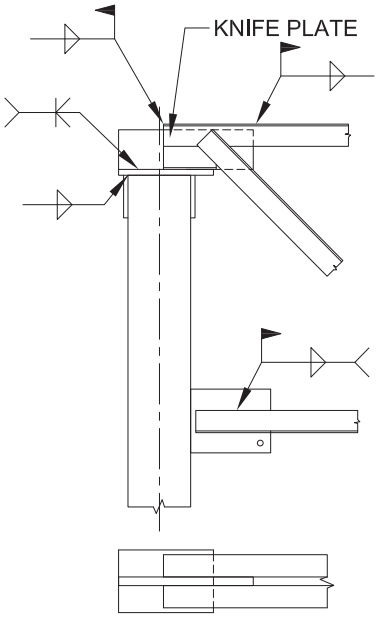
Table 2

A	Minimum Top Chord Width
0.95-1.19	6”
1.20-1.78	7”
1.79-2.48	8”
2.49-3.75	9”
3.76-4.76	11”
4.78-8.44	13”
Greater than 8.44	Consult Vulcraft

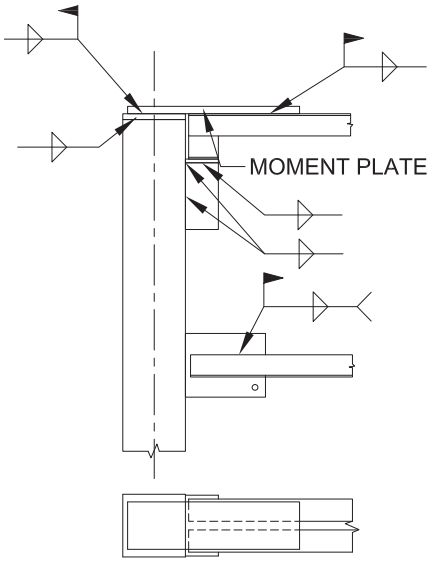
Please note that this chart is to be used only for designing moment plates. It is not intented as a general detailing aid.

*The bearing seat width may be larger than the top chord width. Contact Vulcraft if seat width is needed for determining column plate sizes

Presented below are six suggested details for a moment resistive connection involving roof Joist Girders. Similar details should be utilized for longspan joists with end moments. In all cases, the bottom chord is to be connected to the column with a vertical stabilizer plate which is to be sized to carry the required load and obtain required weld (use 6 x 6 x 3/4 plate minimum for Joist Girders).



Detail "A"



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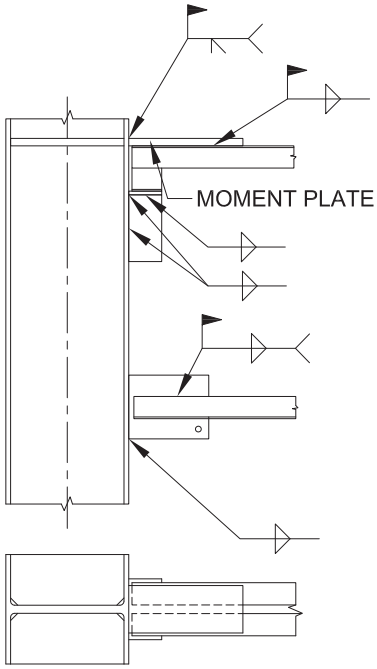
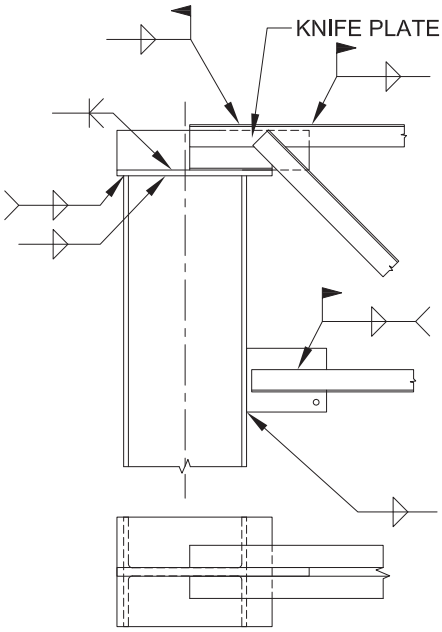
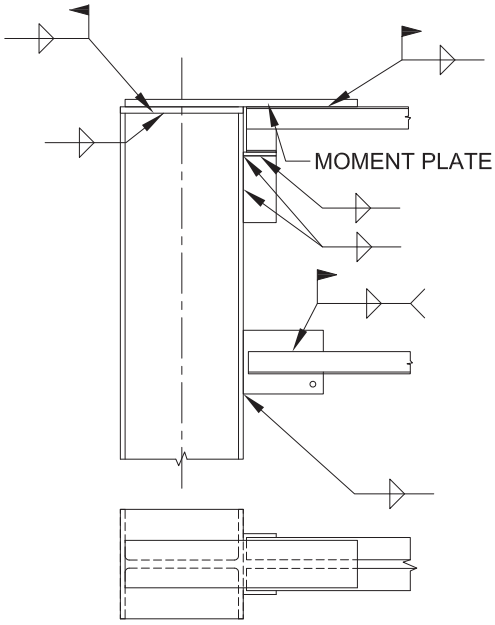


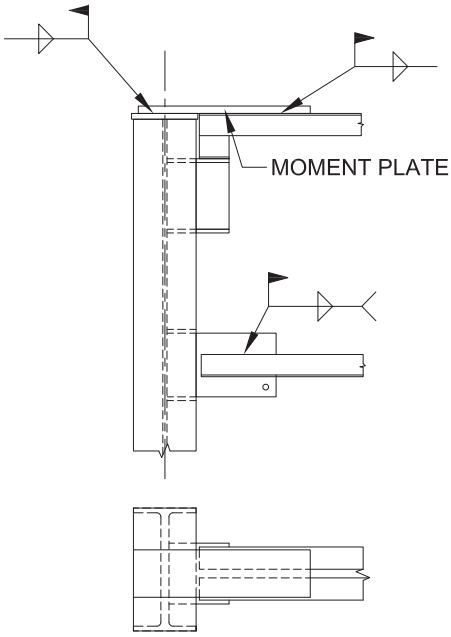
Detail "C"



Detail "D"



Detail "E"



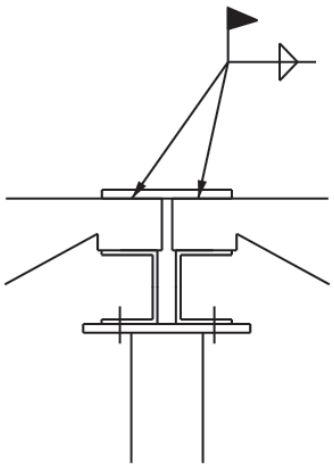
Detail "F"

Axial Loads

The design of open web steel joists and Joist Girders for additional axial loads shares many similarities to the design of joists and Joist Girders used in moment resistant frames. The specifying professional must clearly communicate to Vulcraft the type of load responsible for the axial load so that the appropriate building code required load combinations can be applied.

Like open web steel joist and Joist Girders used in moment resisting frames, one of the most critical concerns is the connection of the joist or Joist Girder to the supporting structure. As shown in Figure 1 of the section on open web steel joists and Joist Girders used in moment resisting frames an eccentric moment exists between the supporting structure and the centroid of the top chord due to the joist or Joist Girder bearing depth. Again, this moment must be resisted by the weld group connecting the joist or Joist Girder seat to the supporting structure.

When axial loads are too large for the seat to resist, it is necessary to utilize additional straps or ties like those shown below. Design of these straps or ties is the responsibility of the specifiying professional.



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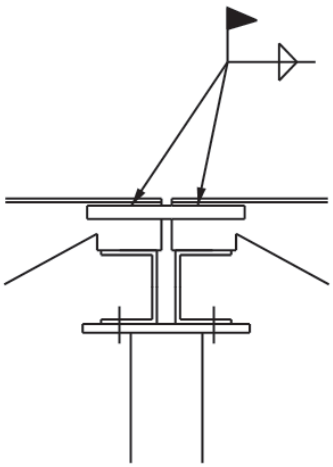

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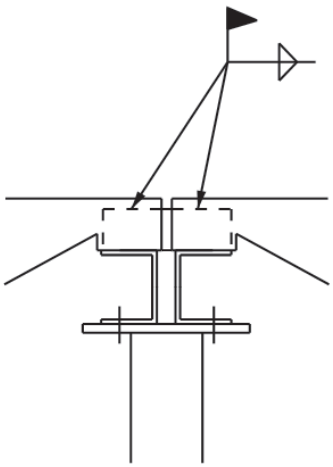

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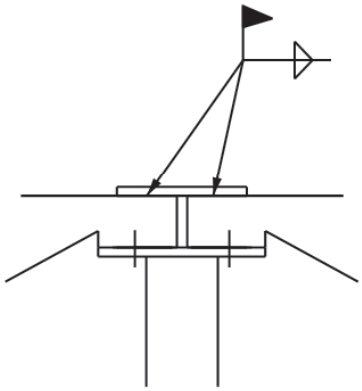

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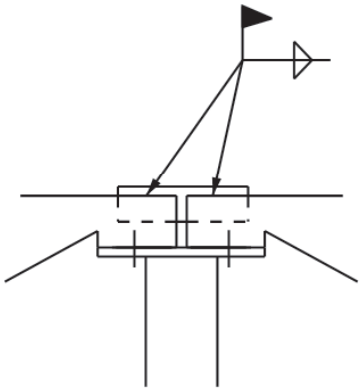

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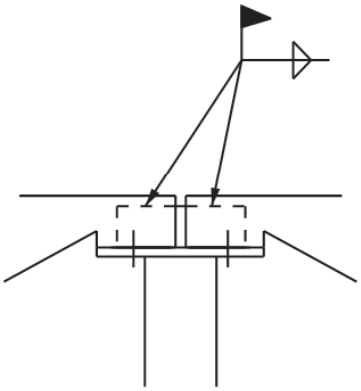


Detail "F"

JOIST MOMENT OF INERTIA AND DEFLECTION

The moment of inertia of K-Series, LH-Series and DLH-Series joists in the load table can be estimated using the following equations:

$I_J = 26.767\ (W)\ (L^3)\ (10^{-6})$ ASD, US Customary Units with W in plf and L = Span – 0.33 in feet

$I_J = 2.6953\ (W)\ (L^3)\ (10^{-5})$ ASD, Metric Units with W in kN/m and L = Span -102 in mm

The equations shown above provide an approximate "gross" moment of inertia, not including the effects of shear deformation. An open web steel joist can be expected to have approximately 15 percent more deformation than a solid web member. When a conventional beam formula is used to calculate joist deflection, a factor of 1.15 should be applied to account for the web shear deformation.

Example:

Find the Inertia for a 24K7 @ 40'-0":

SJI tables 253 / 148

$I_J = 26.767\ (W)\ (L^3)\ (10^{-6})$ where W = RED figure in the Load Table and L = (Span – 0.33) in feet.

$I_J = 26.767(148)\ (40\text{-}0.33)^3(10^{-6}) = 247\ in^4$

Compute Joist Deflection:

Increase deflection 15% to account for shear deformation in webs.

$(1.15)(5WL^4/384EI)$

$(1.15)(5)(148/12)\ [(40\text{-}.33) \times 12)]^4 / [(384)(29 \times 10^{-6})\ (247)] = 1.32"$

Verify the RED number represents the joist loading that produces L/360 deflection

L/360 = (40-.33) x 12/360 = 1.32"

The 15 percent approximation also applies to the deflection equations when using the Joist Girder moment of Inertia equations.

For a Load/Load **LH**-Series joist type, the Weight Table includes an estimated moment of inertia value, so an equation is not needed for approximation.

The Weight Tables list the approximate weight in pounds per linear foot (kiloNewtons per meter) for a Joist Girder supporting the concentrated panel point loads shown. Please note that the weight of the Joist Girder must be included in the panel point load (See Code of Standard Practice for Steel Joists and Joist Girders, Section 2.4 for examples).

For calculating the approximate deflection or checking for ponding, the following formulas in U. S. Customary Units and Metric Units may be used in determining the approximate moment of inertia of a Joist Girder.

I_{JG} = 0.027 NPLd: where N = number of joist spaces;

P = Total panel point load in kips (unfactored); L = Joist Girder length in feet; and d = effective depth of the Joist Girder in inches, or,

I_{JG} = 0.3296 NPLd: where N = number of joist spaces;

P = Total panel point load in kiloNewtons (unfactored); L = Joist Girder length in millimeters and d = effective depth of the Joist Girder in millimeters.

The Joist Girder manufacturer should be contacted when a more exact Joist Girder moment of inertia must be known.

FLOOR VIBRATION

Floor vibration due to human activity occurs, in varying degrees, in all types of building construction. Unlike steady state vibration due to machinery, which can be isolated, vibration due to human occupancy is inconsistent in both amplitude and frequency and must be controlled by proper design of the elements supporting the floor.

The Steel Joist Institute and Nucor Research and Development have been studying this phenomenon for years. Laboratory research continues to be performed along with gathering measurements on numerous buildings, exhibiting both good and bad characteristics, using seismic recording instruments. AISC Design Guide 11 “Vibrations of Steel-Framed Structural Systems Due to Human Activity” Second Edition and SJI Technical Digest 5 “Vibration of Steel Joist Concrete Floor Slabs” discuss in detail methods for calculating vibration characteristics of open web steel joist supported floors.

The clear majority of structures, including those utilizing steel joists, do not exhibit floor vibrations severe enough to be considered objectionable. However, human sensitivity to vibratory motion varies, and a satisfactory framing solution is dependent upon the sound judgement of qualified design professionals.

Floor vibration is measured in terms of acceleration, displacement amplitude, and frequency. These factors are not objectionable to all people at the same level since human sensitivity and tolerance for vibration varies.

Definitions

Acceleration - is the primary measure of vibration level used in the assessment of human comfort, and is usually expressed as a percentage of the acceleration due to gravity.

Frequency - is the number of cycles per second or Hz.

Damping - is the loss of energy over time in a vibrating system and is usually presented as a percent of critical damping.

Critical Damping - is the damping required to bring a displaced system to rest without oscillation.

Observations

The following observations are recommended only as a guide to the design professional:

OPEN FLOOR AREAS are often subject to vibration issues. Modern “electronic offices” tend to have lower live loading and lower damping. Partitions, file cabinets, book stacks, heavy furnishings and even crowds of people provide additional damping and reduce vibration levels.

PARTITIONS increase damping more than any other element and often eliminate vibration issues. They are effective either above or below a floor as long as they are full height partitions connected to the floor above and below the partition. Consideration should be given to potential changes in occupancy of the floor over the life of the building.

SUPPORT FRAMING BEAMS can contribute to floor vibration. The natural frequency and amplitude of both the joists and supporting Joist Girders or hot rolled girders must be calculated. In this manner, the resulting system acceleration, displacement, and frequency can be determined.

BRIDGING of all standard types provides equal floor vibrational characteristics.

THICKER FLOOR SLABS can be an economical solution for controlling floor vibrations. The additional thickness increases floor system stiffness transverse to the joists, often improving vibration characteristics. The additional mass of the system can also reduce vibration levels.

WIDER JOIST SPACINGS improve vibrational characteristics only when combined with thicker floor slabs. The resulting increase in joist size does not contribute significantly. When used with a thicker slab, greater resistance to vibration can be achieved, and, since fewer pieces must be installed, may be more economical.

NON-COMPOSITE JOISTS are considered to be fully composite joists in vibration analyses. Human-induced loads typically cause mid-bay displacement amplitudes smaller than 0.01 in. - implying very low horizontal shears between the joists and the slab. Also, deck fasteners, including spot welds and screws, provide enough slip resistance to warrant using the composite transformed moment of inertia in vibration analyses.

LONGER FLOOR SPANS have many advantages over shorter spans both in construction and vibrational response. There are many long spanning joists supported floors that have satisfactory vibration performance.

INCREASING JOIST STIFFNESS beyond that required to meet the live load deflection limitations can be beneficial when only a small decrease in predicted acceleration is needed. Increase the stiffness of the joist or Girder (whichever has the lowest frequency) until the criterion is met. When the joist and girder have the same frequency, increase the stiffness of both until the required vibration criteria is achieved.

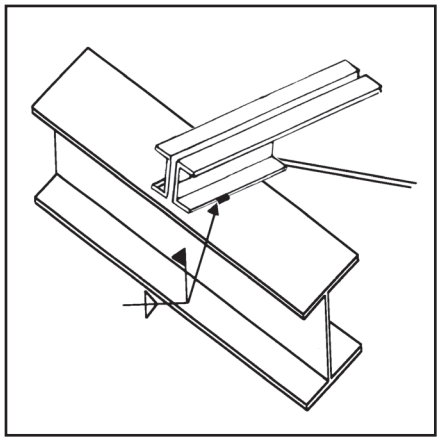
PC – based software for the evaluation of joist supported floor systems is available from:
STRUCTURAL ENGINEERS, INC
537 Wisteria Drive
Radford, VA 24141
Phone (540) 731-3330
www.floorvibe.com

Conclusions

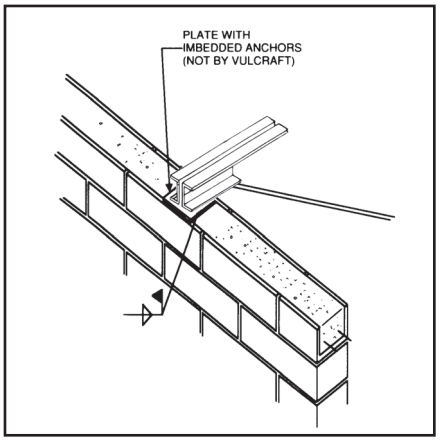
Partitions will usually eliminate vibration issues. When a floor cannot have partitions, increasing the slab thickness, increasing the joist spacing and/or increasing the joist or girder stiffness can be economical and effective ways to reduce vibrations.

For more information refer to the Steel Joist Institute Technical Digest No. 5 “Vibration of Steel Joist-Concrete Slab Floors”, and the AISC Steel Design Guide 11 “Vibrations of Steel-Framed Structural Systems Due to Human Activity” Second Edition.

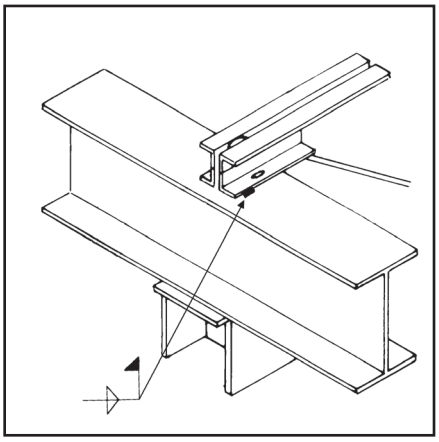
TYPICAL JOIST CONNECTIONS



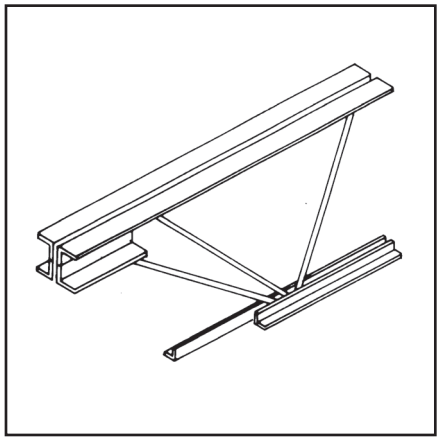
ANCHORAGE TO STEEL
SEE SJI SPECIFICATION 5.4.2



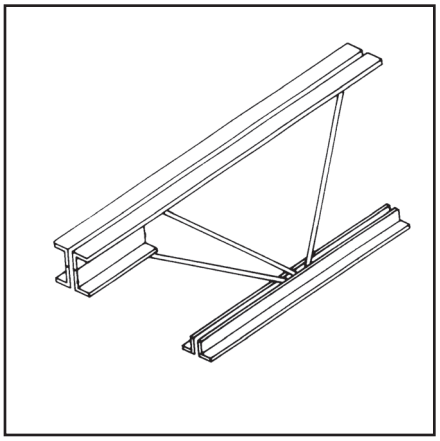
ANCHORAGE TO MASONARY
SEE SJI SPECIFICATION 5.4.1



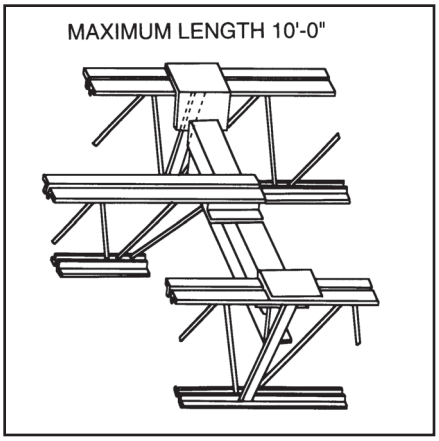
BOLTED CONNECTION
TYPICALLY REQUIRED AT COLUMNS



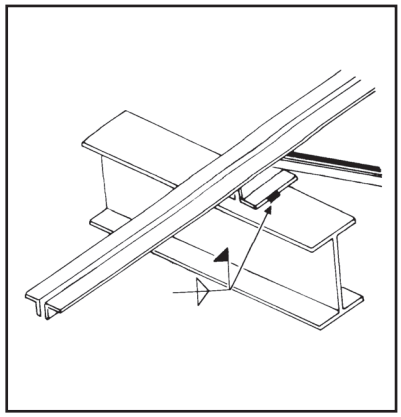
CEILING EXTENSION



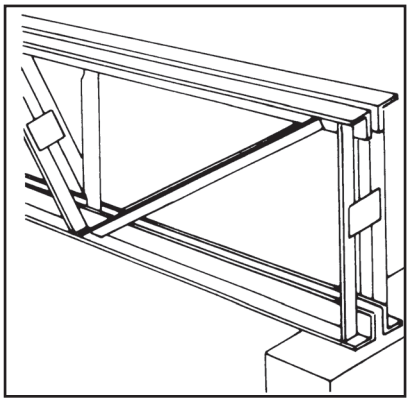
BOTTOM CHORD STRUT



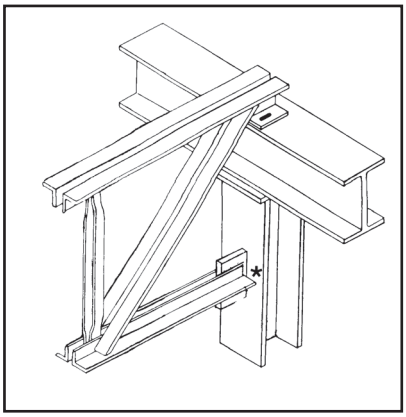
HEADERS
Note: If header does not bear at a Joist Panel Point add extra web in field as shown.
EW or Panel Point by Vulcraft



TOP CHORD EXTENSION



SQUARE END
See SJI Specification 5.5.6. Cross bridging required near the end of bottom bearing joist.



BOTTOM CHORD EXTENSION
*If bottom chord extension is to be bolted or welded the specifiying professional must provide axial loads on structural drawings.

The Ecospan® Composite Floor System by Nucor Vulcraft/Verco Group is an innovative, effective, and economical method of providing all steel structural components for elevated floor construction while incorporating the benefits of lighter weight composite design.

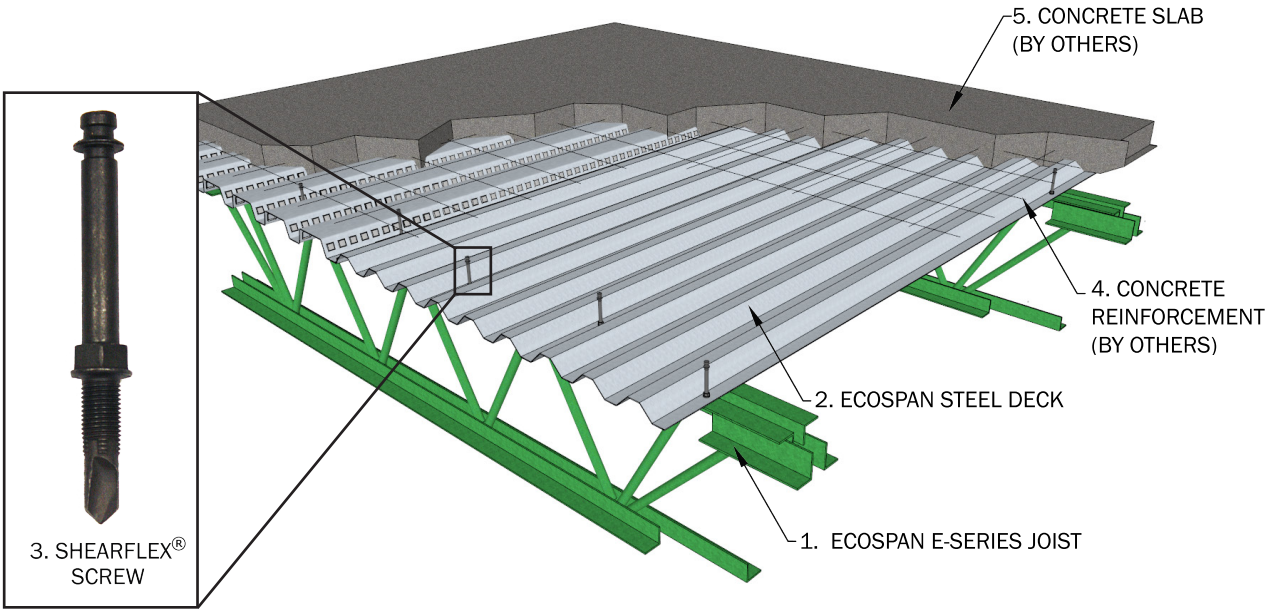


Figure 1-1: The Ecospan® Composite Floor System

Product Description

1. Joists: The Ecospan® Composite Floor System uses E-Series Vulcraft joists ranging from 10” to 30” deep and a maximum length of approximately 50'-0". Joists are typically spaced between 4’-0” o.c. and 6'-0" o.c. The span is the distance from centerline to centerline of the supporting members. (For requirements outside this range please contact your Ecospan® Representative) The design of The Ecospan® Composite Floor System joists is greatly affected by their spacing. The spacing is the distance to the adjacent joist or to the edge of the slab at exterior joists or joists next to slab openings.

2. Decking: Ecospan® utilizes multi-span sheets of steel decking. Generally, conform deck with a depth of 1" or 1 -5/16" will be utilized for residential applications. 1 -1/2" composite steel deck may be used for commercial applications or wider joist spaces.

3. Shearflex® Screws: This screw is a self-drilling and self-tapping screw, ranging from 2 -1/2” to 3” in length (not including the threaded section). Screws are installed using the Vulcraft provided Shearset® Tool.

4. Concrete Slab Reinforcement (by Others): Slab reinforcement shall be the responsibility of the design professional. Rebar or welded wire fabric is suggested for form deck applications while distributed fibers may be an acceptable alternate for projects utilizing composite decks. Refer to ANSI/SDI-C2017 Standard for Composite Steel Floor Deck-Slabs paragraph 2.4.B.15 Items 2 & 3 for applicable dosage rates for distributed fibers.

5. Concrete slab (by Others): The concrete topping slab (specified by the Design Professional) is typically 2 -1/2” normal weight concrete having a minimum 28 day ultimate compressive strength (f'_c) of 3,000 psi, though thicker slabs may be designed for heavier duty uses or serviceability concerns. Light weight concrete may also be specified with The Ecospan® Composite Floor System.

Consider the Advantages

- The Ecospan® Composite Floor System is an effective and economical solution for constructing residential and commercial floor systems.
- Erection is safe, easy, and cost effective. There are no short deck sheets, plywood forms, or shoring; sub-trades can normally continue construction the day after the concrete is placed.
- Floor to floor heights can often be decreased due to the inherent ability to pass mechanical ducts, piping, conduit, etc. through the open web design.
- High strength to weight ratio of composite steel joists allow for greater spans and spacing with lighter members.
- Weight savings due to composite joist design reduces building weight and allows foundation and wall costs to be reduced.
- Constructed with non-combustible materials, achieving multiple UL listings with gypsum board, acoustical ceilings, or spray applied fire resistant materials.
- The Ecospan® Composite Floor System has a Sound Transmission Classification (STC) of 57, and meets or exceeds Impact Insulation Classification (IIC) requirements of the IBC for residential and commercial construction with commonly used sound attenuation materials.

Incorporating Ecospan® into a Project

The Ecospan® Composite Floor System can be utilized for most commercial or residential projects. Ecospan® joists (E-series) are individually designed for the span, spacing, and loading specified on the Contract Documents.

In order for designers and engineers to quickly and efficiently detail and engineer each project with minimal shop drawing review time, some basic design criteria will be needed from the Design Professional.

1. Design Loads
   Unfactored loads that should be specified are as follows:
   a. Non-composite dead load: Includes concrete, joists, deck, and bridging
   b. Construction live load: Indicates the required loading due to work crews and construction equipment before and during the placement of concrete (Ref. ASCE 37-14)
   c. Composite dead load: Includes non-moving partitions, mechanical, electrical, fireproofing, floor covering, and ceiling
   d. Composite live load: The design live load, including moving partitions, as specified.

2. Camber
   E-series joists are typically designed to be cambered for 100% of the non-composite dead load. The Design Professional may indicate any additional camber requirements.

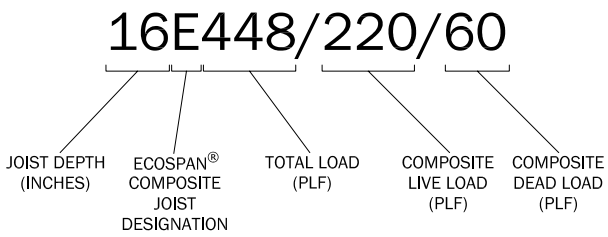
3. Deflection
   The Design Professional shall indicate the maximum allowable live load deflection for each Ecospan® composite joist. In the absence of a specified live load or total load deflection limit, a L/360 live load deflection limit is assumed.

4. Vibration
   Calculations for the predicted floor vibration of the Ecospan® Composite Floor System shall be completed by the Design Professional. Based on this analysis, the Design Professional can indicate a required moment of inertia of the chords required to meet the floor performance requirements.

5. Additional Considerations
   When specifying the Ecospan® Composite Floor System, the Design Professional should consider the following items:
   a. Parallel top and bottom chords are required
   b. Maximum steel floor deck depth is 1 -1/2” inches
   c. Slab thickness above top flute of the deck must be a minimum of 2 -1/2" for fire rated assemblies
   d. Maintain a constant concrete thickness along the entire joist span

E-series Joist Designation

The image below illustrates the format used to designate an E-Series joist. Loading numbers are shown in pounds per lineal foot (PLF). Total load is the summation of the un-factored live load, non-composite dead load and composite dead load.



Ecospan Load Tables

The following tables are intended as a guide for specifying professionals. The Ecospan® joist depths addressed in the tables range from 10” – 30”. For each span and designation load, depths indicated in the chart are either the shallowest possible (Minimum) or that which creates the most economical joist (Most Economic). Floor dead loads (Non-Composite Dead Load for Ecospan® Selection) for each joist designation are estimated as shown and include weight of concrete slab, steel deck, joist, and bridging. Bridging indicates the number of rows of horizontal (H) bridging and the number of rows of erection stability (EX) bridging required for the corresponding joist.

The following tables are not intended to provide the full capability of the The Ecospan® Composite Floor System. When considering the use of The Ecospan® Composite Floor System, the specifying professional should visit www.ecospan-usa.com for more information and contact details for sales and technical representatives.

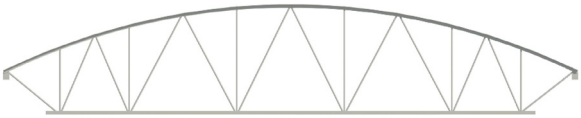
Specification Data		Deck: Vulcraft 1.0C Concrete: f'_c = 3.0ksi Slab: 2 -1/2" Above Deck (3 -1/2" Total Depth)				Joist Spacing: 4'-0" O.C. ShearFlex Fastener: 2 -1/2" (IAPMO ER 0366)			
		Live Load 40 psf Partition Live Load 0 psf				Live Load 40 psf Partition Live Load 15 psf			
Span (ft)	Non-Composite Dead Load for Ecospan Selection (Includes joist self weight)	NW Concrete (145 pcf) 42 psf		LW Concrete (110 pcf) 33 psf		NW Concrete (145 pcf) 42 psf		LW Concrete (110 pcf) 33 psf	
		Designation (Depth) E388/160/60		Designation (Depth) E352/160/60		Designation (Depth) E448/220/60		Designation (Depth) E412/220/60	
		Minimum	Most Economic	Minimum	Most Economic	Minimum	Most Economic	Minimum	Most Economic
20	Depth (in)	10	10	10	10	10	12	10	12
	Bridging (H/EX)	1 / 0	1 / 0	1 / 0	1 / 0	1 / 0	1 / 0	1 / 0	1 / 0
22	Depth (in)	10	14	10	14	10	16	10	14
	Bridging (H/EX)	1 / 0	1 / 0	1 / 0	1 / 0	1 / 0	1 / 0	1 / 0	1 / 0
24	Depth (in)	10	16	10	14	10	16	10	18
	Bridging (H/EX)	1 / 0	1 / 0	1 / 0	1 / 0	1 / 0	1 / 0	1 / 0	1 / 0
26	Depth (in)	12	20	12	18	12	20	12	20
	Bridging (H/EX)	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0	1 / 0	2 / 0	2 / 0
28	Depth (in)	12	20	12	20	12	22	12	20
	Bridging (H/EX)	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0	1 / 0	2 / 0	2 / 0
30	Depth (in)	12	24	12	22	12	24	12	24
	Bridging (H/EX)	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0
32	Depth (in)	14	26	14	26	14	26	14	26
	Bridging (H/EX)	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0
34	Depth (in)	14	26	14	26	14	28	14	26
	Bridging (H/EX)	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0
36	Depth (in)	16	28	16	28	16	28	16	28
	Bridging (H/EX)	2 / 0	2 / 0	1 / 1	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0
38	Depth (in)	16	30	16	30	16	28	16	28
	Bridging (H/EX)	2 / 0	2 / 0	1 / 1	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0
40	Depth (in)	16	30	16	30	16	30	16	30
	Bridging (H/EX)	2 / 0	2 / 0	1 / 1	2 / 0	2 / 0	2 / 0	1 / 1	2 / 0
42	Depth (in)	18	30	18	30	18	30	18	30
	Bridging (H/EX)	2 / 0	2 / 0	2 / 1	2 / 0	2 / 0	2 / 0	2 / 1	2 / 0
44	Depth (in)	18	30	18	30	18	30	18	30
	Bridging (H/EX)	2 / 0	2 / 1	2 / 1	2 / 1	2 / 0	2 / 0	3 / 0	2 / 1
46	Depth (in)	20	30	20	30	20	30	20	30
	Bridging (H/EX)	2 / 0	2 / 1	2 / 0	2 / 1	2 / 0	2 / 1	2 / 1	2 / 1
48	Depth (in)	20	30	20	30	20	30	20	30
	Bridging (H/EX)	2 / 0	2 / 1	1 / 1	2 / 1	2 / 0	2 / 1	2 / 1	2 / 1
50	Depth (in)	20	30	20	30	20	30	20	30
	Bridging (H/EX)	2 / 0	2 / 1	2 / 1	2 / 1	2 / 0	2 / 1	2 / 0	2 / 1

Specification Data		Deck: Vulcraft 1.5VL or Verco 1.5B FORMLOK™ Joist Spacing: 5'-0" O.C. Concrete: f'_c = 3.0ksi ShearFlex Fastener: 3" (IAPMO ER 0366) Slab: 3 -1/2" Above Deck (5" Total Depth)							
		Live Load 50 psf Partition Live Load 15 psf				Live Load 80 psf Partition Live Load 0 psf			
Span (ft)	Non-Composite Dead Load for Ecospan Selection (Includes joist self weight)	NW Concrete (145 pcf) 55 psf		LW Concrete (110 pcf) 43 psf		NW Concrete (145 pcf) 55 psf		LW Concrete (110 pcf) 43 psf	
		Designation (Depth) E675/325/75		Designation (Depth) E615/325/75		Designation (Depth) E750/400/75		Designation (Depth) E690/400/75	
		Minimum	Most Economic	Minimum	Most Economic	Minimum	Most Economic	Minimum	Most Economic
20	Depth (in)	10	12	10	12	10	14	10	12
	Bridging (H/EX)	1 / 0	1 / 0	1 / 0	1 / 0	1 / 0	1 / 0	1 / 0	1 / 0
22	Depth (in)	10	16	10	16	10	18	10	18
	Bridging (H/EX)	1 / 0	1 / 0	1 / 0	1 / 0	1 / 0	1 / 0	1 / 0	1 / 0
24	Depth (in)	10	20	10	20	10	16	10	22
	Bridging (H/EX)	1 / 0	1 / 0	1 / 0	1 / 0	1 / 0	1 / 0	1 / 0	1 / 0
26	Depth (in)	12	22	12	22	12	22	12	24
	Bridging (H/EX)	2 / 0	1 / 0	2 / 0	1 / 0	1 / 0	1 / 0	2 / 0	1 / 0
28	Depth (in)	12	22	12	22	12	24	12	24
	Bridging (H/EX)	2 / 0	1 / 0	2 / 0	1 / 0	2 / 0	1 / 0	2 / 0	1 / 0
30	Depth (in)	12	22	12	24	12	26	12	26
	Bridging (H/EX)	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0
32	Depth (in)	14	26	14	26	14	28	14	28
	Bridging (H/EX)	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0
34	Depth (in)	14	28	14	28	16	28	16	30
	Bridging (H/EX)	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0
36	Depth (in)	16	28	16	28	16	28	16	30
	Bridging (H/EX)	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0
38	Depth (in)	16	28	16	28	16	30	16	30
	Bridging (H/EX)	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0
40	Depth (in)	16	30	16	30	16	30	16	30
	Bridging (H/EX)	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0
42	Depth (in)	18	28	18	30	18	30	18	30
	Bridging (H/EX)	2 / 0	2 / 0	3 / 0	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0
44	Depth (in)	18	30	18	30	18	30	18	30
	Bridging (H/EX)	2 / 0	2 / 0	2 / 1	2 / 0	2 / 0	2 / 0	2 / 0	2 / 0
46	Depth (in)	20	30	20	30	20	30	20	30
	Bridging (H/EX)	2 / 0	3 / 0	2 / 0	3 / 0	2 / 0	2 / 0	2 / 0	2 / 0
48	Depth (in)	20	30	20	30	20	30	20	30
	Bridging (H/EX)	2 / 0	2 / 1	2 / 0	2 / 1	2 / 0	2 / 0	2 / 0	2 / 0
50	Depth (in)	20	30	20	30	20	30	20	30
	Bridging (H/EX)	2 / 1	2 / 0	2 / 0	2 / 1	2 / 0	2 / 0	2 / 0	2 / 0

Specification Data		Deck: Vulcraft 1.5VL or Verco 1.5B FORMLOK™ Joist Spacing: 5'-0" O.C. Concrete: f'_c = 3.0ksi ShearFlex Fastener: 3" (IAPMO ER 0366) Slab: 3 -1/2" Above Deck (5" Total Depth) Live Load 100 psf Partition Live Load 0 psf			
Span (ft)	Non-Composite Dead Load for Ecospan Selection (Includes joist self weight)	NW Concrete (145 pcf) 55 psf		LW Concrete (110 pcf) 43 psf	
		Designation (Depth) E850/500/75		Designation (Depth) E790/500/75	
		Minimum	Most Economic	Minimum	Most Economic
20	Depth (in)	10	16	10	16
	Bridging (H/EX)	1 / 0	1 / 0	1 / 0	1 / 0
22	Depth (in)	10	18	10	18
	Bridging (H/EX)	1 / 0	1 / 0	1 / 0	1 / 0
24	Depth (in)	10	18	10	28
	Bridging (H/EX)	1 / 0	1 / 0	1 / 0	1 / 0
26	Depth (in)	12	22	12	24
	Bridging (H/EX)	1 / 0	1 / 0	1 / 0	1 / 0
28	Depth (in)	12	26	12	26
	Bridging (H/EX)	2 / 0	1 / 0	2 / 0	1 / 0
30	Depth (in)	16	26	14	26
	Bridging (H/EX)	2 / 0	2 / 0	2 / 0	2 / 0
32	Depth (in)	16	28	16	28
	Bridging (H/EX)	1 / 0	2 / 0	2 / 0	2 / 0
34	Depth (in)	16	28	16	28
	Bridging (H/EX)	1 / 0	2 / 0	2 / 0	2 / 0
36	Depth (in)	16	28	16	28
	Bridging (H/EX)	2 / 0	2 / 0	2 / 0	2 / 0
38	Depth (in)	18	28	16	28
	Bridging (H/EX)	2 / 0	2 / 0	2 / 0	2 / 0
40	Depth (in)	18	30	18	28
	Bridging (H/EX)	2 / 0	2 / 0	2 / 0	2 / 0
42	Depth (in)	20	30	18	30
	Bridging (H/EX)	2 / 0	2 / 0	2 / 0	2 / 0
44	Depth (in)	20	30	20	30
	Bridging (H/EX)	2 / 0	2 / 0	2 / 0	2 / 0
46	Depth (in)	22	30	20	30
	Bridging (H/EX)	2 / 0	2 / 0	2 / 0	2 / 0
48	Depth (in)	22	30	22	30
	Bridging (H/EX)	2 / 0	2 / 0	2 / 0	2 / 0
50	Depth (in)	24	30	22	30
	Bridging (H/EX)	2 / 0	2 / 0	2 / 0	2 / 0

Non-Standard Configurations

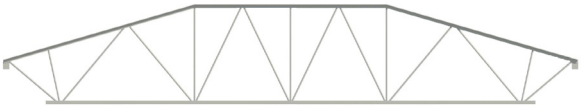
In addition to the standard configurations Vulcraft can also provide the following joist configurations:



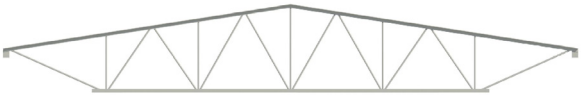
Bowstring

Arch Chord

Scissor



Multi-Pitch



Double Pitch

Single Pitch

In the fabrication of joists, a sufficient end depth must be provided. The appropriate end depth varies with the size, shape, and loading of the joist. The end depth is the distance between the top chord and the bottom chord or the projection of the bottom chord near the center line of the support. End depth requirements increase for bottom-chord-bearing joists and sloped joists. An absolute minimum end depth of 12” must be provided in all cases, with 18” minimum end depth recommended in most cases and for large joists it will increase. Contact Vulcraft for minimum end depth requirements.

Note that both Scissor and Arched Chord type joists require special attention for their supports due to the horizontal deflections. These joists can be designed with either pinned end restraints at both ends or pinned on one end with a roller on the other. The pinned/pinned condition may result in significant horizontal forces being applied to the structure. Analyzing the effect of increasing the stiffness of these joists shows little change in horizontal force magnitude with significant increase in stiffness. The pinned/roller condition requires that the roller bearing condition allow for horizontal movement. In this case increasing the joist stiffness does affect the horizontal displacement.

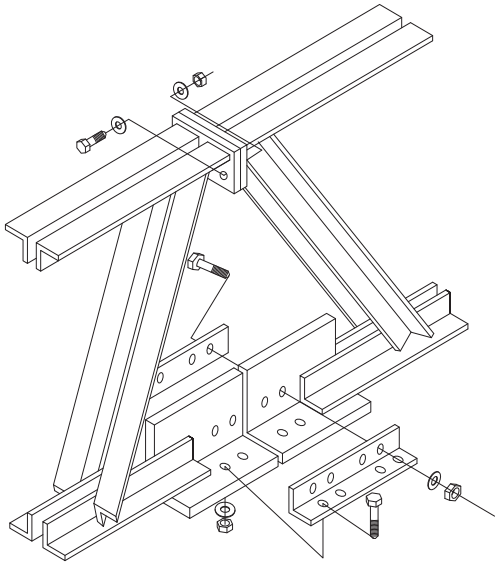
PLEASE CONTACT EITHER YOUR LOCAL DISTRICT SALES OFFICE OR THE NEAREST VULCRAFT MANUFACTURING FACILITY FOR LIMITATIONS IN DEPTH OR LENGTH.

Camber

Standard Configuration:
Unless specifically noted otherwise, joists and Joist Girders will be manufactured with camber in accordance with the Steel Joist Institute Specification 4.6 Camber. **Requirements for less than full camber near walls or other structural elements must be clearly noted on the structural drawings.**

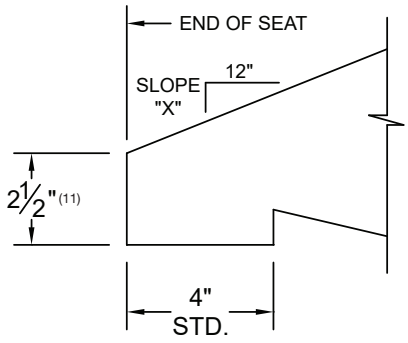
Non-Standard Configurations:
The Design Professional shall provide on the structural drawings the desired camber in inches. If the camber is not specified, Vulcraft will camber using the values for standard joist configurations based on the top chord length or possibly no camber for certain scissor, arched, bowstring or gable profiles.

Bolted Field Splices:
When the overall length of the joists are too long for shipping or where field conditions require (ex. In existing construction where joist will be installed from underneath) the joists will be supplied in two or more pieces to be field bolted together at the jobsite. Per SJI Technical Digest No. 9 it is the erectors responsibility to match joist segments as indicated on the joist erection drawings provided by Vulcraft. **Two dissimilar segments may "fit" together, but if they are not matched as indicated then proper camber or profile will not be maintained. Vulcraft will not accept the responsibility for joists erected with mismatched segments.**

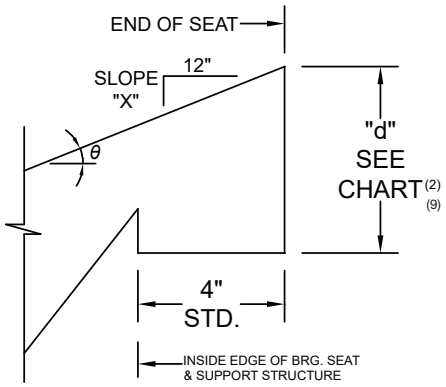


SLOPED SEAT REQUIREMENTS FOR SLOPES 3/8":12 AND GREATER
K-SERIES OPEN WEB STEEL JOISTS
(VARIES FROM SJI CODE OF STANDARD PRACTICE)

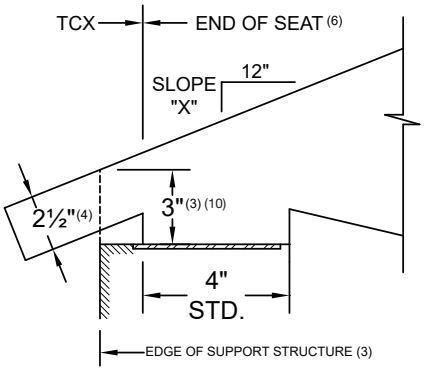
LOW END W/OUT TOP CHORD EXTENSIONS



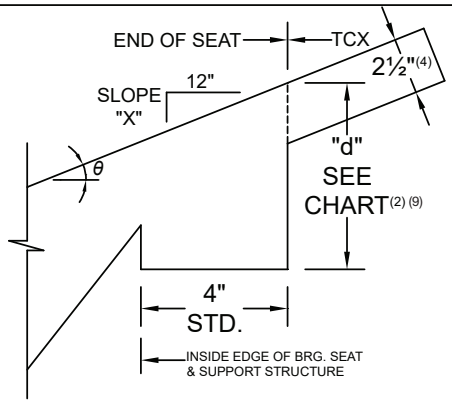
HIGH END W/OUT TOP CHORD EXTENSIONS



LOW END W/ TOP CHORD EXTENSIONS



HIGH END W/ TOP CHORD EXTENSIONS

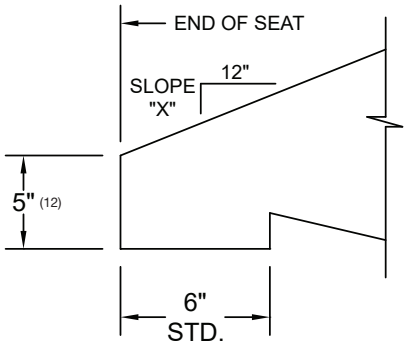


SLOPE "X":12	MINIMUM HIGH END SEAT DEPTH "d"	
	SJI STANDARD	VULCRAFT RECOMMENDED FOR SPECIAL CONDITIONS (8)
3/8	3 1/2	5"
1/2	3 1/2	5"
1	3 1/2	5"
1 1/2	4	5 1/2"
2	4	5 1/2"
2 1/2	4	5 1/2"
3	4 1/2	6"
3 1/2	4 1/2	6"
4	4 1/2	6"
4 1/2	5	6 1/2"
5	5	6 1/2"
5 1/2	5 1/2	7"
6	5 1/2	7"
> 6:12	SEE NOTE (2)	SEE NOTE (9)

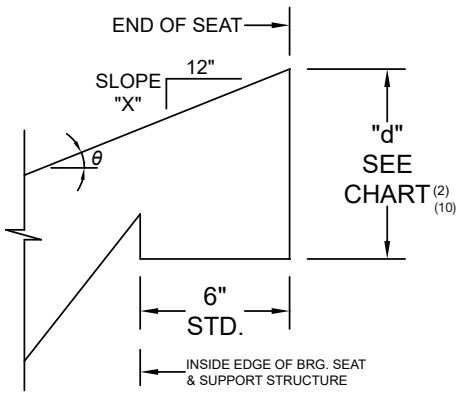
Notes:
1. Depths shown are the minimum required for manufacturing of sloped seats. Depths may vary depending on actual bearing conditions.
2. d = 1/2 + 2.5/cosθ + 4tanθ (Rounded up to the nearest 1/2")
3. Clearance must be checked on outer edge of support. Increase bearing depths as required to allow passage of 2 1/2" deep extension.
4. If extension depth greater than 2 1/2" is required, increase bearing depths accordingly.
5. If slope is 1/4:12 or less, sloped seats are not required.
6. Required bearing seat depth is determined at END OF SEAT.
7. Also, refer to SJI Specification 5.4 for special considerations of joist end reaction location.
8. For extensions greater than 1'-6" or when net uplift reactions exceed the values listed on page 14.
9. d = 2 + 2.5/cosθ + 4tanθ (Rounded up to the nearest 1/2")
10. 4 1/2" for special conditions per Note 8
11. 3" for special conditions per Note 8

SLOPED SEAT REQUIREMENTS FOR SLOPES 3/8":12 AND GREATER
LH- AND DLH-SERIES OPEN WEB STEEL JOISTS
(VARIES FROM SJI CODE OF STANDARD PRACTICE)

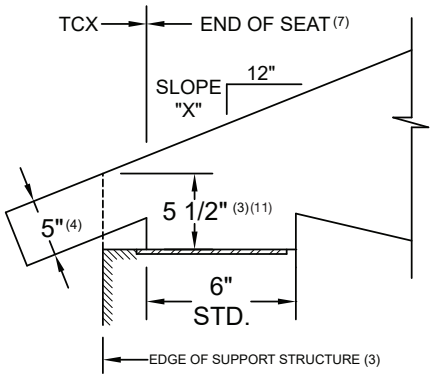
LOW END W/OUT TOP CHORD EXTENSIONS



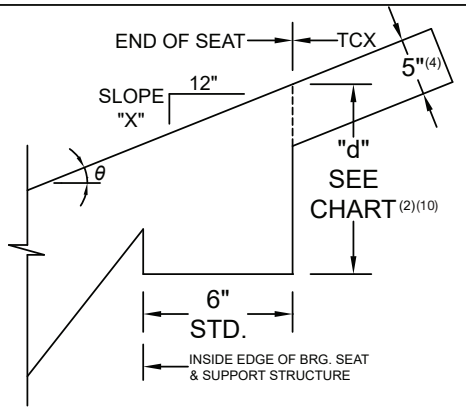
HIGH END W/OUT TOP CHORD EXTENSIONS



LOW END W/ TOP CHORD EXTENSIONS



HIGH END W/ TOP CHORD EXTENSIONS



SLOPE "X":12	MINIMUM HIGH END SEAT DEPTH "d"	
	SJI STANDARD	VULCRAFT RECOMMENDED FOR SPECIAL CONDITIONS (9)
3/8	6	7 1/2"
1/2	6	7 1/2"
1	6 1/2	8"
1 1/2	6 1/2	8"
2	7	8 1/2"
2 1/2	7	8 1/2"
3	7 1/2	9"
3 1/2	7 1/2	9"
4	8	9 1/2"
4 1/2	8 1/2	10"
5	8 1/2	10"
5 1/2	9	10 1/2"
6	9 1/2	11"
> 6:12	SEE NOTE (2)	SEE NOTE (10)

Notes:
1. Depths shown are the minimum required for manufacturing of sloped seats. Depths may vary depending on actual bearing conditions.
2. $d = 1/2 + 5/\cos\theta + 6\tan\theta$ (Rounded up to the nearest 1/2")
3. Clearance must be checked on outer edge of support. Increase bearing depths as required to allow passage of 5" deep extension.
4. If extension depth greater than 5" is required, increase bearing depths accordingly.
5. Add 2 1/2" to seat depth at 18 thru 25 chord section numbers. Consult with Vulcraft for information when TCXs are present.
6. If slope is 1/4:12 or less, sloped seats are not required.
7. Required bearing seat depth is determined at END OF SEAT.
8. Also, refer to SJI Specification 5.4 for special considerations of joist end reaction location.
9. For extensions greater than 1'-6" or when net uplift reactions exceed the values listed on page 14.
10. $d = 2 + 5/\cos\theta + 6\tan\theta$ (Rounded up to the nearest 1/2")
11. 7" for special conditions per Note 9
12. 6" for special conditions per Note 9

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TABLE 5.5-1

U.S. CUSTOMARY UNITS

NUMBER OF ROWS OF TOP CHORD BRIDGING[2]

Section Number[1]	Joist Depth	1 Row	2 Rows	3 Rows	4 Rows	5 Rows	6 Rows	7 Rows	8 Rows	9 Rows
K1	All	17	>17 to 26	>26 to 28						
K2	All	21	>21 to 30	>30 to 32						
K3	All	18	>18 to 26	>26 to 40						
K4	All	20	>20 to 30	>30 to 41	>41 to 48					
K5	12K to 24K	20	>20 to 30	>30 to 42	>42 to 48					
	26K	28	>28 to 41	> 41 to 52						
K6	14K to 24K	20	>20 to 31	>31 to 42	>42 to 48					
	26K & 28K	28	>28 to 41	>41 to 54	>54 to 56					
K7	16K to 24K	23	>23 to 34	>34 to 48						
	26K to 30K	29	>29 to 44	>44 to 60						
K8	24K	25	>25 to 39	>39 to 48						
	26K to 30K	29	>29 to 44	>44 to 60						
K9	16K to 24K	22	>22 to 34	>34 to 48						
	26K to 30K	29	>29 to 44	>44 to 60						
K10	18K to 24K	22	>22 to 38	>38 to 48						
	26K to 30K	29	>29 to 48	>48 to 60						
K11	22K	24	>24 to 39	>39 to 44						
	30K	34	>34 to 49	>49 to 60						
K12	24K	25	>25 to 43	>43 to 48						
	26K to 30K	29	>29 to 47	>47 to 60						
LH02-03	All	20	>20 to 30	>30 to 40	>40					
LH04-05	All	22	>22 to 33	>33 to 44	>44 to 55	>55				
LH06-08	All	26	>26 to 45	>45 to 60	>60 to 75	>75				
LH09	All	26	>26 to 48	>48 to 64	>64 to 80	>80				
LH/DLH10	All	28	>28 to 54	>54 to 72	>72 to 90	>90				
LH/DLH11	All	30	>30 to 54	>54 to 72	>72 to 90	>90 to 108	>108			
LH/DLH12	All	34	>34 to 55	>55 to 74	>74 to 92	>92 to 111	>111			
LH/DLH13	All	36	>36 to 63	>63 to 84	>84 to 105	>105 to 126	>126			
LH/DLH14	All	38	>38 to 64	>64 to 86	>86 to 107	>107 to 129	>129			
LH/DLH15	All	42	>42 to 73	>73 to 98	>98 to 122	>122 to 147	>147			
LH/DLH 16-17	All	44	>44 to 75	>75 to 100	>100 to 125	>125 to 150	>150 to 175	>175		
DLH18-20	All	52	>52 to 78	>78 to 104	>104 to 130	>130 to 156	>156 to 182	>182 to 208	>208 to 234	>234
DLH21-25	All	60	>60 to 90	>90 to 120	>120 to 150	>150 to 180	>180 to 210	>210		

(1) Last digit(s) of joist designation shown in Load Table.

(2) Distances are Joist Span lengths in feet – See "Definition of Span" Figure 5.2-1. Refer to the Joist Load Table and Specification Section 6 for required bolted diagonal bridging and additional stability requirements. See Section 5.12 for additional bridging required for uplift design.

Bridging Requirements of LH-Series Joists
Erection Stability Spans (SJI Spec. Section 105)

Depth	Section Number*	Spans Less Than**
18	02 03 thru 09	33’ 37’
20	02 03 04 thru 10	33’ 38’ 41’
24	03 04 05 06 07 thru 11	35’ 39’ 40’ 45’ 49’
28	05 06 07 thru 08 09 thru 13	42’ 46’ 54’ 57’
32	06 thru 07 08 09 thru 15	47’ 55’ 60’
36	07 thru 08 09	47’ 57’
	10 thru 15	60’
40	08 thru 09 10 thru 17	47’ 60’
44	09 10 thru 17	52’ 60’
48	10 thru 17	60’

* Last two digits of joist designation.

** NOTE: For spans EQUAL TO OR EXCEEDING that shown, one of the rows nearest mid-span must be bolted diagonal type. For spans through 60 feet, the bolted diagonal bridging must be installed BEFORE releasing the hoisting lines. FOR SPANS OVER 60 FEET, ALL BRIDGING ROWS MUST BE BOLTED DIAGONAL TYPE. Spans over 60 feet through 100 feet require two rows of bolted diagonal bridging to be installed, at one-third points, BEFORE releasing the hoisting lines. Spans over 100 feet require ALL rows of bolted diagonal bridging to be installed BEFORE releasing the hoisting lines.

TABLE 2.7-1

MAXIMUM JOIST SPACING FOR HORIZONTAL BRIDGING

SPANS OVER 60 ft. (18.3 m) REQUIRE BOLTED DIAGONAL BRIDGING

JOIST SECTION NUMBER[1]	Nominal Unfactored Force P_{br} lbs (N)	BRIDGING MATERIAL SIZE[2] Equal Leg Angles					
		1 x 7/64 (25 x 3 mm) r = 0.20” (5.08 mm)	**1-1/4 x 7/64 (32 x 3 mm) r = 0.25” (6.35 mm)**	**1-1/2 x 7/64 (38 x 3 mm) r = 0.30” (7.62 mm)**	**1-3/4 x 7/64 (45 x 3 mm) r = 0.35” (8.89 mm)**	**2 x 1/8 (52 x 3 mm) r = 0.40” (10.16 mm)**	**2-1/2 x 5/32 (64 x 4 mm) r = 0.50” (12.70 mm)**
		ft.-in. (mm)	ft.-in. (mm)	ft.-in. (mm)	ft.-in. (mm)	ft.-in. (mm)	ft.-in. (mm)
K1 – 8	340 (1512)	5’-0” (1524)	6’–3” (1905)	7’–6” (2286)	8’-9” (2667)	10’–0” (3048)	12’–6” (3810)
K9-10, LH02-03	450 (2002)	4’-4” (1321)	6’-1” (1854)	7’–6” (2286)	8’–9” (2667)	10’–0” (3048)	12’–6” (3810)
K11-12, LH04-05	560 (2491)	3’–11”(1194)	5’–6” (1676)	7’–4” (2235)	8’–9” (2667)	10’–0” (3048)	12’–6” (3810)
LH06-08	750 (3336)		4’–9” (1448)	6’–3” (1905)	7’–11” (2413)	10’–0” (3048)	12’–6” (3810)
LH09	850 (3781)		4’–5” (1346)	5’–10” (1778)	7’–5” (2261)	9’–9” (2972)	12’–6” (3810)
LH/DLH10	900 (4003)		4’–4” (1321)	5’–8” (1727)	7’–3” (2210)	9’–5” (2870)	12’–6” (3810)
LH/DLH11	950 (4226)		4’–2” (1270)	5’–7” (1702)	7’–0” (2134)	9’–2” (2794)	12’–6” (3810)
LH/DLH12	1100 (4893)		3’-11” (1194)	5’–2” (1575)	6’–8” (2032)	8’–6” (2591)	12’-6” (3810)
LH/DLH13	1200 (5338)		3’-9” (1143)	4’–11” (1499)	6’–3” (1905)	8’-2” (2489)	12-6” (3810)
LH/DLH14	1300 (5783)			4’-9” (1448)	6’-0” (1829)	7’-10” (2388)	12’-4” (3759)
LH/DLH15	1450 (6450)			4’-6” (1372)	5’-8” (1727)	7’-5” (2261)	11’-8” (3556)
LH/DLH16–17	1850 (8229)			4’-0” (1219)	5’-0” (1524)	6’-7”(2007)	10’-4” (3150)
DLH18–20	2350 (10453)			3’-7” (1067)	4’-4” (1321)	5’-10” (1778)	9’-1” (2769)
DLH21–22	3150 (14012)				3’-10” (1168)	5’-0” (1524)	7’-11” (2413)
DLH23–24	4130 (18371)				3’-4” (1016)	4’-5” (1346)	6’-11” (2108)
DLH25	4770 (21218)					4’-1”(1245)	6’-5” (1956)

(1) Refer to last two digit(s) of Joist Designation
(2) Connection to joist shall resist force listed in the Steel Joist Institute Standard Specifications Table 5.5-2

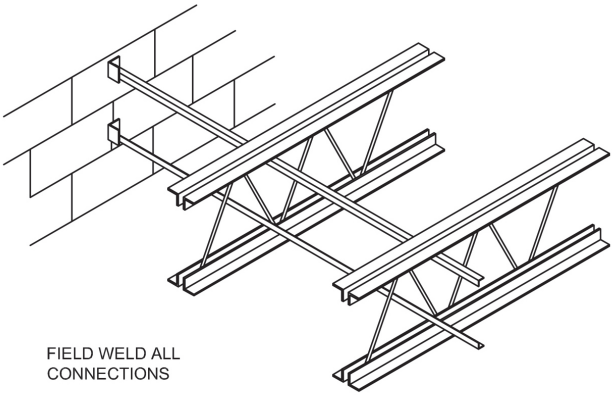
TABLE 2.7-3

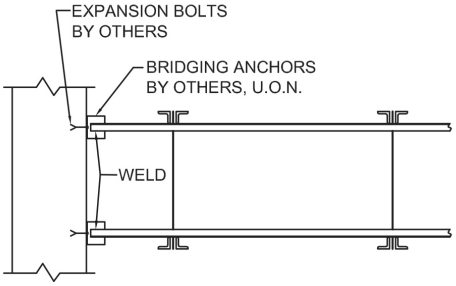
K, LH, and DLH SERIES JOISTS
MAXIMUM JOIST SPACING FOR DIAGONAL BRIDGING

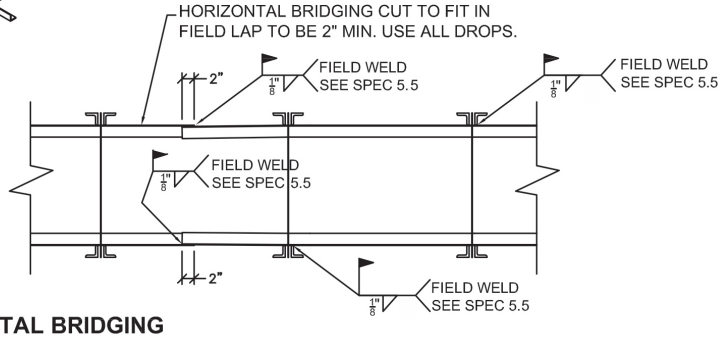
JOIST DEPTH	BRIDGING ANGLE SIZE – (EQUAL LEG ANGLE)							
	1 x 7/64 (25 x 3 mm) **r = 0.20"** (5.08 mm)	**1-1/4 x 7/64** (32 x 3 mm) **r = 0.25"** (6.35 mm)	**1-1/2 x 7/64** (38 x 3 mm) **r = 0.30"** (7.62 mm)	**1-3/4 x 7/64** (45 x 3 mm) **r = 0.35"** (8.89 mm)	**2 x 1/8** (50 x 3 mm) **r = 0.40"** (10.16 mm)	**2 ½ x 5/32** (64x 4 mm) **r=0.50"** (12.70 mm)	**3 x 3/16** (76 x 5 mm) **r = 0.60"** (15.24 mm)	**3 ½ x 1/4** (89 x 6 mm) **r = 0.70"** (17.78 mm)
in. (mm)	**ft.-in. (mm)**	**ft.-in. (mm)**	**ft.-in. (mm)**	**ft.-in. (mm)**	**ft.-in. (mm)**	**ft.-in. (mm)**	**ft.-in. (mm)**	**ft.-in. (mm)**
12" (305)	6'-7" (2007)	8'-3" (2514)	9'-11"(3022)	11'-7" (3530)	13'-3"(4038)	16'-7"(5055)	19'-11"(6070)	23'-3"(7086)
14" (356)	6'-6" (1981)	8'-3" (2514)	9'-11"(3022)	11'-7" (3530)	13'-3"(4038)	16'-7"(5055)	19'-11"(6070)	23'-3"(7086)
16" (406)	6'-6" (1981)	8'-2" (2489)	9'-10"(2997)	11'-7" (3530)	13'-3"(4038)	16'-7"(5055)	19'-11"(6070)	23'-3"(7086)
18" (457)	6'-6" (1981)	8'-2" (2489)	9'-10"(2997)	11'-6" (3505)	13'-3"(4038)	16'-7"(5055)	19'-11"(6070)	23'-3"(7086)
20" (508)	6'-5" (1955)	8'-2" (2489)	9'-10"(2997)	11'-6" (3505)	13'-2"(4013)	16'-7"(5055)	19'-11"(6070)	23'-3"(7086)
22" (559)	6'-4" (1930)	8'-1" (2463)	9'-10"(2997)	11'-6" (3505)	13'-2"(4013)	16'-6"(5029)	19'-11"(6070)	23'-3"(7086)
24" (610)	6'-4" (1930)	8'-1" (2463)	9'-9" (2971)	11'-5" (3479)	13'-2"(4013)	16'-6"(5029)	19'-10"(6045)	23'-3"(7086)
26" (660)	6'-3" (1905)	8'-0" (2438)	9'-9" (2971)	11'-5" (3479)	13'-1"(3987)	16'-6"(5029)	19'-10"(6045)	23'-2"(7061)
28" (711)	6'-3" (1905)	8'-0" (2438)	9'-8" (2946)	11'-5" (3479)	13'-1"(3987)	16'-6"(5029)	19'-10"(6045)	23'-2"(7061)
30" (762)	6'-2" (1879)	7'-11 (2413)	9'-8" (2946)	11'-4" (3454)	13'-1"(3987)	16'-5"(5004)	19'-10"(6045)	23'-2"(7061)
32" (813)	6'-1" (1854)	7'-10"(2387)	9'-7" (2921)	11'-4" (3454)	13'-0" (3962)	16'-5"(5004)	19'-9"(6020)	23'-2"(7061)
36" (914)	5'-11"(1803)	7'-9" (2362)	9'-6" (2895)	11'-3" (3429)	12'-11"(3973)	16'-4"(4979)	19'-9"(6020)	23'-1"(7035)
40" (1016)	5'-9"(1753)	7'-7" (2311)	9'-5" (2870)	11'-2" (3403)	12'-10"(3911)	16'-4"(4979)	19'-8"(5994)	23'-1"(7035)
44" (1118)	5'-6"(1676)	7'-5" (2260)	9'-3" (2819)	11'-0" (3352)	12'-9" (3886)	16'-3"(4953)	19'-7"(5969)	23'-0"(7010)
48" (1219)	5'-4"(1626)	7'-3" (2209)	9'-2" (2794)	10'-11"(3327)	12'-8" (3860)	16'-2"(4928)	19'-7"(5969)	22'-11"(6985)
52" (1321)	5'-0"(1524)	7'-1"(2159)	9'-0" (2743)	10'-10" (3302)	12'-7" (3835)	16'-1"(4902)	19'-6"(5943)	22'-11"(6985)
56" (1422)	4'-9"(1448)	6'-10"(2083)	8'-10"(2692)	10'-8" (3251)	12'-5" (3784)	16'-0"(4877)	19'-5"(5918)	22'-10"(6960)
60" (1524)	4'-4"(1321)	6'-8"(2032)	8'-7" (2616)	10'-6" (3200)	12'-4" (3759)	15'-10"(4826)	19'-4"(5893)	22'-9"(6935)
64" (1626)	**	6'-4"(1931)	8 -5" (2565)	10'-4" (3149)	12'-2" (3708)	15'-9" (4801)	19'-3"(5867)	22'-8"(6909)
68" (1727)	**	6'-1"(1854)	8'-2" (2489)	10'-2" (3098)	12'-0" (3657)	15'-8" (4775)	19'-2"(5842)	22'-7"(6884)
72" (1829)	**	5'-9"(1753)	8'-0" (2438)	10'-0" (3048)	11'-10"(3606)	15'-6" (4724)	19'-1" (5816)	22'-6" (6858)
80" (2032)	**	5'-0"(1524)	7'-5"(2260)	9'-6" (2895)	11'-6" (3505)	15'-3" (4648)	18'-10"(5740)	22'-4" (6808)
88" (2235)		**	6'-9"(2058)	9'-0" (2743)	11'-1" (3378)	14'-11"(4546)	18'-7" (5664)	22'-1" (6731)
96" (2438)		**	6'-0"(1829)	8'-5" (2565)	10'-8"(3251)	14'-7" (4445)	18'-4" (5588)	21'-11"(6680)
104" (2642)			**	7'-9" (2362)	10'-1"(3073)	14'-2" (4318)	18'-0" (5486)	21'-8" (6604)
112" (2845)			**	7'-0" (2134)	9'-6"(2895)	13'-9" (4191)	17'-8" (5385)	21'-4" (6503)
120" (3048)				**	8'-9"(2667)	13'-4"(4064)	17'-3" (5258)	21'-1" (6426)

****INTERPOLATION BELOW THE MINIMUM VALUES SHOWN IS NOT ALLOWED.**
SEE TABLE 2.7-4 FOR MINIMUM JOIST SPACE FOR DIAGONAL ONLY BRIDGING.

BRIDGING DETAILS

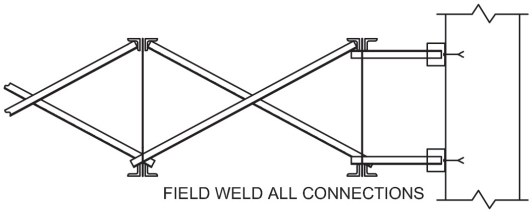






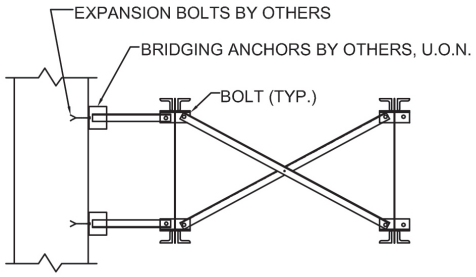
HORIZONTAL BRIDGING
SEE SJI SPECIFICATIONS

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



WELDED CROSS BRIDGING

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



BOLTED CROSS BRIDGING

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

(b) FOR REQUIRED BOLT SIZE REFER TO BRIDGING TABLE. NOTE: CLIP CONFIGURATION MAY VARY FROM THAT SHOWN.

Economic Open Web Steel Joist and Joist Girder Systems

When investigating the most economical Open Web Steel Joist and Joist Girder system, there are many factors that will affect the decision. What follows are several items to consider when making your final decision for the system:

- Like most manufactured products, there is significant advantage to repetition in the manufacture of Open Web Steel Joists and Joist Girders. Repetition not only aids Vulcraft as the manufacturer, it is also a benefit to the steel erector during installation.
- In general, use the deepest system allowed by the available headroom and clearance. On a given span the deeper joists and Joist Girders will be lighter and less expensive. However, a lighter joist may require additional field installed bridging. Also, specifying a deeper LH-Series joist where a K-Series joist would work may not be the best solution due to Vulcraft's efficiency in the manufacture of the K-Series joist.
- Use wider joist spacings. A good solution is to maximize the joist spacing keeping in mind the limitations of the deck such as Factory Mutual. This often results in one less joist per bay for erection and the added reduction of bridging installation.
- It is better to increase the load carrying capacity of the joists during initial construction than to have to reinforce the joists for future loading due to the change in use of the structure or future building maintenance.
- The use of uniform load per foot design (see page 12) can be more economical than the use of SJI standard designations since the joist will be designed for the actual loads indicated by the specifying professional.
- Special joists designed for concentrated loads or other non-uniform loading is likely more economical than double joists or KCS-Series joist.
- It is more economical to provide K-Series joists with 5" bearing seats than to specify LH-series joists just to get the required 5" bearing depth.
- Provide locations of concentrated loads when known. The use of Add-Loads (as defined in the SJI Code of Standard Practice) will provide a joist designed for a concentrated load located at any panel point, and will design both the chord and web members for the worst-case load which may be conservative and result in larger joists than when locations are given.
- Limit the size of welded connections to steel joists. Many components of Open Web Steel Joists have thicknesses less than or equal to 1/8". It is better to increase the weld length than to increase the thickness of the joist members to meet weld requirements.
- When using load diagrams avoid showing web members. The design will be most economical when Vulcraft is free to determine the joist geometry.
- Top Chord extensions are designed for the same uniform load as the joist. When using SJI standard joists at minimum spans the uniform load nears 550 plf which may be conservative for the joist. Designing a long extension for this load may result in an extension that requires additional bearing depth and result in a significantly larger chord member. When dealing with this situation it is more economical to specify the actual loads on the extension or specify either an "S" or "R" type extension (see SJI Load Tables on page 156).
- Specifying joists that require only horizontal bridging will generally be less expensive than joists that require bolted cross bridging. Note however that joists beyond certain spans will always require bolted cross bridging.
- In general, it is more economical to span joists in the long direction and Joist Girders in the short direction for rectangular bays.

Combined K, LH and DLH Series Economic Tables

The following table is an economy guide with the joists listed in sequence of increasing relative cost. The most economical joist for a given span is listed first along with its load carrying capacity and bridging requirements. The economies are based on production cost with a relative cost differential for the installation of horizontal bridging versus bolted cross bridging.

The figures shown in **Red** are the uniform load, in pounds per lineal foot, which will produce an approximate deflection of L/360 (where L is the span). If a deflection of L/240 is desired, simply multiply the figure in red by 1.5. In no case shall the total load capacity of the joist be exceeded.

To use this guide the specifying professional simply turns to the required span and scans down the load column (either ASD or LRFD) until the first joist that will support the required load is found. This will then be the most economical joist for the combination of span and load carrying capacity. The table then lists the approximate weight per foot of the joist and the load which will result in a deflection of L/360 for the given joist. If instead the joist is governed by the serviceability condition of L/360, simply scan down the deflection load column until the first joist that meets the deflection load is found. As before, this will then be the most economical joist to meet the serviceability requirement.

Example: Given 40'-0" span and a required load of 300 plf (ASD). Turn to the 40' span, it is found that a 30K7 at 40'-0" will carry 310 plf total load.

Note that this table has been shaded to match the load tables. The shading indicates when bolted cross bridging needs to be installed per the Steel Joist Institute Specification.

Where the joist is shaded **Green** the row of bridging nearest the mid-span shall be diagonal bridging with bolted connections at the chords and intersection. Hoisting cables shall not be released until this row of bolted diagonal bridging is completely installed.

Where the joist is shaded **Blue**, all rows of bridging shall be diagonal bridging with bolted connections at the chords and intersection. Hoisting cables shall not be released until the two rows nearest the third points are completely installed. The **Blue** shaded area starts after 60'-0" and extends up through 100'-0".

Where the joist is shaded **Gray,** all rows of bridging shall be diagonal bridging with bolted connections at chords and intersection. Hoisting cables shall not be released until all rows of bridging are completely installed. The **Gray** shaded area starts after 100'-0" and extends up through 240'-0"

The bridging column is included to aid the user in determination of the number of bridging rows required for horizontal bridging (H), bolted cross bridging (X) and bolted erection stability bridging (EX).

ECONOMICAL JOIST GUIDE

JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
10' LENGTH						
10K1	550	550	825	4.7	4	1/0/0
11' LENGTH						
10K1	550	542	825	4.6	4	1/0/0
12' LENGTH						
12K1	550	550	825	4.9	4	1/0/0
13' LENGTH						
10K1	480	363	720	5	4	1/0/0
14' LENGTH						
10K1	412	289	618	4.6	4	1/0/0
12K1	500	425	750	5	4	1/0/0
12K3	550	463	825	5.4	4	1/0/0
15' LENGTH						
10K1	358	234	537	4.7	4	1/0/0
12K1	434	344	651	5.2	4	1/0/0
14K1	511	475	767	5.4	4	1/0/0
12K5	550	434	825	6	4	1/0/0
16' LENGTH						
10K1	313	192	470	4.6	4	1/0/0
12K1	381	282	572	5	4	1/0/0
14K1	448	390	672	5.2	4	1/0/0
12K3	476	351	714	5.6	4	1/0/0
14K3	550	467	825	5.8	4	1/0/0
17' LENGTH						
10K1	277	159	416	4.6	4	1/0/0
14K1	396	324	594	4.9	4	1/0/0
14K3	496	404	744	5.9	4	1/0/0
16K3	550	526	825	6.4	4	1/0/0
18LH03	613	613	920	8.1	5	1/0/0
18LH05	806	806	1209	8.9	5	1/0/0
18LH06	954	954	1431	9.9	5	1/0/0
18LH09	1105	1105	1658	10.9	5	1/0/0
18' LENGTH						
12K3	374	245	561	5.3	4	1/0/0
14K3	441	339	662	5.5	4	1/0/0
16K3	508	456	762	6.3	4	1/0/0
14K4	531	397	797	6.4	4	1/0/0
14K6	550	408	825	6.8	5	1/0/0
18LH03	613	613	920	8.2	5	1/0/0
18LH05	806	806	1209	9.2	5	1/0/0
18LH06	954	954	1431	10.2	5	1/0/0
18LH08	1032	1032	1548	11	5	1/0/0
18LH09	1105	1105	1658	11.6	5	1/0/0

JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
19' LENGTH						
10K1	221	113	332	4.6	4	2/0/0
14K1	315	230	473	4.9	4	2/0/0
12K3	335	207	503	5.3	4	2/0/0
14K3	395	287	593	5.5	4	2/0/0
14K4	475	336	713	6.5	4	1/0/0
18K4	550	523	825	7.4	5	1/0/0
18LH03	613	613	920	8.2	5	1/0/0
18LH04	714	714	1071	8.7	5	1/0/0
18LH05	806	806	1209	9.3	5	1/0/0
20LH06	930	930	1395	10	5	1/0/0
20LH07	991	991	1487	10.5	5	1/0/0
20LH08	1023	1023	1535	11.1	5	1/0/0
20LH09	1119	1119	1679	11.6	5	1/0/0
20LH10	1207	1207	1811	12.2	5	1/0/0
20' LENGTH						
12K1	241	142	362	4.7	4	2/0/0
14K1	284	197	426	4.8	4	2/0/0
12K3	302	177	453	5.3	4	2/0/0
12K5	409	230	614	6.6	4	1/0/0
16K4	493	386	740	7.1	5	1/0/0
20K4	550	550	825	7.4	5	1/0/0
18LH03	613	593	920	8.2	5	1/0/0
20LH05	697	697	1046	8.6	5	1/0/0
18LH04	714	686	1071	9.2	5	1/0/0
18LH05	806	773	1209	10.1	5	1/0/0
20LH06	930	930	1395	10.5	5	1/0/0
20LH07	991	991	1487	11.1	5	1/0/0
20LH08	1023	1023	1535	11.6	5	1/0/0
20LH09	1119	1119	1679	12.4	5	1/0/0
20LH10	1207	1207	1811	12.9	5	1/0/0
21' LENGTH						
12K1	218	123	327	4.6	4	2/0/0
14K1	257	170	386	4.9	4	2/0/0
14K3	322	212	483	5.4	4	2/0/0
16K3	371	285	557	5.8	4	2/0/0
18K3	420	364	630	6.5	4	2/0/0
16K4	447	333	671	7	5	2/0/0
20K3	469	453	704	6.9	5	2/0/0
16K7	550	406	825	8	5	1/0/0
20LH04	648	648	972	8.3	5	1/0/0
20LH05	697	697	1046	8.7	5	1/0/0
18LH04	714	622	1071	9.9	5	1/0/0
18LH05	806	700	1209	10.9	5	1/0/0

ECONOMICAL JOIST GUIDE

JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
20LH07	991	991	1487	11.8	5	1/0/0
20LH08	1023	1023	1535	12.3	5	1/0/0
20LH09	1119	1119	1679	13.2	5	1/0/0
22' LENGTH						
12K1	199	106	299	4.6	4	2/0/0
14K1	234	147	351	4.9	4	2/0/0
12K3	249	132	374	5.2	4	2/0/0
16K2	303	222	455	5.5	4	2/0/0
16K3	337	247	506	5.8	4	2/0/0
14K4	353	215	530	5.9	4	2/0/0
16K4	406	289	609	6.9	5	2/0/0
18K4	460	370	690	7.4	5	2/0/0
18K9	550	438	825	7.8	5	1/0/0
20LH04	648	601	972	9.1	5	1/0/0
20LH05	697	644	1046	9.7	5	1/0/0
18LH04	714	566	1071	10.3	5	1/0/0
18LH05	806	637	1209	11.3	5	1/0/0
20LH07	991	908	1487	12.3	5	1/0/0
20LH08	1023	939	1535	13.1	5	1/0/0
20LH10	1207	1103	1811	14.4	6	1/0/0
23' LENGTH						
14K1	214	128	321	4.9	4	2/0/0
14K3	268	160	402	5.3	4	2/0/0
18K3	349	276	524	6	4	2/0/0
16K4	371	252	557	6.4	4	2/0/0
20K3	389	344	584	6.3	4	2/0/0
18K4	420	323	630	7.1	5	2/0/0
20K4	469	402	704	7.4	5	2/0/0
24K7	550	550	825	7.9	5	1/0/0
20LH04	648	549	972	9.4	5	2/0/0
24LH06	708	708	1062	9.9	5	1/0/0
24LH08	829	829	1244	10.9	5	1/0/0
24LH09	976	976	1464	12.3	6	1/0/0
24LH10	1031	1031	1547	12.8	6	1/0/0
24LH11	1087	1087	1631	13.4	6	1/0/0
20LH09	1119	935	1679	14.7	6	1/0/0
20LH10	1207	1008	1811	16	6	1/0/0
24' LENGTH						
12K3	208	101	312	5.1	4	2/0/0
16K2	254	170	381	5.3	4	2/0/0
18K3	320	242	480	6	4	2/0/0
16K4	340	221	510	6.5	4	2/0/0
18K4	385	284	578	7.2	5	2/0/0
22K4	475	431	713	7.4	5	2/0/0

JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
20K6	528	430	792	8	5	2/0/0
20K10	550	448	825	8.5	5	2/0/0
24LH06	708	708	1062	9.6	5	1/0/0
24LH07	777	777	1166	10.3	5	1/0/0
24LH08	829	829	1244	10.7	5	1/0/0
24LH09	976	976	1464	12.6	5	1/0/0
24LH10	1031	1031	1547	13.5	5	1/0/0
20LH09	1073	857	1610	15	6	1/0/0
20LH10	1157	924	1736	15.9	6	1/0/0
25' LENGTH						
14K1	180	100	270	4.8	4	2/0/0
16K2	234	150	351	5.3	4	2/0/0
16K3	260	167	390	5.5	4	2/0/0
18K3	295	214	443	6	4	2/0/0
16K4	313	195	470	6.4	4	2/0/0
20K3	329	266	494	6.3	4	2/0/0
18K4	355	250	533	6.7	4	2/0/0
22K4	438	381	657	7.3	5	2/0/0
26K5	550	550	825	7.9	5	1/0/0
20LH04	596	463	894	9.7	5	2/0/0
24LH07	777	777	1166	10.5	5	1/0/0
24LH08	829	829	1244	11.4	5	1/0/0
20LH06	855	656	1283	13.3	5	1/0/0
20LH07	912	701	1368	14.2	6	1/0/0
20LH09	1030	789	1545	15.6	6	1/0/0
20LH10	1110	851	1665	16.7	6	1/0/0
26' LENGTH						
14K1	166	83	249	4.9	4	2/0/0
16K2	216	133	324	5.3	4	2/0/0
16K3	240	148	360	5.5	4	2/0/0
18K3	272	190	408	5.8	4	2/0/0
16K4	289	173	434	6.4	4	2/0/0
18K4	328	222	492	6.7	4	2/0/0
22K4	404	338	606	7.2	5	2/0/0
24K4	442	405	663	7.4	5	2/0/0
22K5	456	379	684	7.7	5	2/0/0
24K6	543	493	815	7.9	5	2/0/0
20LH04	574	428	861	10.1	5	2/0/0
20LH05	616	459	924	10.5	5	2/0/0
24LH07	777	777	1166	11.5	5	1/0/0
24LH08	829	826	1244	12.1	5	1/0/0
24LH09	976	967	1464	13.9	6	1/0/0
24LH10	1031	1025	1547	14.8	6	1/0/0
20LH10	1068	786	1602	17.2	6	1/0/0

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JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
27' LENGTH						
16K2	200	119	300	5.4	4	2/0/0
16K3	223	132	335	5.5	4	3/0/0
16K4	268	155	402	6.4	4	2/0/0
20K3	281	211	422	6.1	4	3/0/0
16K5	302	173	453	7.3	5	2/0/0
22K4	374	301	561	7	4	2/0/0
24K4	410	361	615	7.5	5	2/0/0
24K5	462	404	693	7.8	5	2/0/0
28K6	550	550	825	8.5	5	1/0/0
28LH07	623	623	935	9.7	5	2/0/0
28LH08	667	667	1001	10.1	5	2/0/0
24LH06	708	655	1062	11.6	5	2/0/0
24LH07	777	720	1166	12.2	5	2/0/0
28LH10	898	898	1347	13	6	1/0/0
28LH11	964	964	1446	13.5	6	1/0/0
24LH09	976	896	1464	14.5	6	2/0/0
24LH11	1087	995	1631	15.9	6	1/0/0
28' LENGTH						
16K2	186	106	279	5.3	4	2/0/0
14K4	216	103	324	5.9	4	2/0/0
16K4	249	138	374	6.3	4	2/0/0
18K4	282	177	423	6.6	4	2/0/0
20K4	315	221	473	6.9	4	2/0/0
24K4	381	323	572	7.4	5	2/0/0
24K5	429	362	644	7.9	5	2/0/0
26K6	508	464	762	8.1	5	1/0/0
26K7	550	501	825	8.7	5	1/0/0
28LH07	623	623	935	10.1	5	2/0/0
28LH08	667	667	1001	10.8	5	2/0/0
24LH06	708	609	1062	11.8	5	2/0/0
24LH07	777	669	1166	12.8	5	2/0/0
28LH09	821	821	1232	12.6	6	2/0/0
28LH10	898	898	1347	13.5	6	1/0/0
28LH11	964	964	1446	14.1	6	1/0/0
24LH09	976	832	1464	15.8	6	2/0/0
24LH10	1031	883	1547	15.9	6	1/0/0
24LH11	1087	924	1631	17	6	1/0/0
29' LENGTH						
16K3	193	106	290	5.5	4	3/0/0
16K4	232	124	348	6.1	4	2/0/0
20K3	243	170	365	6	4	3/0/0
16K5	261	139	392	6.7	4	2/0/0
24K4	355	290	533	7	5	2/0/0
22K5	365	272	548	7.5	5	2/0/0
22K6	398	295	597	7.8	5	2/0/0
24K6	435	354	653	7.9	5	2/0/0
24K7	485	392	728	8.4	5	2/0/0
26K8	550	479	825	9.2	5	1/0/0
28LH07	623	623	935	10.4	5	2/0/0
28LH08	667	667	1001	10.7	5	2/0/0
24LH06	708	567	1062	12.5	5	2/0/0
28LH09	821	821	1232	13	5	2/0/0
28LH10	898	898	1347	13.8	6	2/0/0
24LH09	976	775	1464	16.1	6	2/0/0
24LH10	1031	822	1547	16.8	6	2/0/0
28LH13	1103	1103	1655	16.4	6	1/0/0
30' LENGTH						
16K4	217	112	326	6.1	4	2/0/0
18K4	245	144	368	6.4	4	2/0/0
20K4	274	179	411	6.7	4	2/0/0
22K5	341	245	512	7.5	5	2/0/0
24K5	373	293	560	7.7	5	2/0/0
28K6	477	439	716	8.1	5	2/0/0
26K7	492	417	738	8.5	5	2/0/0
30K7	550	543	825	8.8	5	2/0/0
28LH07	623	623	935	10.7	5	2/0/0
28LH08	667	667	1001	11.3	5	2/0/0
24LH06	684	529	1026	12.6	5	2/0/0
24LH07	751	582	1127	13.6	5	2/0/0
28LH09	821	821	1232	13.5	6	2/0/0
28LH10	898	898	1347	14.7	6	2/0/0
24LH09	943	724	1415	16.6	6	2/0/0
24LH10	997	768	1496	17.3	6	2/0/0
28LH12	1058	1058	1587	17	6	1/0/0
28LH13	1103	1103	1655	17.8	7	1/0/0
31' LENGTH						
20K3	213	138	320	6	4	3/0/0
18K4	229	130	344	6.4	4	3/0/0
20K4	256	162	384	6.7	4	3/0/0
18K6	282	158	423	7.7	5	2/0/0
22K5	319	222	479	7.4	5	3/0/0
22K7	387	267	581	8.3	5	2/0/0
26K7	461	378	692	8.5	5	2/0/0
30K7	534	508	801	8.8	5	2/0/0
30K11	550	520	825	9.5	5	1/0/0
28LH07	623	602	935	11.1	5	2/0/0
28LH08	667	642	1001	11.8	5	2/0/0

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JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
24LH07	727	545	1091	13.5	6	2/0/0
24LH08	775	579	1163	14.5	6	2/0/0
28LH10	898	860	1347	15.1	6	2/0/0
24LH09	913	677	1370	17.4	6	2/0/0
28LH12	1058	1006	1587	17.7	7	1/0/0
32LH14	1079	1079	1619	17.8	7	1/0/0
28LH13	1103	1050	1655	19	7	1/0/0
32' LENGTH						
16K2	142	71	213	5.3	4	2/0/1
16K3	158	79	237	5.5	4	2/0/1
20K4	240	147	360	6.5	4	3/0/0
22K4	265	180	398	6.7	4	3/0/0
22K5	299	201	449	7.4	5	3/0/0
28K6	418	361	627	8.1	5	2/0/0
26K7	432	343	648	8.5	5	2/0/0
28K7	466	400	699	8.8	5	2/0/0
26K8	477	375	716	9.2	5	2/0/0
26K9	520	407	780	9.9	5	2/0/0
30K8	549	500	824	9.9	5	2/0/0
28LH07	623	564	935	11.9	5	2/0/0
24LH06	641	465	962	12.9	5	2/0/0
32LH10	731	731	1097	13.2	5	2/0/0
24LH08	751	543	1127	14.7	6	2/0/0
32LH11	801	801	1202	14.1	6	2/0/0
24LH09	884	635	1326	17.4	6	2/0/0
24LH10	934	674	1401	18.8	7	2/0/0
28LH12	1058	944	1587	18.5	7	1/0/0
28LH13	1103	985	1655	19.1	7	1/0/0
33' LENGTH						
18K3	168	92	252	5.6	4	2/0/1
20K4	226	134	339	6.5	4	3/0/0
24K4	273	196	410	7	5	3/0/0
26K5	334	259	501	7.7	5	2/0/0
28K6	393	329	590	8.2	5	2/0/0
26K7	406	312	609	8.6	5	2/0/0
30K7	471	420	707	8.9	5	2/0/0
30K11	532	468	798	9.7	5	1/0/0
28LH06	552	470	828	10.9	5	2/0/0
28LH07	623	530	935	12	5	2/0/0
28LH08	667	566	1001	13	5	2/0/0
24LH07	683	480	1025	14.4	6	2/0/0
28LH09	821	696	1232	15.4	6	2/0/0
28LH10	898	758	1347	16.6	6	2/0/0
28LH11	964	810	1446	17.8	7	2/0/0
32LH13	1048	1048	1572	18.4	7	1/0/0
28LH12	1058	887	1587	18.9	7	1/0/0
34' LENGTH						
18K3	158	84	237	5.7	4	2/0/1
24K4	257	179	386	7	5	3/0/0
26K5	315	237	473	7.8	5	2/0/0
24K7	352	242	528	8.4	5	2/0/0
26K7	382	285	573	8.6	5	2/0/0
30K7	443	384	665	8.8	5	2/0/0
26K9	460	338	690	9.8	5	2/0/0
28K10	516	410	774	10.3	5	2/0/0
28LH06	552	443	828	11.8	5	2/0/0
28LH07	623	499	935	12.7	5	2/0/0
32LH09	661	661	992	12.9	6	2/0/0
24LH08	707	480	1061	15.8	6	2/0/0
32LH11	801	801	1202	15.2	6	2/0/0
28LH10	898	714	1347	17.8	7	2/0/0
32LH12	939	939	1409	17.5	7	1/0/0
28LH11	964	763	1446	18.8	7	2/0/0
32LH14	1079	1079	1619	19.5	7	1/0/0
28LH13	1103	872	1655	20.7	7	1/0/0
35' LENGTH						
18K3	149	77	224	5.5	4	2/0/1
24K4	242	164	363	6.7	5	3/0/0
26K5	297	217	446	7.7	5	2/0/0
28K7	389	305	584	8.7	5	2/0/0
30K7	418	351	627	8.8	5	2/0/0
28K9	468	361	702	10	5	2/0/0
28K10	501	389	752	10.4	5	2/0/0
28LH06	536	417	804	11.8	5	2/0/0
28LH07	605	471	908	13	5	2/0/0
28LH08	648	503	972	13.8	6	2/0/0
32LH09	661	655	992	13.4	6	2/0/0
24LH08	677	447	1016	15.8	6	2/0/0
32LH10	731	723	1097	14.5	6	2/0/0
32LH11	801	790	1202	15.6	6	2/0/0
28LH10	873	673	1310	17.7	7	2/0/0
36LH13	938	938	1407	17.4	7	1/0/0
36LH14	1034	1034	1551	18.6	7	1/0/0
32LH13	1048	1026	1572	19.9	7	1/0/0
32LH15	1115	1092	1673	20.4	7	1/0/0
36' LENGTH						
18K3	141	70	212	5.5	4	2/0/1
20K3	157	88	236	5.9	4	2/0/1

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JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
18K4	169	82	254	6.3	4	2/0/1
28K6	330	252	495	8.1	5	2/0/0
26K7	340	240	510	8.5	5	2/0/0
30K7	395	323	593	8.8	5	2/0/0
26K9	409	284	614	9.4	5	2/0/0
30K8	436	353	654	9.4	5	2/0/0
30K9	475	383	713	10.1	5	2/0/0
26K10	486	334	729	11.1	5	2/0/0
28LH06	521	394	782	11.7	5	2/0/0
28LH07	588	445	882	12.9	5	2/0/0
28LH08	630	475	945	13.6	6	2/0/0
32LH09	661	619	992	13.9	6	2/0/0
28LH09	776	584	1164	16.2	6	2/0/0
28LH10	848	636	1272	17.8	7	2/0/0
36LH13	938	938	1407	17.9	7	1/0/0
36LH14	1034	1034	1551	19.6	7	1/0/0
32LH14	1079	999	1619	21.5	7	1/0/0

37' LENGTH

20K3	149	81	224	5.8	4	2/0/1
20K4	179	95	269	6.5	4	2/0/1
24K5	244	155	366	7.2	5	3/0/0
26K7	322	221	483	8.5	5	2/0/0
30K7	373	297	560	8.8	5	2/0/0
28K8	384	282	576	9.3	5	2/0/0
30K8	413	325	620	9.6	5	2/0/0
30K9	449	352	674	10.2	5	2/0/0
30K10	474	374	711	10.5	5	2/0/0
32LH07	485	431	728	11.2	5	2/0/0
28LH06	507	373	761	12.2	5	2/0/0
28LH07	572	421	858	13.3	5	2/0/0
28LH08	613	449	920	14	6	2/0/0
32LH09	661	585	992	14.5	6	2/0/0
32LH10	731	646	1097	15.7	6	2/0/0
28LH09	755	553	1133	17.4	6	2/0/0
36LH12	798	798	1197	16.3	7	2/0/0
28LH10	825	602	1238	18.9	7	2/0/0
36LH13	938	938	1407	18.5	7	2/0/0
36LH14	1034	1034	1551	20	7	1/0/0
36LH15	1090	1090	1635	21.3	7	1/0/0
32LH15	1115	976	1673	22.7	7	1/0/0

38' LENGTH

20K3	141	74	212	5.8	4	2/0/1
22K4	187	107	281	6.4	4	2/0/1
26K6	274	184	411	7.8	5	2/0/0
26K7	305	204	458	8.5	5	2/0/0
30K7	354	274	531	8.8	5	2/0/0
28K8	364	260	546	9.3	5	2/0/0
30K8	391	300	587	9.5	5	2/0/0
30K9	426	325	639	10.1	5	2/0/0
30K10	461	353	692	10.5	5	2/0/0
32LH07	485	409	728	11.5	5	2/0/0
32LH08	527	443	791	12.5	5	2/0/0
28LH07	557	399	836	13.4	5	2/0/0
28LH08	597	426	896	14.3	6	2/0/0
36LH10	611	611	917	13.1	6	2/0/0
32LH09	661	555	992	14.5	6	2/0/0
32LH10	731	612	1097	16.3	6	2/0/0
36LH12	798	798	1197	16.7	7	2/0/0
28LH11	862	609	1293	19.6	7	2/0/0
32LH12	939	782	1409	20	7	2/0/0
36LH14	1034	1034	1551	21.3	7	1/0/0
32LH14	1079	895	1619	22.5	7	1/0/0
32LH15	1115	925	1673	23.9	7	1/0/0

39' LENGTH

20K3	133	69	200	5.8	4	2/0/1
20K4	161	81	242	6.5	4	2/0/1
24K4	195	118	293	6.8	5	2/0/1
26K5	238	156	357	7.4	5	1/0/1
24K7	266	159	399	8.3	5	3/0/0
24K8	294	174	441	8.8	5	2/0/0
28K8	346	240	519	9.3	5	2/0/0
30K8	371	277	557	9.5	5	2/0/0
30K10	450	333	675	10.9	5	2/0/0
32LH07	485	388	728	12.1	5	2/0/0
32LH08	527	421	791	12.8	5	2/0/0
28LH07	543	379	815	13.8	6	2/0/0
36LH09	554	549	831	12.9	6	2/0/0
36LH10	611	607	917	14	6	2/0/0
32LH09	661	526	992	15.4	6	2/0/0
28LH09	716	497	1074	17.5	7	2/0/0
32LH10	731	581	1097	16.8	6	2/0/0
36LH12	798	787	1197	17.4	7	2/0/0
40LH14	900	900	1350	18.4	7	2/0/0
36LH13	938	923	1407	19.9	7	2/0/0
36LH14	1034	1014	1551	21.8	7	2/0/0
32LH13	1048	825	1572	22.4	7	2/0/0
32LH14	1079	850	1619	24.4	7	2/0/0

ECONOMICAL JOIST GUIDE

JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
40' LENGTH						
20K3	127	64	191	5.8	4	2/0/1
20K4	153	75	230	6.5	4	2/0/1
20K5	172	84	258	7.1	4	2/0/1
28K7	297	203	446	8.6	5	2/0/0
30K7	319	234	479	8.8	5	2/0/0
26K9	331	207	497	9.4	5	2/0/0
30K8	353	256	530	9.5	5	2/0/0
30K9	384	278	576	9.7	5	2/0/0
30K10	438	315	657	10.9	5	2/0/0
32LH07	473	368	710	12.2	5	2/0/0
32LH08	514	400	771	13.1	6	2/0/0
28LH07	530	360	795	13.7	6	2/0/0
28LH08	567	384	851	14.8	6	2/0/0
36LH10	611	577	917	14.5	6	2/0/0
36LH11	667	628	1001	15.6	6	2/0/0
36LH12	798	748	1197	17.8	7	2/0/0
40LH14	900	900	1350	19.4	7	2/0/0
32LH12	916	705	1374	21.3	7	2/0/0
40LH15	1007	1007	1511	21.6	7	1/0/0
32LH13	1022	784	1533	24.3	7	2/0/0
32LH15	1088	834	1632	24.7	7	1/0/0
41' LENGTH						
22K4	161	85	242	6.5	4	2/0/1
24K4	176	101	264	6.8	5	2/0/1
26K5	216	134	324	7.5	5	1/0/1
24K7	241	137	362	8.2	5	3/0/0
28K6	253	170	380	8	5	1/0/1
24K8	266	150	399	8.7	5	3/0/0
30K8	335	238	503	9.4	5	2/0/0
30K9	365	258	548	9.7	5	2/0/0
28K10	404	263	606	11.2	5	2/0/0
28K12	427	277	641	11.7	5	2/0/0
32LH07	461	351	692	12.4	5	2/0/0
32LH08	501	380	752	13.1	6	2/0/0
28LH07	517	342	776	14	6	2/0/0
28LH08	553	365	830	14.7	6	2/0/0
32LH09	629	476	944	15.6	6	2/0/0
32LH10	695	525	1043	16.7	6	2/0/0
32LH11	761	574	1142	18.9	7	2/0/0
40LH14	900	900	1350	20	7	2/0/0
36LH13	938	834	1407	21.6	7	2/0/0
36LH14	1034	917	1551	24	7	2/0/0
32LH15	1061	794	1592	25.5	7	1/0/0

JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
42' LENGTH						
22K4	153	79	230	6.4	4	3/0/1
24K4	168	94	252	6.7	5	3/0/1
26K5	205	125	308	7.4	5	2/0/1
28K7	269	175	404	8.4	5	2/0/0
28K8	298	192	447	9	5	2/0/0
28K9	324	208	486	9.5	5	2/0/0
30K9	348	240	522	9.7	5	2/0/0
28K10	385	245	578	11.2	5	2/0/0
30K10	413	282	620	11.5	5	2/0/0
32LH07	450	334	675	12.9	5	2/0/0
32LH08	489	362	734	13.5	5	2/0/0
28LH07	505	326	758	14.8	6	2/0/0
28LH08	540	348	810	15.2	6	2/0/0
36LH09	554	473	831	14.2	6	2/0/0
32LH09	614	453	921	15.8	6	2/0/0
40LH12	668	668	1002	16	6	2/0/0
32LH10	679	500	1019	18.1	7	2/0/0
40LH13	788	788	1182	18.4	7	2/0/0
40LH14	900	900	1350	20.2	7	2/0/0
36LH13	938	795	1407	21.8	7	2/0/0
40LH15	1007	1007	1511	22.4	7	1/0/0
36LH14	1034	873	1551	24.1	7	2/0/0
40LH16	1110	1110	1665	24.7	8	1/0/0
43' LENGTH						
22K4	146	73	219	6.5	4	3/0/1
24K4	160	88	240	6.7	5	3/0/1
26K5	196	116	294	7.4	5	2/0/1
26K8	263	153	395	8.8	5	2/0/0
28K8	284	179	426	9	5	2/0/0
28K9	309	194	464	9.5	5	2/0/0
30K9	332	223	498	9.7	5	2/0/0
28K10	367	228	551	10.7	5	2/0/0
30K10	394	263	591	11.4	5	2/0/0
30K11	407	270	611	11.8	5	2/0/0
32LH07	440	318	660	12.8	5	2/0/0
32LH08	478	346	717	13.4	6	2/0/0
28LH08	517	325	776	15.2	6	2/0/0
36LH09	554	451	831	14.7	6	2/0/0
32LH09	600	432	900	16.7	6	2/0/0
36LH10	611	499	917	15.7	6	2/0/0
44LH13	665	665	998	16.2	7	2/0/0
40LH13	788	788	1182	18.8	7	2/0/0
36LH12	798	647	1197	19.9	7	2/0/0

ECONOMICAL JOIST GUIDE

JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
32LH12	852	610	1278	22.3	7	2/0/0
36LH13	938	758	1407	22.6	7	2/0/0
32LH13	951	678	1427	24.4	7	2/0/0
32LH14	979	698	1469	25.4	7	2/0/0
44LH17	1103	1103	1655	25.5	8	1/0/0
44' LENGTH						
22K4	139	68	209	6.4	4	3/0/1
24K4	153	82	230	6.7	5	3/0/1
26K5	187	108	281	7.4	5	2/0/1
26K6	204	118	306	7.9	5	2/0/1
28K6	220	137	330	7.9	5	2/0/1
30K8	291	192	437	9.1	5	2/0/0
30K9	317	208	476	9.6	5	2/0/0
28K10	350	212	525	10.7	5	2/0/0
30K10	376	245	564	10.9	5	2/0/0
30K11	398	258	597	11.8	5	2/0/0
32LH07	430	304	645	12.8	5	2/0/0
32LH08	467	330	701	13.8	6	2/0/0
28LH08	496	305	744	15.2	6	2/0/0
36LH09	542	431	813	14.7	6	2/0/0
44LH12	561	561	842	14.5	6	2/0/0
36LH10	597	476	896	15.9	6	2/0/0
44LH13	665	665	998	16.8	7	2/0/0
44LH14	766	766	1149	18.6	7	2/0/0
36LH12	780	617	1170	19.9	7	2/0/0
44LH15	891	891	1337	21.3	7	2/0/0
36LH13	917	724	1376	23.7	7	2/0/0
44LH16	1027	1027	1541	24.4	8	1/0/0
44LH17	1103	1103	1655	26.3	8	1/0/0
45' LENGTH						
24K4	146	76	219	6.7	5	3/0/1
24K5	164	86	246	7.2	5	3/0/1
24K6	179	93	269	7.7	5	3/0/1
28K6	210	128	315	7.9	5	2/0/1
24K8	221	113	332	8.8	5	2/0/1
28K8	259	156	389	9	5	2/0/1
30K9	303	195	455	9.7	5	2/0/1
28K10	335	198	503	10.7	5	2/0/0
30K11	389	246	584	11.9	5	2/0/0
32LH07	420	291	630	12.9	5	2/0/0
32LH08	456	315	684	13.8	6	2/0/0
28LH08	475	285	713	15.1	6	2/0/0
36LH09	530	412	795	14.7	6	2/0/0
44LH12	561	561	842	15	6	2/0/0

JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
36LH10	584	455	876	16.2	6	2/0/0
40LH12	668	616	1002	17.3	7	2/0/0
32LH11	694	476	1041	20.1	7	2/0/0
36LH12	762	590	1143	20.4	7	2/0/0
40LH13	788	722	1182	20.8	7	2/0/0
44LH15	891	891	1337	22	7	2/0/0
32LH13	908	618	1362	25.5	7	2/0/0
32LH14	935	637	1403	26.4	8	2/0/0
40LH15	1007	923	1511	25.7	8	2/0/0
36LH15	1042	800	1563	27.6	8	2/0/0
40LH16	1110	1014	1665	28.2	8	2/0/0
46' LENGTH						
24K4	139	71	209	6.7	5	3/0/1
26K5	171	95	257	7.3	5	2/0/1
26K6	186	103	279	7.8	5	2/0/1
26K7	207	114	311	8.3	5	2/0/1
28K7	224	133	336	8.6	5	2/0/1
30K7	241	153	362	8.8	5	2/0/1
30K8	266	168	399	9.1	5	2/0/1
26K10	296	159	444	10.5	5	2/0/0
30K10	344	214	516	10.9	5	2/0/0
30K11	381	236	572	12.4	5	2/0/0
32LH07	411	278	617	13.2	6	3/0/0
28LH07	427	251	641	14.3	6	3/0/0
32LH08	447	302	671	14.2	6	3/0/0
36LH09	518	394	777	14.7	6	2/0/0
44LH12	561	561	842	15.1	6	2/0/0
36LH10	571	435	857	16.3	6	2/0/0
36LH11	623	474	935	17.8	7	2/0/0
44LH13	665	665	998	17.7	7	2/0/0
32LH11	679	455	1019	20.3	7	2/0/0
44LH14	766	766	1149	19.8	7	2/0/0
40LH13	788	691	1182	20.4	7	2/0/0
44LH15	891	891	1337	22	7	2/0/0
32LH14	915	609	1373	26.9	8	2/0/0
44LH16	1027	1027	1541	26.1	8	2/0/0
44LH17	1103	1103	1655	27.4	8	2/0/0
47' LENGTH						
24K4	133	67	200	6.7	5	3/0/1
26K5	164	89	246	7.3	5	2/0/1
26K6	178	96	267	7.8	5	2/0/1
26K7	199	107	299	8.5	5	2/0/1
26K8	220	117	330	8.8	5	2/0/1
28K8	237	136	356	9	5	2/0/1

ECONOMICAL JOIST GUIDE

JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
30K8	255	157	383	9.1	5	2/0/1
28K10	306	174	459	10.7	5	2/0/0
30K10	329	201	494	10.9	5	2/0/0
30K11	372	226	558	12.3	5	2/0/0
32LH07	403	266	605	13.2	6	2/0/1
44LH10	419	419	629	12.7	6	2/0/0
32LH08	437	289	656	14.3	6	3/0/0
44LH11	453	453	680	13.4	6	2/0/0
36LH09	507	377	761	15.4	6	2/0/0
44LH12	561	561	842	16.1	6	2/0/0
36LH11	610	454	915	18.3	7	2/0/0
40LH12	668	564	1002	18.4	7	2/0/0
36LH12	730	541	1095	20.5	7	2/0/0
44LH14	766	766	1149	20.1	7	2/0/0
40LH13	788	661	1182	21.7	7	2/0/0
36LH13	858	634	1287	24.4	7	2/0/0
44LH15	891	891	1337	23.3	7	2/0/0
48LH16	904	904	1356	23.4	7	2/0/0
36LH15	997	733	1496	27.5	8	2/0/0
40LH15	1007	845	1511	26.6	8	2/0/0
40LH16	1110	929	1665	28.8	8	2/0/0

48' LENGTH

24K4	128	63	192	6.7	5	3/0/1
26K5	157	83	236	7.3	5	2/0/1
26K6	171	90	257	7.8	5	2/0/1
24K8	194	93	291	8.7	5	2/0/1
28K7	206	117	309	8.6	5	2/0/1
30K7	221	135	332	8.7	5	2/0/1
30K8	244	148	366	9.1	5	2/0/1
26K10	272	140	408	10.5	5	2/0/0
28K10	294	163	441	10.7	5	2/0/0
30K11	362	215	543	12.3	5	2/0/0
44LH09	379	377	569	12.3	6	2/0/0
44LH10	419	416	629	13.1	6	2/0/0
44LH11	453	449	680	14	6	2/0/0
36LH09	497	362	746	15.6	6	2/0/0
32LH09	537	346	806	17.3	6	2/0/0
44LH12	561	554	842	16.8	7	2/0/0
36LH11	597	435	896	18.4	7	2/0/0
40LH12	668	541	1002	18.7	7	2/0/0
48LH14	682	682	1023	18.4	7	2/0/0
36LH12	715	518	1073	21.3	7	2/0/0
44LH14	766	752	1149	21.4	7	2/0/0
40LH13	788	634	1182	21.9	7	2/0/0
36LH13	840	607	1260	24.5	7	2/0/0
44LH15	891	874	1337	24.9	8	2/0/0
48LH16	904	904	1356	24	7	2/0/0
36LH14	926	667	1389	27.1	8	2/0/0
36LH15	977	703	1466	28.9	8	2/0/0
40LH15	1007	810	1511	27.8	8	2/0/0
40LH16	1110	890	1665	30.2	8	2/0/0

49' LENGTH

26K5	150	78	225	7.3	5	2/0/1
26K6	164	85	246	7.8	5	2/0/1
28K6	177	99	266	7.9	5	2/0/1
28K7	197	110	296	8.4	5	2/0/1
28K8	218	120	327	9	5	2/0/1
28K9	237	130	356	9.5	5	2/0/1
30K10	303	177	455	10.9	5	3/0/0
30K11	347	202	521	12.3	5	2/0/0
30K12	357	207	536	13	5	3/0/0
28LH07	379	209	569	14.2	6	3/0/0
28LH08	403	222	605	15.1	6	3/0/0
32LH08	419	266	629	14.6	6	3/0/0
44LH11	453	431	680	14.6	6	2/0/0
36LH09	487	347	731	15.8	6	3/0/0
36LH10	536	383	804	17	7	2/0/0
44LH12	561	532	842	16.8	7	2/0/0
36LH11	585	417	878	18.4	7	2/0/0
40LH12	654	519	981	18.7	7	2/0/0
44LH13	665	630	998	19.3	7	2/0/0
48LH14	682	682	1023	19.2	7	2/0/0
44LH14	766	722	1149	22.1	7	2/0/0
48LH15	784	784	1176	21.3	7	2/0/0
40LH14	882	697	1323	25.1	8	2/0/0
36LH14	907	640	1361	26.9	8	2/0/0
36LH15	957	674	1436	28.9	8	2/0/0
44LH16	1027	965	1541	28.6	8	2/0/0
44LH17	1103	1031	1655	30	8	2/0/0

50' LENGTH

26K5	144	73	216	7.3	5	2/0/1
26K6	157	80	236	7.8	5	2/0/1
28K6	170	93	255	7.9	5	2/0/1
28K7	189	103	284	8.4	5	2/0/1
30K7	203	119	305	8.5	5	2/0/1
30K8	225	130	338	9.1	5	2/0/1
30K9	245	141	368	9.7	5	2/0/1
28K10	270	144	405	10.8	5	2/0/1

ECONOMICAL JOIST GUIDE

JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
30K10	291	166	437	11	5	2/0/1
30K11	333	190	500	12.4	5	3/0/0
30K12	350	199	525	13	5	3/0/0
32LH07	379	235	569	13.8	5	2/0/1
32LH08	411	255	617	14.8	6	3/0/0
44LH11	453	414	680	14.3	6	2/0/0
36LH09	477	333	716	15.7	6	3/0/0
40LH11	527	409	791	16.2	6	2/0/0
44LH12	561	510	842	16.8	7	2/0/0
36LH11	573	400	860	18.9	7	2/0/0
40LH12	641	498	962	19.7	7	2/0/0
36LH12	686	477	1029	22.2	7	2/0/0
44LH14	766	693	1149	22.4	7	2/0/0
48LH15	784	784	1176	21.7	7	2/0/0
36LH13	807	559	1211	25.7	8	2/0/0
44LH15	891	805	1337	25.7	8	2/0/0
48LH16	904	904	1356	25.9	8	2/0/0
36LH15	938	647	1407	29.2	8	2/0/0
40LH15	967	746	1451	28.5	8	2/0/0
44LH17	1103	990	1655	31.4	8	2/0/0

51' LENGTH

26K5	139	69	209	7.3	5	2/0/1
26K6	151	75	227	7.8	5	2/0/1
26K7	168	83	252	8.3	5	2/0/1
28K7	182	97	273	8.4	5	2/0/1
30K7	195	112	293	8.5	5	2/0/1
30K8	216	123	324	9.1	5	2/0/1
30K9	235	133	353	9.7	5	2/0/1
28K10	260	136	390	10.7	5	2/0/1
30K10	279	157	419	10.9	5	2/0/1
30K11	320	179	480	12.4	5	3/0/0
30K12	343	192	515	13.1	5	3/0/0
36LH08	365	251	548	13.2	6	2/0/1
44LH09	379	334	569	12.8	6	3/0/0
44LH10	419	368	629	14.2	6	2/0/0
40LH10	473	363	710	15.3	6	2/0/0
40LH11	516	393	774	16.2	6	2/0/0
44LH12	561	490	842	17.6	7	2/0/0
48LH13	578	578	867	17.6	7	2/0/0
40LH12	629	479	944	19.7	7	2/0/0
44LH13	665	581	998	19.9	7	2/0/0
48LH14	682	682	1023	19.8	7	2/0/0
40LH13	741	561	1112	22.7	7	2/0/0
48LH15	784	784	1176	22.6	7	2/0/0

JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
52DLH15	826	826	1239	23.6	7	2/0/0
40LH14	847	643	1271	26.1	8	2/0/0
36LH14	872	591	1308	28.3	8	2/0/0
36LH15	919	622	1379	29.5	8	2/0/0
48LH17	1015	1015	1523	28	8	2/0/0
40LH16	1045	788	1568	31	8	2/0/0

52' LENGTH

26K5	133	65	200	7.2	5	2/0/1
28K6	157	83	236	7.9	5	2/0/1
28K7	175	92	263	8.4	5	2/0/1
30K7	188	106	282	8.5	5	2/0/1
30K8	208	116	312	9.1	5	2/0/1
30K9	226	126	339	9.6	5	2/0/1
28K10	250	128	375	10.7	5	2/0/1
30K10	269	148	404	10.9	5	2/0/1
30K11	308	169	462	12.4	5	2/0/1
28K12	325	165	488	13.6	5	3/0/0
28LH07	339	176	509	14.2	6	3/0/0
36LH08	358	242	537	13.4	6	2/0/1
32LH08	383	229	575	14.8	6	3/0/0
44LH10	419	354	629	14.2	6	2/0/0
36LH09	458	308	687	16.2	6	3/0/0
40LH11	507	378	761	16.8	7	2/0/0
36LH11	551	370	827	19	7	2/0/0
48LH13	578	570	867	18.1	7	2/0/0
40LH12	617	460	926	19.6	7	2/0/0
44LH13	665	559	998	20.6	7	2/0/0
48LH14	682	672	1023	20.8	7	2/0/0
44LH14	766	640	1149	24	7	2/0/0
36LH13	776	517	1164	26.5	8	2/0/0
44LH15	891	744	1337	26.7	8	2/0/0
36LH15	902	598	1353	29.6	8	2/0/0
40LH15	930	690	1395	29.4	8	2/0/0
48LH17	1015	992	1523	29	8	2/0/0
44LH17	1103	915	1655	31.9	8	2/0/0

53' LENGTH

28K6	151	78	227	7.9	5	2/0/1
28K7	168	87	252	8.4	5	2/0/1
30K7	181	100	272	8.5	5	2/0/1
30K8	200	109	300	9.1	5	2/0/1
30K9	218	119	327	9.7	5	2/0/1
28K10	240	121	360	10.8	5	2/0/1
30K11	296	159	444	12.4	5	2/0/1
30K12	330	177	495	13.4	5	3/0/0

ECONOMICAL JOIST GUIDE

JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
32LH07	341	200	512	13.8	6	2/0/1
32LH08	369	216	554	14.9	6	3/0/0
44LH10	419	340	629	14.3	6	2/0/0
44LH11	453	368	680	15.4	6	2/0/0
40LH11	497	364	746	17	7	2/0/0
36LH11	541	356	812	19.2	7	2/0/0
40LH12	605	443	908	19.8	7	2/0/0
36LH12	647	424	971	22.4	7	2/0/0
52DLH14	735	735	1103	21.6	7	2/0/0
44LH14	766	616	1149	24.2	7	2/0/0
52DLH15	826	826	1239	24.4	8	2/0/0
44LH15	891	716	1337	27.7	8	2/0/0
48LH16	904	854	1356	27.6	8	2/0/0
44LH16	1027	824	1541	31.4	8	2/0/0
44LH17	1103	880	1655	34.4	8	2/0/0
54' LENGTH						
28K6	145	74	218	7.9	5	2/0/1
28K7	162	82	243	8.4	5	2/0/1
28K8	179	89	269	8.9	5	2/0/1
28K9	195	97	293	9.5	5	2/0/1
28K10	232	114	348	10.7	5	2/0/1
30K11	285	150	428	12.3	5	2/0/1
36LH07	313	204	470	12.9	6	2/0/1
30K12	324	170	486	13.9	5	2/0/1
32LH08	357	205	536	14.8	6	3/0/0
44LH09	372	298	558	13.5	6	2/0/1
40LH09	406	293	609	14.6	6	2/0/1
36LH09	441	285	662	16.6	6	3/0/0
40LH11	488	350	732	17	7	2/0/0
44LH12	551	437	827	18.1	7	2/0/0
40LH12	594	427	891	20.5	7	2/0/0
52DLH13	643	643	965	20.1	7	2/0/0
52DLH14	735	735	1103	23.2	7	2/0/0
36LH13	747	479	1121	26.7	8	2/0/0
52DLH15	826	826	1239	25.4	8	2/0/0
44LH15	874	690	1311	27.9	8	2/0/0
48LH16	904	822	1356	28	8	2/0/0
44LH16	1008	793	1512	31.8	8	2/0/0
52DLH17	1025	1025	1538	30.8	8	2/0/0
44LH17	1083	848	1625	34.3	8	2/0/0
55' LENGTH						
28K6	140	70	210	7.9	5	3/0/1
30K7	168	89	252	8.5	5	2/0/1
30K8	185	98	278	9.1	5	2/0/1

JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
30K9	202	106	303	9.7	5	2/0/1
28K10	223	108	335	10.7	5	2/0/1
30K11	275	142	413	12	5	2/0/1
36LH07	307	197	461	12.9	6	2/0/1
36LH08	338	216	507	13.8	6	2/0/1
44LH09	365	287	548	13.5	6	2/0/1
44LH10	404	316	606	14.3	6	3/0/0
44LH11	436	341	654	15.4	6	3/0/0
40LH11	479	338	719	17.5	7	3/0/0
44LH12	541	421	812	18.6	7	2/0/0
40LH12	583	411	875	20.7	7	2/0/0
44LH13	641	499	962	21.7	7	2/0/0
48LH14	682	600	1023	21.9	7	2/0/0
44LH14	738	572	1107	24.4	8	2/0/0
48LH15	784	687	1176	25.8	8	2/0/0
36LH14	808	507	1212	29.2	8	2/0/0
40LH15	879	616	1319	29.7	8	2/0/0
44LH16	990	765	1485	31.7	8	2/0/0
52DLH17	1025	1025	1538	30.8	8	2/0/0
44LH17	1063	817	1595	34.6	9	2/0/0
56' LENGTH						
28K6	135	66	203	7.9	5	3/0/1
28K7	151	73	227	8.4	5	2/0/1
28K8	166	80	249	8.9	5	2/0/1
28K9	181	87	272	9.5	5	2/0/1
28K10	215	102	323	10.7	5	2/0/1
30K11	265	135	398	12	5	2/0/1
32LH06	275	153	413	12.7	5	2/0/1
36LH07	302	190	453	12.8	6	2/0/1
36LH08	332	208	498	13.9	6	2/0/1
44LH09	359	277	539	13.5	6	2/0/1
44LH10	396	305	594	14.7	6	3/0/0
44LH11	429	329	644	15.4	6	3/0/0
40LH11	470	326	705	18.1	7	3/0/0
48LH12	482	411	723	16.7	6	3/0/0
36LH11	512	319	768	20.2	7	3/0/0
40LH12	573	397	860	20.5	7	3/0/0
44LH13	630	482	945	21.6	7	2/0/0
52DLH13	643	641	965	21.9	7	2/0/0
48LH14	682	579	1023	22.4	7	2/0/0
44LH14	725	552	1088	25	8	2/0/0
52DLH14	735	716	1103	24.6	8	2/0/0
56DLH15	756	756	1134	25	8	2/0/0
44LH15	843	641	1265	28.3	8	2/0/0

ECONOMICAL JOIST GUIDE

JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
52DLH16	890	890	1335	28	8	2/0/0
48LH16	904	764	1356	29.1	8	2/0/0
44LH16	972	737	1458	32.7	8	2/0/0
48LH17	1015	854	1523	32	8	2/0/0
44LH17	1044	788	1566	34.7	9	2/0/0
57' LENGTH						
30K7	156	80	234	8.5	5	2/0/1
30K8	173	88	260	9.1	5	2/0/1
30K9	188	95	282	9.6	5	2/0/1
30K10	223	112	335	10.9	5	2/0/1
30K11	256	128	384	12.2	5	2/0/1
32LH06	266	145	399	12.7	5	2/0/1
36LH07	296	183	444	13.1	6	2/0/1
36LH08	326	201	489	13.9	6	2/0/1
44LH09	353	267	530	13.6	6	2/0/1
44LH10	389	294	584	15	6	3/0/0
44LH11	421	318	632	16	6	3/0/0
40LH11	462	314	693	18.2	7	3/0/0
44LH12	522	392	783	18.7	7	3/0/0
40LH12	562	383	843	20.5	7	3/0/0
44LH13	619	465	929	21.9	7	2/0/0
52DLH13	643	618	965	22.5	7	2/0/0
40LH13	663	449	995	24.6	7	2/0/0
44LH14	712	532	1068	25	8	2/0/0
52DLH14	735	691	1103	25	8	2/0/0
48LH15	784	640	1176	26.6	8	2/0/0
52DLH15	826	779	1239	27.6	8	2/0/0
52DLH16	890	866	1335	29.1	8	2/0/0
44LH16	955	711	1433	32.7	8	2/0/0
48LH17	1015	825	1523	33.3	8	2/0/0
52DLH17	1025	989	1538	34.1	9	2/0/0
58' LENGTH						
30K7	151	76	227	8.5	5	2/0/1
30K8	167	83	251	9.1	5	2/0/1
30K9	181	90	272	9.7	5	2/0/1
30K10	215	106	323	10.9	5	2/0/1
30K11	247	121	371	12	5	2/0/1
32LH06	257	138	386	12.6	5	2/0/1
36LH07	292	177	438	13	5	2/0/1
36LH08	321	194	482	14.3	6	2/0/1
44LH09	347	258	521	14.1	6	2/0/1
44LH10	383	284	575	15	6	3/0/0
44LH11	414	307	621	16	6	3/0/0
40LH11	454	303	681	18.1	7	3/0/0

JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
48LH12	474	383	711	17.6	7	3/0/0
36LH11	495	297	743	21	7	3/0/0
52DLH12	529	493	794	19.4	7	3/0/0
40LH12	553	370	830	22	7	3/0/0
36LH12	593	354	890	24.4	7	3/0/0
40LH13	652	433	978	24.5	7	2/0/0
48LH14	670	540	1005	24	7	2/0/0
36LH13	697	415	1046	28	8	2/0/0
44LH15	814	597	1221	28.3	8	2/0/0
52DLH15	826	752	1239	28.1	8	2/0/0
48LH16	888	712	1332	30.3	8	2/0/0
56DLH17	941	941	1412	31.2	8	2/0/0
48LH17	997	796	1496	34.3	8	2/0/0
44LH17	1008	734	1512	35.8	9	2/0/0
59' LENGTH						
30K7	146	72	219	8.5	5	2/0/1
30K8	161	79	242	9.1	5	2/0/1
30K9	175	86	263	9.6	5	2/0/1
30K10	208	101	312	10.8	5	2/0/1
30K11	239	115	359	12	5	2/0/1
32LH06	249	131	374	12.6	5	2/0/1
36LH07	283	168	425	13	6	2/0/1
36LH08	311	185	467	14.3	6	2/0/1
44LH09	341	249	512	14.3	6	2/0/1
40LH09	372	246	558	15.4	6	2/0/1
40LH10	409	271	614	16.4	6	3/0/0
40LH11	446	293	669	18.1	7	3/0/0
48LH12	466	370	699	17.5	7	3/0/0
44LH12	504	366	756	19.3	7	3/0/0
52DLH12	529	477	794	19	7	3/0/0
40LH12	543	357	815	22	7	3/0/0
44LH13	598	434	897	23	7	2/0/0
52DLH13	643	577	965	22.4	7	2/0/0
48LH14	659	521	989	23.9	7	2/0/0
44LH14	688	497	1032	25.8	8	2/0/0
48LH15	757	597	1136	26.5	8	2/0/0
44LH15	800	577	1200	29.8	8	2/0/0
56DLH16	816	816	1224	28.5	8	2/0/0
40LH16	903	588	1355	34.7	8	2/0/0
48LH17	980	769	1470	34.3	8	2/0/0
52DLH17	1025	923	1538	34	8	2/0/0
60' LENGTH						
30K7	141	69	212	8.5	5	2/0/1
30K8	156	75	234	9	5	2/0/1

ECONOMICAL JOIST GUIDE

JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
30K9	169	81	254	9.6	5	2/0/1
30K10	201	96	302	10.8	5	2/0/1
30K11	231	109	347	12	5	2/0/1
32LH06	242	125	363	12.6	5	2/0/1
36LH07	274	160	411	13	6	2/0/1
36LH08	302	176	453	14.3	6	2/0/1
44LH09	335	241	503	14.3	6	2/0/1
44LH10	370	265	555	15.4	6	3/0/0
44LH11	400	287	600	16.5	6	3/0/0
40LH11	439	283	659	18.1	7	3/0/0
48LH12	458	358	687	17.4	7	3/0/0
52DLH11	475	422	713	18.4	7	3/0/0
52DLH12	529	461	794	19.7	7	3/0/0
44LH13	588	419	882	22.9	7	2/0/0
52DLH13	643	558	965	23.6	7	2/0/0
56DLH14	662	662	993	22.6	7	2/0/0
44LH14	676	480	1014	26.1	8	2/0/0
48LH15	745	577	1118	26.6	8	2/0/0
56DLH15	756	753	1134	26.7	8	2/0/0
56DLH16	816	816	1224	27.9	8	2/0/0
52DLH16	890	781	1335	30.8	8	2/0/0
56DLH17	941	941	1412	31.3	8	2/0/0
44LH17	974	686	1461	36.7	9	2/0/0
60DLH18	1016	1016	1524	34.6	9	2/0/0
62' LENGTH						
32LH06	227	114	341	12.7	5	0/2/2
36LH07	258	146	387	13	6	0/2/2
36LH08	284	160	426	14.1	6	0/2/2
44LH09	324	225	486	14.6	6	0/1/2
44LH10	358	248	537	15.7	6	0/1/2
44LH11	387	268	581	16.5	6	0/1/2
40LH11	425	265	638	18.6	7	0/1/2
48LH12	444	335	666	18	7	0/1/2
44LH12	480	331	720	20.1	7	0/1/2
52DLH12	529	431	794	20.2	7	0/1/2
44LH13	569	392	854	22.9	7	0/0/2
52DLH13	643	522	965	24.4	7	0/0/2
56DLH14	662	625	993	24.2	7	0/0/2
48LH15	721	540	1082	27.3	8	0/0/2
52DLH14	735	584	1103	27.1	8	0/0/2
44LH15	762	522	1143	29.9	8	0/0/2
56DLH16	816	785	1224	28.8	8	0/0/2
48LH16	831	623	1247	30.9	8	0/0/2
52DLH16	890	732	1335	32	8	0/0/2

JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
48LH17	933	696	1400	34.4	8	0/0/2
44LH17	943	642	1415	38.4	9	0/0/2
60DLH18	1016	1016	1524	35.6	9	0/0/2
64' LENGTH						
32LH06	214	104	321	12.6	5	0/2/2
36LH07	244	134	366	13.1	6	0/2/2
36LH08	268	146	402	14.2	6	0/2/2
44LH09	314	212	471	14.8	6	0/1/2
44LH10	347	233	521	15.9	6	0/1/2
44LH11	375	252	563	16.8	7	0/1/2
40LH11	412	249	618	19	7	0/1/2
48LH12	430	314	645	18.4	7	0/1/2
52DLH11	460	371	690	18.8	7	0/1/2
52DLH12	513	405	770	20.9	7	0/1/2
44LH13	551	368	827	24.4	7	0/1/2
56DLH13	586	525	879	22.4	7	0/1/2
48LH14	607	443	911	25.3	7	0/0/2
44LH14	634	422	951	27.2	8	0/0/2
52DLH14	712	547	1068	26.9	8	0/0/2
56DLH15	756	661	1134	27.6	8	0/0/2
60DLH16	766	766	1149	28	8	0/0/2
48LH16	805	584	1208	31.8	8	0/0/2
60DLH17	880	880	1320	31.7	8	0/0/2
56DLH17	941	838	1412	34.1	8	0/0/2
52DLH17	993	783	1490	38.1	9	0/0/2
60DLH18	1016	1008	1524	37	9	0/0/2
66' LENGTH						
36LH07	230	122	345	13.1	6	0/2/2
40LH08	254	150	381	13.4	6	0/2/2
44LH09	305	199	458	14.8	6	0/2/2
44LH10	336	219	504	16.2	6	0/1/2
44LH11	364	237	546	17.2	7	0/1/2
40LH11	399	234	599	19.9	7	0/1/2
52DLH11	446	349	669	19.2	7	0/1/2
52DLH12	497	380	746	21.6	7	0/1/2
44LH13	534	346	801	24.3	7	0/1/2
52DLH13	604	461	906	24.8	7	0/1/2
44LH14	615	396	923	27.2	8	0/1/2
56DLH14	662	551	993	26.7	8	0/1/2
52DLH14	691	515	1037	28.6	8	0/1/2
56DLH15	756	622	1134	29.5	8	0/0/2
60DLH16	766	738	1149	29	8	0/0/2
48LH16	780	549	1170	32.8	8	0/0/2
56DLH16	816	692	1224	31.9	8	0/0/2

ECONOMICAL JOIST GUIDE

JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
52DLH16	836	645	1254	34.4	8	0/0/2
44LH17	886	566	1329	38.5	9	0/0/2
52DLH17	963	736	1445	38.1	9	0/0/2
60DLH18	1016	948	1524	38.4	9	0/0/2
68' LENGTH						
36LH07	218	112	327	13.3	6	0/2/2
36LH08	239	123	359	14.5	6	0/2/2
44LH09	296	187	444	15.1	6	0/2/2
44LH10	326	206	489	16.1	6	0/1/2
44LH11	353	223	530	17.7	7	0/1/2
40LH11	378	215	567	19.9	7	0/1/2
52DLH10	394	300	591	18.9	7	0/1/2
52DLH11	433	328	650	20.1	7	0/1/2
40LH12	459	261	689	23	7	0/1/2
48LH13	484	332	726	22.7	7	0/1/2
44LH13	519	326	779	24.7	7	0/1/2
60DLH13	534	495	801	22.6	7	0/1/2
48LH14	571	392	857	26.2	8	0/1/2
44LH14	597	373	896	28.4	8	0/1/2
52DLH14	670	485	1005	28.8	8	0/1/2
60DLH15	697	622	1046	27.8	8	0/0/2
64DLH16	710	710	1065	27.4	8	0/0/2
56DLH15	745	585	1118	30.3	8	0/0/2
48LH16	757	517	1136	33.9	8	0/0/2
56DLH16	804	652	1206	33.2	8	0/0/2
60DLH17	880	790	1320	34.2	8	0/0/2
52DLH17	934	694	1401	39.2	9	0/0/2
64DLH18	945	945	1418	37.2	9	0/0/2
68DLH19	997	997	1496	39.3	9	0/0/2
70' LENGTH						
40LH08	228	127	342	13.2	6	0/2/2
44LH09	287	177	431	15.2	6	0/2/2
40LH09	298	166	447	16.1	6	0/2/2
48LH11	311	209	467	15.8	6	0/1/2
40LH10	329	183	494	18.5	7	0/1/2
40LH11	358	198	537	20.1	7	0/1/2
52DLH10	383	283	575	19	7	0/1/2
52DLH11	420	310	630	20	7	0/1/2
40LH12	435	241	653	23	7	0/1/2
48LH13	471	313	707	22.9	7	0/1/2
44LH13	504	307	756	25.6	7	0/1/2
60DLH13	534	467	801	23.8	7	0/1/2
52DLH13	569	409	854	26.6	8	0/1/2
44LH14	580	352	870	29.1	8	0/1/2

JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
56DLH14	634	489	951	27.7	8	0/1/2
60DLH15	697	587	1046	29.4	8	0/0/2
60DLH16	766	656	1149	31.2	8	0/0/2
56DLH16	781	615	1172	32.5	8	0/0/2
64DLH17	818	793	1227	33.6	8	0/0/2
68DLH18	865	865	1298	34.8	9	0/0/2
56DLH17	900	700	1350	38.8	9	0/0/2
60DLH18	1016	842	1524	40.4	9	0/0/2
72' LENGTH						
36LH07	196	95	294	13.4	5	0/2/2
36LH08	215	104	323	14.6	6	0/2/2
44LH09	279	167	419	15.8	6	0/2/2
44LH10	308	184	462	16.7	6	0/1/2
44LH11	333	199	500	18.1	7	0/1/2
52DLH10	372	268	558	19.2	7	0/1/2
48LH12	382	248	573	20	7	0/1/2
44LH12	413	245	620	22.3	7	0/1/2
52DLH12	456	319	684	22.4	7	0/1/2
44LH13	490	291	735	25.7	8	0/1/2
56DLH13	545	414	818	25	7	0/1/2
44LH14	564	333	846	29.3	8	0/1/2
48LH15	621	400	932	29.9	8	0/0/2
60DLH15	687	554	1031	30.7	8	0/0/2
64DLH16	710	659	1065	30	8	0/0/2
60DLH16	755	620	1133	33.4	8	0/0/2
52DLH16	767	542	1151	35.8	8	0/0/2
64DLH17	818	750	1227	34.2	8	0/0/2
52DLH17	883	618	1325	39.7	9	0/0/2
64DLH18	945	848	1418	40.1	9	0/0/2
60DLH18	1002	796	1503	43.2	9	0/0/2
74' LENGTH						
40LH08	206	108	309	13.6	6	0/2/2
44LH09	272	158	408	16	6	0/2/2
44LH10	300	174	450	17.7	7	0/2/2
44LH11	325	188	488	18.8	7	0/2/2
52DLH10	362	253	543	19.1	7	0/2/2
48LH12	372	235	558	20.2	7	0/1/2
40LH12	392	205	588	23	7	0/1/2
52DLH12	444	302	666	23.2	7	0/1/2
44LH13	477	275	716	26.7	8	0/1/2
56DLH13	530	392	795	25.6	7	0/1/2
44LH14	549	315	824	29.3	8	0/1/2
56DLH14	599	438	899	28.4	8	0/1/2
64DLH15	631	557	947	28.2	8	0/1/2

ECONOMICAL JOIST GUIDE

JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
60DLH15	668	525	1002	30.2	8	0/1/2
64DLH16	710	624	1065	31.1	8	0/0/2
60DLH16	735	586	1103	32.8	8	0/0/2
68DLH17	748	748	1122	32.1	8	0/0/2
48LH17	782	488	1173	40.5	9	0/0/2
56DLH17	852	626	1278	39.7	9	0/0/2
68DLH18	865	848	1298	37.8	9	0/0/2
60DLH18	975	753	1463	44.4	9	0/0/2
76' LENGTH						
40LH08	196	100	294	13.7	6	0/3/2
44LH09	259	146	389	16	6	0/2/2
44LH10	286	162	429	17.6	7	0/2/2
44LH11	310	175	465	18.8	7	0/2/2
52DLH10	353	240	530	19.1	7	0/2/2
52DLH11	387	263	581	20.7	7	0/2/2
52DLH12	432	286	648	23.3	7	0/2/2
44LH13	454	254	681	26.7	8	0/1/2
56DLH13	516	372	774	25.8	7	0/1/2
64DLH14	550	449	825	26.4	8	0/1/2
52DLH14	600	388	900	31.1	8	0/1/2
60DLH15	651	497	977	30.7	8	0/1/2
56DLH15	667	468	1001	32	8	0/1/2
56DLH16	719	521	1079	35.1	8	0/1/2
68DLH17	748	711	1122	34.7	8	0/1/2
48LH17	761	462	1142	40.3	9	0/1/2
60DLH17	822	632	1233	39.1	9	0/1/2
68DLH18	865	804	1298	38.9	9	0/0/2
64DLH18	945	760	1418	43.3	9	0/0/2
68DLH19	997	913	1496	45.2	9	0/0/2
78' LENGTH						
40LH08	187	93	281	13.7	6	0/3/2
44LH09	247	136	371	15.9	6	0/2/2
44LH10	272	150	408	17.6	7	0/2/2
44LH11	295	162	443	18.9	7	0/2/2
52DLH10	344	228	516	20.3	7	0/2/2
44LH12	365	200	548	22.5	7	0/2/2
52DLH12	421	272	632	23.5	7	0/2/2
44LH13	433	236	650	26.8	8	0/1/2
60DLH13	486	376	729	25.1	7	0/1/2
56DLH14	569	394	854	29	8	0/1/2
52DLH14	584	368	876	31.2	8	0/1/2
64DLH15	615	501	923	30.5	8	0/1/2
68DLH16	663	594	995	31.5	8	0/1/2
64DLH16	692	561	1038	33	8	0/1/2

JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
68DLH17	748	675	1122	34.6	8	0/1/2
60DLH17	801	600	1202	38.9	9	0/1/2
68DLH18	865	763	1298	39.6	9	0/0/2
60DLH18	925	677	1388	45.4	9	0/0/2
68DLH19	997	866	1496	45.2	9	0/0/2
80' LENGTH						
40LH08	178	86	267	13.7	6	0/3/2
44LH09	236	127	354	15.9	6	0/2/2
44LH10	260	139	390	17.5	7	0/2/2
48LH11	272	160	408	17.2	6	0/2/2
52DLH10	335	217	503	20.6	7	0/2/2
52DLH11	368	237	552	22	7	0/2/2
52DLH12	410	258	615	24.1	7	0/2/2
60DLH13	474	357	711	25	7	0/1/2
52DLH13	498	313	747	27.9	8	0/1/2
60DLH14	527	380	791	27.3	8	0/1/2
80DLH15	644	631	966	30.6	8	0/1/2
68DLH16	663	564	995	32.8	8	0/1/2
80DLH16	774	737	1161	36.5	9	0/1/2
56DLH17	788	535	1182	41.4	9	0/1/2
68DLH18	865	725	1298	41.1	9	0/1/2
80DLH18	1010	1010	1515	46	9	0/1/2
80DLH19	1179	1136	1769	53.2	11	0/1/2
80DLH20	1325	1269	1988	57.8	11	0/1/2
82' LENGTH						
44LH09	226	118	339	16.2	6	0/3/2
44LH10	249	130	374	17.6	7	0/2/2
44LH11	269	140	404	18.8	7	0/2/2
52DLH10	327	206	491	20.5	7	0/2/2
52DLH11	359	225	539	22.1	7	0/2/2
52DLH12	400	246	600	25	7	0/2/2
44LH14	446	231	669	29.1	8	0/1/2
56DLH13	479	319	719	27.8	8	0/1/2
60DLH14	514	362	771	28.2	8	0/1/2
56DLH14	541	356	812	30.3	8	0/1/2
52DLH14	556	333	834	32.7	8	0/1/2
56DLH15	618	402	927	34.5	8	0/1/2
64DLH16	658	508	987	34.2	8	0/1/2
72DLH17	689	645	1034	35.1	9	0/1/2
80DLH16	764	701	1146	38.6	9	0/1/2
80DLH17	883	843	1325	41.2	9	0/1/2
80DLH18	998	965	1497	47	9	0/1/2
80DLH19	1164	1081	1746	54.3	11	0/1/2
80DLH20	1309	1208	1964	58.2	11	0/1/2

ECONOMICAL JOIST GUIDE

JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
84' LENGTH						
44LH09	216	110	324	16.3	6	0/3/2
44LH10	238	121	357	17.6	7	0/2/2
44LH11	258	131	387	18.8	7	0/2/2
52DLH10	319	196	479	21	7	0/2/2
52DLH11	350	215	525	22.8	7	0/2/2
52DLH12	391	234	587	25	7	0/2/2
44LH14	425	215	638	29	8	0/1/2
56DLH13	467	304	701	27.8	8	0/1/2
64DLH14	498	367	747	27.6	8	0/1/2
52DLH14	543	317	815	32.7	8	0/1/2
64DLH15	571	432	857	31.1	8	0/1/2
56DLH15	603	383	905	35.6	8	0/1/2
64DLH16	642	484	963	35.3	8	0/1/2
80DLH16	746	668	1119	38.4	9	0/1/2
72DLH18	807	694	1211	41.7	9	0/1/2
68DLH18	835	658	1253	44.3	9	0/1/2
80DLH18	974	919	1461	49	9	0/1/2
80DLH19	1137	1030	1706	56.3	11	0/1/2
80DLH20	1278	1151	1917	60.1	11	0/1/2
86' LENGTH						
44LH09	207	103	311	16.2	6	0/3/2
44LH10	228	113	342	17.5	7	0/2/2
48LH11	244	133	366	17.6	6	0/2/2
52DLH10	312	187	468	21.1	7	0/2/2
52DLH11	342	205	513	23	7	0/2/2
52DLH12	382	223	573	25	7	0/2/2
44LH14	406	200	609	29	8	0/1/2
56DLH13	456	290	684	27.7	8	0/2/2
64DLH14	486	350	729	27.6	8	0/1/2
48LH15	499	269	749	33.5	8	0/1/2
60DLH15	575	388	863	33.4	8	0/1/2
56DLH15	589	365	884	35.5	8	0/1/2
72DLH16	605	515	908	34	9	0/1/2
80DLH16	729	637	1094	39.6	9	0/1/2
80DLH17	842	766	1263	44.7	9	0/1/2
80DLH18	952	877	1428	50.1	11	0/1/2
80DLH19	1110	982	1665	55.8	11	0/1/2
80DLH20	1248	1098	1872	61.3	11	0/1/2
88' LENGTH						
44LH09	198	96	297	16.1	6	0/3/2
44LH10	218	106	327	17.5	7	0/2/2
44LH11	236	115	354	18.8	7	0/2/2
44LH12	287	139	431	22.3	7	0/2/2

JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
52DLH11	334	196	501	23.2	7	0/2/2
52DLH12	373	213	560	25.5	7	0/2/2
44LH14	387	187	581	29	8	0/2/2
56DLH13	446	277	669	27.9	8	0/2/2
60DLH14	479	314	719	29.2	8	0/2/2
80DLH15	593	521	890	34.4	9	0/1/2
68DLH16	611	466	917	34.3	8	0/1/2
52DLH16	627	362	941	41	9	0/1/2
88DLH16	699	684	1049	38.6	9	0/1/2
60DLH17	710	471	1065	41.3	9	0/1/2
88DLH17	790	765	1185	41.2	9	0/1/2
88DLH18	906	871	1359	47	9	0/1/2
80DLH18	930	837	1395	50.9	11	0/1/2
88DLH19	1048	987	1572	53.7	11	0/1/2
88DLH20	1206	1180	1809	58.5	11	0/1/2
80DLH20	1220	1048	1830	62.1	11	0/1/2
88DLH21	1487	1372	2231	69.8	11	0/0/2
90' LENGTH						
48LH10	208	108	312	16.8	6	0/2/2
48LH11	225	117	338	18.2	7	0/2/2
52DLH10	298	171	447	21.8	7	0/2/2
52DLH11	327	187	491	23.1	7	0/2/2
48LH13	338	175	507	25.9	7	0/2/2
56DLH12	360	218	540	25.1	7	0/2/2
64DLH13	406	299	609	25.6	7	0/2/2
60DLH13	421	282	632	27.9	8	0/2/2
64DLH14	465	320	698	28.7	8	0/2/2
80DLH15	580	498	870	33.2	8	0/1/2
68DLH16	597	446	896	35.6	8	0/1/2
80DLH16	696	582	1044	39.7	9	0/1/2
80DLH17	805	699	1208	42.7	9	0/1/2
88DLH18	896	833	1344	47.9	9	0/1/2
88DLH19	1036	944	1554	54.8	11	0/1/2
80DLH19	1061	896	1592	56.9	11	0/1/2
80DLH20	1192	1002	1788	61.8	11	0/1/2
88DLH21	1470	1311	2205	77.1	11	0/0/2
92' LENGTH						
48LH10	200	102	300	16.8	6	0/3/2
48LH11	216	110	324	18.2	7	0/3/2
52DLH10	285	159	428	21.8	7	0/3/2
52DLH11	313	174	470	23.1	7	0/3/2
48LH13	325	164	488	25.9	7	0/2/2
56DLH12	352	209	528	25.4	7	0/2/2
64DLH13	397	286	596	26.2	7	0/2/2

ECONOMICAL JOIST GUIDE

JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
56DLH13	427	253	641	29.9	8	0/2/2
64DLH14	455	306	683	28.8	8	0/2/2
68DLH15	493	363	740	30.1	8	0/1/2
80DLH15	567	476	851	33.3	8	0/1/2
68DLH16	584	426	876	35.7	8	0/1/2
80DLH16	681	556	1022	39.7	9	0/1/2
88DLH17	764	700	1146	43.7	9	0/1/2
80DLH17	787	669	1181	46	9	0/1/2
80DLH18	890	766	1335	49.5	9	0/1/2
88DLH19	1014	903	1521	55.7	11	0/1/2
80DLH19	1038	858	1557	56.8	11	0/1/2
88DLH20	1166	1080	1749	60.1	11	0/1/2
88DLH21	1438	1255	2157	76.3	13	0/1/2
94' LENGTH						
48LH10	192	96	288	16.7	6	0/3/2
48LH11	208	103	312	18.1	7	0/3/2
52DLH10	273	150	410	21.8	7	0/3/2
52DLH11	299	164	449	23.1	7	0/3/2
48LH13	312	154	468	25.7	7	0/2/2
60DLH12	332	214	498	23.8	7	0/3/2
64DLH13	388	274	582	26	7	0/2/2
52DLH13	406	216	609	29.9	8	0/2/2
56DLH13	417	242	626	30	8	0/2/2
60DLH14	448	275	672	30.3	8	0/2/2
80DLH15	555	456	833	32.9	8	0/1/2
68DLH16	572	408	858	36	9	0/1/2
80DLH16	667	533	1001	39.6	9	0/1/2
88DLH17	748	670	1122	44.7	9	0/1/2
80DLH17	770	641	1155	45.6	9	0/1/2
80DLH18	871	733	1307	48.9	9	0/1/2
88DLH19	992	865	1488	56.6	11	0/1/2
80DLH19	1016	821	1524	58.8	11	0/1/2
80DLH20	1142	918	1713	61.7	11	0/1/2
88DLH21	1408	1202	2112	76.9	13	0/1/2
96' LENGTH						
48LH10	185	90	278	16.9	6	0/3/2
48LH11	200	97	300	18.1	7	0/3/2
52DLH10	261	140	392	22	7	0/3/2
52DLH11	287	153	431	23.3	7	0/3/2
48LH13	300	145	450	25.7	7	0/2/2
52DLH12	320	168	480	26.4	7	0/3/2
56DLH12	338	192	507	25.6	7	0/3/2
64DLH13	380	263	570	26.2	7	0/2/2
60DLH13	395	248	593	28.2	8	0/2/2

JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
64DLH14	436	281	654	29.4	8	0/2/2
80DLH15	543	437	815	33.8	8	0/1/2
80DLH16	653	511	980	39.6	9	0/1/2
96DLH17	724	715	1086	42.3	9	0/1/2
80DLH17	754	614	1131	45.2	9	0/1/2
96DLH18	814	814	1221	48	9	0/1/2
80DLH18	853	703	1280	52.4	9	0/1/2
96DLH19	974	922	1461	54.4	11	0/1/2
80DLH19	995	788	1493	59	11	0/1/2
80DLH20	1118	880	1677	61.5	11	0/1/2
88DLH21	1379	1152	2069	75.8	13	0/1/2
96DLH22	1540	1490	2310	81.5	11	0/1/2
98' LENGTH						
52DLH10	251	132	377	21.8	7	0/3/2
52DLH11	275	144	413	23.2	7	0/3/2
56DLH11	288	169	432	23.5	7	0/3/2
60DLH12	318	197	477	23.7	7	0/3/2
56DLH12	331	184	497	26.6	7	0/3/2
52DLH13	373	191	560	29.9	8	0/2/2
56DLH13	401	223	602	30.2	8	0/2/2
60DLH14	430	253	645	30.5	8	0/2/2
68DLH15	462	320	693	32.2	8	0/1/2
64DLH15	489	317	734	34.7	8	0/1/2
72DLH16	531	397	797	36.9	9	0/1/2
64DLH16	551	355	827	39.4	9	0/1/2
88DLH16	634	551	951	42.5	9	0/1/2
88DLH17	717	617	1076	46.2	11	0/1/2
80DLH17	739	590	1109	45.3	9	0/1/2
96DLH18	806	781	1209	49.5	11	0/1/2
88DLH18	823	702	1235	50.5	11	0/1/2
96DLH19	964	885	1446	56.9	11	0/1/2
96DLH20	1084	1003	1626	60.2	11	0/1/2
80DLH20	1095	844	1643	66	11	0/1/2
96DLH21	1361	1230	2042	77.5	13	0/1/2
96DLH22	1524	1430	2286	81.3	13	0/1/2
100' LENGTH						
52DLH10	241	124	362	21.8	7	0/0/5
52DLH11	264	135	396	23.1	7	0/0/5
56DLH11	277	158	416	23.4	7	0/0/5
60DLH12	312	189	468	24.5	7	0/0/5
68DLH13	351	255	527	26.2	7	0/0/4
56DLH13	386	209	579	30.1	8	0/0/4
68DLH14	404	274	606	28.9	8	0/0/4
64DLH14	418	259	627	31	8	0/0/4

ECONOMICAL JOIST GUIDE

JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
68DLH15	453	307	680	32.3	8	0/0/4
64DLH15	479	304	719	35.2	8	0/0/4
72DLH16	520	381	780	36.6	9	0/0/3
80DLH16	627	471	941	41.8	9	0/0/3
88DLH17	703	592	1055	43.1	9	0/0/3
80DLH17	724	566	1086	48.3	9	0/0/3
96DLH18	790	750	1185	49.4	9	0/0/3
72DLH19	804	555	1206	53.1	11	0/0/3
96DLH19	944	850	1416	57.4	11	0/0/3
96DLH20	1063	963	1595	60.3	11	0/0/3
88DLH20	1073	913	1610	62.5	11	0/0/3
96DLH21	1333	1181	2000	77.9	13	0/0/3
96DLH22	1494	1373	2241	82.6	13	0/0/3
105' LENGTH						
56DLH11	253	136	380	23.3	7	0/0/5
64DLH12	286	180	429	24	7	0/0/5
56DLH13	351	181	527	30	8	0/0/4
60DLH13	361	207	542	30.2	8	0/0/4
64DLH14	398	235	597	30.8	8	0/0/4
80DLH15	497	365	746	34.2	8	0/0/4
80DLH16	597	427	896	41.2	9	0/0/4
88DLH17	670	537	1005	46.5	9	0/0/4
104DLH18	733	733	1100	49.6	11	0/0/4
88DLH18	768	611	1152	51.5	9	0/0/4
88DLH19	888	692	1332	57.2	11	0/0/4
80DLH19	909	658	1364	58.9	11	0/0/4
88DLH20	1022	828	1533	64.6	11	0/0/4
104DLH21	1260	1181	1890	77.9	13	0/0/3
96DLH21	1270	1071	1905	79.5	13	0/0/3
96DLH22	1423	1245	2135	84.1	13	0/0/3
104DLH23	1556	1438	2334	91.1	13	0/0/3
110' LENGTH						
56DLH11	231	118	347	23.4	7	0/0/6
56DLH12	263	130	395	26.4	7	0/0/5
64DLH12	273	164	410	26	7	0/0/5
56DLH13	319	157	479	30.1	8	0/0/5
64DLH13	332	200	498	30.2	8	0/0/5
72DLH14	357	239	536	30.1	8	0/0/5
64DLH14	380	214	570	33.3	8	0/0/5
68DLH15	412	254	618	34	8	0/0/4
60DLH15	434	228	651	39.1	9	0/0/4
72DLH16	473	315	710	38.6	9	0/0/4
64DLH16	491	281	737	41.3	9	0/0/4
88DLH16	565	437	848	43.4	9	0/0/4

JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
80DLH17	658	468	987	48.4	9	0/0/4
96DLH18	718	619	1077	50.6	9	0/0/4
80DLH18	744	535	1116	55.2	9	0/0/4
104DLH19	851	774	1277	59.2	11	0/0/4
104DLH20	957	876	1436	62	11	0/0/4
88DLH20	975	754	1463	67.1	11	0/0/4
104DLH21	1203	1076	1805	79.3	13	0/0/3
96DLH22	1358	1134	2037	86.4	13	0/0/3
104DLH23	1485	1309	2228	93.8	13	0/0/3
115' LENGTH						
60DLH12	252	131	378	25.6	7	0/0/6
60DLH13	306	158	459	30.2	8	0/0/5
60DLH14	338	170	507	33	8	0/0/5
64DLH14	360	193	540	33.5	8	0/0/5
80DLH15	442	296	663	36.6	8	0/0/4
80DLH16	535	347	803	41.7	9	0/0/4
88DLH17	611	447	917	48	9	0/0/4
104DLH18	669	623	1004	51.5	11	0/0/4
88DLH18	701	509	1052	53.7	9	0/0/4
112DLH19	801	773	1202	57.5	11	0/0/4
88DLH19	811	577	1217	59.7	11	0/0/4
112DLH20	906	876	1359	61.9	11	0/0/4
96DLH20	924	728	1386	65.3	11	0/0/4
112DLH21	1142	1078	1713	79.6	13	0/0/3
96DLH21	1159	893	1739	80	13	0/0/3
112DLH22	1281	1252	1922	84	13	0/0/3
96DLH22	1299	1037	1949	88.2	13	0/0/3
112DLH23	1412	1310	2118	92.1	13	0/0/3
112DLH24	1673	1587	2510	111.2	13	0/0/3
120' LENGTH						
60DLH12	232	115	348	25.6	7	0/0/6
60DLH13	282	139	423	30.1	8	0/0/5
60DLH14	310	149	465	32.9	8	0/0/5
72DLH14	328	201	492	31.7	8	0/0/5
80DLH15	408	262	612	36.4	8	0/0/4
80DLH16	493	305	740	41.5	9	0/0/4
88DLH16	518	367	777	42.9	9	0/0/4
88DLH17	586	411	879	47.7	9	0/0/4
104DLH18	642	572	963	49.5	9	0/0/4
88DLH18	672	468	1008	54	9	0/0/4
104DLH19	780	650	1170	59.3	11	0/0/4
120DLH20	819	819	1229	62.3	11	0/0/4
104DLH20	877	736	1316	66.2	11	0/0/4
120DLH21	1019	1016	1529	76.4	13	0/0/3

ECONOMICAL JOIST GUIDE

JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
112DLH21	1094	990	1641	79.7	13	0/0/3
120DLH22	1168	1168	1752	82.2	13	0/0/3
112DLH22	1228	1150	1842	85.3	13	0/0/3
120DLH23	1292	1234	1938	88.9	13	0/0/3
104DLH23	1362	1100	2043	97.1	13	0/0/3
120DLH24	1532	1497	2298	103.5	13	0/0/3
112DLH24	1604	1457	2406	110.4	13	0/0/3
120DLH25	1756	1754	2634	118.1	13	0/0/3
125' LENGTH						
64DLH12	221	116	332	26.5	8	0/0/6
64DLH13	269	141	404	30.6	8	0/0/5
64DLH14	306	151	459	33.4	8	0/0/5
68DLH14	317	171	476	33.8	8	0/0/5
68DLH15	354	191	531	37.4	9	0/0/5
80DLH16	454	270	681	41.5	9	0/0/4
88DLH16	482	328	723	43.4	9	0/0/4
80DLH17	525	324	788	48.5	9	0/0/4
96DLH17	561	421	842	49.4	9	0/0/4
88DLH18	625	417	938	54.1	9	0/0/4
88DLH19	722	473	1083	59.3	11	0/0/4
96DLH19	756	543	1134	61.2	11	0/0/4
120DLH20	793	759	1190	64.8	11	0/0/4
104DLH20	842	678	1263	66.3	11	0/0/4
120DLH21	986	936	1479	75.9	13	0/0/4
112DLH21	1050	912	1575	84.2	13	0/0/4
120DLH22	1130	1088	1695	83.3	13	0/0/4
112DLH22	1179	1059	1769	92.7	13	0/0/4
96DLH22	1195	877	1793	95.4	13	0/0/4
104DLH23	1307	1013	1961	101.8	13	0/0/4
120DLH24	1483	1379	2225	111.3	13	0/0/4
112DLH24	1540	1343	2310	120.3	13	0/0/4
130' LENGTH						
68DLH13	255	142	383	31.3	8	0/0/6
80DLH15	350	205	525	36.1	8	0/0/5
80DLH16	419	240	629	41.2	9	0/0/5
88DLH16	447	291	671	43.2	9	0/0/5
80DLH17	487	288	731	47.9	9	0/0/5
96DLH17	540	389	810	50.7	9	0/0/5
88DLH18	577	370	866	53.7	9	0/0/4
96DLH18	608	443	912	56	11	0/0/4
88DLH19	666	420	999	59.6	11	0/0/4
104DLH19	720	554	1080	63.3	11	0/0/4
112DLH20	802	685	1203	66.8	11	0/0/4
120DLH21	948	865	1422	81.4	13	0/0/4

JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
96DLH21	1027	698	1541	83.8	13	0/0/4
120DLH22	1087	1006	1631	89	13	0/0/4
112DLH22	1133	979	1700	89.6	13	0/0/4
96DLH22	1150	811	1725	94.8	13	0/0/4
120DLH23	1202	1051	1803	99	13	0/0/4
104DLH23	1257	937	1886	102.9	13	0/0/4
112DLH24	1480	1241	2220	114.6	13	0/0/4
120DLH25	1634	1494	2451	128.3	13	0/0/4
135' LENGTH						
68DLH13	237	127	356	31	8	0/0/6
68DLH14	273	135	410	33.8	8	0/0/6
80DLH15	326	183	489	36.5	8	0/0/5
80DLH16	389	214	584	40.9	9	0/0/5
88DLH16	416	260	624	42.8	9	0/0/5
80DLH17	453	258	680	47.6	9	0/0/5
96DLH17	503	347	755	50	9	0/0/5
88DLH18	535	331	803	53.3	9	0/0/5
104DLH18	570	452	855	54.5	9	0/0/5
112DLH19	682	560	1023	62.3	13	0/0/5
104DLH19	693	513	1040	62.1	11	0/0/5
112DLH20	772	635	1158	66.4	11	0/0/5
120DLH21	913	802	1370	80.9	13	0/0/4
112DLH21	973	782	1460	82.1	13	0/0/4
120DLH22	1047	932	1571	86.4	13	0/0/4
112DLH22	1091	908	1637	90.5	13	0/0/4
120DLH23	1158	975	1737	93.9	13	0/0/4
112DLH23	1203	950	1805	102.6	13	0/0/4
120DLH24	1373	1182	2060	114.4	13	0/0/4
120DLH25	1573	1385	2360	122.2	13	0/0/4
140' LENGTH						
80DLH15	303	164	455	37.1	9	0/0/5
80DLH16	361	192	542	41.6	9	0/0/5
88DLH16	389	233	584	43.6	9	0/0/5
80DLH17	421	230	632	48.1	9	0/0/5
96DLH17	468	311	702	49.5	9	0/0/5
88DLH18	497	297	746	53.3	9	0/0/5
96DLH18	528	355	792	54.7	9	0/0/5
104DLH18	547	417	821	56.2	11	0/0/5
88DLH19	574	336	861	59.4	11	0/0/5
96DLH19	629	402	944	60.8	11	0/0/5
112DLH19	658	521	987	63.8	11	0/0/5
96DLH20	712	455	1068	68.4	11	0/0/5
112DLH20	745	590	1118	72.2	11	0/0/5
120DLH21	880	746	1320	80	13	0/0/4

ECONOMICAL JOIST GUIDE

JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
104DLH21	943	659	1415	84.5	13	0/0/4
120DLH22	1009	867	1514	88	13	0/0/4
112DLH22	1052	844	1578	94.3	13	0/0/4
120DLH23	1117	906	1676	94	13	0/0/4
104DLH23	1168	802	1752	104.4	13	0/0/4
120DLH24	1324	1099	1986	113.2	13	0/0/4
112DLH24	1375	1070	2063	124.9	13	0/0/4
120DLH25	1517	1287	2276	132	13	0/0/4
145' LENGTH						
80DLH15	283	147	425	37	9	0/0/5
80DLH16	336	172	504	41.4	9	0/0/5
88DLH16	363	210	545	43.4	9	0/0/5
80DLH17	393	207	590	47.8	9	0/0/5
96DLH17	438	280	657	49.6	9	0/0/5
88DLH18	463	267	695	52.5	9	0/0/5
96DLH18	493	319	740	54.7	9	0/0/5
104DLH18	512	375	768	55.4	9	0/0/5
88DLH19	534	302	801	59.1	11	0/0/5
96DLH19	585	361	878	60.4	11	0/0/5
112DLH19	635	486	953	62.3	11	0/0/5
96DLH20	662	409	993	67.5	11	0/0/5
120DLH20	683	564	1025	67.4	11	0/0/5
88DLH21	762	420	1143	81.2	13	0/0/4
96DLH21	829	503	1244	82.8	13	0/0/4
112DLH21	906	677	1359	85.3	13	0/0/4
120DLH22	974	808	1461	88.6	13	0/0/4
104DLH22	999	689	1499	95.2	13	0/0/4
120DLH23	1078	845	1617	101.6	13	0/0/4
104DLH23	1096	721	1644	102.6	13	0/0/4
120DLH24	1278	1024	1917	114.6	13	0/0/4
112DLH24	1327	997	1991	117.7	13	0/0/4
120DLH25	1465	1200	2198	137.8	13	0/0/4
150' LENGTH						
80DLH15	265	133	398	37.2	9	0/0/6
80DLH16	313	155	470	41.5	9	0/0/5
88DLH16	340	190	510	43.6	9	0/0/5
80DLH17	368	187	552	48	9	0/0/5
96DLH17	410	252	615	49.6	9	0/0/5
88DLH18	432	241	648	53.1	9	0/0/5
96DLH18	463	288	695	54.3	9	0/0/5
88DLH19	499	273	749	59.1	11	0/0/5
96DLH19	546	327	819	60.1	11	0/0/5
112DLH19	608	448	912	62.2	11	0/0/5
96DLH20	618	370	927	66.9	11	0/0/5

JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
104DLH20	670	436	1005	69.1	11	0/0/5
88DLH21	712	380	1068	80.6	13	0/0/4
96DLH21	776	454	1164	82.4	13	0/0/4
104DLH21	824	536	1236	84.8	13	0/0/4
120DLH22	942	755	1413	94.5	13	0/0/4
112DLH22	978	726	1467	96.2	13	0/0/4
104DLH23	1023	651	1535	103.2	13	0/0/4
112DLH23	1079	759	1619	105	13	0/0/4
120DLH24	1236	957	1854	125.5	13	0/0/4
120DLH25	1416	1121	2124	139.9	13	0/0/4
155' LENGTH						
80DLH15	247	120	371	39.3	11	0/0/6
80DLH16	293	141	440	43.8	11	0/0/6
88DLH16	318	172	477	45.9	11	0/0/6
80DLH17	345	169	518	49.8	11	0/0/6
96DLH17	385	229	578	51	11	0/0/6
88DLH18	404	218	606	54.1	11	0/0/5
96DLH18	435	261	653	55.7	11	0/0/5
104DLH18	450	307	675	57.1	11	0/0/5
88DLH19	467	248	701	59.8	11	0/0/5
96DLH19	512	296	768	61.1	11	0/0/5
104DLH19	546	349	819	62.3	11	0/0/5
112DLH19	571	406	857	64.6	11	0/0/5
104DLH20	629	395	944	69.1	11	0/0/5
120DLH20	639	493	959	68.9	11	0/0/5
112DLH20	657	459	986	73.6	11	0/0/5
96DLH21	728	412	1092	82.3	13	0/0/5
104DLH21	773	486	1160	84	13	0/0/5
120DLH22	911	707	1367	92.2	13	0/0/5
112DLH22	928	657	1392	95.5	13	0/0/5
104DLH23	956	590	1434	102.8	13	0/0/5
120DLH23	1009	739	1514	105.7	13	0/0/5
120DLH24	1196	896	1794	119.2	13	0/0/5
112DLH24	1212	834	1818	122	13	0/0/5
120DLH25	1370	1050	2055	141.3	13	0/0/5
160' LENGTH						
80DLH15	231	109	347	39.4	11	0/0/6
80DLH16	275	128	413	43.7	11	0/0/6
88DLH16	299	156	449	45.6	11	0/0/6
80DLH17	323	154	485	49.7	11	0/0/6
96DLH17	362	208	543	51.2	11	0/0/6
88DLH18	379	199	569	53.9	11	0/0/6
96DLH18	410	237	615	55.9	11	0/0/6
88DLH19	438	225	657	59.6	11	0/0/6

ECONOMICAL JOIST GUIDE

JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
96DLH19	480	269	720	60.9	11	0/0/6
112DLH19	537	369	806	63.3	11	0/0/6
104DLH20	591	359	887	68.2	11	0/0/6
112DLH20	618	418	927	70.5	11	0/0/6
96DLH21	684	374	1026	81.6	13	0/0/5
104DLH21	727	442	1091	84.2	13	0/0/5
96DLH22	792	435	1188	94.7	13	0/0/5
112DLH22	880	598	1320	96.7	13	0/0/5
104DLH23	899	536	1349	102.7	13	0/0/5
120DLH23	977	693	1466	105	13	0/0/5
120DLH24	1159	841	1739	118.1	13	0/0/5
120DLH25	1328	985	1992	147.2	13	0/0/5
165' LENGTH						
88DLH16	281	143	422	45.9	11	0/0/6
88DLH17	310	159	465	49.4	11	0/0/6
96DLH17	339	190	509	51.2	11	0/0/6
88DLH18	356	181	534	54.1	11	0/0/6
96DLH18	386	216	579	56	11	0/0/6
88DLH19	411	205	617	59.7	11	0/0/6
104DLH19	485	289	728	62.6	11	0/0/6
96DLH20	510	277	765	67.2	11	0/0/6
104DLH20	555	327	833	69	11	0/0/6
120DLH20	601	435	902	75.4	11	0/0/6
96DLH21	643	341	965	81.5	13	0/0/5
112DLH21	722	469	1083	84.6	13	0/0/5
120DLH21	747	536	1121	87.4	13	0/0/5
104DLH22	792	468	1188	95.2	13	0/0/5
104DLH23	845	489	1268	102.9	13	0/0/5
112DLH24	1087	691	1631	122.3	13	0/0/5
120DLH25	1287	926	1931	146.3	13	0/0/5
170' LENGTH						
88DLH16	265	130	398	45.7	11	0/0/6
88DLH17	292	146	438	49.2	11	0/0/6
88DLH18	335	165	503	53.9	11	0/0/6
96DLH18	364	198	546	55.8	11	0/0/6
88DLH19	387	187	581	59.6	11	0/0/6
96DLH19	424	224	636	60.8	11	0/0/6
112DLH19	478	308	717	62.6	11	0/0/6
104DLH20	522	299	783	68.4	11	0/0/6
120DLH20	571	400	857	72.6	11	0/0/6
96DLH21	605	312	908	81.8	13	0/0/5
112DLH21	681	429	1022	83.6	13	0/0/5
120DLH21	714	494	1071	87.4	13	0/0/5
104DLH22	747	428	1121	94.9	13	0/0/5

JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
120DLH22	823	574	1235	98.1	13	0/0/5
112DLH23	859	522	1289	103.5	13	0/0/5
112DLH24	1026	632	1539	121.8	13	0/0/5
120DLH24	1073	728	1610	125.4	13	0/0/5
120DLH25	1231	853	1847	147	13	0/0/5
175' LENGTH						
88DLH16	251	119	377	46.9	11	0/0/6
88DLH17	274	133	411	49.7	11	0/0/6
88DLH18	316	152	474	54.3	11	0/0/6
96DLH18	344	181	516	56.4	11	0/0/6
104DLH18	358	213	537	57.5	11	0/0/6
96DLH19	401	206	602	60.7	11	0/0/6
112DLH19	451	281	677	63.2	11	0/0/6
104DLH20	493	274	740	68.2	11	0/0/6
112DLH20	520	319	780	70.2	11	0/0/6
120DLH20	538	367	807	72.2	11	0/0/6
104DLH21	611	337	917	82.4	13	0/0/5
112DLH21	644	393	966	84	13	0/0/5
96DLH22	664	332	996	94.3	13	0/0/5
120DLH22	779	526	1169	98	13	0/0/5
112DLH23	810	478	1215	103	13	0/0/5
120DLH23	858	551	1287	106	13	0/0/5
112DLH24	970	579	1455	121.7	13	0/0/5
120DLH25	1165	782	1748	147.2	13	0/0/5
180' LENGTH						
96DLH17	284	146	426	51.7	11	0/0/7
96DLH18	326	166	489	56.2	11	0/0/6
96DLH19	378	189	567	60.9	11	0/0/6
104DLH19	409	222	614	62.7	11	0/0/6
96DLH20	428	214	642	67.7	11	0/0/6
104DLH20	465	251	698	69	11	0/0/6
120DLH20	510	338	765	71.2	11	0/0/6
96DLH21	539	263	809	81.7	13	0/0/5
120DLH21	639	416	959	85.7	13	0/0/5
112DLH22	705	419	1058	95.5	13	0/0/5
120DLH22	737	483	1106	97.5	13	0/0/5
112DLH23	765	439	1148	103.1	13	0/0/5
120DLH23	813	506	1220	105.1	13	0/0/5
112DLH24	919	532	1379	121.8	13	0/0/5
120DLH25	1104	718	1656	146.1	13	0/0/5
185' LENGTH						
96DLH17	269	134	404	55.7	13	0/0/7
96DLH18	308	153	462	60.3	13	0/0/7
96DLH19	357	174	536	64.9	13	0/0/7

ECONOMICAL JOIST GUIDE

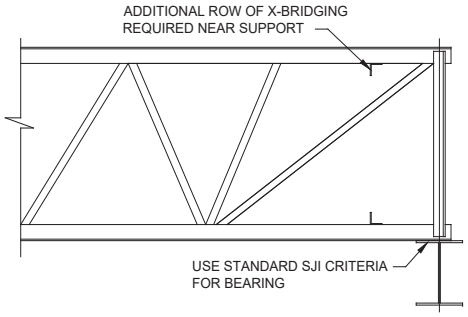
JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
104DLH19	387	204	581	66.2	13	0/0/7
96DLH20	405	196	608	70.8	13	0/0/7
104DLH20	440	232	660	72.1	13	0/0/7
120DLH20	484	311	726	79.8	13	0/0/7
96DLH21	510	242	765	83.2	13	0/0/6
112DLH21	578	333	867	85	13	0/0/6
120DLH21	606	383	909	88.1	13	0/0/6
104DLH22	633	331	950	95.7	13	0/0/6
112DLH23	724	404	1086	103.2	13	0/0/6
112DLH24	871	489	1307	121.2	13	0/0/6
120DLH25	1047	661	1571	145.5	13	0/0/6
190' LENGTH						
96DLH18	292	141	438	60.8	13	0/0/7
96DLH19	338	161	507	64.8	13	0/0/7
112DLH19	386	220	579	67.3	13	0/0/7
104DLH20	417	214	626	71.8	13	0/0/7
112DLH20	445	249	668	73.4	13	0/0/7
120DLH20	461	287	692	75.1	13	0/0/7
96DLH21	482	224	723	83	13	0/0/6
112DLH21	549	306	824	85.4	13	0/0/6
96DLH22	562	259	843	94.2	13	0/0/6
120DLH22	665	411	998	97.5	13	0/0/6
112DLH23	686	373	1029	102.1	13	0/0/6
120DLH23	733	430	1100	105.6	13	0/0/6
112DLH24	828	451	1242	120.2	13	0/0/6
120DLH24	867	521	1301	123.6	13	0/0/6
120DLH25	994	610	1491	145.5	13	0/0/6
195' LENGTH						
104DLH18	290	154	435	64.1	13	0/0/7
104DLH19	350	175	525	66.7	13	0/0/7
104DLH20	395	198	593	72.4	13	0/0/7
112DLH20	422	231	633	73.3	13	0/0/7
120DLH20	438	265	657	75.2	13	0/0/7
104DLH21	493	244	740	84.5	13	0/0/6
120DLH21	548	326	822	87.6	13	0/0/6
104DLH22	570	283	855	95.6	13	0/0/6
120DLH22	632	380	948	97.9	13	0/0/6
112DLH23	651	345	977	102.8	13	0/0/6
120DLH23	697	397	1046	105.5	13	0/0/6
112DLH24	786	418	1179	121.2	13	0/0/6
120DLH25	946	564	1419	145	13	0/0/6
200' LENGTH						
104DLH18	276	142	414	63.7	13	0/0/7
104DLH19	332	162	498	66.3	13	0/0/7

JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
104DLH20	375	184	563	72	13	0/0/7
112DLH20	402	213	603	72.6	13	0/0/7
120DLH20	418	246	627	75.2	13	0/0/7
104DLH21	469	226	704	84.1	13	0/0/6
120DLH21	521	303	782	88.1	13	0/0/6
104DLH22	542	262	813	95.1	13	0/0/6
120DLH22	602	352	903	97.3	13	0/0/6
112DLH23	618	320	927	101.9	13	0/0/6
112DLH24	748	387	1122	120.6	13	0/0/6
120DLH25	900	523	1350	144.4	13	0/0/6
205' LENGTH						
104DLH18	263	132	395	63.7	13	0/0/7
104DLH19	315	150	473	66.2	13	0/0/7
104DLH20	357	170	536	71.9	13	0/0/7
120DLH20	399	228	599	75.3	13	0/0/7
104DLH21	446	209	669	84.1	13	0/0/6
120DLH21	497	281	746	88	13	0/0/6
104DLH22	516	244	774	94.9	13	0/0/6
120DLH22	574	327	861	97.3	13	0/0/6
112DLH23	588	297	882	101.6	13	0/0/6
112DLH24	713	359	1070	120.3	13	0/0/6
120DLH25	858	485	1287	144.5	13	0/0/6
210' LENGTH						
112DLH19	317	162	476	70.6	13	0/0/8
112DLH20	365	184	548	75.6	13	0/0/8
120DLH20	380	212	570	78.2	13	0/0/8
112DLH21	450	227	675	86.6	13	0/0/6
120DLH21	474	262	711	89.6	13	0/0/6
112DLH22	521	264	782	95.6	13	0/0/6
120DLH22	547	304	821	98.1	13	0/0/6
112DLH23	560	276	840	101.9	13	0/0/6
120DLH23	602	318	903	104.8	13	0/0/6
112DLH24	680	334	1020	120.9	13	0/0/6
120DLH25	819	452	1229	144.6	13	0/0/6
215' LENGTH						
112DLH19	303	151	455	74	13	0/0/8
112DLH20	348	171	522	78.8	13	0/0/8
120DLH20	362	198	543	81.5	13	0/0/8
112DLH21	430	211	645	90.1	13	0/0/7
120DLH21	452	244	678	92.8	13	0/0/7
112DLH22	497	246	746	99	13	0/0/7
120DLH22	522	283	783	101.1	13	0/0/7
112DLH23	533	257	800	104.5	13	0/0/7
120DLH23	574	296	861	107.2	13	0/0/7

ECONOMICAL JOIST GUIDE

JOIST DESIG.	TOTAL LOAD (ASD)	LL for L/360 DEFL.	TOTAL LOAD (LRFD)	JOIST WEIGHT (lbs/ft)	MAX CHORD WIDTH (IN)	BRIDG. (H/X/EX)
112DLH24	648	311	972	121.7	13	0/0/7
120DLH25	782	421	1173	144.3	13	0/0/7
220' LENGTH						
112DLH19	289	142	434	78.3	13	0/0/8
112DLH20	333	160	500	83.2	13	0/0/8
120DLH20	347	185	521	90.6	13	0/0/8
120DLH21	432	227	648	97.5	13	0/0/7
112DLH22	474	229	711	103.2	13	0/0/7
120DLH22	499	265	749	105.4	13	0/0/7
120DLH23	548	276	822	111.8	13	0/0/7
112DLH24	619	291	929	125.6	13	0/0/7
120DLH24	651	335	977	127.5	13	0/0/7
120DLH25	748	393	1122	146.4	13	0/0/7
225' LENGTH						
120DLH20	332	172	498	86.2	13	0/0/8
120DLH21	414	212	621	97.8	13	0/0/7
120DLH22	477	247	716	106.2	13	0/0/7
120DLH23	524	258	786	112.2	13	0/0/7
120DLH24	623	313	935	128.2	13	0/0/7
120DLH25	715	367	1073	146.8	13	0/0/7
230' LENGTH						
120DLH20	318	161	477	93.8	13	0/0/8
120DLH21	396	199	594	97.6	13	0/0/7
120DLH22	457	231	686	105.9	13	0/0/7
120DLH23	501	241	752	112.1	13	0/0/7
120DLH24	596	293	894	127.6	13	0/0/7
120DLH25	684	344	1026	145.9	13	0/0/7
235' LENGTH						
120DLH20	305	151	458	94.6	13	0/0/9
120DLH21	379	186	569	98	13	0/0/7
120DLH22	438	217	657	105.7	13	0/0/7
120DLH23	479	227	719	111.8	13	0/0/7
120DLH24	571	275	857	127.3	13	0/0/7
120DLH25	656	322	984	145.6	13	0/0/7
240' LENGTH						
120DLH20	292	142	438	94.5	13	0/0/9
120DLH21	363	175	545	98	13	0/0/7
120DLH22	420	204	630	105.8	13	0/0/7
120DLH23	459	213	689	111.8	13	0/0/7
120DLH24	548	258	822	127.5	13	0/0/7
120DLH25	628	302	942	145.8	13	0/0/7

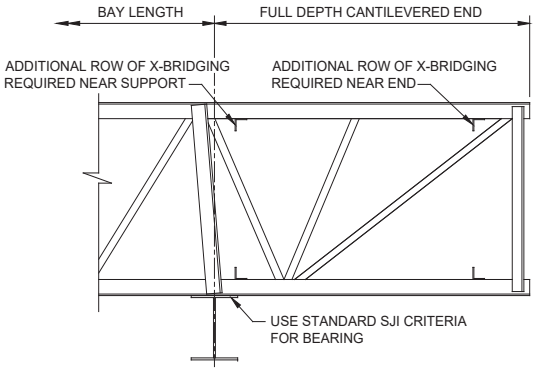
ACCESSORIES AND DETAILS



SQUARE ENDED, BOTTOM BEARING

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

Note: Joist configuration and member size may vary.



CANTILEVERED, BOTTOM BEARING, SQUARE END

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

Note: Joist configuration and member size may vary.

ACCESSORIES AND DETAILS

APPROXIMATE DUCT OPENING SIZES

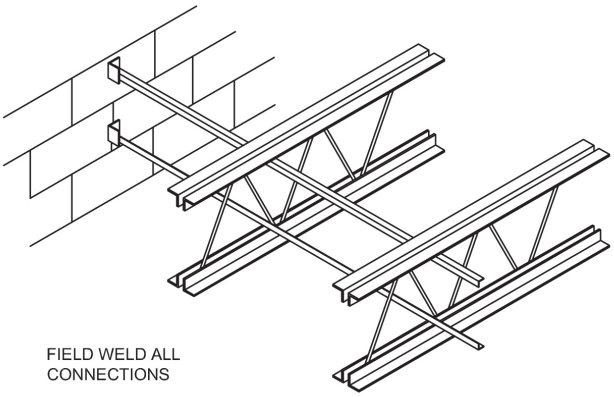
JOIST DEPTH	ROUND	SQUARE	RECTANGLE
10 INCHES	5 INCHES	4 x 4 INCHES	3 x 7 INCHES
12 INCHES	7 INCHES	5 x 5 INCHES	3 X 8 INCHES
14 INCHES	8 INCHES	6 X 6 INCHES	5 X 9 INCHES
16 INCHES	8 INCHES	6 X 6 INCHES	5 X 9 INCHES
18 INCHES	9 INCHES	7 X 7 INCHES	5 X 9 INCHES
20 INCHES	10 INCHES	8 X 8 INCHES	6 X 11 INCHES
22 INCHES	10 INCHES	9 X 9 INCHES	7 X 11 INCHES
24 INCHES	12 INCHES	10 X 10 INCHES	7 X 13 INCHES
28 INCHES	15 INCHES*	12 X 12 INCHES*	9 X 18 INCHES*
28 INCHES	16 INCHES*	13 X 13 INCHES*	9 X 18 INCHES*
30 INCHES	17 INCHES*	14 X 14 INCHES*	10 X 18 INCHES*

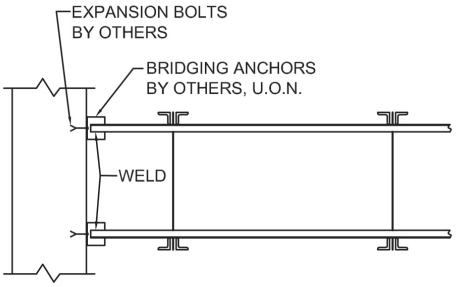
SPECIFYING PROFESSIONAL MUST INDICATE ON STRUCTURAL DRAWINGS SIZE AND LOCATION OF ANY DUCT THAT IS TO PASS THRU JOIST. THIS DOES NOT INCLUDE ANY FIREPROOFING ATTACHED TO JOIST. FOR DEEPER LH- AND DLH- SERIES JOISTS, CONSULT MANUFACTURER.

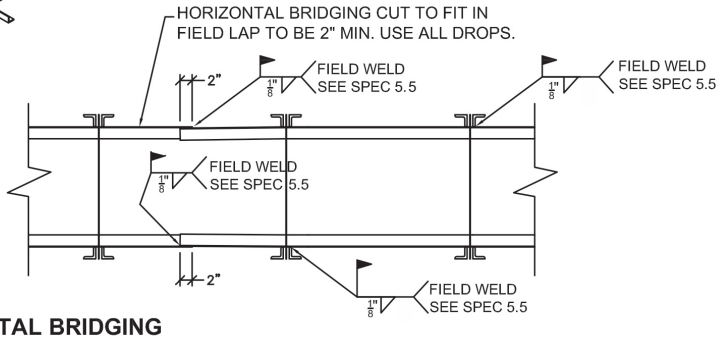
*** FOR ROD WEB CONFIGURATION, THESE WILL BE REDUCED. CONSULT MANUFACTURER.**

ACCESSORIES AND DETAILS

BRIDGING DETAILS

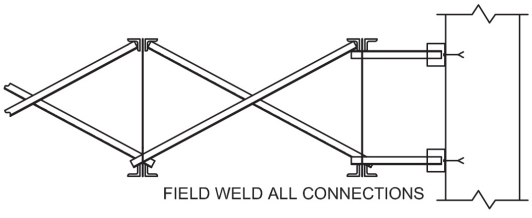






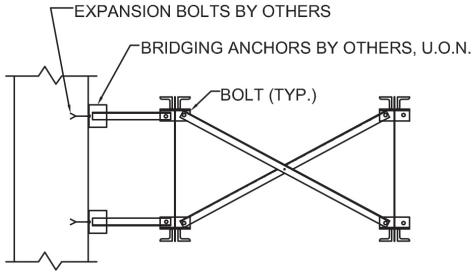
HORIZONTAL BRIDGING
SEE SJI SPECIFICATIONS

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



WELDED CROSS BRIDGING

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



BOLTED CROSS BRIDGING

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

(b) FOR REQUIRED BOLT SIZE REFER TO BRIDGING TABLE. NOTE: CLIP CONFIGURATION MAY VARY FROM THAT SHOWN.

Steel Joist Institute – SJI COSP - 2015

CODE OF STANDARD PRACTICE

FOR STEEL JOISTS AND JOIST GIRDERS

Adopted by the Steel Joist Institute April 7, 1931
Revised to Nov. 10, 2014 - Effective Jan.1, 2015

SECTION 1. GENERAL

1.1 SCOPE

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

1.2 APPLICATION

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

1.3 DEFINITIONS

Add-Load. A single vertical concentrated load that occurs at any one panel point along the joist chord. This load is in addition to any other gravity loads specified.

Bend-Check Load. A vertical concentrated load used to design the joist chord for the additional bending stresses resulting from this load being applied at any location between the joist panel points. This load shall already be accounted for in the specified joist designation load, uniform load, or Add-Load and is used only for the additional bending check in the chord and does not contribute to the overall axial forces within the joist. An ideal use of this is for incidental loads which have already been accounted for in the design loading but may induce additional bending stress due to this load occurring at any location along the chord.

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

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

Material. Steel joists, Joist Girders and accessories as provided by the seller.

Owner. The entity that is identified as such in the contract documents.

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Placement Plans. Drawings that are prepared depicting the interpretation of the contract document's requirements for the Material to be supplied by the Seller. These floor or roof plans are approved by the Specifying Professional, Buyer, or Owner for conformance with the design requirements. The Seller uses the information contained on these drawings for final material design. A unique piece mark number is typically shown for the individual placement of the steel joists, Joist Girders and accessories along with sections that describe the end bearing conditions and minimum attachment required so that material is placed in the proper location in the field.

Seller. A company certified by the Steel Joist Institute engaged in the manufacture and distribution of steel joists, Joist Girders and accessories.

Specifying Professional. The licensed professional who is responsible for sealing the building contract documents, that indicates that he or she has performed or supervised the analysis, design and document preparation for the structure and has knowledge of the load-carrying structural system.

Structural Drawings. The graphic or pictorial portions of the contract documents showing the design, location and dimensions of the work. These documents generally include plans, elevations, sections, details, connections, all loads, schedules, diagrams and notes.

1.4 DESIGN

In the absence of ordinances or specifications to the contrary, all designs prepared by the Specifying Professional shall be in accordance with the Steel Joist Institute Standard Specifications of latest adoption.

1.5 RESPONSIBILITY FOR DESIGN AND ERECTION

When material requirements are specified, the seller shall assume no responsibility other than to furnish the items listed in Section 5.2(a). When material requirements are not specified, the seller shall furnish the items listed in Section 5.2(a) in accordance with Steel Joist Institute Standard Specifications of latest adoption, and this code. Pertinent design information shall be provided to the seller as stipulated in Section 6.1. The seller shall identify material by showing size and type. In no case shall the seller assume any responsibility for the erection of the item furnished.

1.6 PERFORMANCE TESTS FOR OPEN WEB STEEL JOIST CONSTRUCTION

When a performance test on a joist is required, the following criteria shall be used:

a) The performance test load shall be the maximum factored uniformly distributed downward design load for the selected joist.

   (1) The TOTAL safe factored uniformly distributed load-carrying capacity tabulated in the Standard LRFD Load Table for the specific joist designation and span.

   (2) For a joist with factored loading conditions other than those found in the Standard LRFD Load Table, this is the LRFD Load Combination resulting in the highest uniformly distributed downward factored design load.

   (3) For a joist with loading conditions other than those found in the Standard ASD Load Table, this is the ASD Load Combination resulting in the highest uniformly distributed downward design load multiplied times 1.50.

b) Joist self-weight and the weight of all test materials shall be included in the calculation of applied performance test loading as appropriate for the joist during testing.

c) Loading shall be uniformly distributed across the full length of the joist top chord, and the load application shall maintain uniform distribution throughout the test. At any stage during the application of the test loading, the test load shall not be distributed in such a manner as to result in any joist component being subjected to a higher proportion of force than intended by the joist design.

d) If tested as a panel assembly, the joists shall be tested in pairs with deck, deck attachments, and bridging installed per the approved joist and deck Placement Plans. All bottom chord horizontal bridging rows shall be terminated by bracing back to the top chord of the adjacent joist or by a lateral restraint system which does not inhibit the vertical deflection of the test joist.

e) If tested singly in a load test machine apparatus, the joist chords shall be braced to prevent lateral movement, without inhibiting vertical displacement. The joist top chord shall have lateral braces located at equal spacing of no more than 36 inches (914 mm) on center. The joist bottom chord shall have lateral braces located, at a minimum, per the bottom chord bridging locations shown on the approved joist placement plan.

f) The performance test loading shall be applied at a rate of no greater than 25 plf per minute and shall be sustained for no less than 15 minutes. After the maximum test load has been removed for a minimum of 10 minutes, the remaining vertical displacement at midspan shall not exceed 20% of the vertical midspan deflection sustained under the full performance test load.

g) All costs associated with such testing shall be borne by the purchaser.

h) Joists that have been designed and manufactured and have satisfied the above performance test criteria shall be considered to satisfy the intent of the Steel Joist Institute Standard Specifications, and shall be considered acceptable for use in construction. No further proof of strength of individual joist components or connections is required.

SECTION 2.
JOISTS, JOIST GIRDERS, AND ACCESSORIES

2.1 STEEL JOISTS AND JOIST GIRDERS

Steel joists and Joist Girders shall carry the designations and meet the requirements of the Steel Joist Institute Standard Specifications of latest adoption.

K-Series, LH-Series, DLH-Series joists, and Joist Girders are furnished either underslung or square ended, with top chords either parallel, pitched one way or pitched two ways. It is not recommended that any Joist Girder, or any DLH-Series joist that exceeds 72 inches (1829 mm) in depth and has a span greater than 80 feet (24384 mm), be used in a bottom bearing configuration.

The steel joist or Joist Girder designation depth or nominal depth shall be the depth at midspan, except for double pitched joists which shall be the depth at the ridge. K-Series, LH-Series, DLH-Series joists, and Joist Girders shall be permitted to have either parallel chords or a top chord pitch of up to 1/2 inch per foot (1:24).

2.2 BEARING SEATS

Underslung types are furnished with minimum end bearing depths as shown in Table 2.2-1. A standard maximum joist bearing seat width (perpendicular to the joist length) is provided. This width shall be permitted to vary based on the joist design and joist manufacturer.

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TABLE 2.2-1

STANDARD END BEARING SEAT DEPTH AND STANDARD MAXIMUM SEAT WIDTH		
JOIST SECTION NUMBER[1]	**MINIMUM BEARING DEPTH**	**MAXIMUM SEAT WIDTH[2]**
K1-12	2 ½" (64 mm)	6" (152 mm)
LH02-06	5" (127 mm)	6" (152 mm)
LH07-17, DLH10-17	5" (127 mm)	8" (203 mm)
JG	7 ½" (191 mm)	8" (203 mm)
DLH18-25, JG[3]	7 ½" (191 mm)	13" (330 mm)
JG[4]	10" (254 mm)	13" (330 mm)

(1) **Last two digits of joist designation shown in Load Table.**
(2) **THE SEAT WIDTH MAY VARY BASED ON DESIGN.**
(3) **Joist Girders** with a self weight greater than 50 plf (0.73 kN/m).
(4) **Joist Girders** with a self weight equal to or greater than 150 plf (2.19 kN/m).

Joist Girder bearing seat widths vary depending on the Joist Girder size and shall be permitted to be up to 13" (330 mm) wide. The supporting structural member shall be made wide enough to accommodate the seat widths.

Where steel joists or Joist Girders are sloped, sloped end bearings may be provided where the slope exceeds 1/4 inch per foot (1:48). When sloped end bearings are required, the seat depths shall be adjusted to maintain the standard height at the shallow end of the sloped bearing. For Open Web Steel Joists, K-Series, bearing ends shall be permitted to not be beveled for slopes of 1/4 inch or less per foot (1:48). For sloped joist bearing seats refer to the sloped seat depth requirements of Table 2.2-2 and Table 2.2-3.

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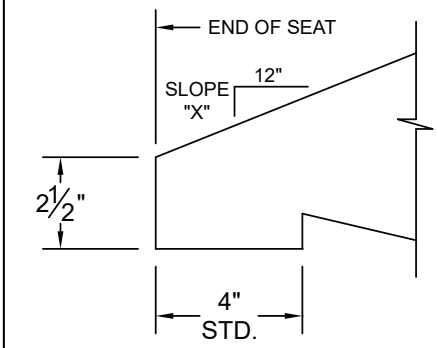
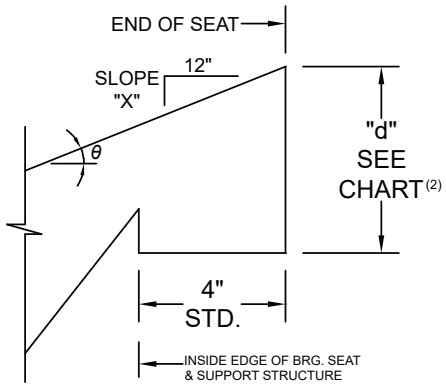
SLOPED SEAT REQUIRMENTS FOR SLOPES 3/8":12 AND GREATER
K-SERIES OPEN WEB STEEL JOISTS

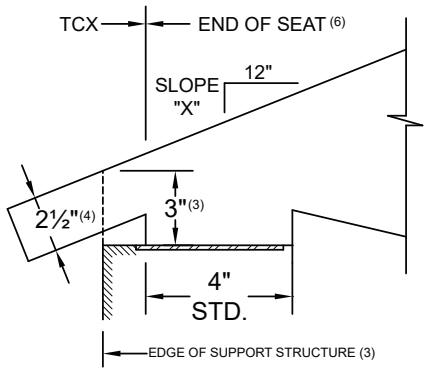
LOW END W/OUT TOP CHORD EXTENSIONS



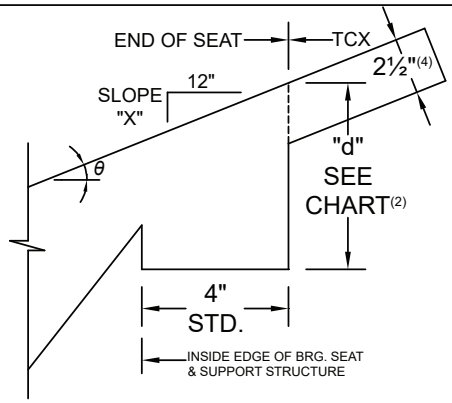
HIGH END W/OUT TOP CHORD EXTENSIONS



LOW END W/ TOP CHORD EXTENSIONS



HIGH END W/ TOP CHORD EXTENSIONS



SLOPE "X":12	MINIMUM HIGH END SEAT DEPTH "d"
3/8	3 1/2
1/2	3 1/2
1	3 1/2
1 1/2	4
2	4
2 1/2	4
3	4 1/2
3 1/2	4 1/2
4	4 1/2
4 1/2	5
5	5
5 1/2	5 1/2
6	5 1/2
SEE NOTE (2) FOR SLOPE RATES GREATER THAN 6:12	

Notes:
(1) Depths shown are the minimum required for manufacturing of sloped seats. Depths may vary depending on actual bearing conditions.
(2) $d = 1/2 + 2.5/\cos\theta + 4\tan\theta$ (Rounded up to the nearest 1/2".)
(3) Clearance must be checked at outer edge of support. Increase bearing depths as required to allow passage of 2 1/2" deep extension.
(4) If extension depth greater than 2 1/2" is required, increase bearing depths accordingly.
(5) If slope is 1/4 : 12 or less, sloped seats are not required.
(6) Required bearing seat depth is determined at END OF SEAT.
(7) Also refer to SJI Specification 5.4 for special considerations of joist end reaction location.

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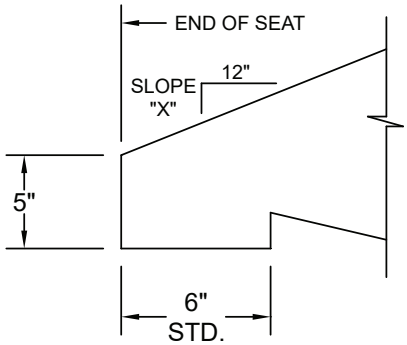
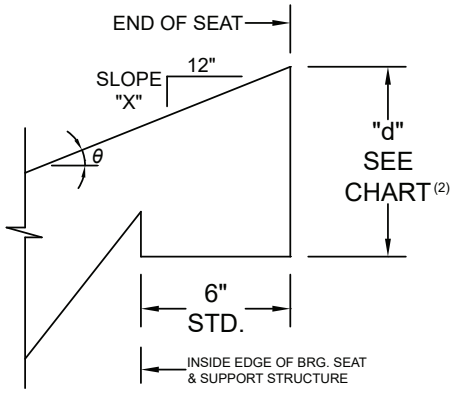
SLOPED SEAT REQUIRMENTS FOR SLOPES 3/8":12 AND GREATER
LH- AND DLH-SERIES OPEN WEB STEEL JOISTS

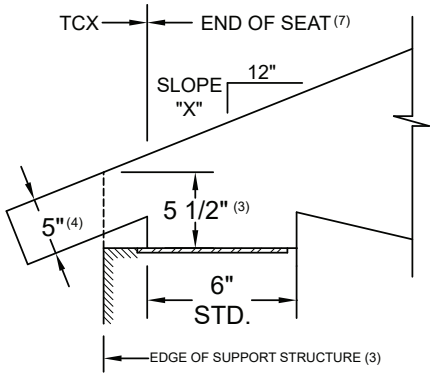
LOW END W/OUT TOP CHORD EXTENSIONS



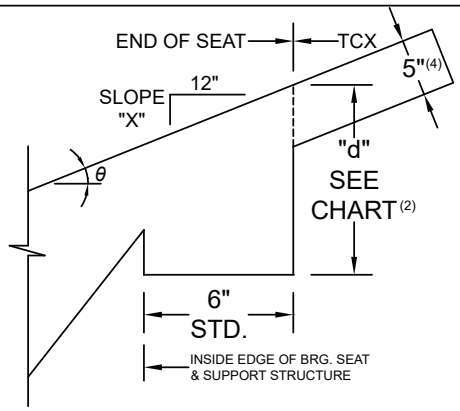
HIGH END W/OUT TOP CHORD EXTENSIONS



LOW END W/ TOP CHORD EXTENSIONS



HIGH END W/ TOP CHORD EXTENSIONS



SLOPE "X" : 12	MINIMUM HIGH END SEAT DEPTH "d"
3/8	6
1/2	6
1	6 1/2
1 1/2	6 1/2
2	7
2 1/2	7
3	7 1/2
3 1/2	7 1/2
4	8
4 1/2	8 1/2
5	8 1/2
5 1/2	9
6	9 1/2
SEE NOTE (2) FOR SLOPE RATES GREATER THAN 6:12	

Notes:
(1) Depths shown are the minimum required for manufacturing of sloped seats. Depth may vary depending on actual bearing condition.
(2) $d = 1/2 + 5 / \cos\theta + 6 \tan\theta$
(3) Clearance must be checked at outer edge of support. Increase bearing seat depth as required to allow passage of 5" deep extension.
(4) If extension depth greater than 5" is required, increase bearing depths accordingly.
(5) Add 2 1/2" to seat depth at 18 thru 25 chord section numbers. Consult with joist manufacturer for information when TCXs are present.
(6) If slope is 1/4 : 12 or less, sloped seats may not required.
(7) Required bearing seat depth shall be determined at END OF SEAT.
(8) Also refer to SJI Specification 5.4 for special considerations of joist end reaction location.

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2.3 JOIST LOCATION AND SPACING

The uniform loads as shown in the Standard Specifications Load Tables & Weight Tables of latest adoption shall be used to determine maximum joist spacing.

Where sidewalls, wall beams or tie beams are capable of supporting the floor slab or roof deck, the first adjacent joists should be placed one full space from these members. Joists are provided with camber and may have a significant difference in elevation with respect to the adjacent structure because of this camber. This difference in elevation shall be given consideration when locating the first joist adjacent to a side wall, wall beam, or tie beam.

K-Series Joists should be placed no closer than 6 inches (152 mm) to adjacent walls or structural members. LH-Series and DLH-Series Joists should be placed no closer than 12 inches (305 mm) to adjacent walls or structural members. Where partition walls are supported by parallel floor joists, there shall be at least one joist provided under each such partition, and more than one such joist shall be provided if necessary to safely support the weight of such partition and the adjacent floor. When partitions occur perpendicular to the joists, they shall be treated as concentrated loads on the supporting joists.

2.4 SPECIFYING DESIGN LOADS

Neither the Steel Joist Institute nor the joist manufacturer establishes the loading requirements for which structures are designed.

The *specifying professional* shall provide the nominal loads and load combinations as stipulated by the applicable code under which the structure is designed and shall provide the design basis (ASD or LRFD).

The *specifying professional* shall calculate and provide the magnitude and location of ALL JOIST and JOIST GIRDER LOADS. This includes all special loads (drift loads, mechanical units, net uplift, axial loads, moments, structural bracing loads, or other applied loads) which are to be incorporated into the joist or Joist Girder design. For Joist Girders, reactions from supported members shall be clearly denoted as point loads on the Joist Girder. When necessary to clearly convey the information, a load diagram or load schedule shall be provided.

The *specifying professional* shall give due consideration to the following loads and load effects:

- Ponded rain water.
- Accumulation of snow in the vicinity of obstructions such as penthouses, signs, parapets, adjacent buildings, etc.
- Wind and seismic forces. Indicate wind NET uplift in pounds per square foot (Pascals) and any other wind or seismic forces required to be incorporated into the joist or Joist Girder design. If applicable, make clear if loads specified are reduced (i.e. for ASD 0.6W=, 0.7E=) and provide any pertinent S_{DS} values. Connection details shall be designed by the *specifying professional*.
- Movable partitions. Convey any special deflection requirements as well as any stacked loading conditions.
- Type and magnitude of end moments and/or axial forces at the joist and Joist Girder end supports shall be shown on the Structural Drawings. For moment resisting joists or Joist Girders framing at or near the top of a column, due consideration shall be given to extend the column length to allow a plate type connection between the top of the joist or Joist Girder top chord and the column.
  Avoid transferring joist or Joist Girder end moments and axial forces through the bearing seat connection.
  A note shall be provided on the structural drawings stating that all moment resisting joists shall have all dead loads applied to the joist before the bottom chord struts are welded to the supporting connection whenever the design moments provided do not include dead load.
  The top and bottom chord moment connection details shall be designed by the *specifying professional*. The joist designer shall furnish the *specifying professional* with the joist detail information if requested. Additional design tools and details are available at the Steel Joist Institute's website, www.steeljoist.org.
- Joist chords shall not carry out-of-plane or torsional loads, such as from horizontal components of concentrated loads applied to laterally sloped joists, braces, screen walls, posts, etc. The structural contract drawings shall show the required structural bracing to resolve these forces.

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Where concentrated loads occur, the magnitude and location of these concentrated loads shall be shown on the structural drawings when, in the opinion of the *specifying professional*, they shall require consideration by the joist manufacturer. For nominal concentrated loads, which have been accounted for in the specified uniform design loads, a "strut" to transfer the load to a panel point on the opposite chord shall not be required provided that the sum of the concentrated loads within a chord panel does not exceed 100 pounds (445 N) and the attachments are concentric to the chord. When exact dimensional locations for concentrated loads which do not meet the above criteria are provided by the *specifying professional,* the joist shall be designed for the loads and load locations provided without the need for additional field applied web members at the specified locations.

(a) Specifying Joist Design Loads

The Steel Joist Institute Load Tables are based on uniform loading conditions and are valid for use in selecting joist sizes for gravity loads that can be expressed in terms of "pounds per linear foot" (kiloNewtons per meter) of joist.

For other loads, the Specifying Professional shall use one of the five options described below that allows:

- The estimator to price the joists.
- The joist manufacturer to design the joists in accordance with the Standard Specifications of latest adoption.
- The owner to obtain the most economical joists.

Option 1: Select a joist designation from the Standard Load Table (or specify a joist type using a uniform load in the designation) which has been determined to be adequate for all design loads. The shear and moment envelope resulting from the selected uniform load shall meet the actual shear and moment requirements. Thus, this option alone may not be adequate if large concentrated loads need to be designed for.

Option 2: Select a joist designation from the Standard Load Table (or specify a joist type using a uniform load in the designation) and also provide the load and location of any additional loads on the structural plan with a note "Joist manufacturer shall design joists for additional loads at locations shown." This option works well for a few added loads per joist with known magnitude and locations.

Option 3: For additional point loads with exact locations not known along the joist or for incidental loads, any one, or both, of the following can be specified on the structural plan in addition to option 1 or 2 above:

a) "**Design for a (__) lb. concentrated load located at any one panel point along the joist**". This is referred to as an *Add-Load*.

b) "**Design for additional bending stresses resulting from a (__) lb. concentrated load located at any location along (____) chord**". This is referred to as a *Bend-Check* and can be specified on the **top** chord, **bottom** chord, or **both top and bottom** chords. This can be used when the concentrated load is already accounted for in the joist designation, uniform load, or specified *Add-Load* yet this specified amount of load shall be permitted to also be located at any location between panel points. The additional bending stresses as a result of this load are then designed for. A *Bend-Check* load shall not exceed (*Add-Load* + 400 lbs.) A *Bend-Check* load can be specified by itself without an *Add-Load*.

c) Both (a) and (b) above can be specified with equal concentrated loads for each; or simply denote **"Design joist for a (__) lb. concentrated load at any location along the (___) chord."**

Example uses:

- *Specifying professional* selects a standard joist capable of carrying a 500 lb. RTU. However, the location and exact frame size is not yet known but the frame load shall result in two- 250 lb. point loads at least 5'-0" apart. **Specify a 250 lb. *Bend-Check.***
- Standard joist specified but not selected for 500 lb. RTU load, location not known. **Specify a 500 lb. *Add-Load* and 250 lb. *Bend-Check*.**
- Standard SJI joist selected to carry collateral load of 3 psf. *Specifying professional* wants bending from 150 lb. incidental loads to also be designed for**. Specify a 150 lb. *Bend-Check*.**

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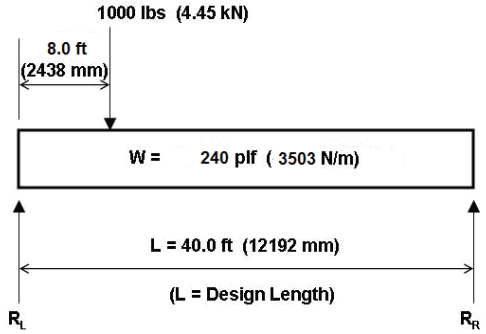
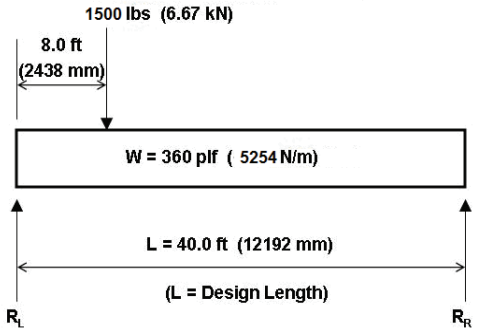
Option 4: Select a KCS joist using moment and end reaction without specifying added loads or diagrams. This option works well for concentrated loads for which exact locations are not known or for multiple loading.

a) Determine the maximum moment.

b) Determine the maximum end reaction (shear).

c) Select the required KCS joist that provides the required moment and end reaction (shear). Note that the top chord end panel is designed for axial load based on the force in the first tension web, that is based on the specified end reaction. A uniform load of 825 plf (12030 N/m) LRFD or 550 plf (8020 N/m) ASD is used to check end panel bending. If the end panel loading exceeds this, reduce the joist spacing or go to Option 5.

d) Specify on the structural drawings that an extra web shall be field applied at all concentrated loads not occurring at panel points.

OPTION 4 - ASD EXAMPLE 1:	**OPTION 4 - LRFD EXAMPLE 1:**
U.S. CUSTOMARY UNITS AND (METRIC UNITS)	**U.S. CUSTOMARY UNITS AND (METRIC UNITS)**
	
M = 625 k-in. (70.6 kN-m) R_L = 5600 lbs (24.9 kN), R_R = 5000 lbs (22.2 kN) Select a 22KCS3, M = 658 k-in. (74.3 kN-m) R = 6600 lbs (29.3 kN) Bridging section no. 9 for L = 40 ft. (12192 mm) Use 22K9 to determine bridging and stability requirements. Since a standard KCS Joist can be selected from the load table a load diagram is not required.	M = 938 k-in. (105.9 kN-m) R_L = 8400 lbs (37.37 kN), R_R = 7500 lbs (33.36 kN) Select a 22KCS3, M = 987 k-in. (111.5 kN-m) R = 9900 lbs (44.0 kN) Bridging section no. 9 for L = 40 ft. (12192 mm) Use 22K9 to determine bridging and stability requirements. Since a standard KCS Joist can be selected from the load table a load diagram is not required.

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OPTION 4 - ASD EXAMPLE 2:	OPTION 4 - LRFD EXAMPLE 2:
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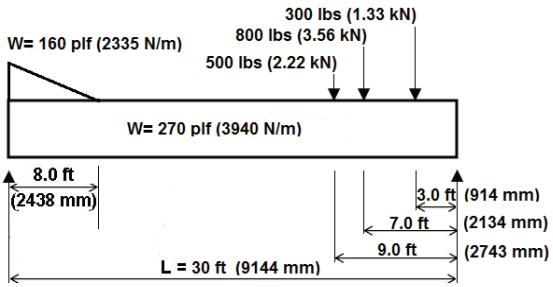	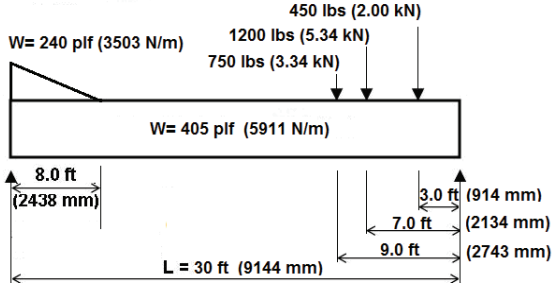
M = 443 k-in. (50.1 kN-m) R_L = 5000 lbs (22.24 kN), R_R = 5340 lbs (23.75 kN) Select a 22KCS2, M = 488 k-in. (55.1 kN-m) R = 5900 lbs (26.2 kN) Bridging section no. 6 for L = 30 ft. (9144 mm) Use 22K6 to determine bridging and stability requirements. Since the maximum uniform load of 430 plf [6275 N/m) (270 plf (3940 N/m) + 160 plf (2335 N/m)] does not exceed the maximum KCS Joist uniform load of 550 plf (8020 N/m) and a standard KCS Joist can be selected from the load table, a load diagram is not required.	M = 664 k-in. (75.03 kN-m) R_L = 7500 lbs (33.36 kN), R_R = 8010 lbs (35.63 kN) Select a 22KCS2, M = 732 k-in. (82.64 kN-m) R = 8850 lbs (39.3 kN) Bridging section no. 6 for L = 30 ft. (9144mm) Use 22K6 to determine bridging and stability requirements. Since the maximum ***factored*** uniform load of 645 plf (9413 N/m) (405 plf (5911 N/m) + 240 plf (3503 N/m)) does not exceed the maximum KCS Joist uniform load of 825 plf (12030 N/m) and a standard KCS Joist can be selected from the load table, a load diagram is not required.

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OPTION 4 - ASD EXAMPLE 3:	OPTION 4 - LRFD EXAMPLE 3:
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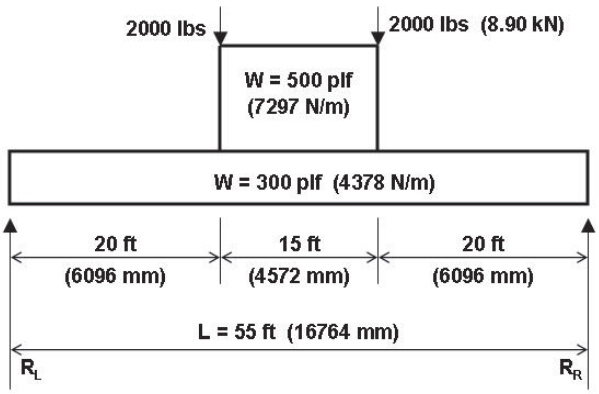	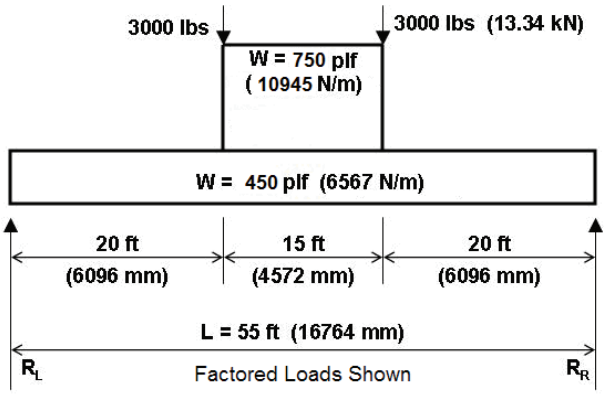
M = 2910 k-in. (328.8 kN-m) $R_L = R_R$ = 14000 lbs (62.28 kN) EXCEEDS CAPACITY OF 30KCS5 (MAXIMUM KCS JOIST) AND EXCEEDS MAXIMUM UNIFORM LOAD OF 550 plf (8027 N/m). **OPTION A:** Use double joists each having a minimum moment capacity, M = 1455 k-in. (164.4 kN-m) and shear capacity, R = 7000 lbs (31.14 kN) and a uniform load of 400 plf (5838 N/m). Select two 28KCS5, M = 1704 k-in. (192.5 kN-m), R = 9200 lbs (40.9 kN). Bridging section no. 12 for L = 55 ft. (16764 mm). Use 28K12 to determine bridging and stability requirements. **OPTION B:** Select a LH-Series Joist. See OPTION 5.	M = 4365 k-in. (493.2 kN-m) $R_L = R_R$ = 21000 lbs (93.41 kN) EXCEEDS CAPACITY OF 30KCS5 (MAXIMUM KCS JOIST AND EXCEEDS MAXIMUM ***FACTORED*** UNIFORM LOAD OF 825 plf (12040 N/m). **OPTION A:** Use double joists each having a minimum moment capacity, M = 2183 k-in. (246.65 kN-m) and shear capacity, R = 10500 lbs (46.71 kN) and a uniform load of 600 plf (8756 N/m). Select two 28KCS5, M = 2556 k-in. (288.7 kN-m), R = 13800 lbs (61.3 kN). Bridging section no. 12 for L = 55 ft. (16764 mm) Use 28K12 to determine bridging and stability requirements. **OPTION B:** Select a LH-Series Joist. See OPTION 5.

Option 5: Specify a SPECIAL joist designation when the joist includes more complex loading or for conditions which need consideration of multiple potentially controlling load combinations.

a) Provide a load diagram and/or enough information on the drawings to clearly define ALL loads.

b) If the loading criteria are too complex to adequately communicate on the drawings or with a simple load diagram, then the *specifying professional* shall provide a load schedule along with the appropriate load combinations. Regardless of where the loads are shown, unfactored design loads broken down by load categories shall be provided in order to design the joists correctly with applicable load combinations.

   Place the designation (e.g. 28K SP or 28LH SP) with the following note: “Joist manufacturer to design joist to support loads as shown.”

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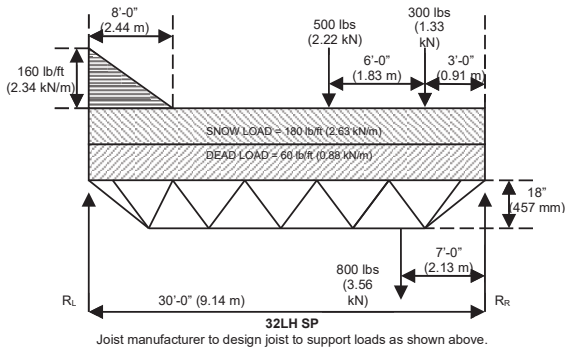
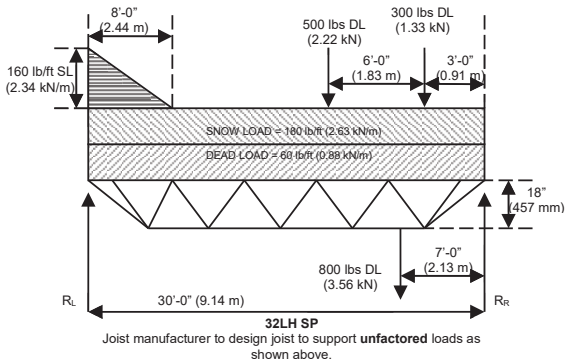
OPTION 5 - ASD EXAMPLE:	OPTION 5 - LRFD EXAMPLE:
U.S. CUSTOMARY UNITS AND (METRIC UNITS)	U.S. CUSTOMARY UNITS AND (METRIC UNITS)
Load diagram per ASCE 7 2.4.1(3), D + S	Unfactored Load diagram per ASCE 7 2.3.2(3), 1.2D+1.6S
 Joist manufacturer to design joist to support loads as shown above.	 Joist manufacturer to design joist to support **unfactored** loads as shown above.
PLEASE NOTE THE LOAD COMBINATIONS SHOWN ARE FOR REFERENCE EXAMPLES ONLY.	

CAUTION FOR OPTIONS 1 thru 5 ABOVE:

If a K-Series joist is being specified, the Specifying Professional shall compare the equivalent uniform loads derived from the maximum moment and shear to the uniform loads tabulated in the K-Series Load Table. An equivalent unfactored uniform load in excess of 550 plf (8020 N/m) or a maximum unfactored end reaction exceeding 9200 lbs. (40.9 kN) indicates that the *specifying professiona*l shall use additional joists to reduce the loading or use an LH-Series joist and make provisions for 5 inch (127 mm) deep bearing seats.

If the joist has not been designed for localized accumulation of loads that results in a point or concentrated load, this load attachment shall be made at top or bottom chord panel points. Therefore, specify on the structural drawings, "Where concentrated loads do not occur at panel points, an extra web shall be field applied from the point of attachment to a panel point on the opposite chord", and indicate the extra web size and weld requirements. When exact dimensional locations for concentrated loads are provided by the *specifying professional*, the joist shall be designed for the loads and load locations provided without the need for additional field applied web members at the specified locations.

(b) Specifying Joist Girder Design Loads

The Steel Joist Institute's Design Guide ASD or LRFD Weight Tables for Joist Girders are based on uniformly spaced panel point loading conditions and are valid for use in selecting Joist Girder sizes for gravity conditions that can be expressed in kips (kiloNewtons) per panel point on the Joist Girder. Note that anything other than point loads shall be shown unfactored or in a Load Schedule. For a given Joist Girder span, the *specifying professional* first determines the number of joist spaces. Then the panel point loads are calculated and a depth is selected. The information provided in the tables gives the Joist Girder weight in pounds per linear foot (kiloNewtons per meter) for various depths and loads.

1. The purpose of the Joist Girder Design Guide Weight Table is to assist the *specifying professional* in the selection of a roof or floor support system.
2. It is not necessary to use only the depths, spans, or loads shown in the tables.
3. Holes in chord elements present special problems that shall be considered by both the *specifying professional* and the Joist Girder Manufacturer. The sizes and locations of such holes shall be clearly indicated on the structural drawings.
4. Live load deflection rarely governs because of the relatively small span to depth ratios of Joist Girders. However, it is recommended that a breakdown of the point loads, by load category (i.e. TL/LL), be provided so specified deflection requirements and load combinations can be properly accounted for in design.

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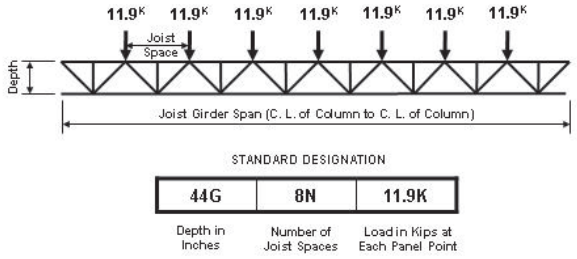
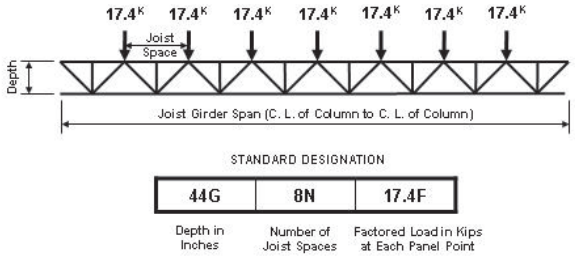
Example using *Allowable Strength Design (ASD)* and U. S. Customary units:	**Example using *Load and Resistance Factor Design (LRFD)* and U. S. Customary units:**
	
Given 42'-0" x 50'-0" bay. Joists spaced on 5'-3" centers Live Load = 30 psf Dead Load = 15 psf (includes the approximate Joist Girder weight) Total Load = 45 psf Note: Web configuration may vary from that shown. Contact joist manufacturer if exact layout must be known.	Given 42'-0" x 50'-0" bay. Joists spaced on 5'-3" centers Live Load = 30 psf x 1.6 Dead Load = 15 psf x 1.2 (includes the approximate Joist Girder weight) Total Load = 66 psf (factored) Note: Web configuration may vary from that shown. Contact joist manufacturer if exact layout must be known.
1. Determine number of actual joist spaces (N). In this example, N = 8. 2. Compute total load: Total load = 5.25 x 45 psf = 236.25 plf 3. Joist Girder Section: (Interior) a) Compute the concentrated load at top chord panel points P = 236.25 x 50 = 11,813 lbs = 11.9 kips (use 12K for depth selection). b) Select Joist Girder depth: Refer to the ASD Joist Girder Design Guide Weight Table for the 42'-0" span, 8 panel, 12.0K Joist Girder. The rule of about one inch of depth for each foot of span is a good compromise of limited depth and economy. Therefore, select a depth of 44 inches. c) The Joist Girder shall then be designated 44G8N11.9K. d) The ASD Joist Girder Design Guide Weight Table shows the weight for a 44G8N12K as 49 pounds per linear foot. The designer should verify that the weight is not greater than the weight assumed in the Dead Load above.	1. Determine number of actual joist spaces (N). In this example, N = 8. 2. Compute total factored load: Total load = 5.25 x 66 psf = 346.50 plf 3. Joist Girder Section: (Interior) a) Compute the factored concentrated load at top chord panel points P = 346.5 x 50 = 17,325 lbs = 17.4 kips (use 18K for depth selection). b) Select Joist Girder depth: Refer to the LRFD Joist Girder Design Guide Weight Table for the 42'-0" span, 8 panel, 18.0K Joist Girder. The rule of about one inch of depth for each foot of span is a good compromise of limited depth and economy. Therefore, select a depth of 44 inches. c) The Joist Girder shall then be designated 44G8N17.4F. Note that the letter "F" is included at the end of the designation to clearly indicate that this is a factored load. d) The LRFD Joist Girder Design Guide Weight Table shows the weight for a 44G8N18.0F as 49 pounds per linear foot. The designer should verify that the weight is not greater than the weight assumed in the Dead Load above.

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e) Check live load deflection:

Live load = 30 psf x 50 ft. = 1500 plf

Approximate Joist Girder moment of inertia

= 0.027 NPLd

= 0.027 x 8 x 11.9 x 42 x 44 = 4750 in.^{4}

Allowable deflection for plastered ceilings

$$= L/360 = \frac{42(12)}{360} = 1.40 \text{ in.}$$

$$\Delta = 1.15\left[\frac{5wL^4}{384EI}\right] = \frac{1.15(5)(1.500/12)[(42)(12)]^4}{384(29000)(4750)}$$

= 0.88 in. <1.40 in., Okay

e) Check live load deflection:

Live load = 30 psf x 50 ft. = 1500 plf

Approximate Joist Girder moment of inertia

= 0.018 NPLd

= 0.018 x 8 x 17.4 x 42 x 44 = 4630 in.^{4}

Allowable deflection for plastered ceilings

$$= L/360 = \frac{42(12)}{360} = 1.40 \text{ in.}$$

$$\Delta = 1.15\left[\frac{5wL^4}{384EI}\right] = \frac{1.15(5)(1.500/12)[(42)(12)]^4}{384(29000)(4630)}$$

= 0.90 in. <1.40 in., Okay

(c) Load Schedule Example

LOAD SCHEDULE (all loads are to be shown as unfactored)

MARK	DESIGNATION(1) (TL/LL) Joists: (plf) Girders: (kips)	LOADING(2) DL(3) (plf)	LOADING(2) LL(4) or L_r/S/R (plf)	W WIND DOWN WARD (plf)	W WIND NET(5) UPLIFT (plf)	ADD-LOAD(6) TL/LL (kips/kips)	BEND-CHECK(7) D TC (kips)	BEND-CHECK(7) D BC (kips)	REMARKS
J1	18KSP	120	185		180	1.0/0.6		0.3	Axial Loads
J2	24K7SP	85	155						Wind Moments
J3	28LHSP	110	355	95	175	0.5			Drift Loads, see diagram
G1	36G5N6.5K/3.5K				360				End Moments

(1) Joist designation loads include all uniform gravity loads. **Provide both Total and Live loads.**

(2) Loading values are not required if designation loading values are correct for deflection and load combinations.

(3) When standard SJI designations are used, the design Dead Load is required for load combinations with Wind or Seismic.

(4) The Floor or Roof Live load, Snow, or Rain load.

(5) When Net Uplift is specified for simple loading, it shall already take into account possible reduced Dead Loading present in order to create the largest Net uplift load combination. For more complex loading or when the Dead Load varies greatly for use in load combinations below, ***Gross*** uplift should be specified with the minimum and maximum Dead Loading values clearly defined. If the uplift cannot be assigned in pounds per lineal foot, a diagram can be shown for joist loading using pounds per square foot.

(6) A concentrated load applied at any panel point on both the top chord and bottom chord.

(7) Chord members shall be designed for additional bending stresses created by this concentrated Total load.

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When in-plane moments (wind load, seismic load) are specified, continuity moments (live load) **shall** also be specified. A Load Schedule that shows a complete breakdown of all loads by Load Category may be required.

AXIAL and END MOMENT LOAD SCHEDULE

MARK	DESIGNATION (TL/LL) Joists: (plf) Girders: (kips)	MIN. I ($in.^4$)	AXIAL			END MOMENTS								TRANSFER DETAILS @ GRIDS
			W WIND (kips)	E SEISMIC (kips)	E_m (kips)	LIVE LOAD CONTINUITY MOMENTS (k-ft.)		LATERAL MOMENTS (k-ft.)						
								W WIND		E		E_m		
						LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	
J1	18KSP		W=18.0	E=21.8										9/S8 @ 4
J2	24K7SP					40	40	35	35					
G1	36G5N6.5K/3.5K	985				75	95	55	60					11/S8 @ B,C

When special loads as shown in the tables above are specified, the load combinations to be used for joist and Joist Girder design **shall** be provided. Two examples showing how to list load combinations are shown below:

LRFD example- Basic Load Combinations	**ASD example** - Basic Load Combinations
1. 1.4D	1. D
2. 1.2D + 1.6L + 0.5(L_r or S or R)	2. D + L
3. 1.2D + 1.6(L_r or S or R) + (1.0L or 0.5W)	3. D + (L_r or S or R)
4. 1.2D + 1.0W + 1.0L + 0.5(L_r or S or R)	4. D + 0.75L + 0.75(L_r or S or R)
5. 1.2D + 1.0E + 1.0L + 0.2S	5. D + (0.6W or 0.7E)
6. 0.9D + 1.0W	6a. D + 0.75L + 0.75(0.6W) + 0.75(L_r or S or R)
7. 0.9D + 1.0E	6b. D + 0.75L + 0.75(0.7E) +0.75S
	7. 0.6D + 0.6W
	8. 0.6D + 0.7E
Special Seismic Load Combinations	Special Seismic Load Combinations
8. (1.2 + 0.2S_{DS})D + E_h + L + 0.2S	9. (1.0 + 0.14S_{DS})D + 0.7E_h
9. (0.9 – 0.2S_{DS})D + E_h	10. (1.0 + 0.105S_{DS})D + 0.525E_h + 0.75L + 0.75(L_r or S or R)
	11. (0.6 – 0.14S_{DS})D + 0.7E_h

2.5 JOIST AND JOIST GIRDER EXTENSIONS

Steel joist and Joist Girder extensions shall be specified and designed in accordance with the requirements of the Steel Joist Institute Standard Specifications of latest adoption.

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2.6 CEILING EXTENSIONS

Ceiling extensions shall be furnished to support ceilings that are to be attached directly to the bottom of the joists. They are not furnished for the support of suspended ceilings. The ceiling extension shall be either an extended bottom chord element or a loose unit, whichever is standard with the manufacturer, and shall be of sufficient strength to properly support any specified ceiling loads.

2.7 BRIDGING AND BRIDGING ANCHORS

(a) Bridging standard with the manufacturer and complying with the Steel Joist Institute Standard Specifications of latest adoption shall be used for bridging all joists furnished by the joist manufacturer. Positive anchorage shall be provided at the ends of each bridging row at both top and bottom chords.

(b) For K-Series and LH-Series joists, horizontal bridging is recommended for spans up to and including 60 feet (18288 mm) except where the Steel Joist Institute Standard Specifications Load Tables & Weight Tables require bolted diagonal bridging for erection stability.

LH-Series and DLH-Series joists exceeding 60 feet (18288 mm) in length shall have bolted diagonal bridging for all rows.

Refer to Section 5.5 in the Steel Joist Institute Standard Specification for erection stability requirements.

Refer to Appendix B for OSHA steel joist erection stability requirements.

Horizontal bridging shall consist of continuous horizontal steel members designed per Section 5.5 in the Steel Joist Institute Standard Specifications. The material sizes listed in Table 2.7-1 meet the requirements of the specifications. Alternately, or for “load/length” designation joists, Table 2.7-2 provides the maximum horizontal bridging force, P_{br}, for various combinations of joist spacing and bridging angle size.

(c) Diagonal cross bridging consisting of angles or other shapes connected to the top and bottom chords of K-Series, LH-Series, and DLH-Series joists shall be used when required by the Steel Joist Institute Standard Specifications of latest adoption.

Diagonal bridging, when used, shall be designed per Section 5.5 in the Steel Joist Institute Standard Specifications.

When the bridging members are connected at their point of intersection, the material sizes listed in Table 2.7-3 and Table 2.7-4 meet the requirements of the specifications.

For LH-Series and DLH-Series joists, where the joist spacing is less than 70 percent of the joist depth, bolted horizontal bridging shall be provided in addition to the diagonal bridging, as shown in Table 2.7-4.

(d) When bolted diagonal erection bridging is required, the following shall apply:

1. The bridging shall be indicated on the joist placement plans.
2. The joist placement plans shall be the exclusive indicator for the proper placement of this bridging.
3. Shop installed bridging clips, or functional equivalents, shall be provided where the bridging bolts to the steel joist.
4. When two pieces of bridging are attached to a steel joist by a common bolt, the nut that secures the first piece of bridging shall not be removed from the bolt for the attachment of the second piece.
5. Bridging attachments shall not protrude above the top chord of the steel joists.
6. See Table 2.7-5 for bolt sizes that meet the connection requirements of the Steel Joist Institute Standard Specifications Section 5.5.

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TABLE 2.7-1

MAXIMUM JOIST SPACING FOR HORIZONTAL BRIDGING

SPANS OVER 60 ft. (18.3 m) REQUIRE BOLTED DIAGONAL BRIDGING

JOIST SECTION NUMBER[1]	Nominal Unfactored Force P_{br} lbs (N)	BRIDGING MATERIAL SIZE[2] Equal Leg Angles					
		1 x 7/64 (25 x 3 mm) r = 0.20" (5.08 mm)	**1-1/4 x 7/64 (32 x 3 mm) r = 0.25" (6.35 mm)**	**1-1/2 x 7/64 (38 x 3 mm) r = 0.30" (7.62 mm)**	**1-3/4 x 7/64 (45 x 3 mm) r = 0.35" (8.89 mm)**	**2 x 1/8 (52 x 3 mm) r = 0.40" (10.16 mm)**	**2-1/2 x 5/32 (64 x 4 mm) r = 0.50" (12.70 mm)**
		ft.-in. (mm)	ft.-in. (mm)	ft.-in. (mm)	ft.-in. (mm)	ft.-in. (mm)	ft.-in. (mm)
K1 – 8	340 (1512)	5'-0" (1524)	6'–3" (1905)	7'–6" (2286)	8'-9" (2667)	10'–0" (3048)	12'–6" (3810)
K9-10, LH02-03	450 (2002)	4'-4" (1321)	6'-1" (1854)	7'–6" (2286)	8'–9" (2667)	10'–0" (3048)	12'–6" (3810)
K11-12, LH04-05	560 (2491)	3'–11"(1194)	5'–6" (1676)	7'–4" (2235)	8'–9" (2667)	10'–0" (3048)	12'–6" (3810)
LH06-08	750 (3336)		4'–9" (1448)	6'–3" (1905)	7'–11" (2413)	10'–0" (3048)	12'–6" (3810)
LH09	850 (3781)		4'–5" (1346)	5'–10" (1778)	7'–5" (2261)	9'–9" (2972)	12'–6" (3810)
LH/DLH10	900 (4003)		4'–4" (1321)	5'–8" (1727)	7'–3" (2210)	9'–5" (2870)	12'–6" (3810)
LH/DLH11	950 (4226)		4'–2" (1270)	5'–7" (1702)	7'–0" (2134)	9'–2" (2794)	12'–6" (3810)
LH/DLH12	1100 (4893)		3'-11" (1194)	5'–2" (1575)	6'–8" (2032)	8'–6" (2591)	12'-6" (3810)
LH/DLH13	1200 (5338)		3'-9" (1143)	4'–11" (1499)	6'–3" (1905)	8'-2" (2489)	12-6" (3810)
LH/DLH14	1300 (5783)			4'-9" (1448)	6'-0" (1829)	7'-10" (2388)	12'-4" (3759)
LH/DLH15	1450 (6450)			4'-6" (1372)	5'-8" (1727)	7'-5" (2261)	11'-8" (3556)
LH/DLH16–17	1850 (8229)			4'-0" (1219)	5'-0" (1524)	6'-7"(2007)	10'-4" (3150)
DLH18–20	2350 (10453)			3'-7" (1067)	4'-4" (1321)	5'-10" (1778)	9'-1" (2769)
DLH21–22	3150 (14012)				3'-10" (1168)	5'-0" (1524)	7'-11" (2413)
DLH23–24	4130 (18371)				3'-4" (1016)	4'-5" (1346)	6'-11" (2108)
DLH25	4770 (21218)					4'-1"(1245)	6'-5" (1956)

(1) Refer to last two digit(s) of Joist Designation

(2) Connection to joist shall resist force listed in the Steel Joist Institute Standard Specifications Table 5.5-2

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TABLE 2.7-2

MAXIMUM BRIDGING FORCE (P_{br}) FOR HORIZONTAL BRIDGING (lbs)							
JOIST SPACING (ft.-in.)	BRIDGING ANGLE SIZE (EQUAL LEG ANGLE)						
	1 x 7/64 r = 0.20"	1¼ x 7/64 r = 0.25"	1½ x7/64 r = 0.30"	1¾ x 7/64 r = 0.35"	2 x 1/8 r = 0.40"	2½ x 5/32 r = 0.50"	3 x 3/16 r = 0.60"
2'-0"	2150	3960	5600				
2'-6"	1370	2730	4410	5910			
3'-0"	950	1890	3290	4850			
3'-6"	700	1390	2420	3840	6180		
4'-0"	530	1060	1850	2960	5030		
4'-6"	420	840	1460	2340	4000		
5'-0"	340	680	1180	1890	3240		
5'-6"	-	560	980	1560	2670		
6'-0"	-	470	820	1310	2250	5490	
6'-6"	-	-	700	1120	1910	4680	
7'-0"	-	-	600	960	1650	4030	
7'-6"	-	-	520	840	1440	3510	
8'-0"	-	-	-	740	1260	3090	
8'-6"	-	-	-	650	1120	2740	5680
9'-0"	-	-	-	-	1000	2440	5060
9'-6"	-	-	-	-	890	2190	4540
10'-0"	-	-	-	-	810	1970	4100
10'-6"	-	-	-	-	-	1790	3720
11'-0"	-	-	-	-	-	1630	3390
11'-6"	-	-	-	-	-	1490	3100
12'-0"	-	-	-	-	-	1370	2850

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TABLE 2.7-3

K, LH, and DLH SERIES JOISTS
MAXIMUM JOIST SPACING FOR DIAGONAL BRIDGING

JOIST DEPTH	BRIDGING ANGLE SIZE – (EQUAL LEG ANGLE)							
	1 x 7/64 (25 x 3 mm) **r = 0.20"** (5.08 mm)	**1-1/4 x 7/64** (32 x 3 mm) **r = 0.25"** (6.35 mm)	**1-1/2 x 7/64** (38 x 3 mm) **r = 0.30"** (7.62 mm)	**1-3/4 x 7/64** (45 x 3 mm) **r = 0.35"** (8.89 mm)	**2 x 1/8** (50 x 3 mm) **r = 0.40"** (10.16 mm)	**2 ½ x 5/32** (64x 4 mm) **r=0.50"** (12.70 mm)	**3 x 3/16** (76 x 5 mm) **r = 0.60"** (15.24 mm)	**3 ½ x 1/4** (89 x 6 mm) **r = 0.70"** (17.78 mm)
in. (mm)	**ft.-in. (mm)**	**ft.-in. (mm)**	**ft.-in. (mm)**	**ft.-in. (mm)**	**ft.-in. (mm)**	**ft.-in. (mm)**	**ft.-in. (mm)**	**ft.-in. (mm)**
12" (305)	6'-7" (2007)	8'-3" (2514)	9'-11"(3022)	11'-7" (3530)	13'-3"(4038)	16'-7"(5055)	19'-11"(6070)	23'-3"(7086)
14" (356)	6'-6" (1981)	8'-3" (2514)	9'-11"(3022)	11'-7" (3530)	13'-3"(4038)	16'-7"(5055)	19'-11"(6070)	23'-3"(7086)
16" (406)	6'-6" (1981)	8'-2" (2489)	9'-10"(2997)	11'-7" (3530)	13'-3"(4038)	16'-7"(5055)	19'-11"(6070)	23'-3"(7086)
18" (457)	6'-6" (1981)	8'-2" (2489)	9'-10"(2997)	11'-6" (3505)	13'-3"(4038)	16'-7"(5055)	19'-11"(6070)	23'-3"(7086)
20" (508)	6'-5" (1955)	8'-2" (2489)	9'-10"(2997)	11'-6" (3505)	13'-2"(4013)	16'-7"(5055)	19'-11"(6070)	23'-3"(7086)
22" (559)	6'-4" (1930)	8'-1" (2463)	9'-10"(2997)	11'-6" (3505)	13'-2"(4013)	16'-6"(5029)	19'-11"(6070)	23'-3"(7086)
24" (610)	6'-4" (1930)	8'-1" (2463)	9'-9" (2971)	11'-5" (3479)	13'-2"(4013)	16'-6"(5029)	19'-10"(6045)	23'-3"(7086)
26" (660)	6'-3" (1905)	8'-0" (2438)	9'-9" (2971)	11'-5" (3479)	13'-1"(3987)	16'-6"(5029)	19'-10"(6045)	23'-2"(7061)
28" (711)	6'-3" (1905)	8'-0" (2438)	9'-8" (2946)	11'-5" (3479)	13'-1"(3987)	16'-6"(5029)	19'-10"(6045)	23'-2"(7061)
30" (762)	6'-2" (1879)	7'-11 (2413)	9'-8" (2946)	11'-4" (3454)	13'-1"(3987)	16'-5"(5004)	19'-10"(6045)	23'-2"(7061)
32" (813)	6'-1" (1854)	7'-10"(2387)	9'-7" (2921)	11'-4" (3454)	13'-0" (3962)	16'-5"(5004)	19'-9"(6020)	23'-2"(7061)
36" (914)	5'-11"(1803)	7'-9" (2362)	9'-6" (2895)	11'-3" (3429)	12'-11"(3973)	16'-4"(4979)	19'-9"(6020)	23'-1"(7035)
40" (1016)	5'-9"(1753)	7'-7" (2311)	9'-5" (2870)	11'-2" (3403)	12'-10"(3911)	16'-4"(4979)	19'-8"(5994)	23'-1"(7035)
44" (1118)	5'-6"(1676)	7'-5" (2260)	9'-3" (2819)	11'-0" (3352)	12'-9" (3886)	16'-3"(4953)	19'-7"(5969)	23'-0"(7010)
48" (1219)	5'-4"(1626)	7'-3" (2209)	9'-2" (2794)	10'-11"(3327)	12'-8" (3860)	16'-2"(4928)	19'-7"(5969)	22'-11"(6985)
52" (1321)	5'-0"(1524)	7'-1"(2159)	9'-0" (2743)	10'-10" (3302)	12'-7" (3835)	16'-1"(4902)	19'-6"(5943)	22'-11"(6985)
56" (1422)	4'-9"(1448)	6'-10"(2083)	8'-10"(2692)	10'-8" (3251)	12'-5" (3784)	16'-0"(4877)	19'-5"(5918)	22'-10"(6960)
60" (1524)	4'-4"(1321)	6'-8"(2032)	8'-7" (2616)	10'-6" (3200)	12'-4" (3759)	15'-10"(4826)	19'-4"(5893)	22'-9"(6935)
64" (1626)	**	6'-4"(1931)	8 -5" (2565)	10'-4" (3149)	12'-2" (3708)	15'-9" (4801)	19'-3"(5867)	22'-8"(6909)
68" (1727)	**	6'-1"(1854)	8'-2" (2489)	10'-2" (3098)	12'-0" (3657)	15'-8" (4775)	19'-2"(5842)	22'-7"(6884)
72" (1829)	**	5'-9"(1753)	8'-0" (2438)	10'-0" (3048)	11'-10"(3606)	15'-6" (4724)	19'-1" (5816)	22'-6" (6858)
80" (2032)	**	5'-0"(1524)	7'-5"(2260)	9'-6" (2895)	11'-6" (3505)	15'-3" (4648)	18'-10"(5740)	22'-4" (6808)
88" (2235)		**	6'-9"(2058)	9'-0" (2743)	11'-1" (3378)	14'-11"(4546)	18'-7" (5664)	22'-1" (6731)
96" (2438)		**	6'-0"(1829)	8'-5" (2565)	10'-8"(3251)	14'-7" (4445)	18'-4" (5588)	21'-11"(6680)
104" (2642)			**	7'-9" (2362)	10'-1"(3073)	14'-2" (4318)	18'-0" (5486)	21'-8" (6604)
112" (2845)			**	7'-0" (2134)	9'-6"(2895)	13'-9" (4191)	17'-8" (5385)	21'-4" (6503)
120" (3048)				**	8'-9"(2667)	13'-4"(4064)	17'-3" (5258)	21'-1" (6426)

****INTERPOLATION BELOW THE MINIMUM VALUES SHOWN IS NOT ALLOWED.**
SEE TABLE 2.7-4 FOR MINIMUM JOIST SPACE FOR DIAGONAL ONLY BRIDGING.

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TABLE 2.7-4

LH AND DLH SERIES JOISTS HORIZONTAL PLUS DIAGONAL BRIDGING REQUIREMENTS		
JOIST DEPTH	**MINIMUM JOIST SPACE FOR DIAGONAL ONLY BRIDGING** **(0.70 x DEPTH)***	**HORIZONTAL AND DIAGONAL MINIMUM ANGLE SIZE REQUIRED** FOR JOIST SPACING < (0.70 X DEPTH) AND JOIST SPANS > 60'-0" (18.3 m)
in. (mm)	**ft.-in. (mm)**	**in. (mm)**
52" (1321)	3'- 0" (914)	1" x 1" x 7/64" (25 x 3)
56" (1422)	3'- 3" (990)	1" x 1" x 7/64" (25 x 3)
60" (1524)	3'- 6" (1066)	1" x 1" x 7/64" (25 x 3)
64" (1626)	3'- 8" (1117)	1¼" x 1¼" x 7/64" (32 x 3)
68" (1727)	3'-11" (1193)	1¼" x 1¼" x 7/64" (32 x 3)
72" (1829)	4'- 2" (1270)	1¼" x 1¼" x 7/64" (32 x 3)
80" (2032)	4'- 8" (1422)	1¼" x 1¼" x 7/64" (32 x 3)
88" (2235)	5'- 1" (1549)	1 ½" x 1 ½" x 7/64" (38 x 3)
96" (2438)	5'- 7" (1702)	1 ½" x 1 ½" x 7/64" (38 x 3)
104" (2642)	6'- 0" (1829)	1 ¾" x 1 ¾" x 7/64" (44 x 3)
112" (2845)	6'- 6" (1981)	1 ¾" x 1 ¾" x 7/64" (44 x 3)
120" (3048)	7'- 0" (2134)	2" x 2" x1/8" (51 x 3)
*NOTE: WHEN THE JOIST SPACING IS LESS THAN 0.70 x JOIST DEPTH, BOLTED HORIZONTAL BRIDGING SHALL BE USED IN ADDITION TO DIAGONAL BRIDGING.		

TABLE 2.7-5

BOLT SIZES WHICH MEET BOLTED BRIDGING CONNECTION REQUIREMENTS		
JOIST SERIES	**SECTION NUMBER***	**BOLT DIAMETER**
K	ALL	3/8" (10 mm) A307
LH/DLH	2 – 12	3/8" (10 mm) A307
LH/DLH	13 – 17	1/2" (13 mm) A307
DLH	18 – 20	5/8" (16 mm) A307
DLH	21 – 22	5/8" (16 mm) A325
DLH	23 – 25	3/4" (19 mm) A325
*REFER TO LAST DIGIT(S) OF JOIST DESIGNATION NOTE: WASHERS SHALL BE USED WITH SLOTTED OR OVERSIZED HOLES. BOLTS SHALL BE TIGHTENED TO A MINIMUM SNUG TIGHT CONDITION.		

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2.8 HEADERS

Where the end reaction of a steel joist is supported by a header, as outlined and defined in Section 5.2(a), and is not more than 10,000 pounds (44482 N), the header shall be furnished by the Seller. Such headers shall be any type standard with the joist manufacturer. Conditions involving headers shall be investigated during erection and, if necessary, provisions made to provide a safe condition. Headers are not provided for steel joists with end reactions greater than 10,000 pounds (44482 N).

2.9 BOTTOM CHORD LATERAL BRACING FOR JOIST GIRDERS

Bottom chord lateral bracing shall be furnished as required to prevent lateral movement of the bottom chord of the Joist Girder and to prevent the ratio of chord length to chord radius of gyration from exceeding that specified in the Steel Joist Institute Standard Specifications of latest adoption. The lateral bracing shall be that which is standard with the joist manufacturer, and shall be sufficient to properly brace the bottom chord of the Joist Girder.

2.10 CONNECTIONS

The adequacy of the end anchorage connection (bolted or welded) between the joist or Joist Girder bearing seat and the supporting structure is the responsibility of the *specifying professional*. The contract documents shall clearly illustrate the end anchorage connection. Forces to be considered include end moments, axial loads, and diaphragm boundaries. Particular attention is required where there is net uplift.

Welded End Anchorage for Uplift
The strength of the joist bearing seat for an uplift loading combination is a function of both the joist seat thickness and length of the end anchorage welds. The minimum end anchorage welds as shown in the Steel Joist Institute Standard Specifications Table 5.7-1 may not develop the full capacity of the joist seat assembly for the specified uplift resistance. When the support dimensions allow, it is recommended the *specifying professional* use a small fillet weld thickness in conjunction with a longer weld length for the connection design to facilitate the design of the joist bearing seat. The joist manufacturer will provide a seat of sufficient thickness and strength to resist the uplift end reaction resulting from the specified uplift. For additional information, including tables for welded end anchorage uplift capacities, refer to Steel Joist Institute Technical Digest 6, “Structural Design of Steel Joist Roofs to Resist Uplift Loads”

Bolted End Anchorage for Uplift
Typically, joists and Joist Girders with bolted end anchorage also require a final connection by welding in order to provide lateral stability to the supporting member. However, only the bolts are relied on to provide uplift anchorage. The bolt type and diameter designed by the *specifying professional* shall provide sufficient tensile strength to resist the uplift end reaction resulting from the specified uplift. Bolts of higher strength than the minimum required by the Steel Joist Institute Standard Specifications may be required.

When the bearing seats are detailed for a bolted connection, bolts shall be installed. If the bolts are not installed, an equivalent welded connection may be permitted by the *specifying professional*, provided the weld is deposited in the slot on the side farthest from the edge of the seat. Additional weld required to meet that specified for the welded connection shall be placed at a location on the seat away from the outer edge of the slot as shown in Figure 2.10-1.
For additional information, including tables for bolted end anchorage uplift capacities, refer to Steel Joist Institute Technical Digest 6, “Structural Design of Steel Joist Roofs to Resist Uplift Loads”

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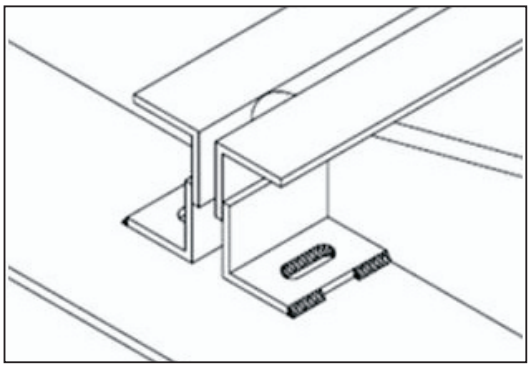

Figure 2.10-1

SECTION 3.
MATERIALS

3.1 STEEL

The steel used in the manufacture of joists and Joist Girders shall comply with the Steel Joist Institute Standard Specifications of latest adoption.

3.2 PAINT

(a) Standard Shop Paint - The shop coat of paint, when specified, shall comply with the Steel Joist Institute Standard Specifications of latest adoption.

(b) Disclaimer - The typical shop applied paint that is used to coat steel joists and Joist Girders is a dip applied, air dried paint. The paint is intended to be an impermanent and provisional coating which shall protect the steel for only a short period of exposure in ordinary atmospheric conditions.

Since most joists and Joist Girders are painted using a standard dip coating, the coating shall be permitted to not be uniform and shall be permitted to include drips, runs, and sags. Compatibility of any coating including fire protective coatings applied over the standard shop paint shall be the responsibility of the specifier and/or painting contractor.

The shop applied paint may require field touch-up/repair as a result of, but not limited to, the following:

1. Abrasions from: Bundling, banding, loading and unloading, chains, dunnage during shipping, cables and chains during erection, bridging, installation, and other handling at the jobsite.
   NOTE: Rusting should be expected at any abrasion.
2. Dirt.
3. Diesel smoke.
4. Road salt.
5. Weather conditions during storage.

The joist manufacturer shall not be responsible for the condition of the paint if it is not properly protected after delivery.

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SECTION 4.
INSPECTION

Inspections shall be made in accordance with Section 5.14 of the Steel Joist Institute Standard Specifications of latest adoption.

SECTION 5.
ESTIMATING

5.1 PLANS FOR BIDDING

Plans to serve as the basis for bids shall show the character of the work with sufficient clarity to permit making an accurate estimate and shall show the following:

- Designation and location of Materials [see Section 5.2(a)], including any special design or configuration requirements
- Locations and elevations of all steel and concrete supporting members and bearing walls
- Location and length of joist extended ends
- Location and size of all openings in floors and roofs
- Location of all partitions
- Loads and their locations as defined in Section 6.1
- Construction and thickness of floor slabs, roof deck, ceilings and partitions
- Joists or Joist Girders requiring extended bottom chords
- Paint, if other than manufacturer's standard

5.2 SCOPE OF ESTIMATE

(a) Unless otherwise specified, the following items shall be included in the estimate, and requirements shall be determined as outlined in Section 6.1:

- Steel Joists
- Joist Girders
- Joist Substitutes
- Joist Extended Ends
- Ceiling Extensions
- Extended bottom chord used as strut
- Bridging
- Joist Girder bottom chord bracing
- Headers which are defined as members supported by and carrying Open Web Steel Joists with end reactions of no more than 10,000 lbs. (44482 N)
- One shop coat of paint, when specified, shall be in accordance with Section 3.2

(b) The following items shall not be included in the estimate but shall be permitted to be quoted and identified by the joist manufacturer as separate items:

- Headers carrying Open Web Steel Joists with end reactions greater than 10,000 lbs. (44482 N)
- Headers for Deep Longspan Steel Joists, **DLH**-Series

- Reinforcement in slabs over joists
- Centering material, decking, and attachments
- Miscellaneous framing between joists for openings at ducts, dumbwaiters, ventilators, skylights, etc.
- Loose individual or continuous bearing plates and bolts or anchors for such plates
- Erection bolts for joist and Joist Girder end anchorage
- Horizontal bracing in the plane of the top and bottom chords from joist to joist or joist to structural framing and walls
- Bridging anchors and anchorage
- Wood nailers
- Moment plates
- Special joist configuration or bridging layouts for ductwork or sprinkler systems
- Shear studs

SECTION 6.
PLANS AND SPECIFICATIONS

6.1 PLANS FURNISHED BY BUYER

The Buyer shall furnish the Seller plans and specifications as prepared by the *specifying professional* showing all Material requirements and steel joist and/or steel Joist Girder designations, the layout of walls, columns, beams, girders and other supports, as well as floor and roof openings and partitions correctly dimensioned. The elevation of finished floors, roofs, and bearings shall be shown.

(a) Loads

The *specifying professional* shall clearly provide all design loads as described in Section 2.4 This includes the live loads to be used, the wind uplift if any, the weights of partitions and the location and amount of any special loads, such as monorails, fans, blowers, tanks, etc.

(b) Connections

Minimum end anchorage for simple span gravity loading shall be in accordance with Steel Joist Institute Standard Specifications of latest adoption, Section 5.7. The end anchorage of a steel joist or Joist Girder is the connection of the joist or Joist Girder bearing seat to the support of the joist or Joist Girder.

The adequacy of the end anchorage connection (bolted or welded) between the joist or Joist Girder bearing seat and the supporting structure is the responsibility of the *specifying professional*. The contract documents shall clearly illustrate the end anchorage connection.

The joist manufacturer is responsible for the design of the bearing seats of joists or Joist Girders for the loads designated by the *specifying professional* in the contract documents.

The *specifying professional* is responsible for bridging termination connections. The contract documents shall clearly illustrate these termination connections.

(c) Special Considerations

The *specifying professional* shall indicate on the construction documents special considerations including:

1) Profiles for non-standard joist and Joist Girder configurations (Standard joist and Joist Girder configurations are as indicated in the Steel Joist Institute Standard Specifications of latest adoption).
2) Oversized or other non-standard web openings
3) Extended Ends

4) Deflection criteria for live and total loads for non-SJI standard joists
5) Non-SJI standard bridging

6.2 PLANS FURNISHED BY SELLER

The Seller shall furnish the buyer with steel joist placement plans to show the material as specified on the construction documents and are to be utilized for field installation in accordance with specific project requirements as stated in Section 6.1. Steel placement plans shall include, at a minimum, the following:

a) Listing of all applicable loads as stated in Section 6.1 and used in the design of the steel joists and Joist Girders as specified in the construction documents.

b) Profiles for non-standard joist and Joist Girder configurations (standard joist and Joist Girder configurations are as indicated in the Steel Joist Institute Standard Specifications of latest adoption).

c) Connection requirements for:

   1) Joist supports
   2) Joist Girder supports
   3) Field splices
   4) Bridging attachments

d) Deflection criteria for live load and total loads for non-SJI standard joists.

e) Size, location, and connections for all bridging

f) Joist headers

All Material shall be identified with its mark which also appears on the Bill of Materials. The shop paint shall be as noted on the joist placement plans. **Steel joist placement plans do not require the seal and signature of the joist manufacturer's registered design professional**.

6.3 DISCREPANCIES

The *specifying professional's* bid plans and specifications shall be assumed to be correct in the absence of written notice from the Buyer to the contrary. When plans are furnished by the Buyer that do not agree with the Architect's bid plans, such detailed plans shall be considered as a written notice of change of plans. However, it shall be the Buyer's responsibility to advise the Seller of those changes which affect the joists or Joist Girders.

6.4 APPROVAL

When joist placement plans are furnished by the Seller, they are submitted to the Buyer and owner for examination and approval. The Seller allows a maximum of fourteen (14) calendar days in their schedule for the return of placement plans noted with the owner's and customer's approval, or approval subject to corrections as noted. The Seller makes the corrections, furnishes corrected prints for field use to the owner/customer and is released by the owner/customer to start joist manufacture.

Approval by the owner/customer of the placement plans, sections, notes and joist schedule prepared by the Seller indicates that the Seller has correctly interpreted the contract requirements, and is released by the owner/customer to start joist manufacture. This approval constitutes the owner's/customer's acceptance of all responsibility for the design adequacy of any detail configuration of joist support conditions shown by the Seller as part of the preparation of these placement plans.

Approval does not relieve the Seller of the responsibility for accuracy of detail dimensions on the plans, nor the general fit-up of joists to be placed in the field.

6.5 CHANGES

When any changes in plans are made by the Buyer (or the buyer's representative) either prior to or after approval of detailed plans, or when any Material is required and was not shown on the plans used as the basis of the bid, the cost of such changes and/or extra Material shall be paid by the Buyer at a price to be agreed upon between Buyer and Seller.

6.6 CALCULATIONS

The Seller shall design the steel joists and/or steel Joist Girders in accordance with the current Steel Joist Institute Standard Specifications of latest adoption to support the load requirements of Section 6.1. The *specifying professional* may require submission of the steel joist and Joist Girder calculations as prepared by a registered design professional responsible for the product design. If requested by the *specifying professional*, the steel joist manufacturer shall submit design calculations with a cover letter bearing the seal and signature of the joist manufacturer's registered design professional. In addition to standard calculations under this seal and signature, submittal of the following shall be included:

a) Non-SJI standard bridging details (e.g. for cantilevered conditions, net uplift, etc.)

b) Connection details for:

   1) Non-SJI standard connections (e.g. flush framed or framed connections)
   2) Field splices
   3) Joist headers

SECTION 7.
HANDLING AND ERECTION

The Buyer and Erector shall comply with the requirements of the Steel Joist Institute Standard Specifications of latest adoption in the handling and erection of Material. For additional coverage of this topic, refer to the Steel Joist Institute's Technical Digest 9, "Handling and Erection of Steel Joists and Joist Girders".

The Buyer and/or Erector shall check all materials on arrival at job site and promptly report to Seller any discrepancies and/or damages.

When joists cannot be delivered as a single piece, they shall be permitted to be delivered in several pieces therefore requiring the pieces to be spliced together in the field. The manufacturer's instructions SHALL be followed to ensure matching pieces are joined, proper bolts are used, and any required bolt tensioning is incorporated.

All joists shall be handled by methods which avoid damage to any part of the joist. For long **LH**-Series joists, **DLH**-Series joists, or Joist Girders this may require the use of spreader bars, multiple hoisting cables, or multiple cranes as necessary to safely handle the joist. Hoisting cables shall be attached at panel points and shall be at panel point locations selected to minimize erection stresses.

The current OSHA, 29 CFR Part 1926, Safety Standards for Steel Erection; Subpart R- Steel Erection, refers to certain joists at or near columns to be designed with sufficient strength to allow one employee to release the hoisting cable without the need for erection bridging. **This STANDARD shall not be interpreted that any joist at or near a column line is safe to support an employee without bridging installed.** Many limitations exist that prevent these joists from being designed to safely allow an employee on an un-bridged joist. Because of these limitations these joists shall be erected by incorporating erection methods ensuring joist stability and either:

1) Installing bridging or otherwise stabilizing the joist prior to releasing the hoisting cable, or
2) Releasing the hoisting cable without having a worker on the joist.

A steel joist or Joist Girder shall not be placed on any support structure unless such structure is stabilized. When steel joists or Joist Girders are landed on a structure, they shall be secured to prevent unintentional displacement prior to installation.

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A bridging terminus point shall be established before joist bridging is installed.

Steel joist and Joist Girders shall not be used as anchorage points for a fall arrest system unless written directions to do so is obtained from a "qualified person". (For definition of "qualified person" see Code of Federal Regulations (CFR), Occupational Safety and Health Administration (OSHA), 29 CFR Part 1926, Safety Standards for Steel Erection; Subpart R- Steel Erection, §1926.751 Definitions, January 18, 2001, Washington, D.C.)

No modification that affects the strength of a steel joist or Joist Girder shall be made without the written approval of the project engineer of record.

The Seller shall not be responsible for the condition of paint finish on Material if it is not properly protected after delivery.

The Seller shall not be responsible for improper fit of Material due to inaccurate construction work.

SECTION 8.
BUSINESS RELATIONS

8.1 PRESENTATION OF PROPOSALS

All proposals for furnishing Material shall be made on a sales contract form. After acceptance by the Buyer, these proposals shall be approved or executed by a qualified official of the Seller. Upon such approval the proposal becomes a contract.

8.2 ACCEPTANCE OF PROPOSALS

All proposals are intended for prompt acceptance and are subject to change without notice.

8.3 BILLING

Contracts on a lump sum basis are to be billed proportionately as shipments are made.

8.4 PAYMENT

Payments shall be made in full on each invoice without retention.

8.5 ARBITRATION

All business controversies which cannot be settled by direct negotiations between Buyer and Seller shall be submitted to arbitration. Both parties shall sign a submission to arbitration and if possible agree upon an arbitrator. If they are unable to agree, each shall appoint an arbitrator and these two shall appoint a third arbitrator. The expenses of the arbitration shall be divided equally between the parties, unless otherwise provided for in the agreements to submit to arbitration. The arbitrators shall pass final judgment upon all questions, both of law and fact, and their findings shall be conclusive.

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STANDARD SPECIFICATION

FOR K-SERIES, LH-SERIES, AND DLH-SERIES OPEN WEB STEEL JOISTS AND FOR JOIST GIRDERS.

K-Series Adopted by the Steel Joist Institute November 4, 1985
LH/DLH-Series Adopted by the Steel Joist Institute May 10, 2006
Joist Girders Adopted by the Steel Joist Institute November 4, 1985
Revised to November 10, 2014, Effective January 1, 2015

SECTION 1.
SCOPE AND DEFINITIONS

1.1 SCOPE

The *Standard Specification for* K-*Series*, LH-*Series,* DLH-*Series Open Web Steel Joists and for Joist Girders*, hereafter referred to as the Specification, covers the design, manufacture, application, and erection stability and handling of Joist Girders and Open Web Steel Joists K-Series, LH-Series, and DLH-Series in buildings or other structures, where other structures are defined as those structures designed, manufactured, and erected in a manner similar to buildings. Joist Girders and K-Series, LH-Series, and DLH-Series joists shall be designed using Allowable Stress Design (ASD) or Load and Resistance Factor Design (LRFD) in accordance with this Specification. Included as part of this Specification are KCS joists, K-Series; Joist Substitutes, K-Series; and Top Chord Extensions and Extended Ends, K-Series.

1.2 OTHER REGULATIONS

Joist Girders and K-Series, LH-Series, and DLH-Series joists shall be erected in accordance with the Occupational Safety and Health Administration (OSHA), 29 CFR Part 1926, Safety Standards for Steel Erection, Subpart R – Steel Erection. The erection of Joist Girders and K-Series, LH-Series, and DLH-Series joists 144 ft. (43.9 m) or less in length shall be in accordance with the requirements of Section 1926.757, Open Web Steel Joists. Joist Girders and DLH–Series joists greater than 144 ft. (43.9 m) in length shall be in accordance with the requirements of Section 1926.756 Beams and Columns.

1.3 APPLICATION

This Specification includes Section 1 through Section 6. The user notes shall not be part of the Specification.

User Note: User notes are intended to provide practical guidance in the use and application of this Specification.

1.4 DEFINITIONS

The following terms shall, for the purposes of this Specification, have the meanings shown in this Section. Where terms are not defined in this Section, those terms shall have their ordinary accepted meanings in the context in which it applies.

Joist Girders, K-Series, LH-Series, and DLH-Series shall be open web, in-plane load-carrying steel members utilizing hot-rolled or cold-formed steel, including cold-formed steel whose yield strength has been attained by cold working.

Joist Girders shall be open web steel trusses used as primary framing members designed as simple spans supporting in-plane concentrated loads for a floor or roof system. These concentrated loads shall be considered to act at the top chord panel points of the Joist Girders unless otherwise specified.

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The Joist Girder standard designation in ASD shall be established by its nominal depth in inches (mm), the letter “G”, followed by the number of joist spaces, the letter “N”, the load in kips (kN) at each panel point, and the letter “K”. The Joist Girder standard designation in LRFD shall be established by its nominal depth in inches (mm), the letter “G”, followed by the number of joist spaces, the letter “N”, the factored load in kips (kN) at each panel point, and the letter “F”. Joist Girders shall be designed in accordance with this Specification to support the loads defined by the specifying professional.

Joist Girders shall be designed and manufactured as either simple framing members with underslung ends and bottom chord extensions or as part of an ordinary steel moment frame (OMF). Where used as part of an OMF the specifying professional shall be responsible for carrying out all the required frame analyses (i.e. first-order and second-order), provide all the required load information and stiffness data to the joist manufacturer, and indicate the type of **Joist Girder** to column connections that are being designed on the structural drawings.

User Note: Joist Girders have been standardized in depths from 20 inches (508 mm) through 120 inches (3048 mm), for spans from 20 feet (6096 mm) through 120 feet (36576 mm).

Where this Specification refers to “steel joists”, this shall mean the K-Series, LH-Series, and DLH-Series joists.

User Note: Joists are suitable for the direct support of floors and roof slabs or decks. The K-Series joists are standardized in depths from 10 inches (254 mm) through 30 inches (762 mm), for spans up through 60 feet (18288 mm). The LH-Series joists are standardized in depths from 18 inches (457 mm) through 48 inches (1219 mm), for spans up through 96 feet (29261 mm). The DLH-Series joists are standardized in depths from 52 inches (1321 mm) through 120 inches (3048 mm), for spans up through 240 feet (73152 mm).

The K-Series, LH-Series and DLH-Series standard joist designations shall be established by their nominal depth, followed by the letters K, LH or DLH as appropriate, and then by the Section Number designation assigned. The Section Number designations shall range from 01 to 25. The K-Series, LH-Series and DLH-Series standard joist designations listed in the following Standard Load Tables shall support the uniformly distributed loads as provided in the applicable tables:

Standard LRFD Load Table Open Web Steel Joists, K-Series – U.S. Customary Units
Standard ASD Load Table Open Web Steel Joists, K-Series – U.S. Customary Units
Standard LRFD Load Table Longspan Steel Joists, LH-Series – U.S. Customary Units
Standard ASD Load Table Longspan Steel Joists, LH-Series – U.S. Customary Units
Standard LRFD Load Table Deep Longspan Steel Joists, DLH-Series – U.S. Customary Units
Standard ASD Load Table Deep Longspan Steel Joists, DLH-Series – U.S. Customary Units
Standard LRFD Load Table Open Web Steel Joists, K-Series – S.I. Units
Standard ASD Load Table Open Web Steel Joists, K-Series – S.I. Units
Standard LRFD Load Table Longspan Steel Joists, LH-Series – S.I. Units
Standard ASD Load Table Longspan Steel Joists, LH-Series – S.I. Units
Standard LRFD Load Table Deep Longspan Steel Joists, DLH-Series – S.I. Units
Standard ASD Load Table Deep Longspan Steel Joists, DLH-Series – S.I. Units

Wherever a standard SJI Section Number is specified in the joist designation (e.g. 18K4, 32LH10) and other design load cases are also specified for the joist, the steel joist shall be designed for the corresponding total load as shown in the Standard Load Tables as a minimum.

User Note: Six standard types of K-Series, LH-Series and DLH-Series joists are designed and manufactured. These types are underslung (top chord bearing) or square-ended (bottom chord bearing), with parallel chords or with single or double pitched top chords. The Standard Load Tables apply for a pitched top chord up to 1/2 inch per foot (1:24).

The steel joist or Joist Girder designation depth shall be the depth at mid-span.

An alternate method of specifying a standard K-Series, LH-Series, or DLH-Series joist shall be permitted by providing the designation in a “load/load” sequence. The format used shall be ddKtl/ll, ddLHtl/ll, or ddDLHtl/ll where:

dd is the nominal depth of the joist in inches (mm)
tl is the total uniformly distributed load applied to the joist top chord, plf (kN/m)
ll is the uniform live load for which the deflection shall be checked and limited as required by this Specification, plf (kN/m)

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User Note: The load/load K-Series, LH-Series, or DLH-Series joists can be specified in depths from 10 inches (254 mm) through 120 inches (3048 mm) and spans up through 240 feet (73152 mm). The maximum uniformly distributed load-carrying capacity of 2400 plf (35.03 kN/m) in ASD and 3600 plf (52.54 kN/m) in LRFD has been established for this alternate K-Series, LH-Series, or DLH-Series format. The maximum capacity for any given load/load joist designation is a function of span, depth and chord member size. When requirements exceed the standard K-Series load table limitations for loading, span, and depth, an LH-Series designation is recommended to facilitate the proper determination of minimum seat depth, end anchorage, bridging size, deck attachment, etc. Thus, any joist exceeding a 30 inch depth, a span of 60 feet, an in-kip moment of Depth x 61 kips in ASD or Depth x 91.5 kips in LRFD, or an end reaction of 9.2 kips in ASD or 13.8 kips in LRFD should be designated as an LH-Series which allows for a cross-reference with a standard LH designation as listed in this Specification for seat, end anchorage, bridging, attachment tables, etc.

A KCS Joist is a particular type of K-Series joist, and shall be designed in accordance with this Specification based on an envelope of moment and shear capacity, rather than uniform load capacity, to support uniform plus concentrated loads or other non-uniform loads. The KCS Joists shall be selected from standardized depths from 10 inches (254 mm) through 30 inches (762 mm), for spans up through 60 feet (18288 mm). The maximum total safe uniformly distributed load-carrying capacity of a KCS Joist, K-Series, shall be 550 plf (8.02 kN/m) in ASD or 825 plf (12.03 kN/m) in LRFD. A KCS Joist shall be parallel chord only and shall be permitted to be underslung or bottom chord bearing.

The KCS Joists, K-Series, standard designations shall be established by their nominal depth, followed by the letters “KCS”, and then by the Section Number designation assigned. The Section Number designations shall range from 1 to 5. A KCS Joist shall not be designated using the alternate “load/load” method. The KCS Joists, K-Series, standard designations listed in the following Standard Load Tables shall provide the moment capacity and shear capacity as listed in the applicable tables:

Standard LRFD Load Table for KCS Open Web Steel Joists – U.S. Customary Units
Standard ASD Load Table for KCS Open Web Steel Joists – U.S. Customary Units
Standard LRFD Load Table for KCS Open Web Steel Joists – S.I. Units
Standard ASD Load Table for KCS Open Web Steel Joists – S.I. Units

Where an open web configuration becomes impractical, a Joist Substitute, K-Series, shall be designed in accordance with this Specification to support uniform loads when the span is less than 10 feet (3048 mm). The maximum total safe uniformly distributed load-carrying capacity of a Joist Substitute shall be 550 plf (8.02 kN/m) in ASD or 825 plf (12.03 kN/m) in LRFD.

The Joist Substitutes, K-Series, standard designations shall be established by their nominal depth, e.g. 2.5, followed by the letter “K” and then by the chord size designation assigned. The chord size designations shall range from 1 to 3. The Joist Substitutes, K-Series, standard designations listed in the following Load Tables shall support the uniformly distributed loads as provided in the applicable tables:

User Note: The Joist Substitutes, K-Series, are standardized as 2.5 inch (64 mm) deep sections for spans up through 10’-0” (3048 mm).

LRFD Simple Span Load Table for 2.5 Inch K–Series Joist Substitutes – U.S. Customary Units
ASD Simple Span Load Table for 2.5 Inch K–Series Joist Substitutes – U.S. Customary Units
LRFD Simple Span Load Table for 64 mm K–Series Joist Substitutes – S.I. Units
ASD Simple Span Load Table for 64 mm K–Series Joist Substitutes – S.I. Units

LRFD Outriggers Load Table for 2.5 Inch K–Series Joist Substitutes – U.S. Customary Units
ASD Outriggers Load Table for 2.5 Inch K–Series Joist Substitutes – U.S. Customary Units
LRFD Outriggers Load Table for 64 mm K–Series Joist Substitutes – S.I. Units
ASD Outriggers Load Table for 64 mm K–Series Joist Substitutes – S.I. Units

A Top Chord Extension or Extended End, K-series, shall be a joist accessory that shall be designed in accordance with this Specification to support uniform loads when one or both ends of an underslung joist needs to be cantilevered beyond its bearing seat.

User Note: The Top Chord Extensions and Extended Ends are standardized as an “S” Type (top chord angles extended only) and an “R” Type (top chord and bearing seat angles extended), respectively.

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Standard designations for the "S" Type shall range from S1 to S12 for spans from 0'-6" to 4'-6" (152 to 1372 mm). Standard designations for the "R" Type shall range from R1 to R12 for spans from 0'-6" to 6'-0" (152 to 1829 mm). The maximum total safe uniformly distributed load-carrying capacity of either an "R" or "S" Type extension shall be 550 plf (8.02 kN/m) in ASD or 825 plf (12.03 kN/m) in LRFD. The "S" Type Top Chord Extensions and "R" Type Extended Ends listed in the following Standard Load Tables shall support the uniformly distributed loads as provided in the applicable tables:

LRFD Top Chord Extension Load Table (S Type) – U.S. Customary Units
ASD Top Chord Extension Load Table (S Type) – U.S. Customary Units
LRFD Top Chord Extension Load Table (R Type) – U.S. Customary Units
ASD Top Chord Extension Load Table (R Type) – U.S. Customary Units
LRFD Top Chord Extension Load Table (S Type) – S.I. Units
ASD Top Chord Extension Load Table (S Type) – S.I. Units
LRFD Top Chord Extension Load Table (R Type) – S.I. Units
ASD Top Chord Extension Load Table (R Type) – S.I. Units

1.5 STRUCTURAL DESIGN DRAWINGS AND SPECIFICATIONS

The structural design drawings and specifications shall meet the requirements in the *Code of Standard Practice for Steel Joists and Joist Girders*, except for deviations specifically identified in the design drawings and/or specifications.

SECTION 2.
REFERENCED SPECIFICATIONS, CODES AND STANDARDS

2.1 REFERENCES

The standards listed below shall be considered as part of the requirements of this Specification. Where conflicts occur between this Specification and a referenced standard, the provisions of this Specification shall take precedence unless otherwise stated. This section lists the standards that are referenced in this Specification. The standards are listed in alphabetical order by name of standards developer organization, with the specific standard designations, title and dates of each of the referenced standards below.

American Institute of Steel Construction, Inc. (AISC), Chicago, IL

ANSI/AISC 360-10 *Specification for Structural Steel Buildings*

American Iron and Steel Institute (AISI), Washington, DC

ANSI/AISI S100-2012 *North American Specification for the Design of Cold-Formed Steel Structural Members*

American Society of Civil Engineers (ASCE), Reston, VA

SEI/ASCE 7-10 *Minimum Design Loads for Buildings and Other Structures*

American Society of Testing and Materials, ASTM International (ASTM), West Conshohocken, PA

ASTM A6/A6M-13A, *Standard Specification for General Requirements for Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling*

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ASTM A36/A36M-12, *Standard Specification for Carbon Structural Steel*

ASTM A242/242M-13, *Standard Specification for High-Strength Low-Alloy Structural Steel*

ASTM A307-12a, *Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength*

ASTM A325/325M-13, *Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi [830 MPa] Minimum Tensile Strength*

ASTM A370-12a, *Standard Test Methods and Definitions for Mechanical Testing of Steel Products*

ASTM A500/A500M-13, *Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes*

ASTM A501-07 *Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing* ASTM

A529/A529M-05(2009), *Standard Specification for High-Strength Carbon-Manganese Steel of Structural Quality* ASTM

A572/A572M-13a, *Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel*

ASTM A588/A588M-10, *Standard Specification for High-Strength Low-Alloy Structural Steel, up to 50 ksi [345 MPa] Minimum Yield Point, with Atmospheric Corrosion Resistance*

ASTM A606/A606M-09a, *Standard Specification for Steel, Sheet and Strip, High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, with Improved Atmospheric Corrosion Resistance*

ASTM A992/A992M-11, *Standard Specification for Structural Steel Shapes*

ASTM A1008/A1008M-13, *Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable*

ASTM A1011/A1011M-13, *Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength*

ASTM A1065/A1065M-09(2014) *Standard Specification for Cold-Formed Electric-Fusion (ARC) Welded High-Strength Low-Alloy Structural Tubing in Shapes with 50 ksi (345 MPA) Minimum Yield Point*

ASTM A1085-13 *Standard Specification for Cold-Formed Welded Carbon Steel Hollow Structural Sections (HSS)*

American Welding Society (AWS), Miami, FL

AWS A5.1/A5.1M-2012, *Specification for Carbon Steel Electrodes for Shielded Metal Arc Welding*

AWS A5.5/A5.5M:2006, *Specification for Low-Alloy Steel Electrodes for Shielded Metal Arc Welding*

AWS A5.17/A5.17M-97:R2007, *Specification for Carbon Steel Electrodes and Fluxes for Submerged Arc Welding*

AWS A5.18/A5.18M:2005, *Specification for Carbon Steel Electrodes and Rods for Gas Shielded Arc Welding*

AWS A5.20/A5.20M:2005, *Specification for Carbon Steel Electrodes for Flux Cored Arc Welding*

AWS A5.23/A5.23M:2011, *Specification for Low-Alloy Steel Electrodes and Fluxes for Submerged Arc Welding*

AWS A5.28/A5.28M:2005, *Specification for Low-Alloy Steel Electrodes and Rods for Gas Shielded Arc Welding*

AWS A5.29/A5.29M:2010, *Specification for Low-Alloy Steel Electrodes for Flux Cored Arc Welding*

AWS D1.1/D1.1M:2015, *Structural Welding Code - Steel*

AWS D1.3/D1.3M:2008, *Structural Welding Code Sheet Steel*

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User Note: The following informative references provide practical guidance in the use and application of this Specification:

Code of Federal Regulations (CFR), Occupational Safety and Health Administration (OSHA), 29 CFR Part 1926, Safety Standards for Steel Erection; Subpart R - Steel Erection; January 18, 2001, Washington, D.C.

Steel Joist Institute (SJI), Florence, SC

SJI-COSP-2015, *Code of Standard Practice for Steel Joists and Joist Girders*

Technical Digest No. 3 (2007), *Structural Design of Steel Joist Roofs to Resist Ponding Loads*

Technical Digest No. 5 (2015), *Vibration of Steel Joist-Concrete Slab Floors*

Technical Digest No. 6 (2012), *Structural Design of Steel Joist Roofs to Resist Uplift Loads*

Technical Digest No. 8 (2008), *Welding of Open Web Steel Joists and Joist Girders*

Technical Digest No. 9 (2008), *Handling and Erection of Steel Joists and Joist Girders*

Technical Digest No. 10 (2003), *Design of Fire Resistive Assemblies with Steel Joists*

Technical Digest No. 11 (2007), *Design of Lateral Load Resisting Frames Using Steel Joists and Joist Girders*

Technical Digest No. 12 (2007), *Evaluation and Modification of Open-Web Steel Joists and Joist Girders*

The Society for Protective Coatings (SSPC), *Steel Structures Painting Manual, Volume 2, Systems and Specifications*, Paint Specification No. 15, Steel Joist Shop Primer, May 1, 1999, Pittsburgh, PA.

Van Malssen, S.H. (1984), *The Effects of Arc Strikes on Steel Used in Nuclear Construction,* Welding Journal, American Welding Society, Miami, FL, July 1984.

SECTION 3.
MATERIALS

3.1 STEEL

The steel used in the manufacture of Joist Girders and K-Series, LH-Series, and DLH-Series joists shall conform to one of the following ASTM specifications:

ASTM A36/A36M, Carbon Structural Steel

ASTM A242/A242M, High-Strength Low-Alloy Structural Steel

ASTM A500/A500M, Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes

ASTM A529/A529M, High-Strength Carbon-Manganese Steel of Structural Quality

ASTM A572/A572M, High-Strength Low-Alloy Columbium-Vanadium Structural Steel

ASTM A588/A588M, High-Strength Low-Alloy Structural Steel up to 50 ksi [345 MPa] Minimum Yield Point with Atmospheric Corrosion Resistance

ASTM A606/A606M, Steel, Sheet and Strip, High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, with Improved Atmospheric Corrosion Resistance

ASTM A992/A992M, Structural Steel Shapes

ASTM A1008/A1008M, Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable

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ASTM A1011/A1011M, Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength

ASTM A1018/A1018M, Steel, Sheet and Strip, Heavy Thickness Coils, Hot Rolled, Carbon, Structural, High-Strength Low-Alloy, Columbium or Vanadium, and High-Strength Low-Alloy with Improved Formability and Ultra-High Strength

EXCEPTION: Steel used in the manufacture of Joist Girders and K-Series, LH-Series, and DLH-Series joists shall be permitted to be of suitable quality ordered or produced to other than the listed ASTM 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 properties, in accordance with Section 3.2.

3.2 MECHANICAL PROPERTIES

3.2.1 Minimum Yield Strength: Steel used for Joist Girders and K-Series, LH-Series, and DLH-Series joists shall have a minimum yield strength determined in accordance with one of the procedures specified in this section, which is equal to the yield strength assumed in the design.

User note: The term "Yield Strength" as used herein designates 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 3.2.3.

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 such material, the mechanical properties of which conform to the requirements of one of the listed ASTM specifications in Section 3.1, the test specimens and procedures shall conform to those of the applicable ASTM specification and to ASTM A370.

3.2.2 Other Materials: For materials where the mechanical properties do not conform to the requirements of one of the ASTM specifications listed in Section 3.1, these materials shall conform to the following requirements:

a) The specimens shall comply with ASTM A370,
b) The specimens shall exhibit a yield strength equal to or exceeding the design yield strength,
c) The specimens shall have an elongation of not less than 20 percent in 2 inches (51 mm) for sheet strip, or 18 percent in 8 inches (203 mm) for plates, shapes and bars with adjustments for thickness for plates, shapes and bars as prescribed in either ASTM A36/A36M, A242/A242M, A500/A500M, A529/A529M, A572/A572M, A588/A588M, or A992/A992M, whichever ASTM specification is applicable, on the basis of design yield strength.
d) The number of tests for a), b), and c) above shall be as prescribed in ASTM A6/A6M for plates, shapes, and bars; and ASTM A606/A606M, A1008/A1008M and A1011/A1011M for sheet and strip.

3.2.3 As-Formed Strength: 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 S100. The reports shall also indicate compliance with the following additional requirements:

a) The yield strength calculated from the test data shall equal or exceed the design yield strength.
b) Where tension tests are made for acceptance and control purposes, the tensile strength shall be at least 8 percent greater than the yield strength of the section.
c) Where compression tests are used for acceptance and control purposes, the specimen shall withstand a gross shortening of 2 percent of its original length without cracking. The length of the specimen shall be not greater than 20 times 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.

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3.3 WELDING ELECTRODES

3.3.1 Welding Electrodes: The welding electrodes used for arc welding shall be in accordance with the following:

a) For connected members both having a specified minimum yield strength greater than 36 ksi (250 MPa), one of the following electrodes shall be used:

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), one of the following electrodes shall be used:

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 3.3.1(a).

3.3.2 Other Welding Methods: Other welding methods, providing equivalent strength as demonstrated by tests, shall be permitted to be used.

3.4 PAINT

The standard shop paint shall be considered an impermanent and provisional coating.

User Note: The standard shop paint is intended to protect the steel for only a short period of exposure in ordinary atmospheric conditions.

When specified, the standard shop paint shall conform to one of the following:

a) The Society for Protective Coatings, SSPC Paint Specification No. 15.

b) Or, shall be a shop paint which meets the minimum performance requirements of SSPC Paint Specification No. 15.

SECTION 4.
DESIGN AND MANUFACTURE

4.1 METHOD

Joist Girders support steel joists or other secondary members and shall be designed in accordance with this Specification as simply-supported primary load-carrying members for in-plane loading. Steel joists shall be designed in accordance with this Specification as simply-supported trusses supporting a floor or roof deck so constructed as to brace the top chord of the steel joists against lateral buckling. 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, AISC 360.

b) For members which are cold-formed from sheet or strip steel, AISI S100.

4.1.1 Design Basis:

Steel joist and Joist Girder designs shall be in accordance with the provisions in this Specification using Load and Resistance Factor Design (LRFD) or Allowable Strength Design (ASD) as specified by the specifying professional for the project.

4.1.2 Loads, Forces and Load Combinations:

The loads and forces used for the steel joist and Joist Girder design shall be calculated by the specifying professional in accordance with the applicable building code and specified and provided on the structural drawings.

For nominal concentrated loads, which have been accounted for in the specified uniform loads, the addition of chord bending moments or an added shop or field web member due to these nominal concentrated loads shall not be required provided that the sum of the concentrated loads within a chord panel does not exceed 100 pounds and the attachments are concentric to the chord. When exact dimensional locations for concentrated loads which do not meet the above criteria are provided by the specifying professional, the joist shall be designed for the loads and load locations provided without the need for additional field applied web members at the specified locations.

The load combinations shall be specified by the specifying professional on the structural drawings in accordance with the applicable building code. In the absence of an applicable building code, the load combinations shall be those stipulated in SEI/ASCE 7 Section 2.3 and Section 2.4 as appropriate. For LRFD designs, the load combinations in SEI/ASCE 7, Section 2.3 shall apply. For ASD designs, the load combinations in SEI/ASCE 7, Section 2.4 shall apply.

4.2 DESIGN AND ALLOWABLE STRESSES

4.2.1 Design Using Load and Resistance Factor Design (LRFD)

Joists and Joist Girders 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)

4.2.2 Design Using Allowable Strength Design (ASD)

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

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

4.2.3 Stresses:

The calculation of design stress or allowable stress for chords shall be based on a yield strength, F_y, of the material used in manufacturing equal to 50 ksi (345 MPa). The calculation of design stress or allowable stress for all other joist elements shall be based on a yield strength, F_y, of the material used in manufacturing, but shall not be less than 36 ksi (250 MPa) nor greater than 50 ksi (345 MPa).Yield strengths greater than 50 ksi shall not be used for the design of any members.

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

Design Stress = $0.9F_y$ (LRFD) (4.2-1)

Allowable Stress = $0.6F_y$ (ASD) (4.2-2)

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

Design Stress = $0.9F_{cr}$ (LRFD) (4.2-3)

Allowable Stress = $0.6F_{cr}$ (ASD) (4.2-4)

Where:

For members with $\frac{k\ell}{r} \leq 4.71\sqrt{\frac{E}{QF_y}}$

$$F_{cr} = Q\left[0.658^{\left(QF_y/F_e\right)}\right]F_y \quad (4.2\text{-}5)$$

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

$$F_{cr} = 0.877F_e \quad (4.2\text{-}6)$$

Where F_e = Elastic buckling stress determined in accordance with Equation 4.2-7

$$F_e = \frac{\pi^2 E}{\left(k\ell/r\right)^2} \quad (4.2\text{-}7)$$

In the above equations, ℓ is the length, k is the effective length factor, and r is the corresponding radius of gyration of the member as defined in Section 4.3. E is equal to 29,000 ksi (200,000 MPa).

For hot-rolled sections and cold-formed angles, Q shall be taken as the full reduction factor for slender compression members as determined in accordance with AISC 360-10.

Exception: Where a compression web member is a crimped-end angle member intersecting at the first bottom chord panel point, whether hot-rolled or cold-formed, then Q shall be determined as follows:

$$Q = [5.25/(w/t)] + t \leq 1.0 \quad (4.2\text{-}8a)$$

Where: w = angle leg length, inches
t = angle leg thickness, inches

or,

$$Q = [5.25/(w/t)] + (t/25.4) \leq 1.0 \quad (4.2\text{-}8b)$$

Where: w = angle leg length, millimeters
t = angle leg thickness, millimeters

For all other cold-formed sections the method of calculating the nominal compression strength shall be in accordance with AISI S100.

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

Bending calculations shall be based on the elastic section modulus.

For chords and web members other than solid rounds: $F_n = F_y$

Design Stress = $\phi_b F_n = 0.9F_y$ (LRFD) (4.2-9)

Allowable Stress = $F_n/\Omega_b = 0.6F_y$ (ASD) (4.2-10)

For web members of solid round cross section: $F_n = 1.6\ F_y$

Design Stress = $\phi_b F_n = 1.45F_y$ (LRFD) (4.2-11)

Allowable Stress = $F_n/\Omega_b = 0.95F_y$ (ASD) (4.2-12)

For bearing plates used in joist seats: $F_n = 1.5\ F_y$

Design Stress = $\phi_b F_n = 1.35F_y$ (LRFD) (4.2-13)

Allowable Stress = $F_n/\Omega_b = 0.90F_y$ (ASD) (4.2-14)

4.2.3.4 Weld Strength:

Shear at throat of fillet welds, flare bevel groove welds, partial joint penetration groove welds, and plug/slot welds shall be determined as follows:

Nominal Shear Stress = $F_{nw} = 0.6F_{exx}$ (4.2-15)

LRFD: $\phi_w = 0.75$

Design Shear Strength = $\phi R_n = \phi_w F_{nw} A = 0.45F_{exx} A_w$ (4.2-16)

ASD: $\Omega_w = 2.0$

Allowable Shear Strength = $R_n/\Omega_w = F_{nw}A/\Omega_w = 0.3F_{exx} A_w$ (4.2-17)

Where:

F_{exx} is determined as follows:

E70 series electrodes or F7XX-EXXX flux-electrode combinations F_{exx} = 70 ksi (483 MPa)

E60 series electrodes or F6XX-EXXX flux-electrode combinations F_{exx} = 60 ksi (414 MPa)

A_w = effective throat area, where:

For fillet welds, A_w = effective throat area

Other design methods demonstrated to provide sufficient strength by testing shall be permitted to be used.

For flare bevel groove welds, the effective weld area is based on a weld throat width, T, where:

T (inches) = 0.12D + 0.11 (4.2-18a)

Where D = web diameter, inches

or,

T (mm) = 0.12D + 2.8 (4.2-18b)

Where D = web diameter, mm

For plug/slot welds, A_w = cross-sectional area of the hole or slot in the plane of the faying surface provided that the hole or slot meets the requirements of AISC 360.

User Note: For more on plugs/slot welds see Steel Joist Institute Technical Digest No. 8, “Welding of Open-Web Steel Joists and Joist Girders”.

Strength of resistance welds and complete-joint-penetration groove or butt welds in tension or compression (only where the stress is normal to the weld axis) shall be equal to the base metal strength:

$\phi_t = \phi_c = 0.90$ (LRFD) $\quad \Omega_t = \Omega_c = 1.67$ (ASD)

Design Stress = $0.9 F_y$ (LRFD) (4.2-19)

Allowable Stress = $0.6 F_y$ (ASD) (4.2-20)

4.3 MAXIMUM SLENDERNESS RATIOS

The slenderness ratios, $1.0\ell/r$ and $1.0\ell_s/r$ of members as a whole or any component part shall not exceed the values given in Table 4.3-1, Part A.

4.3.1 Effective Slenderness Ratios: The effective slenderness ratio, $k\ell/r$ to be used in calculating the nominal stresses, F_{cr} and F'_e, is the largest value as determined from Table 4.3-1, Part B and Part C, and modified where required with equation 4.3-1. The effective length k shall be taken as 1.0 for all components in Joist Girders.

4.3.2 Compressive Members: In compression members where 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 4.3-1 shall be defined as follows:

ℓ = length center-to-center of panel points, except ℓ = 36 inches (914 millimeters) for calculating ℓ/r_y of the top chord member for joists, and for Joist Girders this distance shall be the unbraced length between joists which are positively attached to the top chord, in. (mm).

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

r_x = member radius of gyration about the horizontal axis of the joist or Joist Girder cross section, in. (mm).

r_y = member radius of gyration about the vertical axis of the joist or Joist Girder cross section, in. (mm).

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

Compression web members shall be those web members subject to compressive axial loads under gravity loading.

4.3.3 Tension Members: Tension web members shall be those web members subject to tension axial loads under gravity loading, and which shall be permitted to be subject to compressive axial loads under alternate loading conditions

User Note: An example of a non-gravity alternate loading condition is net uplift.

4.3.4 Top Chords: For top chords, the end panel(s) shall be the panels between the bearing seat and the first primary interior panel point comprised of at least two intersecting web members.

4.3.5 Built-Up Web Members: For built-up web members composed of two interconnected shapes, where $\ell_s/r_z > 40$, a modified slenderness ratio $\left(\frac{k\ell}{r_y}\right)_m$ shall replace $\frac{k\ell}{r_y}$ in equations 4.2-5, 4.2-6, and 4.2-7, where:

$$\left(\frac{k\ell}{r_y}\right)_m = \sqrt{\left(\frac{k\ell}{r_y}\right)^2 + \left(\frac{k_i\ell_s}{r_z}\right)^2} \qquad (4.3\text{-}1)$$

and,

k_i = 0.50 for angles back-to-back
= 0.75 for channels back-to-back

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TABLE 4.3-1

MAXIMUM AND EFFECTIVE SLENDERNESS RATIOS[1]

Description			$k\ell/r_x$	$k\ell/r_y$	$k\ell/r_z$	$k\ell_s/r_z$
I.	TOP CHORD INTERIOR PANELS					
	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 for joists, $k\ell/r$, to determine F_{cr} where k is:				
	1.	Two shapes with fillers or ties	0.75	0.94	---	1.0
	2.	Two shapes without fillers or ties	---	---	0.75	---
	3.	Single component members	0.75	0.94	---	---
	C.	For bending, the effective slenderness ratio, $k\ell/r$, to determine F'_e where k is:	0.75	---	---	---
II.	TOP CHORD END PANELS					
	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 for joists, $k\ell/r$, to determine F_{cr} where k is:				
	1.	Two shapes with fillers or ties	1.0	0.94	---	1.0
	2.	Two shapes without fillers or ties	---	---	1.0	---
	3.	Single component members	1.0	0.94	---	---
	C.	For bending, the effective slenderness ratio, $k\ell/r$, to determine F'_e where k is:	1.0	---	---	---
III.	ALL BOTTOM CHORD PANELS					
	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.				
	B.	For members subject to compression, the effective slenderness ratio for joists, $k\ell/r$, to determine F_{cr} where k is:				
	1.	Two shapes with fillers or ties	0.9	0.94	---	1.0
	2.	Two shapes without fillers or ties	---	---	0.9	---
	3.	Single component members	0.9	0.94	---	---
	C.	For bending, the effective slenderness ratio, $k\ell/r$, to determine F'_e where k is:	0.9	---	---	---
IV.	WEB MEMBERS					
	A.	The slenderness ratios, $1.0\ell/r$ and $1.0\ell_s/r$, of members as a whole or any component part shall not exceed 240 for a tension member or 200 for a compression member.				
	B.	For members subject to compression, the effective slenderness ratio for joists, $k\ell/r$, to determine F_{cr} where k is:				
	1.	Two shapes with fillers or ties	0.75	1.0	---	1.0
	2.	Two shapes without fillers or ties	---	---	1.0	---
	3.	Single component members	0.75	0.9*	---	---
		*For end tension web members subject to compression, k shall equal 0.8				

(1) The effective length k shall equal 1.0 for all components of Joist Girders.

4.4 MEMBERS

4.4.1 Chords

The joist and Joist Girder bottom chord shall be designed as an axially loaded tension member.

For Joist Girders, the radius of gyration of the bottom chord about its vertical axis shall not be less than $\ell/240$ where ℓ is the distance between lines of bracing. The radius of gyration of a Joist Girder top chord about the vertical axis shall not be less than Span/575.

For steel joists, the radius of gyration of the top chord about its vertical axis shall not be less than the results of equation 4.4-1 or 4.4-2:

$$r_y \geq \ell_{br} \Big/ \left(124+0.67\,d_j+28\,\frac{d_j}{L} \right), \text{ in.} \qquad (4.4\text{-}1a)$$

$$r_y \geq \ell_{br} \Big/ \left(124+0.026\,d_j+0.34\,\frac{d_j}{L} \right), \text{ mm} \qquad (4.4\text{-}1b)$$

or,

$$r_y \geq \ell_{br}/170 \qquad (4.4\text{-}2)$$

Where:

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

L is the joist span length, ft. (m)

r_y is the radius of gyration of the top chord about the vertical axis of the joist cross section, in. (mm)

ℓ_{br} is the spacing in inches (millimeters) between lines of bridging as specified in Section 5.5.3.1.

A steel joist top chord shall be considered as laterally braced by the floor slab or roof deck provided the requirements of Section 5.9 are met.

A Joist Girder top chord shall be considered as laterally braced by the steel joists provided positive attachment is made. The outstanding part of the top chord member shall be designed such that the allowable reaction from a single joist shall not exceed equation 4.4-3 or 4.4-4:

ϕP_p and $\phi P_p\,(1.6 - f_{au}/\phi Q F_y)$ (LRFD, $\phi = 0.9$) (4.4-3)

P_p/Ω and $P_p/\Omega\,(1.6 - \Omega f_a/Q F_y)$ (ASD, $\Omega = 1.67$) (4.4-4)

Where:

F_y = Specified minimum yield strength, ksi (MPa)

P_p = Plastic failure mode = $[(t^2F_y)/[2(b\text{-}k)]][g+5.66(b\text{-}k)]$, kips (N)

Q = Form factor defined in Section 4.2.3.2

b = width of the outstanding part of the top chord member, in. (mm)

f_{au} = P_u/A = Required compressive stress, ksi (MPa)

f_a = P/A = Required compressive stress, ksi (MPa)

g = width of bearing seat, in. (mm)

k = value from angle properties or similar dimension for other members, in (mm)

t = thickness of the outstanding part of the top chord member, in. (mm)

The top chord of a steel joist or Joist Girder shall be designed as a continuous member subject to combined axial and bending stresses, except a Joist Girder loaded only at panel points shall be designed as an axial loaded compression member. For combined stresses the top chord shall be so proportioned that:

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For **LRFD**:

at the panel point:

$$f_{au}+f_{bu} \le 0.9F_y \qquad (4.4\text{-}5)$$

at the mid panel:

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

$$\frac{f_{au}}{\phi_c F_{cr}}+\frac{8}{9}\left[\frac{C_m f_{bu}}{\left[1-\left(\dfrac{f_{au}}{\phi_c F_e'}\right)\right]Q\phi_b F_y}\right] \le 1.0 \qquad (4.4\text{-}6)$$

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

$$\frac{f_{au}}{2\phi_c F_{cr}}+\left[\frac{C_m f_{bu}}{\left[1-\left(\dfrac{f_{au}}{\phi_c F_e'}\right)\right]Q\phi_b F_y}\right] \le 1.0 \qquad (4.4\text{-}7)$$

f_{au} = P_u/A = Required compressive stress using LRFD load combinations, ksi (MPa)

P_u = Required axial strength using LRFD load combinations, kips (N)

A = Area of the top chord, in.^{2} (mm^2)

f_{bu} = M_u/S = Required bending stress at the location under consideration using LRFD load combinations, ksi (MPa)

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 in ksi (MPa) based on $k\ell/r$ as defined in Section 4.3

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

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

Q = Form factor defined in Section 4.2.3.2

ϕ_c = Resistance factor for compression = 0.9

ϕ_b = Resistance factor for flexure = 0.9

F_y = Specified minimum yield strength, ksi (MPa)

$F'_e = \dfrac{\pi^2 E}{(k\ell/r_x)^2}$, ksi (MPa),

where ℓ is the length, k is the effective length factor, and r_x is the corresponding radius of gyration of the member as defined in Section 4.3

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

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For **ASD**:

at the panel point:

$$f_a + f_b \le 0.6F_y \qquad (4.4\text{-}8)$$

at the mid panel:

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

$$\frac{f_a}{F_a} + \frac{8}{9}\left[\frac{C_m f_b}{\left[1-\left(\frac{1.67f_a}{F'_e}\right)\right]QF_b}\right] \le 1.0 \qquad (4.4\text{-}9)$$

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

$$\left(\frac{f_a}{2F_a}\right) + \left[\frac{C_m f_b}{\left[1-\left(\frac{1.67f_a}{F'_e}\right)\right]QF_b}\right] \le 1.0 \qquad (4.4\text{-}10)$$

f_a = P/A required compressive stress using ASD load combinations, ksi (MPa)

A = Area of the top chord, in.^{2} (mm^2)

P = Required axial strength using ASD load combinations, kips (N)

f_b = M/S = required bending stress at the location under consideration using ASD load combinations, ksi (MPa)

S = Elastic Section Modulus, in.^{3} (mm^3)

M = Required flexural strength using ASD load combinations, k-in. (N-mm)

F_a = Allowable axial compressive stress based on $k\ell/r$ as defined in Section 4.3; $0.6F_{cr}$, ksi (MPa)

F_b = Allowable bending stress; $0.6F_y$, ksi (MPa)

C_m = 1 - 0.50 f_a/F'_e for end panels

C_m = 1 - 0.67 f_a/F'_e for interior panels

Q = Form factor defined in Section 4.2.3.2

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

where ℓ is the length, *k* is the effective length factor, and r_x is the corresponding radius of gyration of the member as defined in Section 4.3

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

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The top chord and bottom chord shall be designed such that at each joint complies with equation 4.4-11 or 4.4-12:

$$f_{vmod} \le \phi_v F_n \qquad \text{(LRFD, } \phi_v = 1.00\text{)} \qquad (4.4\text{-}11)$$

$$f_{vmod} \le F_n/\Omega_v \qquad \text{(ASD, } \Omega_v = 1.50\text{)} \qquad (4.4\text{-}12)$$

F_n = nominal shear stress = $0.6F_y$, ksi (MPa)

f_t = axial stress = P/A, ksi (MPa)

f_v = shear stress = V/bt, ksi (MPa)

f_{vmod} = modified shear stress = $\left(\frac{1}{2}\right)\sqrt{f_t^2+4f_v^2}$

b = length of vertical part(s) of cross section, in. (mm)

t = thickness of vertical part(s) of cross section, in. (mm)

It shall not be necessary to design the top chord and bottom chord for the modified shear stress, f_{vmod}, where a round bar web member is continuous through a joint. The minimum required shear of section 4.4.2 (25 percent of the maximum end reaction) shall not be required when evaluating Equation 4.4-11 or 4.4-12.

KCS Joist, K-Series, chords shall be designed for a flat positive bending moment envelope where the moment capacity is constant at all interior panels. The top chord end panel(s) shall be designed for an axial load based on the force in the first tension web resulting from the specified shear. A uniform load of 550 plf (8.02 kN/m) in ASD or 825 plf (12.03 kN/m) in LRFD shall be used to check bending in the end panel(s). The top chord interior panels shall be designed for an axial stress resulting from the constant moment capacity plus the bending stress. The bending stress shall be determined from the smaller uniform load derived from the constant moment and constant shear, not to exceed 550 plf (ASD) or 825 plf (LRFD). The constant moment and shear shall be those values as listed in the Standard Load Table for KCS Steel Joists.

4.4.2 Web

The vertical shears to be used in the design of the web members shall be determined by including all loads, but such vertical shears shall be not less than 25 percent of the maximum end reaction from the design load combinations.

4.4.2.1 Redundant Web Members: Redundant 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 ½ of 1.0 percent of the top chord axial force. For a **Joist Girder**, this total axial load shall not be less than 2 percent of the top chord axial force.

4.4.2.2 Joist Girders: For Joist Girders, the tension web members shall be designed to resist at least 25 percent of their axial force in compression.

4.4.2.3 KCS Joist Web Forces: KCS Joist web forces shall be determined based on a flat shear envelope, and the following:

a) All webs shall be designed for a vertical shear equal to the specified shear capacity.
b) All webs shall be designed for 100 percent stress reversal except for the first tension web which remains in tension under all simple span gravity loads.

4.4.2.4 Single Component Web Member: In those cases where a single component web member is attached to the outside of the stem of a tee or double angle chord or any other orientation of a single web member which creates an out-of-plane moment, the web member design shall account for the stresses due to eccentricity.

4.4.2.4.1 Uncrimped Single Angle Web Members

For 1 inch uncrimped single angle web members where one leg is placed flat against one chord member in the gap, the resulting eccentricities and the effects in loading shall be considered in the design. A minimum of 50 percent of the required weld shall be deposited to each chord angle.

For angles subjected to tensile loading, the following requirements shall be met:

For **LRFD**: combined axial and bending stresses shall be proportioned in accordance with Eq. 4.4-5.

For **ASD**: combined axial and bending stresses shall be proportioned in accordance with Eq. 4.4-8.

For angles subjected to compression loading, the following requirements shall be met:

For **LRFD**:

at the panel point, combined axial and bending stresses shall be proportioned in accordance with Eq. 4.4-5.

at the mid length, the strength shall meet Eqs. 4.4-6 or 4.4-7, and 4.4-13:

$$\frac{f_{au}}{\phi_c F_{crz}} \le 1.0 \qquad (4.4\text{-}13)$$

where

f_{au} = P_u/A = Required tensile or compressive stress, ksi (MPa)

P_u = Required axial strength using LRFD load combinations, kips (N)

A = Area of the uncrimped angle web, in.^{2}, (mm^2)

f_{bu} = M_u/S = required bending stress, ksi (MPa)

M_u = Required flexural strength = $0.5 P_u \left(\frac{\text{chord gap}}{2} - \bar{y} \right)$, kip-in. (N-mm)

S = Minimum Elastic Section Modulus, in.^{3} (mm^3)

F_{cr} = F_{crx}, ksi (MPa)

F_{crx} = Nominal axial compressive stress in ksi (MPa) based on $k\ell/r_x$, where ℓ is the length, k is the effective length factor, and r_x is the corresponding radius of gyration of the member as defined in Section 4.3

F_{crz} = Nominal axial compressive stress in ksi (MPa) based on $k\ell/r_z$ where k = 1.0

C_m = 1.0

F_y = Specified minimum yield strength, ksi (MPa)

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

Q = Form factor defined in Section 4.2.3.2

For **ASD**:

at the panel point, combined axial and bending stresses shall be proportioned in accordance with Eq. 4.4-8.

at the mid length the strength shall meet Eqs. 4.4-9 or 4.4-10, and 4.4-14:

$$\frac{f_a}{F_{az}} \leq 1.0 \qquad (4.4\text{-}14)$$

where

f_a = P/A = Required tensile or compressive stress, ksi (MPa)

P = Required axial strength using ASD load combinations, kips (N)

A = Area of the uncrimped angle web, in.^{2}, (mm^2)

f_b = M/S = required bending stress, ksi (MPa)

S = Minimum Elastic Section Modulus, in.^{3} (mm^3)

M = Required flexural strength = $0.5P\left(\frac{\text{chord gap}}{2} - \bar{y}\right)$, kip-in. (N-mm)

F_a = F_{ax}, ksi (MPa)

F_{ax} = Nominal axial compressive stress in ksi (MPa) based on $k\ell/r_x$, where ℓ is the length, k is the effective length factor, and r_x is the corresponding radius of gyration of the member as defined in Section 4.3

F_{az} = Nominal axial compressive stress in ksi (MPa) based on $K\ell/r_z$, where k = 1.0

F_b = Allowable bending stress; $0.6F_y$, ksi (MPa)

Alternate methods of design shall be permitted provided they provide strength equal to or greater than those given. Alternate design procedures shall be submitted to the Steel Joist Institute's consulting engineer for approval.

4.4.3 Fillers and Ties

Fillers or ties added on chord or web compression members shall be designed and connected for a force equal to 2 percent of the required member axial force.

4.4.4 Joist and Joist Girder Extensions

Joist and Joist Girder extensions shall be designated as one of three extension types, as follows: top chord extensions (TCX), extended ends, or full depth cantilevers.

Design criteria for joist extensions shall be specified using one of the following methods:

a) A joist top chord extension (TCX), extended end, or full depth cantilevered end shall be designed for the load from the Standard Load Tables based on the design length and designation of the specified joist. In the absence of other design information, the joist manufacturer shall design the joist extension for this loading as a default.

b) A loading diagram shall be provided for the joist extension, extended end, or full depth cantilevered end. The diagram shall include the magnitude and location of the loads to be supported, as well as the applicable load combinations.

c) 2½" deep steel joist extensions shall be permitted to be specified using extension designations found in the Top Chord Extension Load Table (S Type) for TCXs or the Top Chord Extension Load Table (R Type) for extended ends.

Any deflection requirements or limits due to the accompanying loads and load combinations on the steel joist or Joist Girder extension shall be provided by the specifying professional, regardless of the method used to specify the extension. Unless otherwise specified, the joist manufacturer shall check the extension for the specified deflection limit under uniform live load acting simultaneously on both the joist base span and the extension.

The joist manufacturer shall consider the effects of steel joist or Joist Girder extension loading on the base span of the steel joist or Joist Girder. This shall include carrying the design bending moment due to the loading on the extension into the top chord end panel(s), and the effect on the overall steel joist or Joist Girder chord and web axial forces. In the case of a K-Series Standard Type 'R' Extended End or 'S' TCX, the design bending moment shall be determined by the tabulated extension section modulus (S) multiplied by the appropriate allowable (ASD) or design (LRFD) flexural stress.

Bracing of extensions shall be clearly indicated on the structural drawings.

4.5 CONNECTIONS

4.5.1 Methods

Member connections and splices shall be made by attaching the members to one another by arc or resistance welding or other accredited methods in accordance with the following:

a) Steel joist and Joist Girder arc welded joints shall be in accordance with the American Welding Society, "Structural Welding Code-Steel", D1.1, and/or the "Structural Welding Code Sheet Steel", D1.3 with the following seven modified acceptance criteria as permitted by AWS D1.1 Clause 6.8:

1) Undercut shall not exceed 1/16 inch (2 mm) for welds oriented parallel to the principal stress.

User Note: The typical diagonal web member connection to one leg of a chord angle is considered to be parallel to the principal stress.

2) Discontinuities outside of the weld design length shall be permitted provided no cracks exist and undercut does not exceed the limits of item 1).

User Note: The weld design length is the minimum weld length needed for the connection force and weld thickness. Portions of the actual weld length with imperfections or discontinuities such as porosity or lack of a full profile are not included when comparing the actual weld length to the weld design length.

3) One unrepaired arc strike shall be permitted per joint provided it does not result in other unacceptable defects.

User Note: Minor arc strikes do not reduce the strength of AWS Group II materials (refer to Van Malssen, 1984).

4) The effective throat for flare bevel groove welds shall be calculated in accordance with equation 4.2-18.

User Note: The effective weld throat used by the SJI with round bars is based on SJI research and is more conservative than AWS D1.1 for GMAW for round bars in excess of 9/16" (14 mm). See Steel Joist Institute Technical Digest 8, "Welding of Open Web Steel Joists and Joist Girders".

5) Tack welds that are discontinuous from other welds shall meet the criteria for undercut, but shall be exempt from all other acceptance criteria.

User Note: Joist manufacturers use tack welds in the assembly process, and so long as they do not diminish the strength of the base metal and are not incorporated into the final weld for strength, they are not required to meet other inspection criteria.

6) The weld profile shall be considered acceptable provided neither the weld leg nor the weld throat is undersized less than AWS D1.1 limits within the weld design length.

7) For material with thickness less than 1/8", AWS D1.1 or D1.3 shall be considered appropriate.

User Note: AWS D1.1 does not address thicknesses less than 1/8" for hot rolled material and AWS D1.3 does not address hot rolled material, thus SJI has extended the ranges to include these material thicknesses.

b) Steel joist and Joist Girder resistance welded joints shall follow a preproduction validation procedure and a production checking procedure and shall meet the strength requirements of this Specification.

User Note: Spot, flash or upset resistance welds should have a written welding procedure qualification record and a systematic quality plan. For further information, see Steel Joist Institute Technical Digest 8, "Welding of Open Web Steel Joists and Joist Girders".

c) Welded Connections for Crimped-End Angle Web Members

1) The connection of each end of a crimped angle web member to each side of the chord shall consist of a weld group made of more than a single line of weld. The design weld length shall include an end return of no less than two times the nominal weld size.

d) Welding Program

1) The manufacturer's welders shall be qualified in accordance with either AWS D1.1 or AWS D1.3 for the applicable weld type, position, and material.

2) Manufacturers shall have a program for establishing weld procedures and operator qualification, and for weld sampling and testing. Each manufacturing facility shall have trained inspectors, and an engineer responsible for all welding procedures.

e) Weld Inspection by Outside Agencies (See Section 5.14)

1) The agency shall arrange for visual inspection to determine that welds meet the acceptance standards of Section 4.5.1.

User Note: Ultrasonic, X-ray, and magnetic particle testing are inappropriate for joists due to the configurations of the components and welds.

4.5.2 Strength

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

4.5.2.2 Shop Splices: Shop splices shall be permitted to occur at any point in chord or web members. Splices shall be designed for the member force, but not less than 50 percent of the member strength. All component parts comprising the cross section of the chord or web member (including reinforcing plates, rods, etc.) at the point of the splice shall develop a nominal tensile strength of at least 1.2 times the product of the yield strength and the full design area of the chord or web. The "full design area" shall be defined as the minimum required area such that the required stress will be less than the design (LRFD) or allowable (ASD) stress.

User Note: For more information on welding, see Steel Joist Institute Technical Digest 8, "Welding of Open Web Steel Joists and Joist Girders".

4.5.3 Field Splices

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

4.5.4 Eccentricity

Members connected at a joint shall have their center of gravity lines meet at a point, where practical. Ends of joists or Joist Girders shall be proportioned to resist bending produced by eccentricity at the support.

For a single component web member, the eccentricity shall be permitted to be neglected where it does not exceed the lesser of three-quarters of the over-all dimension of the chord or 2" (51 mm). This eccentricity, measured in the plane of the joist, shall be the perpendicular distance from the centroidal axis of that web member to the point on the centroidal axis of the chord which is vertically above or below the intersection of the centroidal axis of the web member(s) forming the joint in accordance with Figure 4.5-1.

For a web member composed of at least two shapes, the eccentricity on either side of the neutral axis of chord members, measured in the plane of the joist at the joint work point, shall be permitted to be neglected where the web intersect point does not exceed one and one-half times the distance between the neutral axis and the back of the chord in accordance with Figure 4.5-2.

If these limits are exceeded, provision shall be made for the stresses due to eccentricity.

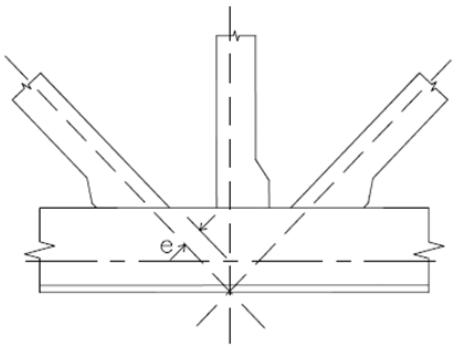

FIGURE 4.5-1

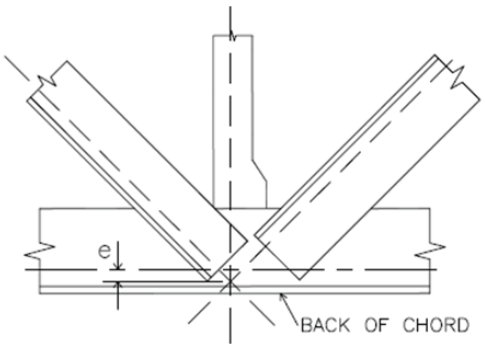

FIGURE 4.5-2

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4.6 CAMBER

Steel joists and Joist Girders 100'-0" or less shall have a manufactured camber in accordance with Table 4.6-1:

TABLE 4.6-1

TOP CHORD LENGTH		APPROXIMATE CAMBER	
20'-0″	(6096 mm)	1/4″	(6 mm)
30'-0″	(9144 mm)	3/8″	(10 mm)
40'-0″	(12192 mm)	5/8″	(16 mm)
50'-0″	(15240 mm)	1″	(25 mm)
60'-0″	(18288 mm)	1 1/2″	(38 mm)
70'-0″	(21336 mm)	2″	(51 mm)
80'-0″	(24384 mm)	2 3/4″	(70 mm)
90'-0″	(27432 mm)	3 1/2″	(89 mm)
100'-0″	(30480 mm)	4 1/4″	(108 mm)

For lengths exceeding 100'-0", manufactured camber equal to Span/300 shall be used.

User Note: The specifying professional shall give consideration to coordinating this approximate camber with adjacent framing.

4.7 VERIFICATION OF DESIGN AND MANUFACTURE

User Note: This Section is included as part of this Specification since the verification of design and manufacture is a requirement of any Steel Joist Institute member company in order to be in compliance with this Specification. This Section applies only to a Steel Joist Institute member manufacturer.

4.7.1 Design Calculations

Companies manufacturing any K-Series, LH-Series, DLH-Series Joists or Joist Girders shall submit design data to the Steel Joist Institute, or an independent agency approved by the Steel Joist Institute, for verification of compliance with this Specification. Design data shall be submitted in detail and in the format specified by the Steel Joist Institute.

4.7.2 Tests of Chord and Web Members

Each manufacturer shall, at the time of design review by the Steel Joist Institute, verify by tests that the design, in accordance with Section 4.1 through Section 4.5, provides the theoretical strength of critical members. Such tests shall be evaluated considering the actual yield strength of the members of the test joists.

Material tests for determining mechanical properties of component members shall be conducted.

4.7.3 Tests of Joints and Connections

Each manufacturer shall, at the time of design review by the Steel Joist Institute, verify by shear tests on representative joints of typical joists that connections will meet the provision of Section 4.5.2. Chord and web members shall be permitted to be reinforced for such tests.

4.7.4 In-Plant Inspections

Each manufacturer shall verify their ability to manufacture K-Series, LH-Series, DLH-Series Joists and Joist Girders through periodic In-Plant Inspections. Inspections shall be performed by an independent agency approved by the Steel Joist Institute. The frequency, manner of inspection, and manner of reporting shall be determined by the Steel Joist Institute. The plant inspections shall not represent a guarantee of the quality of any specific joists; this responsibility shall lie fully and solely with the individual manufacturer.

SECTION 5.
APPLICATION

5.1 USAGE

5.1.1 Scope: This Specification shall apply to any type of structure where floors or roofs are to be supported directly by steel joists installed as hereinafter specified or where steel joists are to be supported directly by Joist Girders installed as hereinafter specified. Where joists or Joist Girders are used other than on simple spans under uniformly distributed loading for joists, or under equal concentrated gravity loading for Joist Girders, as prescribed in Section 4.1, they shall be designed to limit the required stresses to those listed in Section 4.2. The magnitude and location of all loads and forces to be considered in the joist or Joist Girder design shall be provided on the structural drawings.

5.1.2 Continuous Frame Action: Where a rigid connection of the bottom chord is to be made to a column or other structural support, the steel joist or Joist Girder is then no longer simply-supported, and the system shall be investigated for continuous frame action by the specifying professional. The specifying professional shall design the supporting structure, including the design of columns, connections, and moment plates. This design shall account for the stresses caused by lateral forces and the stresses due to connecting the bottom chord to the column or other structural support.

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

User Note: For further reference concerning continuous frame action and their connections, refer to Steel Joist Institute Technical Digest No. 11, “Design of Lateral Load Resisting Frames Using Steel Joists and Joist Girders”.

5.2 SPAN

Except for joist substitutes, the span of a joist or Joist Girder shall not exceed 24 times the depth. Design length shall equal the span minus 4 inches (102 mm) as shown in Figure 5.2-1 “Definition of Span”.

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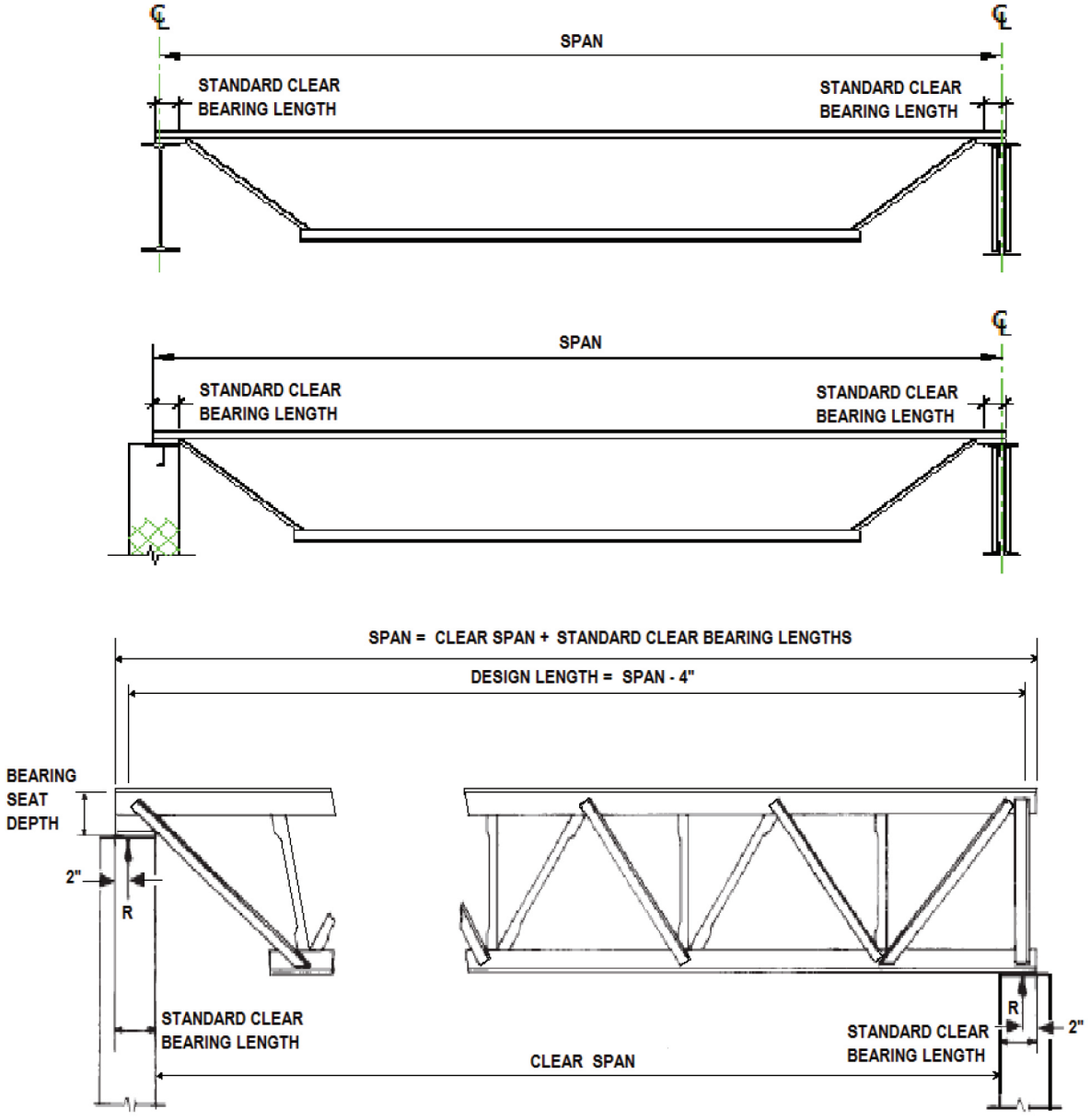
Figure 5.2-1
DEFINITION OF SPAN
(U. S. Customary Units)



NOTES:
1) DESIGN LENGTH = SPAN - 4"
2) MINIMUM BEARING LENGTHS SHALL MEET THE REQUIREMENTS OF SECTION 5.4. BEARING LENGTHS SHOWN MAY VARY BETWEEN STANDARD CLEAR BEARING AND MINIMUM BEARING LENGTH.
3) PARALLEL CHORD JOISTS INSTALLED TO A SLOPE GREATER THAN 1/2 INCH PER FOOT SHALL USE A SPAN DEFINED BY THE LENGTH ALONG THE SLOPE.

5.3 DEPTH

Steel joists or Joist Girders shall have either parallel chords or a top chord pitch of up to 1/2 inch per foot (1:24). The steel joist or Joist Girder designation depth or nominal depth shall be the depth at mid-span, except for double pitched joists which shall be the depth at the ridge.

5.4 END SUPPORTS

Consideration of the reactions, vertical and lateral, shall be taken by the specifying professional in the design of the steel support, or the steel bearing plate on masonry or concrete. The standard location of the end reaction shall be 2" (51 mm) from the end of the span (exclusive of extensions) at each end of the steel joist or Joist Girder as shown in Figure 5.2-1 "Definition of Span". The standard end reaction location shall require the minimum bearing lengths shown in Table 5.4-1.

TABLE 5.4-1

JOIST SECTION NUMBER[1]	STANDARD CLEAR BEARING LENGTH	MINIMUM BEARING LENGTH ON STEEL
K1-12	4" (102 mm)	2 ½" (64 mm)
LH02-06	6" (152 mm)	2 ½" (64 mm)
LH07-17, DLH10-17, JG	6" (152 mm)	4" (102 mm)
DLH18-25, JG[2]	6" (152 mm)	6" (152 mm)

(1)Last digit(s) of joist designation shown in Load Table.
(2) **Joist Girders** with a self weight greater than 50 plf (0.73 kN/m).

If the specifying professional requires the end reaction to be located at a distance from the face of support more than the standard clear bearing length values shown in Table 5.4-1 minus 2" (51 mm), the structural drawings shall indicate the required special location of the end reaction. The seat depth shall also be increased to the special minimum bearing seat depth per Table 5.4-3.

5.4.1 Masonry and Concrete

5.4.1.1 Scope: A K-Series, LH-Series, DLH-Series Joist or Joist Girder end supported by masonry or concrete shall bear on steel bearing plates and shall be designed as steel bearing.

5.4.1.2 Bearing Length: The ends of K-Series Joists shall extend a distance of not less than 4 inches (102 mm) over the face of masonry or concrete support unless it is deemed necessary to bear less than 4 inches (102 mm) over the support. The ends of LH-Series, DLH-Series Joists and Joist Girders shall extend a distance of not less than 6 inches (152 mm) over the face of masonry or concrete support unless it is deemed necessary to bear less than 6 inches (152 mm) over the support.

5.4.1.3 Anchorage: K-Series, **LH**-Series, **DLH**-Series Joists and **Joist Girders** shall be anchored to the steel bearing plate per Section 5.7.

The steel bearing plate shall be located not more than 1/2 inch (13 mm) from the face of the wall. If the steel bearing plate is located more than 1/2 inch (13 mm) from the face of the wall, or the minimum bearing over the masonry or concrete support cannot be provided as shown in Table 5.4-1, special consideration shall be given to the design of the steel bearing plate and the masonry or concrete by the specifying professional.

The steel bearing plate width shall not be less than that shown in Table 5.4-2 perpendicular to the length of the joist. The plate is to be designed by the specifying professional and shall be furnished by other than the joist manufacturer.

TABLE 5.4-2

JOIST SECTION NUMBER[1]	MINIMUM BEARING PLATE WIDTH
K1-12, LH02-06	7” (178 mm)
LH07-17, DLH10-17, JG	9” (229 mm)
DLH18-25, JG[2]	14” (356 mm)

(1)Last digit(s) of joist designation shown in Load Table.
(2) Joist Girders with a self weight greater than 50 plf (0.73 kN/m).

5.4.2 Steel

The ends of K-Series, LH-Series, DLH-Series Joists and Joist Girders shall be anchored to the support per Section 5.7.

5.4.3 Bearing Depth

The standard non-sloping bearing seat depths shall be as shown in Table 5.4-3. If the steel joist slopes 3/8 inch per foot or greater, the high end bearing seat shall require additional depth due to the slope.

User Note: The Steel Joist Institute Code of Standard Practice provides guidance for determining additional seat depth requirements for sloped joists.

TABLE 5.4-3

JOIST SECTION NUMBER[1]	STANDARD BEARING SEAT DEPTH	STANDARD CLEAR BEARING LENGTH	SPECIAL MINIMUM BEARING SEAT DEPTH[2]
K1-12	2 ½” (64 mm)	4” (102 mm)	0.6 x (RP + 2 ½” (64 mm))
LH02-17, DLH10-17	5” (127 mm)	6” (152 mm)	0.6 x (RP + 4” (102 mm))
DLH18-25	7 ½” (191 mm)	6” (152 mm)	0.6 x (RP + 4“ (102 mm)) + 2 ½” (64 mm)
JG	7 ½” (191 mm)	6” (152 mm)	RP + 4” (102 mm)

(1) Last digit(s) of joist designation shown in Load Table.
(2) RP is equal to the distance the reaction is to occur from the face of the wall or leading edge of support member. The equation is not applicable for the high end of a sloped joist or Joist Girder.

When the specifying professional requires the steel joist or Joist Girder reaction to occur at or near the centerline of the wall or other support, a special bearing seat depth shall be required and a note shall be placed on the structural drawings identifying where the reaction is to occur. The specified bearing seat depth shall be increased according to Table 5.4-3 to allow for this special requirement.

5.5 BRIDGING or BRACING

Joist Girders shall be proportioned such that they can be erected without bridging. Therefore, the following requirements shall be met:

a) The ends of the bottom chord shall be restrained from lateral movement to brace the girder from overturning. For Joist Girders at columns in steel frames, restraint shall be provided by a stabilizer plate on the column.

b) No other loads shall be placed on the Joist Girder until the steel joists bearing on the Joist Girder are in place and positively attached to the Joist Girder.

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User Note: See Section 5.12 for bridging or bracing required for uplift forces.

Steel joist top and bottom chord bridging shall be required and shall consist of one or both of either horizontal or diagonal bridging.

5.5.1 Horizontal Bridging

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

5.5.2 Diagonal Bridging

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

5.5.2.1 Diagonal Erection Bridging

User Note: Joists exhibit varying degrees of stability dependent upon the span, depth, member sizes, self weight and other parameters. Bolted diagonal Erection Bridging which must be installed prior to releasing hoisting cables may be required.

Where required as identified below, bolted diagonal Erection Bridging shall be required and shall be in accordance with the following:

(a) For joist spans up through and including 60 feet (18288 mm) in length;

Welded horizontal bridging shall be permitted except where the row of bridging nearest the center is required to be bolted diagonal Erection Bridging as indicated by the **Red** shaded area in the Load Tables. Hoisting cables shall not be released until this row of bolted diagonal Erection Bridging is completely installed and anchored.

Bolted diagonal Erection Bridging shall be provided as required in the SJI Load Tables wherever a standard SJI Section Number designation is specified. For spans 60 feet (18288mm) or less, in the absence of a standard SJI Section Number designation, minimum bolted diagonal Erection Bridging requirements shall be determined by:

1) Matching the joist design to an equivalent standard SJI Section Number designation to determine the span at which Erection Bridging is needed as designated in the tables; or
2) Using Equation 5.5-1 to determine the joist stability and the need for Erection Bridging.

$$W = \frac{-b + \sqrt{b^2 - 4 \cdot a \cdot c}}{2 \cdot a} \quad ; \qquad \text{If , } \frac{w_u}{w_{actual}} > 1.00 \text{ Erection Bridging is not required.} \qquad (5.5\text{-}1)$$

$$a = \left(\frac{\pi^2 + 3}{24} \right)^2$$

$$b = P \cdot \frac{\pi^2 + 3}{12} \cdot \frac{\pi^2 + 4}{16} - \frac{\pi^4 \cdot E \cdot I_y}{2 \cdot (k \cdot L)^3} \cdot \left[\beta_x \cdot \left(\frac{\pi^2 - 3}{24} \right) - \frac{y_o}{2} \right]$$

$$c = (P)^2 \left(\frac{\pi^2 + 4}{16} \right)^2 - \frac{\pi^4 \cdot E \cdot I_y}{2 \cdot (k \cdot L)^3} \cdot \left[P \cdot \left(\beta_x \cdot \frac{\pi^2 - 4}{16} - a_e \right) + \frac{\pi^4 \cdot E \cdot C_w}{2 \cdot (k \cdot L)^3} + \frac{\pi^2 \cdot G \cdot J}{2 \cdot k \cdot L} \right]$$

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Where:

P = Factored weight of erector = 1.2 x (assumed weight of 250 lbs.) = 300 lbs. (1334 N)

E = Modulus of elasticity= 29,000,000 psi (200,000 MPa)

I_y = Joist moment of inertia about y-axis, in.^{4} (mm^4) $\quad I_y = I_{yt} + I_{yb}$

I_{yt} = Top chord moment of inertia about y-axis, in.^{4} (mm^4)

I_{yb} = Bottom chord moment of inertia about y-axis, in.^{4} (mm^4)

L = Joist Span, in. (mm)

k = Effective length factor = 0.85

β_x = Cross-Sectional parameter $\quad \beta_x = \frac{1}{I_x}\left[A_b \cdot (d_e - y)^3 - A_t \cdot y^3 \right] - 2 \cdot y_o$

A_b = Area of bottom chord, in.^{2} (mm^2)

A_t = Area of top chord, in.^{2} (mm^2)

d_e = Joist effective depth, in.(mm) $\quad d_e = d - y_t - y_b$

y_t = Neutral axis of top chord, in. (mm)

y_b = Neutral axis of bottom chord, in. (mm)

y = Distance from centroid of top chord to centroid of cross section, in. (mm) $\quad y = \frac{A_b \cdot d_e}{A_t + A_b}$

I_x = Joist moment of inertia about x-axis, in.^{4} (mm^4) $\quad I_x = A_t y^2 + A_b (d_e - y)^2$

y_o = Distance from centroid of cross section to shear center, in. (mm) $\quad y_o = -y + \frac{I_{yb} \cdot d_e}{I_y}$

a_e = Vertical location of load P from shear center (locate at joist center of gravity), in. (mm), where $a_e = y_o$

C_w = Warping constant $\quad C_w = \frac{d_e^{\,2} \cdot I_{yb} \cdot I_{yt}}{I_y}$

G = Shear modulus, psi (MPa) $\quad G = 0.385E$

J = St. Venant torsion constant, in.^{4} (mm^4) $\quad J = \frac{1}{3}\left(A_t \cdot t_t^{\,2} + A_b \cdot t_b^{\,2} \right)$

t_t = Thickness of top chord, in. (mm)

t_b = Thickness of top chord, in. (mm)

w_u = Ultimate lateral buckling load $\quad w_u = \frac{W \cdot 12}{L}$, plf $\quad w_u = \frac{W}{L}$, (kN/m)

w_{actual} = Joist self-weight, plf (kN/m)

b) For joist spans greater than 60 feet (18288 mm) in length;
Bolted diagonal Erection Bridging shall be used as indicated by the **Blue** and Gray shaded areas of the Load Tables. Hoisting cables shall not be released until all rows of bolted diagonal Erection Bridging are completely installed and anchored. Where the joist spacing is less than 0.70 x joist depth, bolted horizontal bridging shall be used in addition to bolted diagonal Erection Bridging.

c) The bolted diagonal Erection Bridging determined by Section 5.5.2.1a and Section 5.5.2.1b shall be considered a minimum. This bolted diagonal Erection Bridging shall be indicated on the placement plans.

User Note: Joists with special profiles having a higher center of gravity as compared to a parallel chord joist, joists which are canted, or joists having any condition which may create instability, may require additional bridging and/or special erection methods.

5.5.3 Quantity and Spacing of Bridging

5.5.3.1 Scope: Bridging shall be properly spaced and anchored to support the decking and the employees prior to the attachment of the deck to the top chord. The maximum spacing between lines of bridging, ℓ_{brmax} shall be the lesser of,

$$\ell_{brmax} = \left(124 + 0.67\, d_j + 28\,\frac{d_j}{L}\right) r_y \text{, in.} \qquad (5.5\text{-}2a)$$

$$\ell_{brmax} = \left(124 + 0.026\, d_j + 0.34\,\frac{d_j}{L}\right) r_y \text{, mm} \qquad (5.5\text{-}2b)$$

or,

$$\ell_{brmax} = 170\ r_y \qquad (5.5\text{-}3)$$

Where:

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

L is the joist span length, ft. (m)

r_y is the radius of gyration of the top chord about the vertical axis of the joist cross section, in. (mm)

5.5.3.2 Number of Rows: The number of rows of top chord bridging shall not be less than as shown in Table 5.5-1 and the spacing shall meet the requirements of Equations 5.5-2 and 5.5-3. The number of rows of bottom chord bridging, including bridging required per Section 5.12, shall not be less than the number of top chord rows. Rows of bottom chord bridging shall be permitted to be spaced independently of rows of top chord bridging. The spacing of rows of bottom chord bridging shall meet the slenderness requirement of Section 4.3 and any specified strength requirements.

5.5.3.3 DLH Joist Section 21 and Greater: For DLH-Series joist Section Number 21 and greater, bridging shall be installed near a bottom chord panel point or an extra web member shall be furnished to brace the bottom chord for the vertical component of the bridging force equal to the horizontal bracing force.

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TABLE 5.5-1

U.S. CUSTOMARY UNITS

NUMBER OF ROWS OF TOP CHORD BRIDGING[2]

Section Number[1]	Joist Depth	1 Row	2 Rows	3 Rows	4 Rows	5 Rows	6 Rows	7 Rows	8 Rows	9 Rows
K1	All	17	>17 to 26	>26 to 28						
K2	All	21	>21 to 30	>30 to 32						
K3	All	18	>18 to 26	>26 to 40						
K4	All	20	>20 to 30	>30 to 41	>41 to 48					
K5	12K to 24K	20	>20 to 30	>30 to 42	>42 to 48					
	26K	28	>28 to 41	> 41 to 52						
K6	14K to 24K	20	>20 to 31	>31 to 42	>42 to 48					
	26K & 28K	28	>28 to 41	>41 to 54	>54 to 56					
K7	16K to 24K	23	>23 to 34	>34 to 48						
	26K to 30K	29	>29 to 44	>44 to 60						
K8	24K	25	>25 to 39	>39 to 48						
	26K to 30K	29	>29 to 44	>44 to 60						
K9	16K to 24K	22	>22 to 34	>34 to 48						
	26K to 30K	29	>29 to 44	>44 to 60						
K10	18K to 24K	22	>22 to 38	>38 to 48						
	26K to 30K	29	>29 to 48	>48 to 60						
K11	22K	24	>24 to 39	>39 to 44						
	30K	34	>34 to 49	>49 to 60						
K12	24K	25	>25 to 43	>43 to 48						
	26K to 30K	29	>29 to 47	>47 to 60						
LH02-03	All	20	>20 to 30	>30 to 40	>40					
LH04-05	All	22	>22 to 33	>33 to 44	>44 to 55	>55				
LH06-08	All	26	>26 to 45	>45 to 60	>60 to 75	>75				
LH09	All	26	>26 to 48	>48 to 64	>64 to 80	>80				
LH/DLH10	All	28	>28 to 54	>54 to 72	>72 to 90	>90				
LH/DLH11	All	30	>30 to 54	>54 to 72	>72 to 90	>90 to 108	>108			
LH/DLH12	All	34	>34 to 55	>55 to 74	>74 to 92	>92 to 111	>111			
LH/DLH13	All	36	>36 to 63	>63 to 84	>84 to 105	>105 to 126	>126			
LH/DLH14	All	38	>38 to 64	>64 to 86	>86 to 107	>107 to 129	>129			
LH/DLH15	All	42	>42 to 73	>73 to 98	>98 to 122	>122 to 147	>147			
LH/DLH 16-17	All	44	>44 to 75	>75 to 100	>100 to 125	>125 to 150	>150 to 175	>175		
DLH18-20	All	52	>52 to 78	>78 to 104	>104 to 130	>130 to 156	>156 to 182	>182 to 208	>208 to 234	>234
DLH21-25	All	60	>60 to 90	>90 to 120	>120 to 150	>150 to 180	>180 to 210	>210		

(1) Last digit(s) of joist designation shown in Load Table.

(2) Distances are Joist Span lengths in feet – See "Definition of Span" Figure 5.2-1. Refer to the Joist Load Table and Specification Section 6 for required bolted diagonal bridging and additional stability requirements. See Section 5.12 for additional bridging required for uplift design.

5.5.4 Sizing of Bridging

Horizontal and diagonal bridging shall be capable of resisting the nominal unfactored horizontal compressive force, P_{br} given in Equation 5.5-4.

$$P_{br} = 0.0025\ n\ A_t\ F_{construction}\ ,\ \text{kips (N)} \qquad (5.5\text{-}4)$$

Where:

n = 8 for horizontal bridging

n = 2 for diagonal bridging

A_t = cross sectional area of joist top chord, in.^{2} (mm^2)

$F_{construction}$ = assumed ultimate stress in top chord to resist construction loads, determined in accordance with the following:

$$F_{construction} = \left(\frac{\pi^2 E}{\left(\frac{0.9\,\ell_{brmax}}{r_y} \right)^2} \right) \geq 12.2\,\text{ksi} \qquad (5.5\text{-}5a)$$

$$F_{construction} = \left(\frac{\pi^2 E}{\left(\frac{0.9\,\ell_{brmax}}{r_y} \right)^2} \right) \geq 84.1\,\text{MPa} \qquad (5.5\text{-}5b)$$

Where:

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

and $\frac{\ell_{brmax}}{r_y}$ is determined from Equations 5.5-2 or 5.5-3

The bridging nominal horizontal unfactored compressive forces, P_{br}, shall be in accordance with Table 5.5-2.

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TABLE 5.5-2

BRIDGING NOMINAL HORIZONTAL UNFACTORED COMPRESSSIVE FORCE					
JOIST SECTION NUMBER[1]	HORIZONTAL BRIDGING P_{br} (n=8)		REQUIRED BRIDGING CONNECTION WELD[2]	DIAGONAL BRIDGING P_{br} (n=2)	
	Lbs.	(N)	In.	Lbs.	(N)
K1-8	340	(1512)	1/8" x 1" (3mm x 25mm)	85	(378)
K9-10, LH02-03	450	(2002)		113	(503)
K11-12, LH04-05	560	(2491)		140	(623)
LH06-08	750	(3336)		188	(836)
LH09	850	(3781)		213	(945)
LH/DLH10	900	(4003)		225	(1001)
LH/DLH11	950	(4226)		238	(1056)
LH/DLH12	1100	(4893)		275	(1223)
LH/DLH13	1200	(5338)		300	(1334)
LH/DLH14	1300	(5783)		325	(1446)
LH/DLH15	1450	(6450)		363	(1612)
LH/DLH16-17	1850	(8229)	1/8" x 1 ½ " (3mm x 38mm)	463	(2057)
DLH18-20	2350	(10453)		585	(2602)
DLH21-22	3150	(14012)	1/8" x 2" (3mm x 51mm)	790	(3514)
DLH23-24	4130	(18371)	1/8" x 3" (3mm x 76mm)	1035	(4604)
DLH25	4770	(21218)		1195	(5316)

(1) Last digit(s) of joist designation shown in Load Table.
(2) Or other connection type designed for the required force.

5.5.5 Connections

Connections to the joist chords shall be made by welding or mechanical means and shall be capable of resisting the unfactored or nominal horizontal force, P_{br}, of Equation 5.5-4 but not less than 700 pounds (3114 N).

5.5.6 Bottom Chord Bearing Joists

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

5.6 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 thereto.

5.7 BEARING SEAT ATTACHMENTS

5.7.1 Masonry and Concrete

Ends of K-Series, LH-Series, and DLH-Series Joists and Joist Girders resting on steel bearing plates on masonry or structural concrete shall be attached thereto, as shown in Table 5.7-1, with a minimum of two fillet welds, or with two bolts, or the equivalent.

5.7.2 Steel

Ends of K-Series, LH-Series, and DLH-Series Joists and Joist Girders resting on steel supports shall be attached thereto, as shown in Table 5.7-1, with a minimum of two fillet welds, or with two bolts, or the equivalent. Where K-Series, LH-Series and DLH-Series Joists and Joist Girders 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.

TABLE 5.7-1

JOIST SECTION NUMBER [1]	MINIMUM FILLET WELD	MINIMUM BEARING SEAT BOLTS FOR ERECTION
K1-12	2– 1/8" x 2 1/2" (3 x 64 mm)	2– 1/2" (13 mm) A307
LH02-06	2– 3/16" x 2 1/2" (5 x 64 mm)	
LH07-17, DLH10-17, JG	2– 1/4" x 2 1/2" (6 x 64 mm)	2– 3/4" (19 mm) A307
DLH18-25, JG[2]	2– 1/4" x 4" (6 x 102 mm)	2– 3/4" (19 mm) A325

(1)Last digit(s) of joist designation shown in load table.
(2) Joist Girders with a self weight greater than 50 plf (0.73 kN/m).

5.7.3 Uplift

Where uplift forces are a design consideration, roof joists shall be anchored to resist such forces and shall meet the requirements of Section 5.12.

5.8 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 designation and span as shown in the applicable load tables.

5.9 FLOOR AND ROOF DECKS

5.9.1 Material

Floor and roof decks shall be permitted to consist of cast-in-place or pre-cast concrete or gypsum, cold-formed steel, wood, or other suitable material capable of supporting the required load at the specified joist spacing.

5.9.2 Thickness

Cast-in-place slabs shall be not less than 2 inches (51 mm) thick.

5.9.3 Centering

Centering for cast-in-place slabs shall be permitted to be ribbed metal lath, corrugated steel sheets, paper-backed welded wire fabric, removable centering or any other suitable material capable of supporting the slab at the designated joist spacing.

Centering shall not cause lateral displacement or damage to the top chord of joists during installation or removal of the centering or placing of the concrete.

5.9.4 Bearing

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

5.9.5 Attachments

The spacing of attachments along the joist top chord shall not exceed 36 inches (914 mm). Such attachments of the slab or deck to the top chords of joists shall be capable of resisting the forces given in Table 5.9-1.

TABLE 5.9-1

JOIST SECTION NUMBER[1]	NOMINAL FORCE REQUIRED[2]
K1-12	100 lbs/ft. (1.46 kN/m)
LH02-04	120 lbs/ft. (1.75 kN/m)
LH05-09	150 lbs/ft. (2.19 kN/m)
LH/DLH10-17	200 lbs/ft. (2.92 kN/m)
DLH18-19	250 lbs/ft. (3.65 kN/m)
DLH20-21	300 lbs/ft. (4.38 kN/m)
DLH22-24	420 lbs/ft. (6.13 kN/m)
DLH25	520 lbs/ft. (7.59 kN/m)
[(1)]Last digit(s) of joist designation shown in Load Table. [(2)]Nominal bracing force is unfactored.	

5.9.6 Wood Nailers

Where wood nailers are used, such nailers in conjunction with deck or slab shall be firmly attached to the top chords of the joists in conformance with Section 5.9.5.

5.9.7 Joist With Standing Seam Roofing or Laterally Unbraced Top Chords

Where the roof systems do not provide lateral stability for the steel joists in accordance with Section 5.9.5 sufficient stability shall be provided to brace the steel joists laterally under the full design load. For this condition, the compression chord design shall include the effects of both the in-plane and out-of-plane buckling of the steel joist (e.g., buckling about the vertical axis of the steel joist cross section). In any case where the attachment requirement of Section 5.9.5 is not achieved, out-of-plane strength shall be achieved by adjusting the bridging spacing and/or increasing the compression chord area and the y-axis radius of gyration. The effective slenderness ratio about the vertical axis equals $0.94\ L/r_y$; where L is the bridging spacing in inches (millimeters) and r_y is the radius of gyration of the top chord in inches (millimeters). The maximum bridging spacing shall not exceed that specified in Section 5.5.3.

User Note: Some examples of roof systems which may not provide adequate top chord lateral stability may be standing seam roofs, skylights, or other openings which do not provide top chord attachments per Section 5.9.5.

Horizontal bridging members attached to the compression chords and their anchorages shall be designed for a compressive axial force, P_{br}, given in Equation 5.9-1.

$$P_{br} = 0.001nP + 0.004P\sqrt{n} \geq 0.0025nP, \text{ kips (N)} \quad (5.9\text{-}1)$$

Where n is the number of joists between end anchors and P is the chord design force in kips (N)

The attachment force between the horizontal bridging member and the compression chord shall be 0.01P. Horizontal bridging attached to the tension chords shall be proportioned so that the slenderness ratio between attachments does not exceed 300. Diagonal bridging shall be proportioned so that the slenderness ratio between attachments does not exceed 200.

5.10 DEFLECTION

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

Floors: 1/360 of span.
Roofs: 1/360 of span where a plaster ceiling is attached or suspended, or
1/240 of span for all other cases.

The specifying professional shall give consideration to the effects of deflection and vibration in the selection of joists.

User Note: For further information on vibration, refer to Steel Joist Institute Technical Digest 5, “Vibration of Steel Joist-Concrete Slab Floors".

5.11 PONDING

The ponding investigation shall be performed by the specifying professional.

User Note: For further reference, refer to Steel Joist Institute Technical Digest 3, “Structural Design of Steel Joist Roofs to Resist Ponding Loads” and AISC 360.

5.12 UPLIFT

Where uplift forces due to wind are a design requirement, these forces shall be indicated on the structural drawings in terms of NET uplift in pounds per square foot (Pascals). The structural drawings shall indicate if the net uplift is based upon an LRFD or ASD load combination. When these forces are specified, they shall be considered in the design of joists, Joist Girders, and required bridging or bracing. Wherever uplift due to wind forces is a design consideration, the following shall be required:

a) For joists, a single line of **bottom chord** bridging shall be provided near the first bottom chord panel points.

b) For **Joist Girders**, if the ends of the bottom chord are not strutted and extended to column stabilizer plates, bracing shall be provided near the first bottom chord panel points.

User Note: For further reference, refer to Steel Joist Institute Technical Digest 6, “Structural Design of Steel Joist Roofs to Resist Uplift Loads”.

5.13 DIAPHRAGMS AND COLLECTORS

Where diaphragm collector forces due to wind or seismic forces are a design requirement, these forces shall be indicated on the structural drawings. The structural drawings shall indicate the nominal (unfactored) forces. The structural drawings shall also indicate the Seismic Design Category, and the Seismic Force Resisting System type, and applicable seismic design coefficients. When this data is specified, joist collectors or chords in horizontal diaphragm systems, shall be designed in conformance with the provisions of Section 4 through Section 6. End connections and splices in joists incorporated into Seismic Force Resisting System (SFRS) as horizontal diaphragms as collectors or chords shall adhere to the requirements stipulated by the applicable building code.

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5.14 INSPECTION

Joists shall be inspected by the manufacturer before shipment to verify compliance of materials and workmanship with the requirements of this Specification.

User Note: If the purchaser requires an inspection of the steel joists or Joist Girders by someone other than the manufacturer's own inspectors, they shall be permitted to reserve the right to do so in their "Invitation to Bid" or the accompanying "Job Specifications". Arrangements shall be made with the manufacturer for such inspection of the joists or Joist Girders at the manufacturing shop by the purchaser's inspectors at purchaser's expense.

5.15 PARALLEL CHORD SLOPED JOISTS AND JOIST GIRDERS

The span of a parallel chord sloped joist or Joist Girder shall be defined by the length along the slope. Minimum depth, load-carrying capacity, and bridging requirements shall be determined by the sloped definition of span. The Load Table capacity shall be the component normal to the joist.

SECTION 6
ERECTION STABILITY AND HANDLING

As a minimum, erection stability and handling of joists and Joist Girders shall meet the requirements of this Section 6.

User Note: Additional requirements for erection of steel joists and Joist Girders can be found in Steel Joist Institute Technical Digest No. 9, “Handling and Erection of Steel Joists and Joist Girders”.

6.1 STABILITY REQUIREMENTS

User Note: It is not recommended that an erector climb on unbridged joists, extreme caution shall be exercised since unbridged joists exhibit some degree of instability under the erector's weight.

a) In steel framing, where joists/Joist Girders are utilized at column lines, the joist/Joist Girder shall be field-bolted at the column. Before hoisting cables are released and before an employee is allowed on the joists/Joist Girder the following conditions shall be met:
   1) The seat at each end of the joist/Joist Girder is attached in accordance with Section 5.7. Where a bolted seat connection is used for erection purposes, as a minimum, the bolts shall be snug tightened. The snug tight condition shall be defined as the tightness that exists where all plies of a joint are in firm contact. This shall be attained by a few impacts of an impact wrench or the full effort of an employee using an ordinary spud wrench.
   2) Where stabilizer plates are required the joist/Joist Girder bottom chord shall engage the stabilizer plate.

   During the construction period, the contractor shall provide means for the adequate distribution of loads so that the carrying capacity of any joist or Joist Girder is not exceeded.

b) Before an employee is allowed on the steel joist: 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 5.7.

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

c) On steel joists that do not require erection bridging as shown by either the unshaded area of the Load Tables or as determined by Section 5.5.2.1, only one employee shall be allowed on the steel joist until all bridging is installed and anchored.

d) Where the span of the steel joist is within the Red shaded area of the Load Table, or in the absence of a standard SJI Section Number designation and Erection Bridging is required in accordance with Section 5.5.2.1, the following shall apply:

1) The row of bridging nearest the midspan of the steel joist shall be bolted diagonal Erection Bridging; and
2) Hoisting cables shall not be released until this bolted diagonal Erection Bridging is installed and anchored, unless an alternate method of stabilizing the joist has been provided; and
3) No more than one employee shall be allowed on these spans until all other bridging is installed and anchored.

e) Where the span of the steel joist is within the Blue shaded area of the Load Table, the following shall apply:

1) All rows of bridging shall be bolted diagonal bridging; and
2) Hoisting cables shall not be released until the two rows of bolted diagonal Erection Bridging nearest the third points of the steel joist are installed and anchored; and
3) No more than two employees shall be allowed on these spans until all bridging is installed and anchored.

f) Where the span of the steel joist is in the Gray shaded area of the Load Table, the following shall apply:

1) All rows of bridging shall be bolted diagonal bridging; and
2) Hoisting cables shall not be released until all bridging is installed and anchored; and
3) No more than two employees shall be allowed on these spans until all other bridging is installed and anchored.

g) Where permanent bridging terminus points cannot be used during erection, additional temporary bridging terminus points shall be required to provide lateral stability.

h) In the case of bottom chord bearing joists, the ends of the joist shall be restrained laterally per Section 5.5.6 before releasing the hoisting cables.

i) 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 5.7.

6.2 LANDING AND PLACING LOADS

a) Except as stated in Section 6.2(d), no "construction loads" shall be allowed on the steel joists until all bridging is installed and anchored, and all joist bearing ends are attached.

User Note: For definition of "construction load" see Code of Federal Regulations (CFR), Occupational Safety and Health Administration (OSHA), 29 CFR Part 1926, Safety Standards for Steel Erection; Subpart R - Steel Erection, §1926.751 Definitions; January 18, 2001, Washington, D.C.

b) During the construction period, loads placed on the steel joists shall be distributed so as not to exceed the capacity of the steel joists.

c) 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.

d) No bundle of deck shall be placed on steel joists until all bridging has been installed and anchored and all joist bearing ends attached, unless the following conditions are met:

1) The contractor has first determined from a "qualified person" and documented in a site-specific erection plan that the structure or portion of the structure is capable of supporting the load;
2) The bundle of decking is placed on a minimum of three steel joists;

3) The joists supporting the bundle of decking are attached at both ends;
4) At least one row of bridging is installed and anchored;
5) The total weight of the decking does not exceed 4000 pounds (1816 kilograms); and
6) The edge of the bundle of decking is placed within 1 foot (0.30 meters) of the bearing surface of the joist end.

User Note: For definition of "qualified person" see Code of Federal Regulations (CFR), Occupational Safety and Health Administration (OSHA), 29 CFR Part 1926, Safety Standards for Steel Erection; Subpart R - Steel Erection, §1926.751 Definitions; January 18, 2001, Washington, D.C.

e) The edge of the construction load shall be placed within 1 foot (0.30 meters) of the bearing surface of the joist end.

6.3 FIELD WELDING

All field welding shall be performed in accordance with the structural drawings. Field welding shall not damage the joists or Joist Girders.

On cold-formed steel 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.

6.4 HANDLING

Particular attention shall be considered for the handling and erection of K-Series, LH-Series, DLH-Series steel joists and Joist Girders. Damage to the joists and accessories shall be avoided. Hoisting cables shall be attached at panel point locations and those locations shall be selected to minimize erection stresses.

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 6.1(c), 6.1(d), 6.1(e), and 6.1(f) shall be anchored to prevent lateral movement.

6.5 FALL ARREST SYSYTEMS

Steel joists and Joist Girders shall not be used as anchorage points for a fall arrest system unless written direction to do so is obtained from a "qualified person".

User Note: For definition of "qualified person" see Code of Federal Regulations (CFR), Occupational Safety and Health Administration (OSHA), 29 CFR Part 1926, Safety Standards for Steel Erection; Subpart R - Steel Erection, §1926.751 Definitions; January 18, 2001, Washington, D.C.

American National Standard SJI 100 - 2015

STANDARD LRFD LOAD TABLE

OPEN WEB STEEL JOISTS, K-SERIES

Based on a 50 ksi (345 MPa) Maximum Yield Strength
Adopted by the Steel Joist Institute May 1, 2000
Revised to May 18, 2010 – Effective December 31, 2010

The **BLACK** figures in the Load Table give the TOTAL safe factored uniformly distributed load-carrying capacities, in pounds per linear foot, of **LRFD** K-Series Steel Joists.

The approximate joist weights, in pounds per linear foot (kiloNewtons per meter), given in the Load Table may be added to the other building weights to determine the unfactored DEAD load. In all cases the factored DEAD load, including the joist self-weight, must be deducted from the TOTAL load to determine the factored LIVE load. The approximate joist weights do not include accessories.

The **RED** figures in the Load Table represent the unfactored uniform load, in pounds per linear foot (kiloNewtons per meter), which will produce an approximate joist deflection of 1/360 of the span. This load can be linearly prorated to obtain the unfactored uniform load for supplementary deflection criteria (i.e. an unfactored uniform load which will produce a joist deflection of 1/240 of the span may be obtained by multiplying the **RED** figures by 360/240). In no case shall the prorated, unfactored load exceed the unfactored TOTAL load-carrying capacity of the joist as given in the Standard **ASD** Load Table for Open Web Steel Joists, K-Series.

Where the joist span is in the **RED SHADED** area of the Load Table, the row of bridging nearest the mid span shall be diagonal bridging with bolted connections at chords and intersections. Hoisting cables shall not be released until this row of bolted diagonal bridging is completely installed. The **RED SHADED** area extends up through 60'–0" (18288 mm).

The approximate gross moment of inertia (not adjusted for shear deformation) of a standard joist listed in the Load Table may be determined as follows:

$I_j = 26.767(W)(L^3)(10^{-6})$ in^4 or $2.6953(W)(L^3)(10^{-5})$ mm^4, where W= **RED** figure in the Load Table, and
L = (span – 0.33) in feet or (span – 102) in millimeters

The TOTAL safe factored uniformly distributed load-carrying capacities, in pounds per linear foot (kiloNewtons per meter), of **LRFD** K-Series Steel Joists shall not exceed 825 plf (12.03 kN/m) for spans shorter than what is explicitly shown in the Load Table. The maximum prorated unfactored RED load shall not exceed 550 plf (8.02 kN/m) (the TOTAL load-carrying capacity of the joist as given in the Standard **ASD** Load Table for Open Web Steel Joists, K-Series).

Loads for span increments not explicitly given in the Load Table may be determined using linear interpolation between the load values given in adjacent span columns.

For the proper handling of concentrated and/or varying loads, see Section 2.4 in the Code of Standard Practice for Steel Joist and Joist Girders.

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STANDARD LOAD TABLE FOR OPEN WEB STEEL JOISTS, K-SERIES
Based On A 50 ksi Maximum Yield Strength - Loads Shown In Pounds Per Linear Foot (plf)

Joist Designation	10K1	12K1	12K3	12K5	14K1	14K3	14K4	14K6	16K2	16K3	16K4	16K5	16K6	16K7	16K9
Depth (in.)	10	12	12	12	14	14	14	14	16	16	16	16	16	16	16
Approx. Wt (lbs./ft.)	5.0	5.0	5.7	7.1	5.2	6.0	6.7	7.7	5.5	6.3	7.0	7.5	8.1	8.6	10.0
Span (ft.) ↓															
10	825 550														
11	825 542														
12	825 455	825 550	825 550	825 550											
13	718 363	825 510	825 510	825 510											
14	618 289	750 425	825 463	825 463	825 550	825 550	825 550	825 550							
15	537 234	651 344	814 428	825 434	766 475	825 507	825 507	825 507							
16	469 192	570 282	714 351	825 396	672 390	825 467	825 467	825 467	825 550	825 550	825 550	825 550	825 550	825 550	825 550
17	415 159	504 234	630 291	825 366	592 324	742 404	825 443	825 443	768 488	825 526	825 526	825 526	825 526	825 526	825 526
18	369 134	448 197	561 245	760 317	528 272	661 339	795 397	825 408	684 409	762 456	825 490	825 490	825 490	825 490	825 490
19	331 113	402 167	502 207	681 269	472 230	592 287	712 336	825 383	612 347	682 386	820 452	825 455	825 455	825 455	825 455
20	298 97	361 142	453 177	613 230	426 197	534 246	642 287	787 347	552 297	615 330	739 386	825 426	825 426	825 426	825 426
21		327 123	409 153	555 198	385 170	483 212	582 248	712 299	499 255	556 285	670 333	754 373	822 405	825 406	825 406
22		298 106	373 132	505 172	351 147	439 184	529 215	648 259	454 222	505 247	609 289	687 323	747 351	825 385	825 385
23		271 93	340 116	462 150	321 128	402 160	483 188	592 226	415 194	462 216	556 252	627 282	682 307	760 339	825 363
24		249 81	312 101	423 132	294 113	367 141	442 165	543 199	381 170	424 189	510 221	576 248	627 269	697 298	825 346
25					270 100	339 124	408 145	501 175	351 150	390 167	469 195	529 219	576 238	642 263	771 311
26					249 88	313 110	376 129	462 156	324 133	360 148	433 173	489 194	532 211	592 233	711 276
27					231 79	289 98	349 115	427 139	300 119	334 132	402 155	453 173	493 188	549 208	658 246
28					214 70	270 88	324 103	397 124	279 106	310 118	373 138	421 155	459 168	510 186	612 220
29									259 95	289 106	348 124	391 139	427 151	475 167	570 198
30									241 86	270 96	324 112	366 126	399 137	444 151	532 178
31									226 78	252 87	304 101	342 114	373 124	415 137	498 161
32									213 71	237 79	285 92	321 103	349 112	388 124	466 147

LRFD

STANDARD LOAD TABLE FOR OPEN WEB STEEL JOISTS, K-SERIES
Based On A 50 ksi Maximum Yield Strength - Loads Shown In Pounds Per Linear Foot (plf)

Joist Designation	18K3	18K4	18K5	18K6	18K7	18K9	18K10	20K3	20K4	20K5	20K6	20K7	20K9	20K10	22K4	22K5	22K6	22K7	22K9	22K10	22K11
Depth (In.)	18	18	18	18	18	18	18	20	20	20	20	20	20	20	22	22	22	22	22	22	22
Approx. Wt. (lbs./ft.)	6.4	7.2	7.7	8.4	8.9	10.1	11.6	6.5	7.2	7.7	8.4	8.9	10.1	11.6	7.3	7.7	8.5	9.0	10.2	11.7	11.9
Span (ft.) ↓																					
18	825	825	825	825	825	825	825														
	550	550	550	550	550	550	550														
19	771	825	825	825	825	825	825	825	825	825	825	825	825	825							
	494	523	523	523	523	523	523	550	550	550	550	550	550	550							
20	694	825	825	825	825	825	825	775	825	825	825	825	825	825							
	423	490	490	490	490	490	490	517	550	550	550	550	550	550							
21	630	759	825	825	825	825	825	702	825	825	825	825	825	825	825	825	825	825	825	825	825
	364	426	460	460	460	460	460	453	520	520	520	520	520	520	550	550	550	550	550	550	550
22	573	690	777	825	825	825	825	639	771	825	825	825	825	825	825	825	825	825	825	825	825
	316	370	414	438	438	438	438	393	461	490	490	490	490	490	548	548	548	548	548	548	548
23	523	630	709	774	825	825	825	583	703	793	825	825	825	825	777	825	825	825	825	825	825
	276	323	362	393	418	418	418	344	402	451	468	468	468	468	491	518	518	518	518	518	518
24	480	577	651	709	789	825	825	535	645	727	792	825	825	825	712	804	825	825	825	825	825
	242	284	318	345	382	396	396	302	353	396	430	448	448	448	431	483	495	495	495	495	495
25	441	532	600	652	727	825	825	493	594	669	729	811	825	825	657	739	805	825	825	825	825
	214	250	281	305	337	377	377	266	312	350	380	421	426	426	381	427	464	474	474	474	474
26	408	492	553	603	672	807	825	456	549	618	673	750	825	825	606	682	744	825	825	825	825
	190	222	249	271	299	354	361	236	277	310	337	373	405	405	338	379	411	454	454	454	454
27	378	454	513	558	622	747	825	421	508	573	624	694	825	825	561	633	688	768	825	825	825
	169	198	222	241	267	315	347	211	247	277	301	333	389	389	301	337	367	406	432	432	432
28	351	423	477	519	577	694	822	391	472	532	579	645	775	825	522	588	640	712	825	825	825
	151	177	199	216	239	282	331	189	221	248	269	298	353	375	270	302	328	364	413	413	413
29	327	394	444	483	538	646	766	364	439	495	540	601	723	825	486	547	597	664	798	825	825
	136	159	179	194	215	254	298	170	199	223	242	268	317	359	242	272	295	327	387	399	399
30	304	367	414	451	502	603	715	340	411	462	504	561	675	799	453	511	556	619	745	825	825
	123	144	161	175	194	229	269	153	179	201	218	242	286	336	219	245	266	295	349	385	385
31	285	343	387	421	469	564	669	318	384	433	471	525	631	748	424	478	520	580	697	825	825
	111	130	146	158	175	207	243	138	162	182	198	219	259	304	198	222	241	267	316	369	369
32	267	322	363	396	441	529	627	298	360	406	442	492	592	702	397	448	489	544	654	775	823
	101	118	132	144	159	188	221	126	147	165	179	199	235	276	180	201	219	242	287	337	355
33	252	303	342	372	414	498	589	280	339	381	415	463	556	660	373	421	459	511	615	729	798
	92	108	121	131	145	171	201	114	134	150	163	181	214	251	164	183	199	221	261	307	334
34	237	285	321	349	390	468	555	264	318	358	391	435	523	621	352	397	432	481	579	687	774
	84	98	110	120	132	156	184	105	122	137	149	165	195	229	149	167	182	202	239	280	314
35	223	268	303	330	367	441	523	249	300	339	369	411	493	585	331	373	408	454	546	648	741
	77	90	101	110	121	143	168	96	112	126	137	151	179	210	137	153	167	185	219	257	292
36	211	253	286	312	348	417	495	235	283	319	348	388	466	553	313	354	385	429	516	612	700
	70	82	92	101	111	132	154	88	103	115	125	139	164	193	126	141	153	169	201	236	269
37								222	268	303	330	367	441	523	297	334	364	406	487	579	663
								81	95	106	115	128	151	178	116	130	141	156	185	217	247
38								211	255	286	312	348	418	496	280	316	345	384	462	549	628
								74	87	98	106	118	139	164	107	119	130	144	170	200	228
39								199	241	271	297	330	397	471	267	300	327	364	438	520	595
								69	81	90	98	109	129	151	98	110	120	133	157	185	211
40								190	229	258	282	313	376	447	253	285	310	346	417	495	565
								64	75	84	91	101	119	140	91	102	111	123	146	171	195
41															241	271	295	330	396	471	538
															85	95	103	114	135	159	181
42															229	259	282	313	378	448	513
															79	88	96	106	126	148	168
43															219	247	268	300	360	427	489
															73	82	89	99	117	138	157
44															208	235	256	286	343	408	466
															68	76	83	92	109	128	146

LRFD

STANDARD LOAD TABLE FOR OPEN WEB STEEL JOISTS, K-SERIES
Based On A 50 ksi Maximum Yield Strength - Loads Shown In Pounds Per Linear Foot (plf)

Joist Designation	24K4	24K5	24K6	24K7	24K8	24K9	24K10	24K12	26K5	26K6	26K7	26K8	26K9	26K10	26K12
Depth (In.)	24	24	24	24	24	24	24	24	26	26	26	26	26	26	26
Approx. Wt. (lbs./ft.)	7.8	7.9	8.5	9.0	9.4	10.3	11.7	13.5	8.1	8.6	9.0	9.7	10.4	11.8	13.7
Span (ft.) ↓															
23	825 550	825 550	825 550	825 550	825 550	825 550	825 550	825 550							
24	780 516	825 544	825 544	825 544	825 544	825 544	825 544	825 544							
25	718 456	810 511	825 520	825 520	825 520	825 520	825 520	825 520	825 550	825 550	825 550	825 550	825 550	825 550	825 550
26	663 405	748 453	814 493	825 499	825 499	825 499	825 499	825 499	813 535	825 541	825 541	825 541	825 541	825 541	825 541
27	615 361	693 404	754 439	825 479	825 479	825 479	825 479	825 479	753 477	820 519	825 522	825 522	825 522	825 522	825 522
28	571 323	643 362	700 393	781 436	825 456	825 456	825 456	825 456	699 427	762 464	825 501	825 501	825 501	825 501	825 501
29	531 290	600 325	652 354	727 392	804 429	825 436	825 436	825 436	651 384	709 417	790 463	825 479	825 479	825 479	825 479
30	496 262	559 293	609 319	679 353	750 387	816 419	825 422	825 422	607 346	661 377	738 417	816 457	825 459	825 459	825 459
31	465 237	523 266	570 289	636 320	702 350	765 379	825 410	825 410	568 314	619 341	690 378	763 413	825 444	825 444	825 444
32	435 215	490 241	535 262	595 290	658 318	717 344	823 393	823 393	534 285	580 309	648 343	715 375	778 407	823 431	823 431
33	409 196	462 220	502 239	559 265	619 289	673 313	798 368	798 368	501 259	546 282	609 312	672 342	732 370	798 404	798 404
34	385 179	435 201	472 218	526 242	582 264	634 286	753 337	774 344	472 237	514 257	573 285	633 312	688 338	774 378	774 378
35	363 164	409 184	445 200	496 221	549 242	598 262	709 308	751 324	445 217	484 236	540 261	597 286	649 310	751 356	751 356
36	343 150	387 169	421 183	469 203	519 222	565 241	670 283	730 306	420 199	457 216	510 240	564 263	613 284	729 334	730 334
37	324 138	366 155	399 169	444 187	490 205	534 222	634 260	711 290	397 183	433 199	483 221	534 242	580 262	690 308	711 315
38	307 128	346 143	378 156	421 172	465 189	507 204	601 240	691 275	376 169	411 184	457 204	505 223	550 241	654 284	691 299
39	292 118	328 132	358 144	399 159	441 174	480 189	570 222	673 261	357 156	390 170	433 188	480 206	522 223	619 262	673 283
40	277 109	312 122	340 133	379 148	420 161	456 175	541 206	657 247	340 145	370 157	412 174	456 191	496 207	589 243	657 269
41	264 101	297 114	324 124	361 137	399 150	435 162	516 191	640 235	322 134	352 146	393 162	433 177	472 192	561 225	640 256
42	252 94	283 106	309 115	343 127	379 139	414 151	490 177	625 224	307 125	336 136	373 150	412 164	450 178	534 210	625 244
43	240 88	270 98	294 107	328 118	363 130	394 140	468 165	609 213	294 116	319 126	357 140	394 153	429 166	508 195	610 232
44	229 82	258 92	280 100	313 110	346 121	376 131	447 154	580 199	280 108	306 118	340 131	376 143	409 155	486 182	597 222
45	219 76	246 86	268 93	298 103	330 113	360 122	427 144	555 185	268 101	291 110	325 122	360 133	391 145	465 170	583 212
46	208 71	235 80	256 87	286 97	316 106	345 114	408 135	531 174	256 95	279 103	310 114	343 125	375 135	444 159	570 203
47	199 67	225 75	246 82	274 90	303 99	330 107	391 126	508 163	246 89	267 96	298 107	328 117	358 127	426 149	553 192
48	192 63	216 70	235 77	262 85	291 93	316 101	375 118	487 153	235 83	256 90	285 100	315 110	343 119	408 140	529 180
49									225 78	246 85	274 94	303 103	330 112	391 131	508 169
50									216 73	235 80	262 89	291 97	316 105	375 124	487 159
51									208 69	226 75	252 83	279 91	304 99	361 116	469 150
52									199 65	217 71	243 79	268 86	292 93	346 110	451 142

LRFD

STANDARD LOAD TABLE/OPEN WEB STEEL JOISTS, K-SERIES
Based On A 50 ksi Maximum Yield Strength - Loads Shown In Pounds Per Linear Foot (plf)

Joist Designation	28K6	28K7	28K8	28K9	28K10	28K12	30K7	30K8	30K9	30K10	30K11	30K12
Depth (In.)	28	28	28	28	28	28	30	30	30	30	30	30
Approx. Wt. (lbs./ft.)	8.9	9.2	9.8	10.5	11.8	14.5	9.6	10.0	10.6	11.9	13.3	15.0
Span (ft.) ↓												
27	825 550	825 550	825 550	825 550	825 550	825 550						
28	822 541	825 543	825 543	825 543	825 543	825 543						
29	766 486	825 522	825 522	825 522	825 522	825 522	825 550	825 550	825 550	825 550	825 550	825 550
30	715 439	796 486	825 500	825 500	825 500	825 500	825 543	825 543	825 543	825 543	825 543	825 543
31	669 397	745 440	825 480	825 480	825 480	825 480	801 508	825 520	825 520	825 520	825 520	825 520
32	627 361	699 400	772 438	823 463	823 463	823 463	751 461	823 500	823 500	823 500	823 500	823 500
33	589 329	657 364	726 399	790 432	798 435	798 435	706 420	780 460	798 468	798 468	798 468	798 468
34	555 300	618 333	684 364	744 395	774 410	774 410	664 384	735 420	774 441	774 441	774 441	774 441
35	523 275	583 305	645 333	702 361	751 389	751 389	627 351	693 384	751 415	751 415	751 415	751 415
36	495 252	550 280	609 306	663 332	730 366	730 366	592 323	654 353	712 383	730 392	730 392	730 392
37	468 232	522 257	576 282	627 305	711 344	711 344	559 297	619 325	673 352	711 374	711 374	711 374
38	444 214	493 237	546 260	594 282	691 325	691 325	531 274	586 300	639 325	691 353	691 353	691 353
39	420 198	469 219	519 240	564 260	670 306	673 308	504 253	556 277	606 300	673 333	673 333	673 333
40	399 183	445 203	492 222	535 241	636 284	657 291	478 234	529 256	576 278	657 315	657 315	657 315
41	379 170	424 189	468 206	510 224	606 263	640 277	454 217	502 238	547 258	640 300	640 300	640 300
42	361 158	403 175	445 192	486 208	576 245	625 264	433 202	480 221	522 240	619 282	625 284	625 284
43	345 147	385 163	426 179	463 194	550 228	610 252	414 188	457 206	498 223	591 263	610 270	610 270
44	330 137	367 152	406 167	442 181	525 212	597 240	394 176	436 192	475 208	564 245	597 258	597 258
45	315 128	351 142	388 156	423 169	501 198	583 229	376 164	417 179	454 195	538 229	583 246	583 246
46	301 120	336 133	372 146	405 158	480 186	570 219	361 153	399 168	435 182	516 214	570 236	570 236
47	288 112	321 125	355 136	387 148	459 174	558 210	345 144	382 157	415 171	493 201	558 226	558 226
48	276 105	309 117	340 128	370 139	441 163	547 201	331 135	366 148	399 160	472 188	543 215	547 216
49	265 99	295 110	327 120	355 130	423 153	535 193	318 127	351 139	382 150	454 177	520 202	535 207
50	255 93	283 103	313 113	342 123	405 144	525 185	304 119	337 130	367 141	436 166	499 190	525 199
51	244 88	273 97	301 106	328 115	390 136	507 175	292 112	324 123	352 133	418 157	480 179	514 192
52	235 83	262 92	289 100	315 109	375 128	487 165	282 106	312 116	339 126	402 148	462 169	504 184
53	226 78	252 87	279 95	304 103	360 121	469 156	271 100	300 109	327 119	387 140	444 159	495 177
54	217 74	243 82	268 89	292 97	348 114	451 147	261 94	288 103	313 112	373 132	427 150	486 170
55	210 70	234 77	259 85	282 92	334 108	435 139	252 89	277 98	303 106	360 125	412 142	468 161
56	202 66	226 73	249 80	271 87	322 102	420 132	243 84	268 92	292 100	346 118	397 135	451 153
57							234 80	259 88	282 95	334 112	384 128	435 145
58							226 76	250 83	271 90	322 106	370 121	420 137
59							219 72	241 79	262 86	312 101	358 115	406 130
60							211 69	234 75	253 81	301 96	346 109	393 124

LRFD

METRIC LOAD TABLE FOR OPEN WEB STEEL JOISTS, K-SERIES
Based On A 345 MPa Maximum Yield Strength - Loads Shown In Kilonewtons Per Meter (kN/m)

Joist Designation	10K1	12K1	12K3	12K5	14K1	14K3	14K4	14K6	16K2	16K3	16K4	16K5	16K6	16K7	16K9
Depth (mm)	254	305	305	305	356	356	356	356	406	406	406	406	406	406	406
Approx. Wt (kN/m)	0.07	0.07	0.08	0.10	0.08	0.09	0.10	0.11	0.08	0.09	0.10	0.11	0.12	0.13	0.15
Span (mm) ↓															
3048	12.03 8.02														
3353	12.03 7.90														
3658	12.03 6.64	12.03 8.02	12.03 8.02	12.03 8.02											
3962	10.48 5.29	12.03 7.44	12.03 7.44	12.03 7.44											
4267	9.01 4.21	10.94 6.20	12.03 6.75	12.03 6.75	12.03 8.02	12.03 8.02	12.03 8.02	12.03 8.02							
4572	7.83 3.41	9.50 5.02	11.88 6.24	12.03 6.33	11.18 6.93	12.03 7.39	12.03 7.39	12.03 7.39							
4877	6.85 2.80	8.31 4.11	10.42 5.12	12.03 5.77	9.80 5.69	12.03 6.81	12.03 6.81	12.03 6.81	12.03 8.02	12.03 8.02	12.03 8.02	12.03 8.02	12.03 8.02	12.03 8.02	12.03 8.02
5182	6.06 2.32	7.35 3.41	9.19 4.24	12.03 5.34	8.64 4.72	10.83 5.89	12.03 6.46	12.03 6.46	11.20 7.12	12.03 7.67	12.03 7.67	12.03 7.67	12.03 7.67	12.03 7.67	12.03 7.67
5486	5.38 1.95	6.54 2.87	8.18 3.57	11.09 4.62	7.70 3.96	9.65 4.94	11.60 5.79	12.03 5.95	9.98 5.96	11.12 6.65	12.03 7.15	12.03 7.15	12.03 7.15	12.03 7.15	12.03 7.15
5791	4.83 1.64	5.86 2.43	7.33 3.02	9.93 3.92	6.89 3.35	8.64 4.18	10.39 4.90	12.03 5.58	8.93 5.06	9.96 5.63	11.97 6.59	12.03 6.64	12.03 6.64	12.03 6.64	12.03 6.64
6096	4.35 1.41	5.27 2.07	6.61 2.58	8.95 3.35	6.21 2.87	7.79 3.59	9.36 4.18	11.49 5.06	8.05 4.33	8.97 4.81	10.79 5.63	12.03 6.21	12.03 6.21	12.03 6.21	12.03 6.21
6401		4.77 1.79	5.97 2.23	8.09 2.88	5.62 2.48	7.04 3.09	8.49 3.61	10.39 4.36	7.28 3.72	8.12 4.15	9.78 4.85	11.01 5.44	11.99 5.91	12.03 5.92	12.03 5.92
6706		4.35 1.54	5.45 1.92	7.37 2.51	5.12 2.14	6.41 2.68	7.72 3.13	9.45 3.77	6.63 3.23	7.37 3.60	8.88 4.21	10.02 4.71	10.90 5.12	12.03 5.61	12.03 5.61
7010		3.96 1.35	4.96 1.69	6.74 2.18	4.68 1.86	5.86 2.33	7.04 2.74	8.64 3.29	6.06 2.83	6.74 3.15	8.12 3.67	9.15 4.11	9.96 4.48	11.09 4.94	12.03 5.29
7315		3.63 1.18	4.55 1.47	6.17 1.92	4.29 1.64	5.36 2.05	6.45 2.40	7.92 2.90	5.56 2.48	6.19 2.75	7.44 3.22	8.40 3.61	9.15 3.92	10.17 4.34	12.03 5.04
7620					3.94 1.45	4.94 1.80	5.95 2.11	7.31 2.55	5.12 2.18	5.69 2.43	6.85 2.84	7.72 3.19	8.40 3.47	9.36 3.83	11.25 4.53
7925					3.63 1.28	4.57 1.60	5.49 1.88	6.74 2.27	4.72 1.94	5.25 2.15	6.32 2.52	7.13 2.83	7.77 3.07	8.64 3.40	10.37 4.02
8230					3.37 1.15	4.22 1.43	5.10 1.67	6.23 2.02	4.37 1.73	4.88 1.92	5.86 2.26	6.61 2.52	7.20 2.74	8.01 3.03	9.61 3.59
8534					3.13 1.02	3.94 1.28	4.72 1.50	5.80 1.80	4.07 1.54	4.53 1.72	5.45 2.01	6.15 2.26	6.69 2.45	7.44 2.71	8.93 3.21
8839									3.78 1.38	4.22 1.54	5.07 1.80	5.71 2.02	6.23 2.20	6.93 2.43	8.31 2.88
9144									3.52 1.25	3.94 1.40	4.72 1.63	5.34 1.83	5.82 1.99	6.47 2.20	7.77 2.59
9449									3.30 1.13	3.67 1.26	4.44 1.47	4.99 1.66	5.45 1.80	6.06 1.99	7.26 2.34
9754									3.10 1.03	3.45 1.15	4.15 1.34	4.68 1.50	5.10 1.63	5.66 1.80	6.80 2.14

LRFD

METRIC LOAD TABLE FOR OPEN WEB STEEL JOISTS, K-SERIES
Based On A 345 MPa Maximum Yield Strength - Loads Shown In Kilonewtons Per Meter (kN/m)

Joist Designation	18K3	18K4	18K5	18K6	18K7	18K9	18K10	20K3	20K4	20K5	20K6	20K7	20K9	20K10	22K4	22K5	22K6	22K7	22K9	22K10	22K11
Depth (mm)	457	457	457	457	457	457	457	508	508	508	508	508	508	508	559	559	559	559	559	559	559
Approx. Wt. (kN/m)	0.09	0.11	0.11	0.12	0.13	0.15	0.17	0.09	0.11	0.11	0.12	0.13	0.15	0.17	0.11	0.11	0.12	0.13	0.15	0.17	0.17
Span (mm) ↓																					
5486	12.03	12.03	12.03	12.03	12.03	12.03	12.03														
	8.02	8.02	8.02	8.02	8.02	8.02	8.02														
5791	11.25	12.03	12.03	12.03	12.03	12.03	12.03	12.03	12.03	12.03	12.03	12.03	12.03	12.03							
	7.20	7.63	7.63	7.63	7.63	7.63	7.63	8.02	8.02	8.02	8.02	8.02	8.02	8.02							
6096	10.13	12.03	12.03	12.03	12.03	12.03	12.03	11.31	12.03	12.03	12.03	12.03	12.03	12.03							
	6.17	7.15	7.15	7.15	7.15	7.15	7.15	7.54	8.02	8.02	8.02	8.02	8.02	8.02							
6401	9.19	11.07	12.03	12.03	12.03	12.03	12.03	10.24	12.03	12.03	12.03	12.03	12.03	12.03	12.03	12.03	12.03	12.03	12.03	12.03	12.03
	5.31	6.21	6.71	6.71	6.71	6.71	6.71	6.61	7.58	7.58	7.58	7.58	7.58	7.58	8.02	8.02	8.02	8.02	8.02	8.02	8.02
6706	8.36	10.06	11.33	12.03	12.03	12.03	12.03	9.32	11.25	12.03	12.03	12.03	12.03	12.03	12.03	12.03	12.03	12.03	12.03	12.03	12.03
	4.61	5.39	6.04	6.39	6.39	6.39	6.39	5.73	6.72	7.15	7.15	7.15	7.15	7.15	7.99	7.99	7.99	7.99	7.99	7.99	7.99
7010	7.63	9.19	10.35	11.29	12.03	12.03	12.03	8.51	10.26	11.58	12.03	12.03	12.03	12.03	11.33	12.03	12.03	12.03	12.03	12.03	12.03
	4.02	4.71	5.28	5.73	6.10	6.10	6.10	5.02	5.86	6.58	6.82	6.82	6.82	6.82	7.16	7.55	7.55	7.55	7.55	7.55	7.55
7315	7.00	8.42	9.50	10.35	11.51	12.03	12.03	7.81	9.41	10.61	11.55	12.03	12.03	12.03	10.39	11.73	12.03	12.03	12.03	12.03	12.03
	3.53	4.14	4.64	5.03	5.57	5.77	5.77	4.40	5.15	5.77	6.27	6.53	6.53	6.53	6.28	7.04	7.22	7.22	7.22	7.22	7.22
7620	6.43	7.77	8.75	9.52	10.61	12.03	12.03	7.20	8.66	9.76	10.63	11.84	12.03	12.03	9.58	10.79	11.75	12.03	12.03	12.03	12.03
	3.12	3.64	4.10	4.45	4.91	5.50	5.50	3.88	4.55	5.10	5.54	6.14	6.21	6.21	5.56	6.23	6.77	6.91	6.91	6.91	6.91
7925	5.95	7.18	8.07	8.80	9.80	11.77	12.03	6.65	8.01	9.01	9.82	10.94	12.03	12.03	8.84	9.96	10.85	12.03	12.03	12.03	12.03
	2.77	3.23	3.63	3.95	4.36	5.16	5.26	3.44	4.04	4.52	4.91	5.44	5.91	5.91	4.93	5.53	5.99	6.62	6.62	6.62	6.62
8230	5.51	6.63	7.48	8.14	9.08	10.90	12.03	6.15	7.42	8.36	9.10	10.13	12.03	12.03	8.18	9.23	10.04	11.20	12.03	12.03	12.03
	2.46	2.88	3.23	3.51	3.89	4.59	5.06	3.07	3.60	4.04	4.39	4.85	5.67	5.67	4.39	4.91	5.35	5.92	6.30	6.30	6.30
8534	5.12	6.17	6.96	7.57	8.42	10.13	11.99	5.71	6.89	7.77	8.44	9.41	11.31	12.03	7.61	8.58	9.34	10.39	12.03	12.03	12.03
	2.20	2.58	2.90	3.15	3.48	4.11	4.83	2.75	3.22	3.61	3.92	4.34	5.15	5.47	3.94	4.40	4.78	5.31	6.02	6.02	6.02
8839	4.77	5.75	6.47	7.04	7.85	9.43	11.18	5.31	6.41	7.22	7.88	8.77	10.55	12.03	7.09	7.99	8.71	9.69	11.64	12.03	12.03
	1.98	2.32	2.61	2.83	3.13	3.70	4.34	2.48	2.90	3.25	3.53	3.91	4.62	5.23	3.53	3.96	4.30	4.77	5.64	5.82	5.82
9144	4.44	5.36	6.04	6.58	7.33	8.80	10.44	4.96	5.99	6.74	7.35	8.18	9.85	11.66	6.61	7.46	8.12	9.04	10.87	12.03	12.03
	1.79	2.10	2.34	2.55	2.83	3.34	3.92	2.23	2.61	2.93	3.18	3.53	4.17	4.90	3.19	3.57	3.88	4.30	5.09	5.61	5.61
9449	4.15	5.01	5.64	6.15	6.85	8.23	9.76	4.64	5.60	6.32	6.87	7.66	9.21	10.92	6.19	6.98	7.59	8.47	10.17	12.03	12.03
	1.61	1.89	2.13	2.30	2.55	3.02	3.54	2.01	2.36	2.65	2.88	3.19	3.77	4.43	2.88	3.23	3.51	3.89	4.61	5.38	5.38
9754	3.89	4.70	5.29	5.77	6.43	7.72	9.15	4.35	5.25	5.93	6.45	7.18	8.64	10.24	5.80	6.54	7.13	7.94	9.54	11.31	12.01
	1.47	1.72	1.92	2.10	2.32	2.74	3.22	1.83	2.14	2.40	2.61	2.90	3.42	4.02	2.62	2.93	3.19	3.53	4.18	4.91	5.18
10058	3.67	4.42	4.99	5.42	6.04	7.26	8.60	4.09	4.94	5.56	6.06	6.76	8.12	9.63	5.45	6.15	6.69	7.46	8.97	10.63	11.64
	1.34	1.57	1.76	1.91	2.11	2.49	2.93	1.66	1.95	2.18	2.37	2.64	3.12	3.66	2.39	2.67	2.90	3.22	3.80	4.48	4.87
10363	3.45	4.15	4.68	5.10	5.69	6.82	8.09	3.85	4.64	5.23	5.71	6.34	7.63	9.06	5.14	5.80	6.30	7.02	8.44	10.02	11.29
	1.22	1.43	1.60	1.75	1.92	2.27	2.68	1.53	1.78	1.99	2.17	2.40	2.84	3.34	2.17	2.43	2.65	2.94	3.48	4.08	4.58
10668	3.26	3.91	4.42	4.81	5.36	6.43	7.63	3.63	4.37	4.94	5.38	5.99	7.20	8.53	4.83	5.45	5.95	6.63	7.96	9.45	10.81
	1.12	1.31	1.47	1.60	1.76	2.08	2.45	1.40	1.63	1.83	1.99	2.20	2.61	3.06	1.99	2.23	2.43	2.69	3.19	3.75	4.26
10973	3.08	3.69	4.18	4.55	5.07	6.08	7.22	3.43	4.13	4.66	5.07	5.66	6.80	8.07	4.57	5.16	5.62	6.26	7.53	8.93	10.22
	1.02	1.19	1.34	1.47	1.61	1.92	2.24	1.28	1.50	1.67	1.82	2.02	2.39	2.81	1.83	2.05	2.23	2.46	2.93	3.44	3.92
11278								3.23	3.91	4.42	4.81	5.36	6.43	7.63	4.33	4.88	5.31	5.93	7.11	8.44	9.67
								1.18	1.38	1.54	1.67	1.86	2.20	2.59	1.69	1.89	2.05	2.27	2.69	3.16	3.60
11582								3.08	3.72	4.18	4.55	5.07	6.10	7.24	4.09	4.61	5.03	5.60	6.74	8.01	9.17
								1.07	1.26	1.43	1.54	1.72	2.02	2.39	1.56	1.73	1.89	2.10	2.48	2.91	3.32
11887								2.91	3.52	3.96	4.33	4.81	5.80	6.87	3.89	4.37	4.77	5.31	6.39	7.59	8.69
								1.00	1.18	1.31	1.43	1.59	1.88	2.20	1.43	1.60	1.75	1.94	2.29	2.69	3.07
12192								2.78	3.34	3.76	4.11	4.57	5.49	6.52	3.69	4.15	4.53	5.05	6.08	7.22	8.25
								0.93	1.09	1.22	1.32	1.47	1.73	2.04	1.32	1.48	1.61	1.79	2.13	2.49	2.84
12497															3.52	3.96	4.31	4.81	5.77	6.87	7.85
															1.24	1.38	1.50	1.66	1.97	2.32	2.64
12802															3.34	3.78	4.11	4.57	5.51	6.54	7.48
															1.15	1.28	1.40	1.54	1.83	2.15	2.45
13106															3.19	3.61	3.91	4.37	5.25	6.23	7.13
															1.06	1.19	1.29	1.44	1.70	2.01	2.29
13411															3.04	3.43	3.74	4.18	5.01	5.95	6.80
															0.99	1.10	1.21	1.34	1.59	1.86	2.13

LRFD

METRIC LOAD TABLE FOR OPEN WEB STEEL JOISTS, K-SERIES
Based On A 345 MPa Maximum Yield Strength - Loads Shown In Kilonewtons Per Meter (kN/m)

Joist Designation	24K4	24K5	24K6	24K7	24K8	24K9	24K10	24K12	26K5	26K6	26K7	26K8	26K9	26K10	26K12
Depth (mm)	610	610	610	610	610	610	610	610	660	660	660	660	660	660	660
Approx. Wt. (kN/m)	0.11	0.12	0.12	0.13	0.14	0.15	0.17	0.20	0.12	0.13	0.13	0.14	0.15	0.17	0.20
Span (mm) ↓															
7010	12.03	12.03	12.03	12.03	12.03	12.03	12.03	12.03							
	8.02	8.02	8.02	8.02	8.02	8.02	8.02	8.02							
7315	11.38	12.03	12.03	12.03	12.03	12.03	12.03	12.03							
	7.53	7.93	7.93	7.93	7.93	7.93	7.93	7.93							
7620	10.48	11.82	12.03	12.03	12.03	12.03	12.03	12.03	12.03	12.03	12.03	12.03	12.03	12.03	12.03
	6.65	7.45	7.58	7.58	7.58	7.58	7.58	7.58	8.02	8.02	8.02	8.02	8.02	8.02	8.02
7925	9.67	10.92	11.88	12.03	12.03	12.03	12.03	12.03	11.86	12.03	12.03	12.03	12.03	12.03	12.03
	5.91	6.61	7.19	7.28	7.28	7.28	7.28	7.28	7.80	7.89	7.89	7.89	7.89	7.89	7.89
8230	8.97	10.11	11.01	12.03	12.03	12.03	12.03	12.03	10.98	11.97	12.03	12.03	12.03	12.03	12.03
	5.26	5.89	6.40	6.99	6.99	6.99	6.99	6.99	6.96	7.57	7.61	7.61	7.61	7.61	7.61
8534	8.34	9.39	10.22	11.40	12.03	12.03	12.03	12.03	10.20	11.12	12.03	12.03	12.03	12.03	12.03
	4.71	5.28	5.73	6.36	6.65	6.65	6.65	6.65	6.23	6.77	7.31	7.31	7.31	7.31	7.31
8839	7.74	8.75	9.52	10.61	11.73	12.03	12.03	12.03	9.50	10.35	11.53	12.03	12.03	12.03	12.03
	4.23	4.74	5.16	5.72	6.26	6.36	6.36	6.36	5.60	6.08	6.75	6.99	6.99	6.99	6.99
9144	7.24	8.16	8.88	9.91	10.94	11.90	12.03	12.03	8.86	9.65	10.77	11.90	12.03	12.03	12.03
	3.82	4.27	4.65	5.15	5.64	6.11	6.15	6.15	5.04	5.50	6.08	6.66	6.69	6.69	6.69
9449	6.78	7.63	8.31	9.28	10.24	11.16	12.03	12.03	8.29	9.04	10.06	11.14	12.03	12.03	12.03
	3.45	3.88	4.21	4.67	5.10	5.53	5.98	5.98	4.58	4.97	5.51	6.02	6.47	6.47	6.47
9754	6.34	7.15	7.81	8.69	9.61	10.46	12.01	12.01	7.79	8.47	9.45	10.44	11.36	12.01	12.01
	3.13	3.51	3.82	4.23	4.64	5.02	5.73	5.73	4.15	4.50	5.00	5.47	5.93	6.28	6.28
10058	5.97	6.74	7.33	8.16	9.04	9.82	11.64	11.64	7.31	7.96	8.88	9.80	10.68	11.64	11.64
	2.86	3.21	3.48	3.86	4.21	4.56	5.37	5.37	3.77	4.11	4.55	4.99	5.39	5.89	5.89
10363	5.62	6.34	6.89	7.68	8.49	9.25	10.98	11.29	6.89	7.50	8.36	9.23	10.04	11.29	11.29
	2.61	2.93	3.18	3.53	3.85	4.17	4.91	5.02	3.45	3.75	4.15	4.55	4.93	5.51	5.51
10668	5.29	5.97	6.50	7.24	8.01	8.73	10.35	10.96	6.50	7.07	7.88	8.71	9.47	10.96	10.96
	2.39	2.68	2.91	3.22	3.53	3.82	4.49	4.72	3.16	3.44	3.80	4.17	4.52	5.19	5.19
10973	5.01	5.64	6.15	6.85	7.57	8.25	9.78	10.66	6.12	6.67	7.44	8.23	8.95	10.63	10.66
	2.18	2.46	2.67	2.96	3.23	3.51	4.13	4.46	2.90	3.15	3.50	3.83	4.14	4.87	4.87
11278	4.72	5.34	5.82	6.47	7.15	7.79	9.25	10.37	5.80	6.32	7.04	7.79	8.47	10.06	10.37
	2.01	2.26	2.46	2.72	2.99	3.23	3.79	4.23	2.67	2.90	3.22	3.53	3.82	4.49	4.59
11582	4.48	5.05	5.51	6.15	6.78	7.39	8.77	10.09	5.49	5.99	6.67	7.37	8.03	9.54	10.09
	1.86	2.08	2.27	2.51	2.75	2.97	3.50	4.01	2.46	2.68	2.97	3.25	3.51	4.14	4.36
11887	4.26	4.79	5.23	5.82	6.43	7.00	8.31	9.82	5.21	5.69	6.32	7.00	7.61	9.04	9.82
	1.72	1.92	2.10	2.32	2.53	2.75	3.23	3.80	2.27	2.48	2.74	3.00	3.25	3.82	4.13
12192	4.04	4.55	4.96	5.53	6.12	6.65	7.90	9.58	4.96	5.40	6.01	6.65	7.24	8.60	9.58
	1.59	1.78	1.94	2.15	2.34	2.55	3.00	3.60	2.11	2.29	2.53	2.78	3.02	3.54	3.92
12497	3.85	4.33	4.72	5.27	5.82	6.34	7.53	9.34	4.70	5.14	5.73	6.32	6.89	8.18	9.34
	1.47	1.66	1.80	1.99	2.18	2.36	2.78	3.42	1.95	2.13	2.36	2.58	2.80	3.28	3.73
12802	3.67	4.13	4.50	5.01	5.53	6.04	7.15	9.12	4.48	4.90	5.45	6.01	6.56	7.79	9.12
	1.37	1.54	1.67	1.85	2.02	2.20	2.58	3.26	1.82	1.98	2.18	2.39	2.59	3.06	3.56
13106	3.50	3.94	4.29	4.79	5.29	5.75	6.82	8.88	4.29	4.66	5.21	5.75	6.26	7.42	8.90
	1.28	1.43	1.56	1.72	1.89	2.04	2.40	3.10	1.69	1.83	2.04	2.23	2.42	2.84	3.38
13411	3.34	3.76	4.09	4.57	5.05	5.49	6.52	8.47	4.09	4.46	4.96	5.49	5.97	7.09	8.71
	1.19	1.34	1.45	1.60	1.76	1.91	2.24	2.90	1.57	1.72	1.91	2.08	2.26	2.65	3.23
13716	3.19	3.59	3.91	4.35	4.81	5.25	6.23	8.09	3.91	4.24	4.75	5.25	5.71	6.78	8.51
	1.10	1.25	1.35	1.50	1.64	1.78	2.10	2.69	1.47	1.60	1.78	1.94	2.11	2.48	3.09
14021	3.04	3.43	3.74	4.18	4.61	5.03	5.95	7.74	3.74	4.07	4.53	5.01	5.47	6.47	8.31
	1.03	1.16	1.26	1.41	1.54	1.66	1.97	2.53	1.38	1.50	1.66	1.82	1.97	2.32	2.96
14326	2.91	3.28	3.59	4.00	4.42	4.81	5.71	7.42	3.59	3.89	4.35	4.79	5.23	6.21	8.07
	0.97	1.09	1.19	1.31	1.44	1.56	1.83	2.37	1.29	1.40	1.56	1.70	1.85	2.17	2.80
14630	2.80	3.15	3.43	3.83	4.24	4.61	5.47	7.11	3.43	3.74	4.15	4.59	5.01	5.95	7.72
	0.91	1.02	1.12	1.24	1.35	1.47	1.72	2.23	1.21	1.31	1.45	1.60	1.73	2.04	2.62
14935									3.28	3.59	4.00	4.42	4.81	5.71	7.42
									1.13	1.24	1.37	1.50	1.63	1.91	2.46
15240									3.15	3.43	3.83	4.24	4.61	5.47	7.11
									1.06	1.16	1.29	1.41	1.53	1.80	2.32
15545									3.04	3.30	3.67	4.07	4.44	5.27	6.85
									1.00	1.09	1.21	1.32	1.44	1.69	2.18
15850									2.91	3.17	3.54	3.91	4.26	5.05	6.58
									0.94	1.03	1.15	1.25	1.35	1.60	2.07

LRFD

METRIC LOAD TABLE FOR OPEN WEB STEEL JOISTS, K-SERIES
Based On A 345 MPa Maximum Yield Strength - Loads Shown In Kilonewtons Per Meter (kN/m)

Joist Designation	28K6	28K7	28K8	28K9	28K10	28K12	30K7	30K8	30K9	30K10	30K11	30K12
Depth (mm)	711	711	711	711	711	711	762	762	762	762	762	762
Approx. Wt. (kN/m)	0.13	0.13	0.14	0.15	0.17	0.21	0.14	0.15	0.15	0.17	0.19	0.22
Span (mm) ↓												
8230	12.03 8.02	12.03 8.02	12.03 8.02	12.03 8.02	12.03 8.02	12.03 8.02						
8534	11.99 7.89	12.03 7.92	12.03 7.92	12.03 7.92	12.03 7.92	12.03 7.92						
8839	11.18 7.09	12.03 7.61	12.03 7.61	12.03 7.61	12.03 7.61	12.03 7.61	12.03 8.02	12.03 8.02	12.03 8.02	12.03 8.02	12.03 8.02	12.03 8.02
9144	10.44 6.40	11.62 7.09	12.03 7.29	12.03 7.29	12.03 7.29	12.03 7.29	12.03 7.92	12.03 7.92	12.03 7.92	12.03 7.92	12.03 7.92	12.03 7.92
9449	9.76 5.79	10.87 6.42	12.03 7.00	12.03 7.00	12.03 7.00	12.03 7.00	11.68 7.41	12.03 7.58	12.03 7.58	12.03 7.58	12.03 7.58	12.03 7.58
9754	9.15 5.26	10.20 5.83	11.27 6.39	12.01 6.75	12.01 6.75	12.01 6.75	10.96 6.72	12.01 7.29	12.01 7.29	12.01 7.29	12.01 7.29	12.01 7.29
10058	8.60 4.80	9.58 5.31	10.59 5.82	11.53 6.30	11.64 6.34	11.64 6.34	10.31 6.12	11.38 6.71	11.64 6.82	11.64 6.82	11.64 6.82	11.64 6.82
10363	8.09 4.37	9.01 4.85	9.98 5.31	10.85 5.76	11.29 5.98	11.29 5.98	9.69 5.60	10.72 6.12	11.29 6.43	11.29 6.43	11.29 6.43	11.29 6.43
10668	7.63 4.01	8.51 4.45	9.41 4.85	10.24 5.26	10.96 5.67	10.96 5.67	9.15 5.12	10.11 5.60	10.96 6.05	10.96 6.05	10.96 6.05	10.96 6.05
10973	7.22 3.67	8.03 4.08	8.88 4.46	9.67 4.84	10.66 5.34	10.66 5.34	8.64 4.71	9.54 5.15	10.39 5.58	10.66 5.72	10.66 5.72	10.66 5.72
11278	6.82 3.38	7.61 3.75	8.40 4.11	9.15 4.45	10.37 5.02	10.37 5.02	8.16 4.33	9.04 4.74	9.82 5.13	10.37 5.45	10.37 5.45	10.37 5.45
11582	6.47 3.12	7.20 3.45	7.96 3.79	8.66 4.11	10.09 4.74	10.09 4.74	7.74 3.99	8.55 4.37	9.32 4.74	10.09 5.15	10.09 5.15	10.09 5.15
11887	6.12 2.88	6.85 3.19	7.57 3.50	8.23 3.79	9.78 4.46	9.82 4.49	7.35 3.69	8.12 4.04	8.84 4.37	9.82 4.85	9.82 4.85	9.82 4.85
12192	0.09 2.67	6.50 2.96	7.18 3.23	7.81 3.51	9.28 4.14	9.58 4.24	6.98 3.41	7.72 3.73	8.40 4.05	9.58 4.59	9.58 4.59	9.58 4.59
12497	5.53 2.48	6.19 2.75	6.82 3.00	7.44 3.26	8.84 3.83	9.34 4.04	6.63 3.16	7.33 3.47	7.99 3.76	9.34 4.37	9.34 4.37	9.34 4.37
12802	5.27 2.30	5.88 2.55	6.50 2.80	7.09 3.03	8.40 3.57	9.12 3.85	6.32 2.94	7.00 3.22	7.61 3.50	9.04 4.11	9.12 4.14	9.12 4.14
13106	5.03 2.14	5.62 2.37	6.21 2.61	6.76 2.83	8.03 3.32	8.90 3.67	6.04 2.74	6.67 3.00	7.26 3.25	8.62 3.83	8.90 3.94	8.90 3.94
13411	4.81 1.99	5.36 2.21	5.93 2.43	6.45 2.64	7.66 3.09	8.71 3.50	5.75 2.56	6.37 2.80	6.93 3.03	8.23 3.57	8.71 3.76	8.71 3.76
13716	4.59 1.86	5.12 2.07	5.66 2.27	6.17 2.46	7.31 2.88	8.51 3.34	5.49 2.39	6.08 2.61	6.63 2.84	7.85 3.34	8.51 3.59	8.51 3.59
14021	4.40 1.75	4.90 1.94	5.42 2.13	5.91 2.30	7.00 2.71	8.31 3.19	5.27 2.23	5.82 2.45	6.34 2.65	7.53 3.12	8.31 3.44	8.31 3.44
14326	4.20 1.63	4.68 1.82	5.18 1.98	5.64 2.15	6.69 2.53	8.14 3.06	5.03 2.10	5.58 2.29	6.06 2.49	7.20 2.93	8.14 3.29	8.14 3.29
14630	4.02 1.53	4.50 1.70	4.96 1.86	5.40 2.02	6.43 2.37	7.99 2.93	4.83 1.97	5.34 2.15	5.82 2.33	6.89 2.74	7.92 3.13	7.99 3.15
14935	3.87 1.44	4.31 1.60	4.77 1.75	5.18 1.89	6.17 2.23	7.81 2.81	4.64 1.85	5.12 2.02	5.58 2.18	6.63 2.58	7.59 2.94	7.81 3.02
15240	3.72 1.35	4.13 1.50	4.57 1.64	4.99 1.79	5.91 2.10	7.66 2.69	4.44 1.73	4.92 1.89	5.36 2.05	6.37 2.42	7.28 2.77	7.66 2.90
15545	3.56 1.28	3.98 1.41	4.40 1.54	4.79 1.67	5.69 1.98	7.39 2.55	4.26 1.63	4.72 1.79	5.14 1.94	6.10 2.29	7.00 2.61	7.50 2.80
15850	3.43 1.21	3.83 1.34	4.22 1.45	4.59 1.59	5.47 1.86	7.11 2.40	4.11 1.54	4.55 1.69	4.94 1.83	5.86 2.15	6.74 2.46	7.35 2.68
16154	3.30 1.13	3.67 1.26	4.07 1.38	4.44 1.50	5.25 1.76	6.85 2.27	3.96 1.45	4.37 1.59	4.77 1.73	5.64 2.04	6.47 2.32	7.22 2.58
16459	3.17 1.07	3.54 1.19	3.91 1.29	4.26 1.41	5.07 1.66	6.58 2.14	3.80 1.37	4.20 1.50	4.57 1.63	5.45 1.92	6.23 2.18	7.09 2.48
16764	3.06 1.02	3.41 1.12	3.78 1.24	4.11 1.34	4.88 1.57	6.34 2.02	3.67 1.29	4.04 1.43	4.42 1.54	5.25 1.82	6.01 2.07	6.82 2.34
17069	2.95 0.96	3.30 1.06	3.63 1.16	3.96 1.26	4.70 1.48	6.12 1.92	3.54 1.22	3.91 1.34	4.26 1.45	5.05 1.72	5.80 1.97	6.58 2.23
17374							3.41 1.16	3.78 1.28	4.11 1.38	4.88 1.63	5.60 1.86	6.34 2.11
17678							3.30 1.10	3.65 1.21	3.96 1.31	4.70 1.54	5.40 1.76	6.12 1.99
17983							3.19 1.05	3.52 1.15	3.83 1.25	4.55 1.47	5.23 1.67	5.93 1.89
18288							3.08 1.00	3.41 1.09	3.69 1.18	4.40 1.40	5.05 1.59	5.73 1.80

American National Standard SJI 100 - 2015

STANDARD ASD LOAD TABLE

OPEN WEB STEEL JOISTS, K-SERIES

Based on a 50 ksi (345 MPa) Maximum Yield Strength
Adopted by the Steel Joist Institute November 4, 1985
Revised to May 18, 2010 – Effective December 31, 2010

The **BLACK** figures in the Load Table give the TOTAL safe uniformly distributed load-carrying capacities, in pounds per linear foot (kiloNewtons per meter), of **ASD** K-Series Steel Joists.

The approximate joist weights, in pounds per linear foot (kiloNewtons per meter), given in the Load Table may be added to the other building weights to determine the DEAD load. In all cases the DEAD load, including the joist self-weight, must be deducted from the TOTAL load to determine the LIVE load. The approximate joist weights do not include accessories.

The **RED** figures in the Load Table represent the uniform load, in pounds per linear foot (kiloNewtons per meter), which will produce an approximate joist deflection of 1/360 of the span. This load can be linearly prorated to obtain the uniform load for supplementary deflection criteria (i.e. a uniform load which will produce a joist deflection of 1/240 of the span may be obtained by multiplying the **RED** figure by 360/240). In no case shall the prorated load exceed the TOTAL load-carrying capacity of the joist.

Where the joist span is in the **RED SHADED** area of the Load Table, the row of bridging nearest the mid span shall be diagonal bridging with bolted connections at chords and intersections. Hoisting cables shall not be released until this row of bolted diagonal bridging is completely installed. The **RED SHADED** area extends up through 60'–0" (18288 mm).

The approximate gross moment of inertia (not adjusted for shear deformation) of a standard joist listed in the Load Table may be determined as follows:

$I_j = 26.767(W)(L^3)(10^{-6})$ in^4 or $2.6953(W)(L^3)(10^{-5})$ mm^4, where W= **RED** figure in the Load Table, and
L = (span – 0.33) in feet or (span – 102) in millimeters

The TOTAL safe uniformly distributed load-carrying capacities, in pounds per linear foot (kiloNewtons per meter), of **ASD** K-Series Steel Joists shall not exceed 550 plf (8.02 kN/m) for spans shorter than what is explicitly shown in the Load Table. The maximum prorated RED load shall not exceed 550 plf (8.02 kN/m) (the TOTAL load-carrying capacity of the joist as given in the Standard **ASD** Load Table for Open Web Steel Joists, K-Series).

Loads for span increments not explicitly given in the Load Table may be determined using linear interpolation between the load values given in adjacent span columns.

For the proper handling of concentrated and/or varying loads, see Section 2.4 in the Code of Standard Practice for Steel Joist and Joist Girders.

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STANDARD LOAD TABLE FOR OPEN WEB STEEL JOISTS, K-SERIES
Based on a 50 ksi Maximum Yield Strength - Loads Shown In Pounds Per Linear Foot (plf)

Joist Designation	10K1	12K1	12K3	12K5	14K1	14K3	14K4	14K6	16K2	16K3	16K4	16K5	16K6	16K7	16K9
Depth (in.)	10	12	12	12	14	14	14	14	16	16	16	16	16	16	16
Approx. Wt (lbs./ft.)	5.0	5.0	5.7	7.1	5.2	6.0	6.7	7.7	5.5	6.3	7.0	7.5	8.1	8.6	10.0
Span (ft.) ↓															
10	550 550														
11	550 542														
12	550 455	550 550	550 550	550 550											
13	479 363	550 510	550 510	550 510											
14	412 289	500 425	550 463	550 463	550 550	550 550	550 550	550 550							
15	358 234	434 344	543 428	550 434	511 475	550 507	550 507	550 507							
16	313 192	380 282	476 351	550 396	448 390	550 467	550 467	550 467	550 550	550 550	550 550	550 550	550 550	550 550	550 550
17	277 159	336 234	420 291	550 366	395 324	495 404	550 443	550 443	512 488	550 526	550 526	550 526	550 526	550 526	550 526
18	246 134	299 197	374 245	507 317	352 272	441 339	530 397	550 408	456 409	508 456	550 490	550 490	550 490	550 490	550 490
19	221 113	268 167	335 207	454 269	315 230	395 287	475 336	550 383	408 347	455 386	547 452	550 455	550 455	550 455	550 455
20	199 97	241 142	302 177	409 230	284 197	356 246	428 287	525 347	368 297	410 330	493 386	550 426	550 426	550 426	550 426
21		218 123	273 153	370 198	257 170	322 212	388 248	475 299	333 255	371 285	447 333	503 373	548 405	550 406	550 406
22		199 106	249 132	337 172	234 147	293 184	353 215	432 259	303 222	337 247	406 289	458 323	498 351	550 385	550 385
23		181 93	227 116	308 150	214 128	268 160	322 188	395 226	277 194	308 216	371 252	418 282	455 307	507 339	550 363
24		166 81	208 101	282 132	196 113	245 141	295 165	362 199	254 170	283 189	340 221	384 248	418 269	465 298	550 346
25					180 100	226 124	272 145	334 175	234 150	260 167	313 195	353 219	384 238	428 263	514 311
26					166 88	209 110	251 129	308 156	216 133	240 148	289 173	326 194	355 211	395 233	474 276
27					154 79	193 98	233 115	285 139	200 119	223 132	268 155	302 173	329 188	366 208	439 246
28					143 70	180 88	216 103	265 124	186 106	207 118	249 138	281 155	306 168	340 186	408 220
29									173 95	193 106	232 124	261 139	285 151	317 167	380 198
30									161 86	180 96	216 112	244 126	266 137	296 151	355 178
31									151 78	168 87	203 101	228 114	249 124	277 137	332 161
32									142 71	158 79	190 92	214 103	233 112	259 124	311 147

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STANDARD LOAD TABLE FOR OPEN WEB STEEL JOISTS, K-SERIES
Based on a 50 ksi Maximum Yield Strength - Loads Shown In Pounds Per Linear Foot (plf)

Joist Designation	18K3	18K4	18K5	18K6	18K7	18K9	18K10	20K3	20K4	20K5	20K6	20K7	20K9	20K10	22K4	22K5	22K6	22K7	22K9	22K10	22K11
Depth (In.)	18	18	18	18	18	18	18	20	20	20	20	20	20	20	22	22	22	22	22	22	22
Approx. Wt. (lbs./ft.)	6.4	7.2	7.7	8.4	8.9	10.1	11.6	6.5	7.2	7.7	8.4	8.9	10.1	11.6	7.3	7.7	8.5	9.0	10.2	11.7	11.9
Span (ft.) ↓																					
18	550	550	550	550	550	550	550														
	550	550	550	550	550	550	550														
19	514	550	550	550	550	550	550	550	550	550	550	550	550	550							
	494	523	523	523	523	523	523	550	550	550	550	550	550	550							
20	463	550	550	550	550	550	550	517	550	550	550	550	550	550							
	423	490	490	490	490	490	490	517	550	550	550	550	550	550							
21	420	506	550	550	550	550	550	468	550	550	550	550	550	550	550	550	550	550	550	550	550
	364	426	460	460	460	460	460	453	520	520	520	520	520	520	550	550	550	550	550	550	550
22	382	460	518	550	550	550	550	426	514	550	550	550	550	550	550	550	550	550	550	550	550
	316	370	414	438	438	438	438	393	461	490	490	490	490	490	548	548	548	548	548	548	548
23	349	420	473	516	550	550	550	389	469	529	550	550	550	550	518	550	550	550	550	550	550
	276	323	362	393	418	418	418	344	402	451	468	468	468	468	491	518	518	518	518	518	518
24	320	385	434	473	526	550	550	357	430	485	528	550	550	550	475	536	550	550	550	550	550
	242	284	318	345	382	396	396	302	353	396	430	448	448	448	431	483	495	495	495	495	495
25	294	355	400	435	485	550	550	329	396	446	486	541	550	550	438	493	537	550	550	550	550
	214	250	281	305	337	377	377	266	312	350	380	421	426	426	381	427	464	474	474	474	474
26	272	328	369	402	448	538	550	304	366	412	449	500	550	550	404	455	496	550	550	550	550
	190	222	249	271	299	354	361	236	277	310	337	373	405	405	338	379	411	454	454	454	454
27	252	303	342	372	415	498	550	281	339	382	416	463	550	550	374	422	459	512	550	550	550
	169	198	222	241	267	315	347	211	247	277	301	333	389	389	301	337	367	406	432	432	432
28	234	282	318	346	385	463	548	261	315	355	386	430	517	550	348	392	427	475	550	550	550
	151	177	199	216	239	282	331	189	221	248	269	298	353	375	270	302	328	364	413	413	413
29	218	263	296	322	359	431	511	243	293	330	360	401	482	550	324	365	398	443	532	550	550
	136	159	179	194	215	254	298	170	199	223	242	268	317	359	242	272	295	327	387	399	399
30	203	245	276	301	335	402	477	227	274	308	336	374	450	533	302	341	371	413	497	550	550
	123	144	161	175	194	229	269	153	179	201	218	242	286	336	219	245	266	295	349	385	385
31	190	229	258	281	313	376	446	212	256	289	314	350	421	499	283	319	347	387	465	550	550
	111	130	146	158	175	207	243	138	162	182	198	219	259	304	198	222	241	267	316	369	369
32	178	215	242	264	294	353	418	199	240	271	295	328	395	468	265	299	326	363	436	517	549
	101	118	132	144	159	188	221	126	147	165	179	199	235	276	180	201	219	242	287	337	355
33	168	202	228	248	276	332	393	187	226	254	277	309	371	440	249	281	306	341	410	486	532
	92	108	121	131	145	171	201	114	134	150	163	181	214	251	164	183	199	221	261	307	334
34	158	190	214	233	260	312	370	176	212	239	261	290	349	414	235	265	288	321	386	458	516
	84	98	110	120	132	156	184	105	122	137	149	165	195	229	149	167	182	202	239	280	314
35	149	179	202	220	245	294	349	166	200	226	246	274	329	390	221	249	272	303	364	432	494
	77	90	101	110	121	143	168	96	112	126	137	151	179	210	137	153	167	185	219	257	292
36	141	169	191	208	232	278	330	157	189	213	232	259	311	369	209	236	257	286	344	408	467
	70	82	92	101	111	132	154	88	103	115	125	139	164	193	126	141	153	169	201	236	269
37								148	179	202	220	245	294	349	198	223	243	271	325	386	442
								81	95	106	115	128	151	178	116	130	141	156	185	217	247
38								141	170	191	208	232	279	331	187	211	230	256	308	366	419
								74	87	98	106	118	139	164	107	119	130	144	170	200	228
39								133	161	181	198	220	265	314	178	200	218	243	292	347	397
								69	81	90	98	109	129	151	98	110	120	133	157	185	211
40								127	153	172	188	209	251	298	169	190	207	231	278	330	377
								64	75	84	91	101	119	140	91	102	111	123	146	171	195
41															161	181	197	220	264	314	359
															85	95	103	114	135	159	181
42															153	173	188	209	252	299	342
															79	88	96	106	126	148	168
43															146	165	179	200	240	285	326
															73	82	89	99	117	138	157
44															139	157	171	191	229	272	311
															68	76	83	92	109	128	146

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STANDARD LOAD TABLE FOR OPEN WEB STEEL JOISTS, K-SERIES
Based on a 50 ksi Maximum Yield Strength - Loads Shown In Pounds Per Linear Foot (plf)

Joist Designation	24K4	24K5	24K6	24K7	24K8	24K9	24K10	24K12	26K5	26K6	26K7	26K8	26K9	26K10	26K12
Depth (In.)	24	24	24	24	24	24	24	24	26	26	26	26	26	26	26
Approx. Wt. (lbs./ft.)	7.8	7.9	8.5	9.0	9.4	10.3	11.7	13.5	8.1	8.6	9.0	9.7	10.4	11.8	13.7
Span (ft.) ↓															
23	550 550	550 550	550 550	550 550	550 550	550 550	550 550	550 550							
24	520 516	550 544	550 544	550 544	550 544	550 544	550 544	550 544							
25	479 456	540 511	550 520	550 520	550 520	550 520	550 520	550 520	550 550	550 550	550 550	550 550	550 550	550 550	550 550
26	442 405	499 453	543 493	550 499	550 499	550 499	550 499	550 499	542 535	550 541	550 541	550 541	550 541	550 541	550 541
27	410 361	462 404	503 439	550 479	550 479	550 479	550 479	550 479	502 477	547 519	550 522	550 522	550 522	550 522	550 522
28	381 323	429 362	467 393	521 436	550 456	550 456	550 456	550 456	466 427	508 464	550 501	550 501	550 501	550 501	550 501
29	354 290	400 325	435 354	485 392	536 429	550 436	550 436	550 436	434 384	473 417	527 463	550 479	550 479	550 479	550 479
30	331 262	373 293	406 319	453 353	500 387	544 419	550 422	550 422	405 346	441 377	492 417	544 457	550 459	550 459	550 459
31	310 237	349 266	380 289	424 320	468 350	510 379	550 410	550 410	379 314	413 341	460 378	509 413	550 444	550 444	550 444
32	290 215	327 241	357 262	397 290	439 318	478 344	549 393	549 393	356 285	387 309	432 343	477 375	519 407	549 431	549 431
33	273 196	308 220	335 239	373 265	413 289	449 313	532 368	532 368	334 259	364 282	406 312	448 342	488 370	532 404	532 404
34	257 179	290 201	315 218	351 242	388 264	423 286	502 337	516 344	315 237	343 257	382 285	422 312	459 338	516 378	516 378
35	242 164	273 184	297 200	331 221	366 242	399 262	473 308	501 324	297 217	323 236	360 261	398 286	433 310	501 356	501 356
36	229 150	258 169	281 183	313 203	346 222	377 241	447 283	487 306	280 199	305 216	340 240	376 263	409 284	486 334	487 334
37	216 138	244 155	266 169	296 187	327 205	356 222	423 260	474 290	265 183	289 199	322 221	356 242	387 262	460 308	474 315
38	205 128	231 143	252 156	281 172	310 189	338 204	401 240	461 275	251 169	274 184	305 204	337 223	367 241	436 284	461 299
39	195 118	219 132	239 144	266 159	294 174	320 189	380 222	449 261	238 156	260 170	289 188	320 206	348 223	413 262	449 283
40	185 109	208 122	227 133	253 148	280 161	304 175	361 206	438 247	227 145	247 157	275 174	304 191	331 207	393 243	438 269
41	176 101	198 114	216 124	241 137	266 150	290 162	344 191	427 235	215 134	235 146	262 162	289 177	315 192	374 225	427 256
42	168 94	189 106	206 115	229 127	253 139	276 151	327 177	417 224	205 125	224 136	249 150	275 164	300 178	356 210	417 244
43	160 88	180 98	196 107	219 118	242 130	263 140	312 165	406 213	196 116	213 126	238 140	263 153	286 166	339 195	407 232
44	153 82	172 92	187 100	209 110	231 121	251 131	298 154	387 199	187 108	204 118	227 131	251 143	273 155	324 182	398 222
45	146 76	164 86	179 93	199 103	220 113	240 122	285 144	370 185	179 101	194 110	217 122	240 133	261 145	310 170	389 212
46	139 71	157 80	171 87	191 97	211 106	230 114	272 135	354 174	171 95	186 103	207 114	229 125	250 135	296 159	380 203
47	133 67	150 75	164 82	183 90	202 99	220 107	261 126	339 163	164 89	178 96	199 107	219 117	239 127	284 149	369 192
48	128 63	144 70	157 77	175 85	194 93	211 101	250 118	325 153	157 83	171 90	190 100	210 110	229 119	272 140	353 180
49									150 78	164 85	183 94	202 103	220 112	261 131	339 169
50									144 73	157 80	175 89	194 97	211 105	250 124	325 159
51									139 69	151 75	168 83	186 91	203 99	241 116	313 150
52									133 65	145 71	162 79	179 86	195 93	231 110	301 142

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STANDARD LOAD TABLE FOR OPEN WEB STEEL JOISTS, K-SERIES
Based on a 50 ksi Maximum Yield Strength - Loads Shown In Pounds Per Linear Foot (plf)

Joist Designation	28K6	28K7	28K8	28K9	28K10	28K12	30K7	30K8	30K9	30K10	30K11	30K12
Depth (In.)	28	28	28	28	28	28	30	30	30	30	30	30
Approx. Wt. (lbs./ft.)	8.9	9.2	9.8	10.5	11.8	14.5	9.6	10.0	10.6	11.9	13.3	15.0
Span (ft.) ↓												
27	550 550	550 550	550 550	550 550	550 550	550 550						
28	548 541	550 543	550 543	550 543	550 543	550 543						
29	511 486	550 522	550 522	550 522	550 522	550 522	550 550	550 550	550 550	550 550	550 550	550 550
30	477 439	531 486	550 500	550 500	550 500	550 500	550 543	550 543	550 543	550 543	550 543	550 543
31	446 397	497 440	550 480	550 480	550 480	550 480	534 508	550 520	550 520	550 520	550 520	550 520
32	418 361	466 400	515 438	549 463	549 463	549 463	501 461	549 500	549 500	549 500	549 500	549 500
33	393 329	438 364	484 399	527 432	532 435	532 435	471 420	520 460	532 468	532 468	532 468	532 468
34	370 300	412 333	456 364	496 395	516 410	516 410	443 384	490 420	516 441	516 441	516 441	516 441
35	349 275	389 305	430 333	468 361	501 389	501 389	418 351	462 384	501 415	501 415	501 415	501 415
36	330 252	367 280	406 306	442 332	487 366	487 366	395 323	436 353	475 383	487 392	487 392	487 392
37	312 232	348 257	384 282	418 305	474 344	474 344	373 297	413 325	449 352	474 374	474 374	474 374
38	296 214	329 237	364 260	396 282	461 325	461 325	354 274	391 300	426 325	461 353	461 353	461 353
39	280 198	313 219	346 240	376 260	447 306	449 308	336 253	371 277	404 300	449 333	449 333	449 333
40	266 183	297 203	328 222	357 241	424 284	438 291	319 234	353 256	384 278	438 315	438 315	438 315
41	253 170	283 189	312 206	340 224	404 263	427 277	303 217	335 238	365 258	427 300	427 300	427 300
42	241 158	269 175	297 192	324 208	384 245	417 264	289 202	320 221	348 240	413 282	417 284	417 284
43	230 147	257 163	284 179	309 194	367 228	407 252	276 188	305 206	332 223	394 263	407 270	407 270
44	220 137	245 152	271 167	295 181	350 212	398 240	263 176	291 192	317 208	376 245	398 258	398 258
45	210 128	234 142	259 156	282 169	334 198	389 229	251 164	278 179	303 195	359 229	389 246	389 246
46	201 120	224 133	248 146	270 158	320 186	380 219	241 153	266 168	290 182	344 214	380 236	380 236
47	192 112	214 125	237 136	258 148	306 174	372 210	230 144	255 157	277 171	329 201	372 226	372 226
48	184 105	206 117	227 128	247 139	294 163	365 201	221 135	244 148	266 160	315 188	362 215	365 216
49	177 99	197 110	218 120	237 130	282 153	357 193	212 127	234 139	255 150	303 177	347 202	357 207
50	170 93	189 103	209 113	228 123	270 144	350 185	203 119	225 130	245 141	291 166	333 190	350 199
51	163 88	182 97	201 106	219 115	260 136	338 175	195 112	216 123	235 133	279 157	320 179	343 192
52	157 83	175 92	193 100	210 109	250 128	325 165	188 106	208 116	226 126	268 148	308 169	336 184
53	151 78	168 87	186 95	203 103	240 121	313 156	181 100	200 109	218 119	258 140	296 159	330 177
54	145 74	162 82	179 89	195 97	232 114	301 147	174 94	192 103	209 112	249 132	285 150	324 170
55	140 70	156 77	173 85	188 92	223 108	290 139	168 89	185 98	202 106	240 125	275 142	312 161
56	135 66	151 73	166 80	181 87	215 102	280 132	162 84	179 92	195 100	231 118	265 135	301 153
57							156 80	173 88	188 95	223 112	256 128	290 145
58							151 76	167 83	181 90	215 106	247 121	280 137
59							146 72	161 79	175 86	208 101	239 115	271 130
60							141 69	156 75	169 81	201 96	231 109	262 124

ASD

METRIC LOAD TABLE FOR OPEN WEB STEEL JOISTS, K-SERIES
Based On A 345 MPa Maximum Yield Strength - Loads Shown In Kilonewtons Per Meter (kN/m)

Joist Designation	10K1	12K1	12K3	12K5	14K1	14K3	14K4	14K6	16K2	16K3	16K4	16K5	16K6	16K7	16K9
Depth (mm)	254	305	305	305	356	356	356	356	406	406	406	406	406	406	406
Approx. Wt (kN/m)	0.07	0.07	0.08	0.10	0.08	0.09	0.10	0.11	0.08	0.09	0.10	0.11	0.12	0.13	0.15
Span (mm) ↓															
3048	8.02 8.02														
3353	8.02 7.90														
3658	8.02 6.64	8.02 8.02	8.02 8.02	8.02 8.02											
3962	6.99 5.29	8.02 7.44	8.02 7.44	8.02 7.44											
4267	6.01 4.21	7.29 6.20	8.02 6.75	8.02 6.75	8.02 8.02	8.02 8.02	8.02 8.02	8.02 8.02							
4572	5.22 3.41	6.33 5.02	7.92 6.24	8.02 6.33	7.45 6.93	8.02 7.39	8.02 7.39	8.02 7.39							
4877	4.56 2.80	5.54 4.11	6.94 5.12	8.02 5.77	6.53 5.69	8.02 6.81	8.02 6.81	8.02 6.81	8.02 8.02	8.02 8.02	8.02 8.02	8.02 8.02	8.02 8.02	8.02 8.02	8.02 8.02
5182	4.04 2.32	4.90 3.41	6.12 4.24	8.02 5.34	5.76 4.72	7.22 5.89	8.02 6.46	8.02 6.46	7.47 7.12	8.02 7.67	8.02 7.67	8.02 7.67	8.02 7.67	8.02 7.67	8.02 7.67
5486	3.59 1.95	4.36 2.87	5.45 3.57	7.39 4.62	5.13 3.96	6.43 4.94	7.73 5.79	8.02 5.95	6.65 5.96	7.41 6.65	8.02 7.15	8.02 7.15	8.02 7.15	8.02 7.15	8.02 7.15
5791	3.22 1.64	3.91 2.43	4.88 3.02	6.62 3.92	4.59 3.35	5.76 4.18	6.93 4.90	8.02 5.58	5.95 5.06	6.64 5.63	7.98 6.59	8.02 6.64	8.02 6.64	8.02 6.64	8.02 6.64
6096	2.90 1.41	3.51 2.07	4.40 2.58	5.96 3.35	4.14 2.87	5.19 3.59	6.24 4.18	7.66 5.06	5.37 4.33	5.98 4.81	7.19 5.63	8.02 6.21	8.02 6.21	8.02 6.21	8.02 6.21
6401		3.18 1.79	3.98 2.23	5.39 2.88	3.75 2.48	4.69 3.09	5.66 3.61	6.93 4.36	4.85 3.72	5.41 4.15	6.52 4.85	7.34 5.44	7.99 5.91	8.02 5.92	8.02 5.92
6706		2.90 1.54	3.63 1.92	4.91 2.51	3.41 2.14	4.27 2.68	5.15 3.13	6.30 3.77	4.42 3.23	4.91 3.60	5.92 4.21	6.68 4.71	7.26 5.12	8.02 5.61	8.02 5.61
7010		2.64 1.35	3.31 1.69	4.49 2.18	3.12 1.86	3.91 2.33	4.69 2.74	5.76 3.29	4.04 2.83	4.49 3.15	5.41 3.67	6.10 4.11	6.64 4.48	7.39 4.94	8.02 5.29
7315		2.42 1.18	3.03 1.47	4.11 1.92	2.86 1.64	3.57 2.05	4.30 2.40	5.28 2.90	3.70 2.48	4.13 2.75	4.96 3.22	5.60 3.61	6.10 3.92	6.78 4.34	8.02 5.04
7620					2.62 1.45	3.29 1.80	3.96 2.11	4.87 2.55	3.41 2.18	3.79 2.43	4.56 2.84	5.15 3.19	5.60 3.47	6.24 3.83	7.50 4.53
7925					2.42 1.28	3.05 1.60	3.66 1.88	4.49 2.27	3.15 1.94	3.50 2.15	4.21 2.52	4.75 2.83	5.18 3.07	5.76 3.40	6.91 4.02
8230					2.24 1.15	2.81 1.43	3.40 1.67	4.15 2.02	2.91 1.73	3.25 1.92	3.91 2.26	4.40 2.52	4.80 2.74	5.34 3.03	6.40 3.59
8534					2.08 1.02	2.62 1.28	3.15 1.50	3.86 1.80	2.71 1.54	3.02 1.72	3.63 2.01	4.10 2.26	4.46 2.45	4.96 2.71	5.95 3.21
8839									2.52 1.38	2.81 1.54	3.38 1.80	3.80 2.02	4.15 2.20	4.62 2.43	5.54 2.88
9144									2.34 1.25	2.62 1.40	3.15 1.63	3.56 1.83	3.88 1.99	4.31 2.20	5.18 2.59
9449									2.20 1.13	2.45 1.26	2.96 1.47	3.32 1.66	3.63 1.80	4.04 1.99	4.84 2.34
9754									2.07 1.03	2.30 1.15	2.77 1.34	3.12 1.50	3.40 1.63	3.77 1.80	4.53 2.14

ASD

METRIC LOAD TABLE FOR OPEN WEB STEEL JOISTS, K-SERIES
Based On A 345 MPa Maximum Yield Strength - Loads Shown In Kilonewtons Per Meter (kN/m)

Joist Designation	18K3	18K4	18K5	18K6	18K7	18K9	18K10	20K3	20K4	20K5	20K6	20K7	20K9	20K10	22K4	22K5	22K6	22K7	22K9	22K10	22K11
Depth (mm)	457	457	457	457	457	457	457	508	508	508	508	508	508	508	559	559	559	559	559	559	559
Approx. Wt. (kN/m)	0.09	0.11	0.11	0.12	0.13	0.15	0.17	0.09	0.11	0.11	0.12	0.13	0.15	0.17	0.11	0.11	0.12	0.13	0.15	0.17	0.17
Span (mm) ↓																					
5486	8.02	8.02	8.02	8.02	8.02	8.02	8.02														
	8.02	8.02	8.02	8.02	8.02	8.02	8.02														
5791	7.50	8.02	8.02	8.02	8.02	8.02	8.02	8.02	8.02	8.02	8.02	8.02	8.02	8.02							
	7.20	7.63	7.63	7.63	7.63	7.63	7.63	8.02	8.02	8.02	8.02	8.02	8.02	8.02							
6096	6.75	8.02	8.02	8.02	8.02	8.02	8.02	7.54	8.02	8.02	8.02	8.02	8.02	8.02							
	6.17	7.15	7.15	7.15	7.15	7.15	7.15	7.54	8.02	8.02	8.02	8.02	8.02	8.02							
6401	6.12	7.38	8.02	8.02	8.02	8.02	8.02	6.82	8.02	8.02	8.02	8.02	8.02	8.02	8.02	8.02	8.02	8.02	8.02	8.02	8.02
	5.31	6.21	6.71	6.71	6.71	6.71	6.71	6.61	7.58	7.58	7.58	7.58	7.58	7.58	8.02	8.02	8.02	8.02	8.02	8.02	8.02
6706	5.57	6.71	7.55	8.02	8.02	8.02	8.02	6.21	7.50	8.02	8.02	8.02	8.02	8.02	8.02	8.02	8.02	8.02	8.02	8.02	8.02
	4.61	5.39	6.04	6.39	6.39	6.39	6.39	5.73	6.72	7.15	7.15	7.15	7.15	7.15	7.99	7.99	7.99	7.99	7.99	7.99	7.99
7010	5.09	6.12	6.90	7.53	8.02	8.02	8.02	5.67	6.84	7.72	8.02	8.02	8.02	8.02	7.55	8.02	8.02	8.02	8.02	8.02	8.02
	4.02	4.71	5.28	5.73	6.10	6.10	6.10	5.02	5.86	6.58	6.82	6.82	6.82	6.82	7.16	7.55	7.55	7.55	7.55	7.55	7.55
7315	4.67	5.61	6.33	6.90	7.67	8.02	8.02	5.21	6.27	7.07	7.70	8.02	8.02	8.02	6.93	7.82	8.02	8.02	8.02	8.02	8.02
	3.53	4.14	4.64	5.03	5.57	5.77	5.77	4.40	5.15	5.77	6.27	6.53	6.53	6.53	6.28	7.04	7.22	7.22	7.22	7.22	7.22
7620	4.29	5.18	5.83	6.34	7.07	8.02	8.02	4.80	5.77	6.50	7.09	7.89	8.02	8.02	6.39	7.19	7.83	8.02	8.02	8.02	8.02
	3.12	3.64	4.10	4.45	4.91	5.50	5.50	3.88	4.55	5.10	5.54	6.14	6.21	6.21	5.56	6.23	6.77	6.91	6.91	6.91	6.91
7925	3.96	4.78	5.38	5.86	6.53	7.85	8.02	4.43	5.34	6.01	6.55	7.29	8.02	8.02	5.89	6.64	7.23	8.02	8.02	8.02	8.02
	2.77	3.23	3.63	3.95	4.36	5.16	5.26	3.44	4.04	4.52	4.91	5.44	5.91	5.91	4.93	5.53	5.99	6.62	6.62	6.62	6.62
8230	3.67	4.42	4.99	5.42	6.05	7.26	8.02	4.10	4.94	5.57	6.07	6.75	8.02	8.02	5.45	6.15	6.69	7.47	8.02	8.02	8.02
	2.46	2.88	3.23	3.51	3.89	4.59	5.06	3.07	3.60	4.04	4.39	4.85	5.67	5.67	4.39	4.91	5.35	5.92	6.30	6.30	6.30
8534	3.41	4.11	4.64	5.04	5.61	6.75	7.99	3.80	4.59	5.18	5.63	6.27	7.54	8.02	5.07	5.72	6.23	6.93	8.02	8.02	8.02
	2.20	2.58	2.90	3.15	3.48	4.11	4.83	2.75	3.22	3.61	3.92	4.34	5.15	5.47	3.94	4.40	4.78	5.31	6.02	6.02	6.02
8839	3.18	3.83	4.31	4.69	5.23	6.28	7.45	3.54	4.27	4.81	5.25	5.85	7.03	8.02	4.72	5.32	5.80	6.46	7.76	8.02	8.02
	1.98	2.32	2.61	2.83	3.13	3.70	4.34	2.48	2.90	3.25	3.53	3.91	4.62	5.23	3.53	3.96	4.30	4.77	5.64	5.82	5.82
9144	2.96	3.57	4.02	4.39	4.88	5.86	6.96	3.31	3.99	4.49	4.90	5.45	6.56	7.77	4.40	4.97	5.41	6.02	7.25	8.02	8.02
	1.79	2.10	2.34	2.55	2.83	3.34	3.92	2.23	2.61	2.93	3.18	3.53	4.17	4.90	3.19	3.57	3.88	4.30	5.09	5.61	5.61
9449	2.77	3.34	3.76	4.10	4.56	5.48	6.50	3.09	3.73	4.21	4.58	5.10	6.14	7.28	4.13	4.65	5.06	5.64	6.78	8.02	8.02
	1.61	1.89	2.13	2.30	2.55	3.02	3.54	2.01	2.36	2.65	2.88	3.19	3.77	4.43	2.88	3.23	3.51	3.89	4.61	5.38	5.38
9754	2.59	3.13	3.53	3.85	4.29	5.15	6.10	2.90	3.50	3.95	4.30	4.78	5.76	6.82	3.86	4.36	4.75	5.29	6.36	7.54	8.01
	1.47	1.72	1.92	2.10	2.32	2.74	3.22	1.83	2.14	2.40	2.61	2.90	3.42	4.02	2.62	2.93	3.19	3.53	4.18	4.91	5.18
10058	2.45	2.94	3.32	3.61	4.02	4.84	5.73	2.72	3.29	3.70	4.04	4.50	5.41	6.42	3.63	4.10	4.46	4.97	5.98	7.09	7.76
	1.34	1.57	1.76	1.91	2.11	2.49	2.93	1.66	1.95	2.18	2.37	2.64	3.12	3.66	2.39	2.67	2.90	3.22	3.80	4.48	4.87
10363	2.30	2.77	3.12	3.40	3.79	4.55	5.39	2.56	3.09	3.48	3.80	4.23	5.09	6.04	3.42	3.86	4.20	4.68	5.63	6.68	7.53
	1.22	1.43	1.60	1.75	1.92	2.27	2.68	1.53	1.78	1.99	2.17	2.40	2.84	3.34	2.17	2.43	2.65	2.94	3.48	4.08	4.58
10668	2.17	2.61	2.94	3.21	3.57	4.29	5.09	2.42	2.91	3.29	3.59	3.99	4.80	5.69	3.22	3.63	3.96	4.42	5.31	6.30	7.20
	1.12	1.31	1.47	1.60	1.76	2.08	2.45	1.40	1.63	1.83	1.99	2.20	2.61	3.06	1.99	2.23	2.43	2.69	3.19	3.75	4.26
10973	2.05	2.46	2.78	3.03	3.38	4.05	4.81	2.29	2.75	3.10	3.38	3.77	4.53	5.38	3.05	3.44	3.75	4.17	5.02	5.95	6.81
	1.02	1.19	1.34	1.47	1.61	1.92	2.24	1.28	1.50	1.67	1.82	2.02	2.39	2.81	1.83	2.05	2.23	2.46	2.93	3.44	3.92
11278								2.15	2.61	2.94	3.21	3.57	4.29	5.09	2.88	3.25	3.54	3.95	4.74	5.63	6.45
								1.18	1.38	1.54	1.67	1.86	2.20	2.59	1.69	1.89	2.05	2.27	2.69	3.16	3.60
11582								2.05	2.48	2.78	3.03	3.38	4.07	4.83	2.72	3.07	3.35	3.73	4.49	5.34	6.11
								1.07	1.26	1.43	1.54	1.72	2.02	2.39	1.56	1.73	1.89	2.10	2.48	2.91	3.32
11887								1.94	2.34	2.64	2.88	3.21	3.86	4.58	2.59	2.91	3.18	3.54	4.26	5.06	5.79
								1.00	1.18	1.31	1.43	1.59	1.88	2.20	1.43	1.60	1.75	1.94	2.29	2.69	3.07
12192								1.85	2.23	2.51	2.74	3.05	3.66	4.34	2.46	2.77	3.02	3.37	4.05	4.81	5.50
								0.93	1.09	1.22	1.32	1.47	1.73	2.04	1.32	1.48	1.61	1.79	2.13	2.49	2.84
12497															2.34	2.64	2.87	3.21	3.85	4.58	5.23
															1.24	1.38	1.50	1.66	1.97	2.32	2.64
12802															2.23	2.52	2.74	3.05	3.67	4.36	4.99
															1.15	1.28	1.40	1.54	1.83	2.15	2.45
13106															2.13	2.40	2.61	2.91	3.50	4.15	4.75
															1.06	1.19	1.29	1.44	1.70	2.01	2.29
13411															2.02	2.29	2.49	2.78	3.34	3.96	4.53
															0.99	1.10	1.21	1.34	1.59	1.86	2.13

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STANDARD LRFD LOAD TABLE

FOR KCS JOISTS

Based on a 50 ksi (345 MPa) Maximum Yield Strength
Adopted by the Steel Joist Institute May 1, 2000
Revised to May 18, 2010 – Effective December 31, 2010

The figures in the following table give the Moment Capacity (kip-in.)(N/m) and Shear Capacity (lbs)(kN). The maximum uniformly distributed load capacity in **LRFD** shall not exceed 825 plf (12.03 kN/M) and a single concentrated load cannot exceed the shear capacity. Sloped parallel-chord KCS Joists shall use the appropriate moment and shear capacity for the span as defined by the length along the slope.

The approximate KCS Joist weights per linear foot (kiloNewtons per meter) shown in this table do not include accessories.

The KCS Joist designation is not used to establish bridging requirements. The Bridging Table Section Numbers given in the KCS Standard Load Table indicate the equivalent K-Series joist of the same depth to be used for determination of the number of bridging rows, the size of horizontal bridging, and the need for erection stability bridging. While the need for erection stability bridging (diagonal bridging with bolted connections at the chords and intersections), can be determined from the **RED** shaded portion of the Standard Load Table, Open Web Steel Joists, K-Series, for convenience the KCS Load Table also includes a column for erection stability bridging. Where the span of the KCS Joist designation exceeds the length in ft. (mm) listed, the row of bridging nearest the joist midspan shall be erection stability bridging. Where “NA” is listed in the column, the KCS Joist designation does not require bolted diagonal erection bridging regardless of span.

For the proper handling of concentrated and/or varying loads, see Section 2.4 in the Code of Standard Practice for Steel Joists and Joist Girders.

LRFD

STANDARD LOAD TABLE FOR KCS OPEN WEB STEEL JOISTS Based on a 50 ksi Maximum Yield Strength							
JOIST DESIGNATION	DEPTH (in.)	MOMENT CAPACITY (k-in.)	SHEAR CAPACITY* (lbs)	APPROX. WEIGHT** (lbs/ft.)	GROSS MOMENT OF INERTIA ($in.^4$)	ERECTION STABILITY BRIDGING REQ'D (ft.)	BRIDGING TABLE SECTION NUMBER
10KCS1	10	258	3000	6.0	29	NA	1
10KCS2	10	337	3750	7.5	37	NA	1
10KCS3	10	444	4500	10.0	47	NA	1
12KCS1	12	313	3600	6.0	43	NA	3
12KCS2	12	411	4500	8.0	55	NA	5
12KCS3	12	543	5250	10.0	71	NA	5
14KCS1	14	370	4350	6.5	59	NA	4
14KCS2	14	486	5100	8.0	77	NA	6
14KCS3	14	642	5850	10.0	99	NA	6
16KCS2	16	523	6000	8.5	99	NA	6
16KCS3	16	705	7200	10.5	128	NA	9
16KCS4	16	1080	7950	14.5	192	NA	9
16KCS5	16	1401	8700	18.0	245	NA	9
18KCS2	18	592	7050	9.0	127	35-0	6
18KCS3	18	798	7800	11.0	164	NA	9
18KCS4	18	1225	8550	15.0	247	NA	10
18KCS5	18	1593	9300	18.5	316	NA	10
20KCS2	20	663	7800	9.5	159	36-0	6
20KCS3	20	892	9000	11.5	205	39-0	9
20KCS4	20	1371	11850	16.5	308	NA	10
20KCS5	20	1786	12600	20.0	396	NA	10
22KCS2	22	732	8850	10.0	194	36-0	6
22KCS3	22	987	9900	12.5	251	40-0	9
22KCS4	22	1518	11850	16.5	377	NA	11
22KCS5	22	1978	12900	20.5	485	NA	11
24KCS2	24	801	9450	10.0	232	39-0	6
24KCS3	24	1080	10800	12.5	301	44-0	9
24KCS4	24	1662	12600	16.5	453	NA	12
24KCS5	24	2172	13350	20.5	584	NA	12
26KCS2	26	870	9900	10.0	274	39-0	6
26KCS3	26	1174	11700	12.5	355	44-0	9
26KCS4	26	1809	12750	16.5	536	NA	12
26KCS5	26	2364	13800	20.5	691	NA	12
28KCS2	28	939	10350	10.5	320	40-0	6
28KCS3	28	1269	12000	12.5	414	45-0	9
28KCS4	28	1954	12750	16.5	626	53-0	12
28KCS5	28	2556	13800	20.5	808	53-0	12
30KCS3	30	1362	12000	13.0	478	45-0	9
30KCS4	30	2100	12750	16.5	722	54-0	12
30KCS5	30	2749	13800	21.0	934	54-0	12

*Maximum uniformly distributed load capacity is 825 plf and single concentrated load cannot exceed shear capacity
**Does not include accessories

LRFD

METRIC LOAD TABLE FOR KCS OPEN WEB STEEL JOISTS Based on 345 MPa Maximum Yield Strength							
JOIST DESIGNATION	DEPTH (mm)	MOMENT CAPACITY (kN-m)	SHEAR CAPACITY* (kN)	APPROX. WEIGHT** (kN/m)	GROSS MOMENT OF INERTIA (cm^4)	ERECTION STABILITY BRIDGING REQ'D (mm)	BRIDGING TABLE SECTION NUMBER
10KCS1	254	29.1	13.3	0.09	1200	NA	1
10KCS2	254	38.1	16.6	0.11	1540	NA	1
10KCS3	254	50.1	20.0	0.15	1950	NA	1
12KCS1	305	35.4	16.0	0.09	1780	NA	3
12KCS2	305	46.4	20.0	0.12	2280	NA	5
12KCS3	305	61.3	23.3	0.15	2950	NA	5
14KCS1	356	41.8	19.3	0.09	2450	NA	4
14KCS2	356	54.9	22.6	0.12	3200	NA	6
14KCS3	356	72.5	26.0	0.15	4120	NA	6
16KCS2	406	59.1	26.6	0.12	4120	NA	6
16KCS3	406	79.6	32.0	0.15	5320	NA	9
16KCS4	406	122.0	35.3	0.21	7990	NA	9
16KCS5	406	158.2	38.6	0.26	10190	NA	9
18KCS2	457	66.9	31.3	0.13	5280	10668	6
18KCS3	457	90.1	34.6	0.16	6820	NA	9
18KCS4	457	138.4	38.0	0.22	10280	NA	10
18KCS5	457	179.9	41.3	0.27	13150	NA	10
20KCS2	508	74.9	34.6	0.14	6610	10973	6
20KCS3	508	100.7	40.0	0.17	8530	11887	9
20KCS4	508	154.9	52.7	0.24	12810	NA	10
20KCS5	508	201.8	56.0	0.29	16480	NA	10
22KCS2	559	82.7	39.3	0.15	8070	10973	6
22KCS3	559	111.5	44.0	0.18	10440	12192	9
22KCS4	559	171.5	52.7	0.24	15690	NA	11
22KCS5	559	223.5	57.3	0.30	20180	NA	11
24KCS2	610	90.5	42.0	0.15	9650	11887	6
24KCS3	610	122.0	48.0	0.18	12520	13411	9
24KCS4	610	187.7	56.0	0.24	18850	NA	12
24KCS5	610	245.4	59.3	0.30	24300	NA	12
26KCS2	660	98.2	44.0	0.15	11400	11887	6
26KCS3	660	132.7	52.0	0.18	14770	13411	9
26KCS4	660	204.3	56.7	0.24	22310	NA	12
26KCS5	660	267.0	61.3	0.30	28760	NA	12
28KCS2	711	106.0	46.0	0.15	13310	12192	6
28KCS3	711	143.3	53.3	0.18	17230	13716	9
28KCS4	711	220.8	56.7	0.24	26050	16154	12
28KCS5	711	288.7	61.3	0.30	33630	16154	12
30KCS3	762	153.8	53.3	0.19	19890	13716	9
30KCS4	762	237.2	56.7	0.24	30050	16459	12
30KCS5	762	310.6	61.3	0.31	38870	16459	12

*Maximum uniformly distributed load capacity is 8.02 kN/m and single concentrated load cannot exceed shear capacity
**Does not include accessories

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STANDARD ASD LOAD TABLE

FOR KCS JOISTS

Based on a 50 ksi (345 MPa) Maximum Yield Strength
Adopted by the Steel Joist Institute May 2, 1994
Revised to May 18, 2010 – Effective December 31, 2010

The figures in the following table give the Moment Capacity (kip-in.)(N/m) and Shear Capacity (lbs)(N). The maximum uniformly distributed load capacity in **ASD** shall not exceed 550 plf (8.02 kN/m) and a single concentrated load cannot exceed the shear capacity. Sloped parallel-chord KCS Joists shall use the appropriate moment and shear capacity for the span as defined by the length along the slope.

The approximate KCS Joist weights per linear foot shown in the table do not include accessories.

The KCS Joist designation is not used to establish bridging requirements. The Bridging Table Section Numbers given in the KCS Standard Load Table indicate the equivalent K-Series joist of the same depth to be used for determination of the number of bridging rows, the size of horizontal bridging, and the need for erection stability bridging. While the need for erection stability bridging (diagonal bridging with bolted connections at the chords and intersections), can be determined from the **RED** shaded portion of the Standard Load Table, Open Web Steel Joists, K-Series, for convenience the KCS Load Table also includes a column for erection stability bridging. Where the span of the KCS Joist designation exceeds the length in ft. (mm) listed, the row of bridging nearest the joist midspan shall be erection stability bridging. Where “NA” is listed in the column, the KCS Joist designation does not require bolted diagonal erection bridging regardless of span.

For the proper handling of concentrated and/or varying loads, see Section 2.4 in the Code of Standard Practice for Steel Joists and Joist Girders.

ASD

STANDARD LOAD TABLE FOR KCS OPEN WEB STEEL JOISTS Based on a 50 ksi Maximum Yield Strength							
JOIST DESIGNATION	DEPTH (in.)	MOMENT CAPACITY (k-in.)	SHEAR CAPACITY* (lbs)	APPROX. WEIGHT** (lbs/ft.)	GROSS MOMENT OF INERTIA ($in.^4$)	ERECTION STABILITY BRIDGING REQ'D (ft.)	BRIDGING TABLE SECTION NUMBER
10KCS1	10	172	2000	6.0	29	NA	1
10KCS2	10	225	2500	7.5	37	NA	1
10KCS3	10	296	3000	10.0	47	NA	1
12KCS1	12	209	2400	6.0	43	NA	3
12KCS2	12	274	3000	8.0	55	NA	5
12KCS3	12	362	3500	10.0	71	NA	5
14KCS1	14	247	2900	6.5	59	NA	4
14KCS2	14	324	3400	8.0	77	NA	6
14KCS3	14	428	3900	10.0	99	NA	6
16KCS2	16	349	4000	8.5	99	NA	6
16KCS3	16	470	4800	10.5	128	NA	9
16KCS4	16	720	5300	14.5	192	NA	9
16KCS5	16	934	5800	18.0	245	NA	9
18KCS2	18	395	4700	9.0	127	35-0	6
18KCS3	18	532	5200	11.0	164	NA	9
18KCS4	18	817	5700	15.0	247	NA	10
18KCS5	18	1062	6200	18.5	316	NA	10
20KCS2	20	442	5200	9.5	159	36-0	6
20KCS3	20	595	6000	11.5	205	39-0	9
20KCS4	20	914	7900	16.5	308	NA	10
20KCS5	20	1191	8400	20.0	396	NA	10
22KCS2	22	488	5900	10.0	194	36-0	6
22KCS3	22	658	6600	12.5	251	40-0	9
22KCS4	22	1012	7900	16.5	377	NA	11
22KCS5	22	1319	8600	20.5	485	NA	11
24KCS2	24	534	6300	10.0	232	39-0	6
24KCS3	24	720	7200	12.5	301	44-0	9
24KCS4	24	1108	8400	16.5	453	NA	12
24KCS5	24	1448	8900	20.5	584	NA	12
26KCS2	26	580	6600	10.0	274	39-0	6
26KCS3	26	783	7800	12.5	355	44-0	9
26KCS4	26	1206	8500	16.5	536	NA	12
26KCS5	26	1576	9200	20.5	691	NA	12
28KCS2	28	626	6900	10.5	320	40-0	6
28KCS3	28	846	8000	12.5	414	45-0	9
28KCS4	28	1303	8500	16.5	626	53-0	12
28KCS5	28	1704	9200	20.5	808	53-0	12
30KCS3	30	908	8000	13.0	478	45-0	9
30KCS4	30	1400	8500	16.5	722	54-0	12
30KCS5	30	1833	9200	21.0	934	54-0	12

*Maximum uniformly distributed load capacity is 550 plf and single concentrated load cannot exceed shear capacity
**Does not include accessories

ASD

METRIC LOAD TABLE FOR KCS OPEN WEB STEEL JOISTS

Based on 345 MPa Maximum Yield Strength

JOIST DESIGNATION	DEPTH (mm)	MOMENT CAPACITY (kN-m)	SHEAR CAPACITY* (kN)	APPROX. WEIGHT** (kN/m)	GROSS MOMENT OF INERTIA (cm^4)	ERECTION STABILITY BRIDGING REQ'D (mm)	BRIDGING TABLE SECTION NUMBER
10KCS1	254	19.4	8.8	0.09	1200	NA	1
10KCS2	254	25.4	11.1	0.11	1540	NA	1
10KCS3	254	33.4	13.3	0.15	1950	NA	1
12KCS1	305	23.6	10.6	0.09	1780	NA	3
12KCS2	305	31.0	13.3	0.12	2280	NA	5
12KCS3	305	40.9	15.5	0.15	2950	NA	5
14KCS1	356	27.9	12.8	0.09	2450	NA	4
14KCS2	356	36.6	15.1	0.12	3200	NA	6
14KCS3	356	48.4	17.3	0.15	4120	NA	6
16KCS2	406	39.4	17.7	0.12	4120	NA	6
16KCS3	406	53.1	21.3	0.15	5320	NA	9
16KCS4	406	81.3	23.5	0.21	7990	NA	9
16KCS5	406	105.5	25.7	0.26	10190	NA	9
18KCS2	457	44.6	20.9	0.13	5280	10668	6
18KCS3	457	60.1	23.1	0.16	6820	NA	9
18KCS4	457	92.3	25.3	0.22	10280	NA	10
18KCS5	457	120.0	27.5	0.27	13150	NA	10
20KCS2	508	49.9	23.1	0.14	6610	10973	6
20KCS3	508	67.2	26.6	0.17	8530	11887	9
20KCS4	508	103.3	35.1	0.24	12810	NA	10
20KCS5	508	134.6	37.3	0.29	16480	NA	10
22KCS2	559	55.1	26.2	0.15	8070	10973	6
22KCS3	559	74.3	29.3	0.18	10440	12192	9
22KCS4	559	114.3	35.1	0.24	15690	NA	11
22KCS5	559	149.0	38.2	0.30	20180	NA	11
24KCS2	610	60.3	28.0	0.15	9650	11887	6
24KCS3	610	81.3	32.0	0.18	12520	13411	9
24KCS4	610	125.2	37.3	0.24	18850	NA	12
24KCS5	610	163.6	39.5	0.30	24300	NA	12
26KCS2	660	65.5	29.3	0.15	11400	11887	6
26KCS3	660	88.5	34.6	0.18	14770	13411	9
26KCS4	660	136.3	37.8	0.24	22310	NA	12
26KCS5	660	178.1	40.9	0.30	28760	NA	12
28KCS2	711	70.7	30.6	0.15	13310	12192	6
28KCS3	711	95.6	35.5	0.18	17230	13716	9
28KCS4	711	147.2	37.8	0.24	26050	16154	12
28KCS5	711	192.5	40.9	0.30	33630	16154	12
30KCS3	762	102.6	35.5	0.19	19890	13716	9
30KCS4	762	158.2	37.8	0.24	30050	16459	12
30KCS5	762	207.1	40.9	0.31	38870	16459	12

*Maximum uniformly distributed load capacity is 8.02 kN/m and single concentrated load cannot exceed shear capacity
**Does not include accessories

American National Standard SJI 100 - 2015

STANDARD ASD LOAD TABLE
STANDARD LRFD LOAD TABLE
FOR TOP CHORD EXTENSIONS (S TYPE) and (R TYPE)

Based on a 50 ksi (345 MPa) Maximum Yield Strength
ASD Load Table adopted by the Steel Joist Institute November 15, 1989
LRFD Load Table adopted by the Steel Joist Institute May 1, 2000
Revised to May 18, 2010 – Effective December 31, 2010

Joist extensions are commonly furnished to support a variety of overhang conditions. Two types are pictured below. The first is the TOP CHORD EXTENSION or "S" TYPE, which has only the top chord angles extended. The second is the EXTENDED END or "R" TYPE in which the standard 2½", (64 mm) end bearing depth is maintained over the entire length of the extension. The "S" TYPE extension is so designated because of its Simple nature whereas the "R" TYPE involves Reinforcing the top chord angles. The Specifying Professional should be aware that an "S" TYPE is more economical and should be specified whenever possible.

The following load tables are for K-Series TOP CHORD EXTENSIONS and EXTENDED ENDS for **ASD** and **LRFD** methods of design. The tabulated values are the maximum allowable uniform load in pounds per linear foot (kiloNewton/meter). The "S" and "I" numbers shown in the load tables are the Elastic Section Modulus and Moment of Inertia of the extension (Section) number with which they are associated.

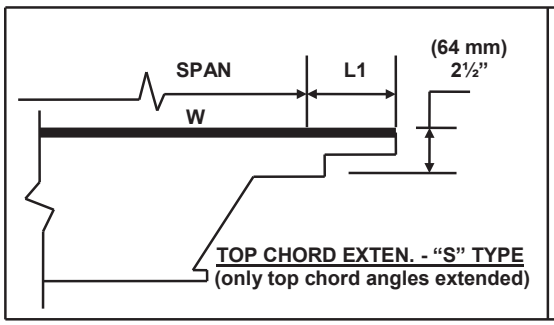
In cases where it is not possible to meet specific job requirements with a 2½" (64 mm) deep "R" type extension (refer to "S" and "I" values in the Extended End Load Table), the depth of the extension must be increased to provide greater load-carrying capacity.

The "S" and "R" extension numbers are intended to be associated with Standard K-Series Joist Sizes of matching Section Number. When possible, the extension number should be limited to no more than the Standard K-Series Joist Section Number, for optimum economy.

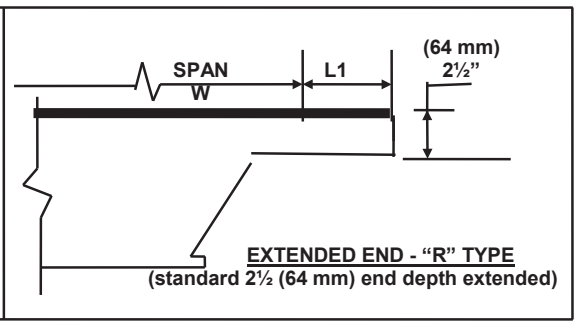
When TOP CHORD EXTENSIONS or EXTENDED ENDS are specified the bracing requirements must be considered by the specifying professional.

It should be noted that an "R" TYPE extension must be specified when building details dictate a 2½", (64 mm) depth at the end of the extension. In the absence of specific instructions. the joist manufacturer may provide either type.

TOP CHORD EXTENSION



EXTENDED END



W = Uniform Load L1 = Length of Extension SPAN = See K-Series Standard Specification for Definition of Span

LRFD

TOP CHORD EXTENSION LOAD TABLE (R TYPE)
Based on a Yield Strength of 50 ksi
Pounds Per Linear Foot

TYPE	"S" ($in.^3$)	"I" ($in.^4$)	LENGTH (L1) 0'-6"	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"
R1	0.895	1.119	825	825	825	825	825	669	498	385	307	250	208	175
R2	0.923	1.157	825	825	825	825	825	690	514	399	318	259	216	181
R3	1.039	1.299	825	825	825	825	825	777	579	448	358	292	243	205
R4	1.147	1.433	825	825	825	825	825	825	639	495	394	321	267	225
R5	1.249	1.561	825	825	825	825	825	825	696	538	429	349	291	246
R6	1.352	1.690	825	825	825	825	825	825	753	583	465	379	315	265
R7	1.422	1.802	825	825	825	825	825	825	792	613	489	399	331	279
R8	1.558	1.948	825	825	825	825	825	825	825	672	535	436	363	306
R9	1.673	2.091	825	825	825	825	825	825	825	721	576	469	390	328
R10	1.931	2.414	825	825	825	825	825	825	825	825	664	541	450	379
R11	2.183	2.729	825	825	825	825	825	825	825	825	751	612	508	430
R12	2.413	3.016	825	825	825	825	825	825	825	825	825	676	562	475

LRFD

TOP CHORD EXTENSION LOAD TABLE (S TYPE)
Based on a Yield Strength of 50 ksi
Pounds Per Linear Foot

TYPE	"S" ($in.^3$)	"I" ($in.^4$)	LENGTH (L1) 0'-6"	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"			
S1	0.099	0.088	825	544	267	157								
S2	0.127	0.138	825	700	343	202								
S3	0.144	0.156	825	793	388	229								
S4	0.160	0.172	825	825	432	255	168							
S5	0.176	0.188	825	825	474	280	184							
S6	0.192	0.204	825	825	517	306	202							
S7	0.241	0.306	825	825	649	384	253	180						
S8	0.266	0.332	825	825	717	424	280	198						
S9	0.288	0.358	825	825	777	459	303	214	160					
S10	0.380	0.544	825	825	825	606	400	283	211	163				
S11	0.438	0.622	825	825	825	699	460	327	243	189	150			
S12	0.494	0.696	825	825	825	789	520	369	274	213	169			

ASD

TOP CHORD EXTENSION LOAD TABLE (R TYPE)
Based on a Yield Strength of 50 ksi
Pounds Per Linear Foot

TYPE	"S" ($in.^3$)	"I" ($in.^4$)	LENGTH (L1) 0'-6"	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"
R1	0.895	1.119	550	550	550	550	550	446	332	257	205	167	139	117
R2	0.923	1.157	550	550	550	550	550	460	343	266	212	173	144	121
R3	1.039	1.299	550	550	550	550	550	518	386	299	239	195	162	137
R4	1.147	1.433	550	550	550	550	550	550	426	330	263	214	178	150
R5	1.249	1.561	550	550	550	550	550	550	464	359	286	233	194	164
R6	1.352	1.690	550	550	550	550	550	550	502	389	310	253	210	177
R7	1.422	1.802	550	550	550	550	550	550	528	409	326	266	221	186
R8	1.558	1.948	550	550	550	550	550	550	550	448	357	291	242	204
R9	1.673	2.091	550	550	550	550	550	550	550	481	384	313	260	219
R10	1.931	2.414	550	550	550	550	550	550	550	550	443	361	300	253
R11	2.183	2.729	550	550	550	550	550	550	550	550	501	408	339	287
R12	2.413	3.016	550	550	550	550	550	550	550	550	550	451	375	317

ASD

TOP CHORD EXTENSION LOAD TABLE (S TYPE)
Based on a Yield Strength of 50 ksi
Pounds Per Linear Foot

TYPE	"S" ($in.^3$)	"I" ($in.^4$)	LENGTH (L1) 0'-6"	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"			
S1	0.099	0.088	550	363	178	105								
S2	0.127	0.138	550	467	229	135								
S3	0.144	0.156	550	529	259	153								
S4	0.160	0.172	550	550	288	170	112							
S5	0.176	0.188	550	550	316	187	123							
S6	0.192	0.204	550	550	345	204	135							
S7	0.241	0.306	550	550	433	256	169	120						
S8	0.266	0.332	550	550	478	283	187	132						
S9	0.288	0.358	550	550	518	306	202	143	107					
S10	0.380	0.544	550	550	550	404	267	189	141	109				
S11	0.438	0.622	550	550	550	466	307	218	162	126	100			
S12	0.494	0.696	550	550	550	526	347	246	183	142	113			

LRFD

TOP CHORD EXTENSION METRIC LOAD TABLE (R TYPE)
Based on a Yield Strength of 345 Mpa
Kilonewtons Per Meter (kN/m)

TYPE	"S" (mm^3)	"I" (mm^4)	LENGTH (L1)											
			152	305	457	610	762	914	1067	1219	1372	1524	1676	1829
R1	14666	465762	12.03	12.03	12.03	12.03	12.03	9.76	7.26	5.63	4.49	3.65	3.03	2.55
R2	15125	481579	12.03	12.03	12.03	12.03	12.03	10.06	7.50	5.82	4.64	3.78	3.15	2.64
R3	17026	540684	12.03	12.03	12.03	12.03	12.03	11.33	8.44	6.54	5.22	4.26	3.54	2.99
R4	18795	596459	12.03	12.03	12.03	12.03	12.03	12.03	9.32	7.22	5.74	4.68	3.89	3.28
R5	20467	649737	12.03	12.03	12.03	12.03	12.03	12.03	10.15	7.85	6.26	5.10	4.24	3.59
R6	22155	703431	12.03	12.03	12.03	12.03	12.03	12.03	10.98	8.51	6.78	5.54	4.59	3.87
R7	23302	750049	12.03	12.03	12.03	12.03	12.03	12.03	11.55	8.94	7.13	5.82	4.83	4.07
R8	25531	810818	12.03	12.03	12.03	12.03	12.03	12.03	12.03	9.80	7.82	6.36	5.29	4.46
R9	27415	870339	12.03	12.03	12.03	12.03	12.03	12.03	12.03	10.52	8.40	6.84	5.69	4.79
R10	31643	1004782	12.03	12.03	12.03	12.03	12.03	12.03	12.03	12.03	9.69	7.89	6.56	5.54
R11	35772	1135895	12.03	12.03	12.03	12.03	12.03	12.03	12.03	12.03	10.96	8.93	7.41	6.27
R12	39541	1255353	12.03	12.03	12.03	12.03	12.03	12.03	12.03	12.03	12.03	9.87	8.20	6.93

LRFD

TOP CHORD EXTENSION METRIC LOAD TABLE (S TYPE)
Based on a Yield Strength of 345 Mpa
Kilonewtons Per Meter (kN/m)

TYPE	"S" (mm^3)	"I" (mm^4)	LENGTH (L1)											
			152	305	457	610	762	914	1067	1219	1372			
S1	1622	36628	12.03	7.93	3.89	2.29								
S2	2081	57439	12.03	10.21	5.00	2.94								
S3	2359	64932	12.03	11.57	5.66	3.34								
S4	2621	71591	12.03	12.03	6.30	3.72	2.45							
S5	2884	78251	12.03	12.03	6.91	4.08	2.68							
S6	3146	84911	12.03	12.03	7.54	4.46	2.94							
S7	3949	127366	12.03	12.03	9.47	5.60	3.69	2.62						
S8	4358	138188	12.03	12.03	10.46	6.18	4.08	2.88						
S9	4719	149010	12.03	12.03	11.33	6.69	4.42	3.12	2.33					
S10	6227	226429	12.03	12.03	12.03	8.84	5.83	4.13	3.07	2.37				
S11	7177	258895	12.03	12.03	12.03	10.20	6.71	4.77	3.54	2.75	2.18			
S12	8095	289697	12.03	12.03	12.03	11.51	7.58	5.38	3.99	3.10	2.46			

ASD

TOP CHORD EXTENSION METRIC LOAD TABLE (R TYPE)
Based on a Yield Strength of 345 MPa
Kilonewtons Per Meter (kN/m)

TYPE	"S" (mm^3)	"I" (mm^4)	LENGTH (L1)											
			152	305	457	610	762	914	1067	1219	1372	1524	1676	1829
R1	14666	465762	8.02	8.02	8.02	8.02	8.02	6.50	4.84	3.75	2.99	2.43	2.02	1.70
R2	15125	481579	8.02	8.02	8.02	8.02	8.02	6.71	5.00	3.88	3.09	2.52	2.10	1.76
R3	17026	540684	8.02	8.02	8.02	8.02	8.02	7.55	5.63	4.36	3.48	2.84	2.36	1.98
R4	18796	596459	8.02	8.02	8.02	8.02	8.02	8.02	6.21	4.81	3.83	3.12	2.59	2.18
R5	20467	649737	8.02	8.02	8.02	8.02	8.02	8.02	6.77	5.23	4.17	3.40	2.83	2.39
R6	22155	703431	8.02	8.02	8.02	8.02	8.02	8.02	7.32	5.67	4.52	3.69	3.06	2.58
R7	23302	750049	8.02	8.02	8.02	8.02	8.02	8.02	7.70	5.96	4.75	3.88	3.22	2.71
R8	25531	810818	8.02	8.02	8.02	8.02	8.02	8.02	8.02	6.53	5.21	4.24	3.53	2.97
R9	27415	870339	8.02	8.02	8.02	8.02	8.02	8.02	8.02	7.01	5.60	4.56	3.79	3.19
R10	31643	1004782	8.02	8.02	8.02	8.02	8.02	8.02	8.02	8.02	6.46	5.26	4.37	3.69
R11	35773	1135895	8.02	8.02	8.02	8.02	8.02	8.02	8.02	8.02	7.31	5.95	4.94	4.18
R12	39542	1255353	8.02	8.02	8.02	8.02	8.02	8.02	8.02	8.02	8.02	6.58	5.47	4.62

ASD

TOP CHORD EXTENSION METRIC LOAD TABLE (S TYPE)
Based on a Yield Strength of 345 MPa
Kilonewtons Per Meter (kN/m)

TYPE	"S" (mm^3)	"I" (mm^4)	LENGTH (L1)											
			152	305	457	610	762	914	1067	1219	1372			
S1	1622	36628	8.02	5.29	2.59	1.53								
S2	2081	57439	8.02	6.81	3.34	1.97								
S3	2359	64932	8.02	7.72	3.77	2.23								
S4	2621	71591	8.02	8.02	4.20	2.48	1.63							
S5	2884	78251	8.02	8.02	4.61	2.72	1.79							
S6	3146	84911	8.02	8.02	5.03	2.97	1.97							
S7	3949	127366	8.02	8.02	6.31	3.73	2.46	1.75						
S8	4358	138188	8.02	8.02	6.97	4.13	2.72	1.92						
S9	4719	149010	8.02	8.02	7.55	4.46	2.94	2.08	1.56					
S10	6227	226429	8.02	8.02	8.02	5.89	3.89	2.75	2.05	1.59				
S11	7177	258895	8.02	8.02	8.02	6.80	4.48	3.18	2.36	1.83	1.45			
S12	8095	289697	8.02	8.02	8.02	7.67	5.06	3.59	2.67	2.07	1.64			

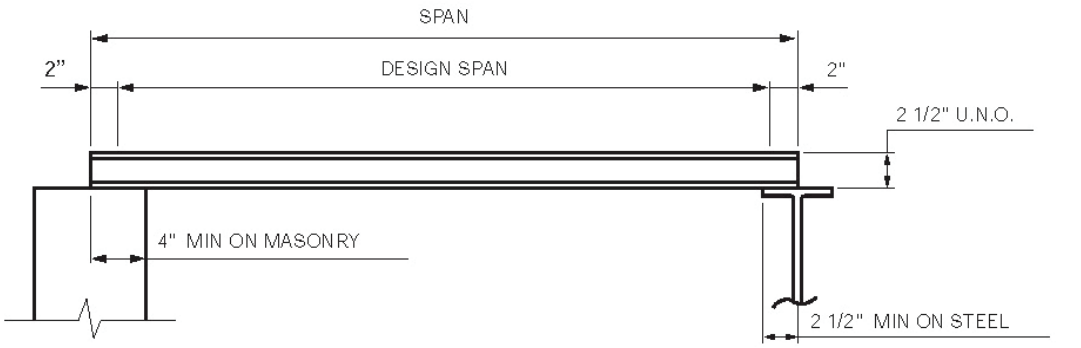
American National Standard SJI 100 - 2015

STANDARD ASD LOAD TABLE
STANDARD LRFD LOAD TABLE
FOR JOIST SUBSTITUTES AND OUTRIGGERS

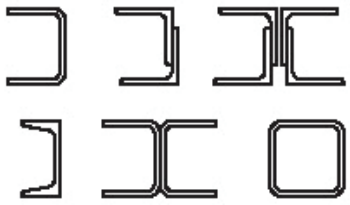
Based on a 50 ksi (345 MPa) Maximum Yield Strength
LRFD Load Table adopted by the Steel Joist Institute May 1, 2001
Revised to May 18, 2010 – Effective December 31, 2010

JOIST SUBSTITUTES, SIMPLE SPAN LOAD TABLES

Joist substitutes are 2.5 inch (64 mm) deep sections intended for use in very short spans (less than 10 feet (3.05 m)) where Open Web Steel Joists are impractical. They are commonly specified to span over hallways and short spans in skewed bays.



Joist substitutes are solid members that can be manufactured from material conforming to the Steel Joist Institute Standard Specifications and can be made of hot rolled or cold-formed channels or HSS as shown below.



Full lateral support to the compressive flange is provided by attachments to the deck. Caution must be exercised during erection since joist substitutes exhibit some degree of instability. After erection and before loads of any description are placed on the joist substitutes, the ends must be attached to the supports per the SJI Standard Specification for Open Web Steel Joists, K-Series and the deck installed and attached to the top flange.

The Simple Span Joist Substitutes Load Tables list uniform loads based on **LRFD** and **ASD** methods of design and are shown in U.S. Customary Units.

The **BLACK** figures in the **LRFD** Load Table gives the TOTAL safe factored uniformly distributed load-carrying capacity in pounds per linear foot, of 2.5 Inch Joist Substitutes. The **BLACK** figures in the **ASD** Load Table gives the TOTAL safe unfactored uniformly distributed load-carrying capacity in pounds per linear foot, of 2.5 Inch Joist Substitutes.

The **RED** figures in the Load Table represent the unfactored, uniform load, in pounds per linear foot, which will produce an approximate joist substitute deflection of 1/360 of the span. This load can be linearly prorated to obtain the unfactored, uniform load for supplementary deflection criteria (e.g. an unfactored uniform load which will produce a joist substitute deflection of 1/240 of the span may be obtained by multiplying the **RED** figure by 360/240). In no case shall the prorated, unfactored load exceed the unfactored TOTAL load-carrying capacity of the joist substitute as given in the **ASD** Load Table for 2.5 Inch Simple Span Joist Substitutes, **K**-Series.

Minimum section properties shall be provided for the particular 2.5K type specified even at shorter spans where the developed load capacity may exceed 550 plf (**ASD**) or 825 plf (**LRFD**).

2.5K JOIST SUBSTITUTES PROPERTIES			
2.5K TYPE	**2.5K1**	**2.5K2**	**2.5K3**
S in^3	0.62	0.86	1.20
I in^4	0.77	1.07	1.50
Approx. Wt. (lbs/ft)	3.0	4.2	6.4

LRFD

LOAD TABLES FOR 2.5 INCH SIMPLE SPAN JOIST SUBSTITUTES, K-SERIES			
Based on a Yield Strength of 50 ksi			
Designation	**2.5K1**	**2.5K2**	**2.5K3**
Span (ft-in)	**Pounds per Linear Foot**		
4'-0"	825	825	825
	550	550	550
5'-0"	825	825	825
	326	452	550
6'-0"	579	803	825
	182	253	354
7'-0"	419	581	810
	112	155	218
8'-0"	316	439	612
	73	102	143
9'-0"	0	343	479
	0	71	99
10'-0"	0	0	385
	0	0	71

ASD

LOAD TABLES FOR 2.5 INCH SIMPLE SPAN JOIST SUBSTITUTES, K-SERIES			
Based on a Yield Strength of 50 ksi			
Designation	**2.5K1**	**2.5K2**	**2.5K3**
Span (ft-in)	**Pounds per Linear Foot**		
4'-0"	550	550	550
	550	550	550
5'-0"	550	550	550
	326	452	550
6'-0"	386	536	550
	182	253	354
7'-0"	279	387	540
	112	155	218
8'-0"	211	293	408
	73	102	143
9'-0"	0	229	320
	0	71	99
10'-0"	0	0	257
	0	0	71

The Simple Span Joist Substitutes Load Tables list uniform loads based on **LRFD** and **ASD** methods of design and are shown in S.I. Metric Units.

The **BLACK** figures in the **LRFD** Load Table gives the TOTAL safe factored uniformly distributed load-carrying capacity in kiloNewtons per meter, of 64 mm Joist Substitutes. The **BLACK** figures in the **ASD** Load Table gives the TOTAL safe unfactored uniformly distributed load-carrying capacity in kiloNewtons per meter, of 64 mm Joist Substitutes.

The **RED** figures in the Load Table represent the unfactored, uniform load, in kiloNewtons per meter, which will produce an approximate joist substitute deflection of 1/360 of the span. This load can be linearly prorated to obtain the unfactored, uniform load for supplementary deflection criteria (i.e. an unfactored uniform load which will produce a joist substitute deflection of 1/240 of the span may be obtained by multiplying the **RED** figure by 360/240). In no case shall the prorated, unfactored load exceed the unfactored TOTAL load-carrying capacity of the joist substitute as given in the **ASD** Load Table for 64 mm Simple Span Joist Substitutes, K-Series.

Minimum section properties shall be provided for the particular 2.5K type specified even at shorter spans where the developed load capacity may exceed 8.02 kN/m (**ASD**) or 12.03 kN/m (**LRFD**).

2.5K JOIST SUBSTITUTES PROPERTIES			
2.5K TYPE	**2.5K1**	**2.5K2**	**2.5K3**
S mm³	10160	14093	19664
I mm⁴	320498	445368	624347
Approx. Wt. (kN/m)	0.44	0.61	0.93

LRFD

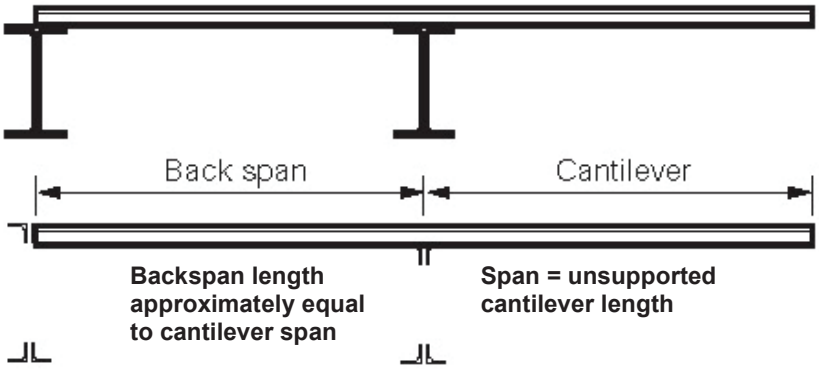
LOAD TABLES FOR 64 MM SIMPLE SPAN JOIST SUBSTITUTES, K-SERIES			
Based on a Yield Strength of 345 Mpa			
Designation	**2.5K1**	**2.5K2**	**2.5K3**
Span (mm)	**KiloNewtons per Meter (kN/m)**		
1219	12.03	12.03	12.03
	8.02	8.02	8.02
1524	12.03	12.03	12.03
	4.75	6.60	8.02
1829	8.45	11.72	12.03
	2.65	3.68	5.16
2134	6.11	8.46	11.82
	1.62	2.26	3.17
2438	4.61	6.41	8.93
	1.07	1.48	2.08
2743	0.00	5.01	6.99
	0.00	1.03	1.44
3048	0.00	0.00	5.61
	0.00	0.00	1.04

ASD

LOAD TABLES FOR 64 MM SIMPLE SPAN JOIST SUBSTITUTES, K-SERIES			
Based on a Yield Strength of 345 Mpa			
Designation	**2.5K1**	**2.5K2**	**2.5K3**
Span (mm)	**KiloNewtons per Meter (kN/m)**		
1219	8.02	8.02	8.02
	8.02	8.02	8.02
1524	8.02	8.02	8.02
	4.75	6.60	8.02
1829	5.63	7.81	8.02
	2.65	3.68	5.16
2134	4.07	5.64	7.88
	1.62	2.26	3.17
2438	3.07	4.27	5.95
	1.07	1.48	2.08
2743	0.00	3.34	4.66
	0.00	1.03	1.44
3048	0.00	0.00	3.75
	0.00	0.00	1.04

JOIST SUBSTITUTES, OUTRIGGERS LOAD TABLES

Joist substitutes may be used in an outrigger condition where the member is overhanging one support as illustrated below where a portion is the back span and the remainder is the cantilever span or outrigger. Joist substitutes used in this configuration are 2.5 inch (64 mm) deep sections.



The Joist Outriggers Load Tables list uniform loads based on **LRFD** and **ASD** methods of design and shown in U.S. Customary Units

The **BLACK** figures in the **LRFD** Load Table gives the TOTAL safe factored uniformly distributed load-carrying capacity in pounds per linear foot, of 2.5 Inch Joist Outriggers. The **BLACK** figures in the **ASD** Load Table gives the TOTAL safe uniformly distributed load-carrying capacity in pounds per linear foot, of 2.5 Inch Joist Outriggers.
Serviceability requirements must be checked by the specifying professional. When calculating the actual live load deflection at the end of the cantilever it is necessary to consider the length of the back span.
Minimum section properties shall be provided for the particular 2.5K type specified even at shorter spans where the developed load capacity may exceed 550 plf (**ASD**) or 825 plf (**LRFD**).

LRFD

LOAD TABLES FOR 2.5 INCH JOIST OUTRIGGERS, K-SERIES									
OUTRIGGER TYPE	TOTAL ALLOWABLE LOAD FOR UNSUPPORTED CANTILEVER, PLF								
	SPAN (ft-in)								
	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"
2.5K1	825	744	517	380	291	230	186	154	129
2.5K2	825	825	717	527	403	319	258	213	179
2.5K3	825	825	825	735	563	444	360	298	250

ASD

LOAD TABLES FOR 2.5 INCH JOIST OUTRIGGERS, K-SERIES									
OUTRIGGER TYPE	TOTAL ALLOWABLE LOAD FOR UNSUPPORTED CANTILEVER, PLF								
	SPAN (ft-in)								
	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"
2.5K1	550	496	344	253	194	153	124	102	86
2.5K2	550	550	478	351	269	212	172	142	119
2.5K3	550	550	550	490	375	296	240	198	167

The Joist Outriggers Load Tables list uniform loads based on **LRFD** and **ASD** methods of design and are shown in S.I. Metric Units.

The **BLACK** figures in the **LRFD** Load Table gives the TOTAL safe factored uniformly distributed load-carrying capacity in kiloNewtons per meter, of 64 mm Joist Outriggers. The **BLACK** figures in the **ASD** Load Table gives the TOTAL safe uniformly distributed load-carrying capacity in kiloNewtons per meter, of 64 mm Joist Outriggers.
Serviceability requirements must be checked by the specifying professional. When calculating the actual live load deflection at the end of the cantilever it is necessary to consider the length of the back span.
Minimum section properties shall be provided for the particular 2.5K type specified even at shorter spans where the developed load capacity may exceed 8.02 kN/m (**ASD**) or 12.03 kN/m (**LRFD**).

LRFD

LOAD TABLES FOR 64 MM JOIST OUTRIGGERS, K-SERIES									
OUTRIGGER TYPE	TOTAL ALLOWABLE LOAD FOR UNSUPPORTED CANTILEVER, kN/m								
	SPAN (mm)								
	610	762	914	167	1219	1372	1524	1676	1229
2.5K1	12.03	10.85	7.53	5.54	4.23	3.35	2.70	2.24	1.88
2.5K2	12.03	12.03	10.46	7.68	5.88	4.64	3.77	3.11	2.61
2.5K3	12.03	12.03	12.03	10.71	8.21	6.48	5.25	4.34	3.65

ASD

LOAD TABLES FOR 64 MM JOIST OUTRIGGERS, K-SERIES									
OUTRIGGER TYPE	TOTAL ALLOWABLE LOAD FOR UNSUPPORTED CANTILEVER, kN/m								
	SPAN (mm)								
	610	762	914	167	1219	1372	1524	1676	1229
2.5K1	8.02	7.23	5.02	3.69	2.82	2.23	1.80	1.49	1.25
2.5K2	8.02	8.02	6.97	5.12	3.92	3.09	2.51	2.07	1.74
2.5K3	8.02	8.02	8.02	7.14	5.47	4.32	3.50	2.89	2.43

American National Standard SJI 100 - 2015

STANDARD LRFD LOAD TABLE

LONGSPAN STEEL JOISTS, LH-SERIES

Based on a 50 ksi (345 MPa) Maximum Yield Strength
Adopted by the Steel Joist Institute May 1, 2000
Revised to May 18, 2010 – Effective December 31, 2010

The **BLACK** figures in the Load Table give the TOTAL safe factored uniformly distributed load-carrying capacities, in pounds per linear foot (kiloNewtons per meter), of **LRFD** LH-Series Steel Joists.

The approximate joist weights, in pounds per linear foot (kiloNewtons per meter), given in the Load Table may be added to the other building weights to determine the unfactored DEAD load. In all cases the factored DEAD load, including the joist self-weight, must be deducted from the TOTAL load to determine the factored LIVE load. The approximate joist weights do not include accessories.

The **RED** figures in the Load Table represent the unfactored, uniform load, in pounds per linear foot (kiloNewtons per meter), which will produce an approximate joist deflection of 1/360 of the span. This load can be linearly prorated to obtain the unfactored, uniform load for supplementary deflection criteria (i.e. an unfactored uniform load which will produce a joist deflection of 1/240 of the span may be obtained by multiplying the **RED** figures by 360/240). In no case shall the prorated, unfactored load exceed the unfactored TOTAL load-carrying capacity of the joist as given in the Standard **ASD** Load Table for Longspan Steel Joists, LH-Series.

The Load Table applies to joists with either parallel chords or pitched top chords. Joists can have a top chord pitch up to 1/2 inch per foot (42 mm per meter). If the pitch exceeds this limit, the Load Table does not apply. When top chords are pitched, the load-carrying capacities are determined by the nominal depth of the joists at the center of the span. Sloped parallel-chord joists shall use span as defined by the length along the slope.

Where the joist span is in the **RED SHADED** area of the Load Table, the row of bridging nearest the mid span shall be diagonal bridging with bolted connections at chords and intersections. Hoisting cables shall not be released until this row of bolted diagonal bridging is completely installed. The **RED SHADED** area extends up through 60'–0" (18288 mm).

Where the joist span is in the **BLUE SHADED** area of the Load Table, all rows of bridging shall be diagonal bridging with bolted connections at chords and intersections. Hoisting cables shall not be released until the two rows of bridging nearest the third points are completely installed. The **BLUE SHADED** area starts after 60'–0" (18288 mm) and extends up through 100'–0" (30175 mm).

The approximate gross moment of inertia (not adjusted for shear deformation) of a standard joist listed in the Load Table may be determined as follows:

$I_j = 26.767(W)(L^3)(10^{-6})$ in^4 or $2.6953(W)(L^3)(10^{-5})$ mm^4, where W= **RED** figure in the Load Table, and
L = (span – 0.33) in feet or (span – 102) in millimeters

Loads for span increments not explicitly given in the Load Table may be determined using linear interpolation between the load values given in adjacent span columns.

*The safe factored uniform load for the spans shown in the SAFE LOAD Column is equal to (SAFE LOAD) / (span). The TOTAL safe factored uniformly distributed load-carrying capacity, for spans less than those shown in the SAFE LOAD Column are given in the MAX LOAD Column.

To solve for an unfactored RED figure for spans shown in the SAFE LOAD Column (or lesser spans), multiply the unfactored RED figure of the shortest span shown in the Load Table by (the shortest span shown in the Load Table – 0.33 feet [101 mm])^2 and divide by (the actual span – 0.33 feet [101 mm])^2. In no case shall the calculated unfactored load exceed the unfactored TOTAL load-carrying capacity of the joist as determined from the Standard **ASD** Load Table for Longspan Steel Joists, LH-Series.

LRFD

STANDARD LOAD TABLE FOR LONGSPAN STEEL JOISTS, LH-SERIES
Based on a 50 ksi Maximum Yield Strength - Loads Shown In Pounds Per Linear Foot (plf)

Joist Designation	Approx. Wt in Lbs. Per Linear Ft. (Joists only)	Depth in inches	Max Load (plf)	SAFE LOAD* in Lbs. Between	SPAN IN FEET															
			< 22	22-25	26	27	28	29	30	31	32	33	34	35	36					
18LH02	10	18	829	18240	702	663	627	586	550	517	486	459	433	409	388					
					313	284	259	234	212	193	175	160	147	135	124					
18LH03	11	18	919	20220	781	739	700	657	613	573	538	505	475	448	424					
					348	317	289	262	236	213	194	177	161	148	136					
18LH04	12	18	1070	23550	906	856	802	750	703	660	619	582	547	516	487					
					403	367	329	296	266	242	219	200	182	167	153					
18LH05	15	18	1210	26610	1026	972	921	871	814	762	714	672	631	595	562					
					454	414	378	345	311	282	256	233	212	195	179					
18LH06	15	18	1430	31470	1213	1123	1044	972	907	849	796	748	705	664	627					
					526	469	419	377	340	307	280	254	232	212	195					
18LH07	17	18	1485	32670	1260	1213	1170	1089	1017	952	892	838	789	744	703					
					553	513	476	428	386	349	317	288	264	241	222					
18LH08	19	18	1548	34050	1314	1264	1218	1176	1137	1075	1020	961	906	856	810					
					577	534	496	462	427	387	351	320	292	267	246					
18LH09	21	18	1658	36480	1404	1351	1302	1257	1215	1174	1138	1069	1006	949	897					
					616	571	527	491	458	418	380	346	316	289	266					
			< 23	23-25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
20LH02	10	20	747	17190	663	655	646	615	582	547	516	487	460	436	412	393	373	355	337	
					306	303	298	274	250	228	208	190	174	160	147	136	126	117	108	
20LH03	11	20	793	18240	703	694	687	678	651	621	592	558	528	499	474	448	424	403	382	
					337	333	317	302	280	258	238	218	200	184	169	156	143	133	123	
20LH04	12	20	972	22350	861	849	837	792	744	700	660	624	589	558	529	502	477	454	433	
					428	406	386	352	320	291	265	243	223	205	189	174	161	149	139	
20LH05	14	20	1045	24030	924	913	903	892	856	816	769	726	687	651	616	585	556	529	504	
					459	437	416	395	366	337	308	281	258	238	219	202	187	173	161	
20LH06	15	20	1394	32070	1233	1186	1144	1084	1018	952	894	840	790	745	703	666	631	598	568	
					606	561	521	477	427	386	351	320	292	267	246	226	209	192	178	
20LH07	17	20	1487	34200	1317	1267	1221	1179	1140	1066	1000	940	885	834	789	745	706	670	637	
					647	599	556	518	484	438	398	362	331	303	278	256	236	218	202	
20LH08	19	20	1534	35280	1362	1309	1263	1219	1177	1140	1083	1030	981	931	882	837	795	754	718	
					669	619	575	536	500	468	428	395	365	336	309	285	262	242	225	
20LH09	21	20	1679	38610	1485	1429	1377	1329	1284	1242	1203	1167	1132	1068	1009	954	904	858	816	
					729	675	626	581	542	507	475	437	399	366	336	309	285	264	244	
20LH10	23	20	1810	41640	1602	1542	1486	1434	1386	1341	1297	1258	1221	1186	1122	1060	1005	954	906	
					786	724	673	626	585	545	510	479	448	411	377	346	320	296	274	

LRFD

STANDARD LOAD TABLE FOR LONGSPAN STEEL JOISTS, LH-SERIES
Based on a 50 ksi Maximum Yield Strength - Loads Shown In Pounds Per Linear Foot (plf)

Joist Designation	Approx. Wt in Lbs. Per Linear Ft. (Joists only)	Depth in inches	Max Load (plf)	SAFELOAD* in Lbs. Between	SPAN IN FEET															
			< 29	29-33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	
24LH03	11	24	601	17430	513	508	504	484	460	439	418	400	382	366	351	336	322	310	298	
					235	226	218	204	188	175	162	152	141	132	124	116	109	102	96	
24LH04	12	24	737	21360	628	597	568	540	514	490	468	447	427	409	393	376	361	346	333	
					288	265	246	227	210	195	182	169	158	148	138	130	122	114	107	
24LH05	13	24	789	22890	673	669	660	628	598	570	544	520	496	475	456	436	420	403	387	
					308	297	285	264	244	226	210	196	182	171	160	150	141	132	124	
24LH06	16	24	1061	30780	906	868	832	795	756	720	685	655	625	598	571	546	522	501	480	
					411	382	356	331	306	284	263	245	228	211	197	184	172	161	152	
24LH07	17	24	1166	33810	997	957	919	882	847	811	774	736	702	669	639	610	583	559	535	
					452	421	393	367	343	320	297	276	257	239	223	208	195	182	171	
24LH08	18	24	1243	36060	1060	1015	973	933	895	858	817	780	745	712	682	652	625	600	576	
					480	447	416	388	362	338	314	292	272	254	238	222	208	196	184	
24LH09	21	24	1464	42450	1248	1212	1177	1146	1096	1044	994	948	903	861	822	786	751	720	690	
					562	530	501	460	424	393	363	337	313	292	272	254	238	223	209	
24LH10	23	24	1547	44850	1323	1284	1248	1213	1182	1152	1105	1053	1002	955	912	873	834	799	766	
					596	559	528	500	474	439	406	378	351	326	304	285	266	249	234	
24LH11	25	24	1630	47280	1390	1350	1312	1276	1243	1210	1180	1152	1101	1051	1006	963	924	885	850	
					624	588	555	525	498	472	449	418	388	361	337	315	294	276	259	
			< 34	34-41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	
28LH05	13	28	623	21180	505	484	465	445	429	412	397	382	367	355	342	330	319	309	298	
					219	205	192	180	169	159	150	142	133	126	119	113	107	102	97	
28LH06	16	28	828	28140	672	643	618	592	568	546	525	505	486	469	451	436	421	406	393	
					289	270	253	238	223	209	197	186	175	166	156	148	140	133	126	
28LH07	17	28	934	31770	757	726	696	667	640	615	591	568	547	528	508	490	474	457	442	
					326	305	285	267	251	236	222	209	197	186	176	166	158	150	142	
28LH08	18	28	1001	34020	810	775	744	712	684	657	630	604	580	556	535	516	496	478	462	
					348	325	305	285	268	252	236	222	209	196	185	175	165	156	148	
28LH09	21	28	1232	41880	1000	958	918	879	844	810	778	748	721	694	669	645	622	601	580	
					428	400	375	351	329	309	291	274	258	243	228	216	204	193	183	
28LH10	23	28	1347	45810	1093	1056	1018	976	937	900	864	831	799	769	742	715	690	666	643	
					466	439	414	388	364	342	322	303	285	269	255	241	228	215	204	
28LH11	25	28	1445	49140	1170	1143	1104	1066	1023	982	943	907	873	841	810	781	753	727	702	
					498	475	448	423	397	373	351	331	312	294	278	263	249	236	223	
28LH12	27	28	1587	53970	1285	1255	1227	1200	1173	1149	1105	1063	1023	984	948	913	880	849	819	
					545	520	496	476	454	435	408	383	361	340	321	303	285	270	256	
28LH13	30	28	1654	56250	1342	1311	1281	1252	1224	1198	1173	1149	1126	1083	1041	1002	964	930	897	
					569	543	518	495	472	452	433	415	396	373	352	332	314	297	281	
			< 39	39-46 47-49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	
32LH06	14	32	647	25230 25230	507	489	472	456	441	426	412	399	385	373	363	351	340	330	321	
					211	199	189	179	169	161	153	145	138	131	125	119	114	108	104	
32LH07	16	32	728	28380 28380	568	549	529	511	493	477	462	447	432	418	406	393	381	370	360	
					235	223	211	200	189	179	170	162	154	146	140	133	127	121	116	
32LH08	17	32	790	30810 30810	616	595	574	553	535	517	499	483	468	453	439	426	412	400	388	
					255	242	229	216	205	194	184	175	167	159	151	144	137	131	125	
32LH09	21	32	992	38670 38670	774	747	720	694	670	648	627	606	586	568	550	534	517	502	487	
					319	302	285	270	256	243	230	219	208	198	189	180	172	164	157	
32LH10	21	32	1096	42750 42750	856	825	796	768	742	717	693	667	645	624	603	583	564	546	529	
					352	332	315	297	282	267	254	240	228	217	206	196	186	178	169	
32LH11	24	32	1201	46830 46830	937	903	870	840	811	783	757	732	709	687	664	643	624	604	585	
					385	363	343	325	308	292	277	263	251	239	227	216	206	196	187	
32LH12	27	32	1409	54960 54960	1101	1068	1032	996	961	928	897	867	838	811	786	762	738	715	694	
					450	428	406	384	364	345	327	311	295	281	267	255	243	232	221	
32LH13	30	32	1572	61320 61320	1225	1201	1177	1156	1113	1072	1035	999	964	931	900	871	843	816	790	
					500	480	461	444	420	397	376	354	336	319	304	288	275	262	249	
32LH14	33	32	1618	63120 63120	1264	1239	1215	1192	1170	1149	1107	1069	1032	997	964	933	903	874	846	
					515	495	476	458	440	417	395	374	355	337	321	304	290	276	264	
32LH15	35	32	1673	65250 65250	1305	1279	1255	1231	1207	1186	1164	1144	1125	1087	1051	1017	984	952	924	
					532	511	492	473	454	438	422	407	393	374	355	338	322	306	292	
			< 43	43-46 47-56 57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	
36LH07	16	36	590	25350 25350	438	424	411	399	387	376	366	355	345	336	327	318	310	301	294	
					177	168	160	153	146	140	134	128	122	117	112	107	103	99	95	
36LH08	18	36	649	27900 27900	481	466	453	439	426	414	402	390	379	369	358	349	340	331	322	
					194	185	176	168	160	153	146	140	134	128	123	118	113	109	104	
36LH09	21	36	832	35760 35760	616	597	579	561	544	528	513	499	484	471	459	445	433	423	412	
					247	235	224	214	204	195	186	179	171	163	157	150	144	138	133	
36LH10	21	36	916	39390 39390	681	660	639	619	601	583	567	550	535	520	507	492	480	466	454	
					273	260	248	236	225	215	206	197	188	180	173	165	159	152	146	
36LH11	23	36	1000	42990 42990	742	720	697	676	657	637	618	601	583	567	552	537	522	508	495	
					297	283	269	257	246	234	224	214	205	196	188	180	173	166	159	
36LH12	25	36	1197	51450 51450	889	862	835	810	784	762	739	717	696	675	655	636	618	600	583	
					354	338	322	307	292	279	267	255	243	232	222	213	204	195	187	
36LH13	30	36	1407	60510 60510	1045	1012	981	951	922	894	868	843	819	796	774	753	732	712	694	
					415	395	376	359	342	327	312	298	285	273	262	251	240	231	222	
36LH14	36	36	1551	66690 66690	1152	1132	1093	1059	1024	991	961	931	903	876	850	826	802	780	757	
					456	434	412	392	373	356	339	323	309	295	283	270	259	247	237	
36LH15	36	36	1635	70320 70320	1213	1192	1171	1153	1116	1081	1047	1015	984	955	927	900	874	850	826	
					480	464	448	434	413	394	375	358	342	327	312	299	286	274	263	

LRFD

STANDARD LOAD TABLE FOR LONGSPAN STEEL JOISTS, LH-SERIES
Based on a 50 ksi Maximum Yield Strength - Loads Shown In Pounds Per Linear Foot (plf)

Joist Designation	Approx. Wt in Lbs. Per Linear Ft. (Joists Only)	Depth in inches	Max Load (plf)	SAFELOAD* in Lbs. Between		SPAN IN FEET														
			< 48	**48-59**	**60-65**	**66**	**67**	**68**	**69**	**70**	**71**	**72**	**73**	**74**	**75**	**76**	**77**	**78**	**79**	**80**
40LH08	16	40	521	25020	25020	381	370	361	351	342	333	325	316	309	301	294	288	280	274	267
						150	144	138	132	127	122	117	112	108	104	100	97	93	90	86
40LH09	21	40	685	32880	32880	498	484	472	459	447	436	424	414	403	394	384	375	366	358	349
						196	188	180	173	166	160	153	147	141	136	131	126	122	118	113
40LH10	21	40	754	36180	36180	550	535	520	507	493	481	469	457	445	435	424	414	403	393	382
						216	207	198	190	183	176	169	162	156	150	144	139	134	129	124
40LH11	22	40	823	39510	39510	598	582	567	552	537	523	510	498	484	472	462	450	439	429	418
						234	224	215	207	198	190	183	176	169	163	157	151	145	140	135
40LH12	25	40	1002	48090	48090	729	708	688	670	652	636	619	603	588	573	559	546	532	519	507
						285	273	261	251	241	231	222	213	205	197	189	182	176	169	163
40LH13	30	40	1181	56700	56700	859	835	813	792	771	750	730	712	694	676	660	643	628	613	598
						334	320	307	295	283	271	260	250	241	231	223	214	207	199	192
40LH14	35	40	1351	64830	64830	984	957	930	904	880	856	834	813	792	772	753	735	717	699	682
						383	367	351	336	323	309	297	285	273	263	252	243	233	225	216
40LH15	36	40	1511	72510	72510	1101	1068	1036	1006	978	949	924	898	874	850	828	807	786	766	747
						427	408	390	373	357	342	328	315	302	290	279	268	258	248	239
40LH16	42	40	1665	79920	79920	1212	1194	1176	1158	1141	1126	1095	1065	1036	1009	982	957	933	909	886
						469	455	441	428	416	404	387	371	356	342	329	316	304	292	282
			< 53	**53-59**	**60-73**	**74**	**75**	**76**	**77**	**78**	**79**	**80**	**81**	**82**	**83**	**84**	**85**	**86**	**87**	**88**
44LH09	19	44	569	30150	30150	408	397	388	379	370	363	354	346	339	331	324	316	310	303	297
						158	152	146	141	136	131	127	122	118	114	110	106	103	99	96
44LH10	21	44	628	33300	33300	450	439	429	418	408	399	390	381	373	364	357	349	342	334	327
						174	168	162	155	150	144	139	134	130	125	121	117	113	110	106
44LH11	22	44	679	36000	36000	487	475	465	453	442	433	423	414	403	396	387	378	370	363	354
						188	181	175	168	162	157	151	146	140	136	131	127	123	119	115
44LH12	25	44	842	44610	44610	603	589	574	561	547	534	520	508	496	484	472	462	450	439	430
						232	224	215	207	200	192	185	179	172	166	160	155	149	144	139
44LH13	30	44	998	52890	52890	715	699	681	666	649	634	619	606	592	579	565	553	541	529	519
						275	265	254	246	236	228	220	212	205	198	191	185	179	173	167
44LH14	31	44	1148	60870	60870	823	801	780	759	739	721	703	685	669	654	637	622	609	594	580
						315	302	291	279	268	259	249	240	231	223	215	207	200	193	187
44LH15	36	44	1336	70830	70830	958	934	912	889	868	847	826	805	786	768	750	732	714	699	682
						366	352	339	326	314	303	292	281	271	261	252	243	234	227	219
44LH16	42	44	1541	81660	81660	1105	1078	1051	1026	1002	978	955	933	912	891	870	852	832	814	796
						421	405	390	375	362	348	336	324	313	302	291	282	272	263	255
44LH17	47	44	1655	87690	87690	1185	1170	1153	1138	1125	1098	1072	1048	1024	1000	978	957	936	915	895
						450	438	426	415	405	390	376	363	351	338	327	316	305	295	285
			< 57	**57-59**	**60-81**	**82**	**83**	**84**	**85**	**86**	**87**	**88**	**89**	**90**	**91**	**92**	**93**	**94**	**95**	**96**
48LH10	21	48	528	30120	30120	369	361	354	346	339	331	325	318	312	306	300	294	288	282	277
						141	136	132	127	123	119	116	112	108	105	102	99	96	93	90
48LH11	22	48	573	32670	32670	399	390	382	373	366	358	351	343	337	330	324	318	312	306	300
						152	147	142	137	133	129	125	120	117	113	110	106	103	100	97
48LH12	25	48	724	41250	41250	504	493	483	472	462	451	442	433	424	415	408	399	391	384	376
						191	185	179	173	167	161	156	151	147	142	138	133	129	126	122
48LH13	29	48	867	49410	49410	603	589	576	564	552	540	529	517	507	498	487	477	468	459	450
						228	221	213	206	199	193	187	180	175	170	164	159	154	150	145
48LH14	32	48	1023	58290	58290	712	696	681	666	651	637	624	610	598	585	574	562	550	540	529
						269	260	251	243	234	227	220	212	206	199	193	187	181	176	171
48LH15	36	48	1176	67020	67020	817	799	781	765	748	732	717	702	687	672	658	645	633	619	607
						308	298	287	278	269	260	252	244	236	228	221	214	208	201	195
48LH16	42	48	1355	77250	77250	943	922	901	882	864	844	826	810	792	777	760	745	730	715	702
						355	343	331	320	310	299	289	280	271	263	255	247	239	232	225
48LH17	47	48	1522	86760	86760	1059	1035	1012	990	969	948	928	909	889	871	853	837	820	804	787
						397	383	371	358	346	335	324	314	304	294	285	276	268	260	252

LRFD

METRIC LOAD TABLE FOR LONGSPAN STEEL JOISTS, LH-SERIES
Based on 345 MPa Maximum Yield Strength - Loads Shown In Kilonewtons Per Meter (kN/m)

Joist Designation	Approx. Wt in kN Per Meter (Joists only)	Depth in mm	Max Load (kN/m)	SAFE LOAD* in kN Between	SPAN IN MILLIMETERS														
			<6706	**6706-7620**	**7925**	**8230**	**8534**	**8839**	**9144**	**9449**	**9754**	**10058**	**10363**	**10668**	**10973**				
18LH02	0.15	457	12.10	81.10	10.24	9.67	9.15	8.55	8.03	7.55	7.09	6.69	6.32	5.97	5.66				
					4.56	4.14	3.77	3.41	3.09	2.81	2.55	2.33	2.14	1.97	1.80				
18LH03	0.16	457	13.41	89.90	11.40	10.79	10.22	9.58	8.95	8.36	7.85	7.37	6.93	6.54	6.19				
					5.07	4.62	4.21	3.82	3.44	3.10	2.83	2.58	2.34	2.15	1.98				
18LH04	0.18	457	15.62	104.75	13.22	12.49	11.71	10.94	10.26	9.63	9.04	8.49	7.99	7.53	7.11				
					5.88	5.35	4.80	4.31	3.88	3.53	3.19	2.91	2.65	2.43	2.23				
18LH05	0.22	457	17.66	118.36	14.97	14.18	13.44	12.71	11.88	11.12	10.42	9.80	9.21	8.69	8.20				
					6.62	6.04	5.51	5.03	4.53	4.11	3.73	3.40	3.09	2.84	2.61				
18LH06	0.22	457	20.87	139.98	17.70	16.39	15.23	14.18	13.24	12.39	11.62	10.92	10.28	9.69	9.15				
					7.67	6.84	6.11	5.50	4.96	4.48	4.08	3.70	3.38	3.09	2.84				
18LH07	0.25	457	21.67	145.32	18.38	17.70	17.07	15.89	14.84	13.90	13.02	12.23	11.51	10.85	10.26				
					8.07	7.48	6.94	6.24	5.63	5.09	4.62	4.20	3.85	3.51	3.23				
18LH08	0.28	457	22.56	151.46	19.17	18.45	17.77	17.16	16.59	15.69	14.88	14.03	13.22	12.49	11.82				
					8.42	7.79	7.23	6.74	6.23	5.64	5.12	4.67	4.26	3.89	3.59				
18LH09	0.31	457	24.20	162.27	20.48	19.72	19.00	18.34	17.73	17.14	16.61	15.60	14.68	13.85	13.09				
					8.98	8.33	7.69	7.16	6.68	6.10	5.54	5.04	4.61	4.21	3.88				
			<7010	**7010-7620**	**7925**	**8230**	**8534**	**8839**	**9144**	**9449**	**9754**	**10058**	**10363**	**10668**	**10973**	**11278**	**11582**	**11887**	**12192**
20LH02	0.15	508	10.90	76.46	9.67	9.56	9.43	8.97	8.49	7.99	7.53	7.11	6.72	6.37	6.01	5.73	5.45	5.18	4.92
					4.46	4.42	4.34	3.99	3.64	3.32	3.03	2.77	2.53	2.33	2.14	1.98	1.83	1.70	1.57
20LH03	0.16	508	11.58	81.13	10.26	10.13	10.02	9.89	9.50	9.06	8.64	8.14	7.70	7.28	6.91	6.54	6.19	5.88	5.58
					4.91	4.85	4.62	4.40	4.08	3.76	3.47	3.18	2.91	2.68	2.46	2.27	2.08	1.94	1.79
20LH04	0.18	508	14.18	99.41	12.56	12.39	12.21	11.55	10.85	10.22	9.63	9.10	8.60	8.14	7.72	7.33	6.96	6.63	6.32
					6.24	5.92	5.63	5.13	4.67	4.24	3.86	3.54	3.25	2.99	2.75	2.53	2.34	2.17	2.02
20LH05	0.20	508	15.25	106.89	13.48	13.33	13.17	13.02	12.49	11.90	11.23	10.59	10.02	9.50	8.99	8.53	8.12	7.72	7.35
					6.69	6.37	6.07	5.76	5.34	4.91	4.49	4.10	3.76	3.47	3.19	2.94	2.72	2.52	2.34
20LH06	0.22	508	20.35	142.65	17.99	17.31	16.70	15.82	14.86	13.90	13.04	12.25	11.53	10.87	10.26	9.71	9.21	8.73	8.29
					8.84	8.18	7.60	6.96	6.23	5.63	5.12	4.67	4.26	3.89	3.59	3.29	3.05	2.80	2.59
20LH07	0.25	508	21.70	152.12	19.22	18.49	17.81	17.20	16.63	15.56	14.60	13.72	12.91	12.17	11.51	10.87	10.31	9.78	9.30
					9.44	8.74	8.11	7.55	7.06	6.39	5.80	5.28	4.83	4.42	4.05	3.73	3.44	3.18	2.94
20LH08	0.28	508	22.39	156.93	19.87	19.11	18.43	17.79	17.18	16.63	15.80	15.03	14.31	13.59	12.87	12.21	11.60	11.01	10.48
					9.76	9.03	8.39	7.82	7.29	6.82	6.24	5.76	5.32	4.90	4.50	4.15	3.82	3.53	3.28
20LH09	0.31	508	24.51	171.74	21.67	20.86	20.09	19.39	18.73	18.12	17.55	17.03	16.52	15.58	14.73	13.92	13.20	12.52	11.90
					10.63	9.85	9.13	8.47	7.90	7.39	6.93	6.37	5.82	5.34	4.90	4.50	4.15	3.85	3.56
20LH10	0.34	508	26.42	185.22	23.37	22.50	21.69	20.92	20.22	19.57	18.93	18.36	17.81	17.31	16.37	15.47	14.66	13.92	13.22
					11.47	10.56	9.82	9.13	8.53	7.95	7.44	6.99	6.53	5.99	5.50	5.04	4.67	4.31	3.99

LRFD

METRIC LOAD TABLE FOR LONGSPAN STEEL JOISTS, LH-SERIES
Based on 345 MPa Maximum Yield Strength - Loads Shown In Kilonewtons Per Meter (kN/m)

Joist Designation	Approx. Wt in kN Per Meter (Joists only)	Depth in mm	Max Load (kN/m)	SAFELOAD* in kN Between	SPAN IN MILLIMETERS													
			<8839	8839-10058	10363	10668	10973	11278	11582	11887	12192	12497	12802	13106	13411	13716	14021	14326	14630
24LH03	0.16	610	8.77	77.53	7.48	7.42	7.35	7.07	6.72	6.41	6.10	5.84	5.58	5.34	5.12	4.90	4.70	4.53	4.35
					3.42	3.29	3.18	2.97	2.74	2.55	2.36	2.21	2.05	1.92	1.80	1.69	1.59	1.48	1.40
24LH04	0.18	610	10.76	95.01	9.17	8.71	8.29	7.88	7.50	7.15	6.82	6.52	6.23	5.97	5.73	5.49	5.27	5.05	4.85
					4.20	3.86	3.59	3.31	3.06	2.84	2.65	2.46	2.30	2.15	2.01	1.89	1.78	1.66	1.56
24LH05	0.19	610	11.51	101.81	9.82	9.76	9.63	9.17	8.73	8.31	7.94	7.59	7.24	6.93	6.65	6.37	6.12	5.88	5.64
					4.49	4.33	4.15	3.85	3.56	3.29	3.06	2.86	2.65	2.49	2.33	2.18	2.05	1.92	1.80
24LH06	0.23	610	15.49	136.91	13.22	12.67	12.14	11.60	11.03	10.50	10.00	9.56	9.12	8.73	8.34	7.96	7.61	7.31	7.00
					5.99	5.57	5.19	4.83	4.46	4.14	3.83	3.57	3.32	3.07	2.87	2.68	2.51	2.34	2.21
24LH07	0.25	610	17.02	150.39	14.55	13.96	13.41	12.87	12.36	11.84	11.29	10.74	10.24	9.76	9.32	8.90	8.51	8.16	7.81
					6.59	6.14	5.73	5.35	5.00	4.67	4.33	4.02	3.75	3.48	3.25	3.03	2.84	2.65	2.49
24LH08	0.26	610	18.14	160.40	15.47	14.82	14.20	13.61	13.06	12.52	11.93	11.38	10.87	10.39	9.96	9.52	9.12	8.75	8.40
					7.00	6.52	6.07	5.66	5.28	4.93	4.58	4.26	3.96	3.70	3.47	3.23	3.03	2.86	2.68
24LH09	0.31	610	21.36	188.82	18.21	17.68	17.18	16.72	16.00	15.23	14.51	13.83	13.17	12.56	11.99	11.47	10.96	10.50	10.06
					8.20	7.73	7.31	6.71	6.18	5.73	5.29	4.91	4.56	4.26	3.96	3.70	3.47	3.25	3.05
24LH10	0.34	610	22.58	199.50	19.30	18.73	18.21	17.70	17.24	16.81	16.13	15.36	14.62	13.94	13.30	12.74	12.17	11.66	11.18
					8.69	8.15	7.70	7.29	6.91	6.40	5.92	5.51	5.12	4.75	4.43	4.15	3.88	3.63	3.41
24LH11	0.36	610	23.79	210.31	20.29	19.70	19.15	18.62	18.14	17.66	17.22	16.81	16.06	15.34	14.68	14.05	13.48	12.91	12.41
					9.10	8.58	8.09	7.66	7.26	6.88	6.55	6.10	5.66	5.26	4.91	4.59	4.29	4.02	3.77
			<10363	10363-12497	12802	13106	13411	13716	14021	14326	14630	14935	15240	15545	15850	16154	16459	16764	17069
28LH05	0.19	711	9.09	94.21	7.37	7.07	6.78	6.50	6.26	6.01	5.80	5.58	5.36	5.18	4.99	4.81	4.66	4.50	4.35
					3.19	2.99	2.80	2.62	2.46	2.32	2.18	2.07	1.94	1.83	1.73	1.64	1.56	1.48	1.41
28LH06	0.23	711	12.08	125.17	9.80	9.39	9.01	8.64	8.29	7.96	7.66	7.37	7.09	6.85	6.58	6.37	6.15	5.93	5.73
					4.21	3.94	3.69	3.47	3.25	3.05	2.87	2.71	2.55	2.42	2.27	2.15	2.04	1.94	1.83
28LH07	0.25	711	13.63	141.32	11.05	10.59	10.15	9.74	9.34	8.97	8.62	8.29	7.99	7.70	7.42	7.15	6.91	6.67	6.45
					4.75	4.45	4.15	3.89	3.66	3.44	3.23	3.05	2.87	2.71	2.56	2.42	2.30	2.18	2.07
28LH08	0.26	711	14.61	151.32	11.82	11.31	10.85	10.39	9.98	9.58	9.19	8.82	8.47	8.12	7.81	7.53	7.24	6.98	6.74
					5.07	4.74	4.45	4.15	3.91	3.67	3.44	3.23	3.05	2.86	2.69	2.55	2.40	2.27	2.15
28LH09	0.31	711	17.98	186.29	14.60	13.98	13.39	12.82	12.32	11.82	11.36	10.92	10.52	10.13	9.76	9.41	9.08	8.77	8.47
					6.24	5.83	5.47	5.12	4.80	4.50	4.24	3.99	3.76	3.54	3.32	3.15	2.97	2.81	2.67
28LH10	0.34	711	19.65	203.77	15.95	15.41	14.86	14.25	13.68	13.13	12.60	12.12	11.66	11.23	10.83	10.44	10.06	9.71	9.39
					6.80	6.40	6.04	5.66	5.31	4.99	4.69	4.42	4.15	3.92	3.72	3.51	3.32	3.13	2.97
28LH11	0.36	711	21.09	218.58	17.07	16.68	16.11	15.56	14.92	14.33	13.76	13.24	12.74	12.28	11.82	11.40	10.98	10.61	10.24
					7.26	6.93	6.53	6.17	5.79	5.44	5.12	4.83	4.55	4.29	4.05	3.83	3.63	3.44	3.25
28LH12	0.39	711	23.16	240.07	18.76	18.32	17.90	17.51	17.11	16.76	16.13	15.52	14.92	14.36	13.83	13.33	12.84	12.39	11.95
					7.95	7.58	7.23	6.94	6.62	6.34	5.95	5.58	5.26	4.96	4.68	4.42	4.15	3.94	3.73
28LH13	0.44	711	24.14	250.21	19.59	19.13	18.69	18.27	17.86	17.49	17.11	16.76	16.44	15.80	15.19	14.62	14.07	13.57	13.09
					8.30	7.92	7.55	7.22	6.88	6.59	6.31	6.05	5.77	5.44	5.13	4.84	4.58	4.33	4.10
			<11887	11887-14021 / 14326-14935	15240	15545	15850	16154	16459	16764	17069	17374	17678	17983	18288	18593	18898	19202	19507
32LH06	0.20	813	9.44	112.22 / 112.22	7.39	7.13	6.89	6.65	6.43	6.21	6.01	5.82	5.62	5.45	5.29	5.12	4.96	4.81	4.68
					3.07	2.90	2.75	2.61	2.46	2.34	2.23	2.11	2.01	1.91	1.82	1.73	1.66	1.57	1.51
32LH07	0.23	813	10.63	126.24 / 126.24	8.29	8.01	7.72	7.46	7.20	6.96	6.74	6.52	6.30	6.10	5.93	5.73	5.56	5.40	5.25
					3.42	3.25	3.07	2.91	2.75	2.61	2.48	2.36	2.24	2.13	2.04	1.94	1.85	1.76	1.69
32LH08	0.25	813	11.53	137.04 / 137.04	8.99	8.69	8.38	8.07	7.81	7.55	7.28	7.04	6.82	6.61	6.41	6.21	6.01	5.84	5.66
					3.72	3.53	3.34	3.15	2.99	2.83	2.68	2.55	2.43	2.32	2.20	2.10	1.99	1.91	1.82
32LH09	0.31	813	14.48	172.01 / 172.01	11.29	10.90	10.50	10.13	9.78	9.45	9.15	8.84	8.55	8.29	8.03	7.79	7.55	7.33	7.11
					4.65	4.40	4.15	3.94	3.73	3.54	3.35	3.19	3.03	2.88	2.75	2.62	2.51	2.39	2.29
32LH10	0.31	813	16.00	190.16 / 190.16	12.49	12.03	11.62	11.20	10.83	10.46	10.11	9.74	9.41	9.10	8.80	8.51	8.23	7.96	7.72
					5.13	4.84	4.59	4.33	4.11	3.89	3.70	3.50	3.32	3.16	3.00	2.86	2.71	2.59	2.46
32LH11	0.35	813	17.53	208.31 / 208.31	13.68	13.17	12.69	12.25	11.84	11.42	11.05	10.68	10.35	10.02	9.69	9.39	9.10	8.82	8.53
					5.61	5.29	5.00	4.74	4.49	4.26	4.04	3.83	3.66	3.48	3.31	3.15	3.00	2.86	2.72
32LH12	0.39	813	20.57	244.47 / 244.47	16.06	15.58	15.06	14.53	14.03	13.55	13.09	12.65	12.23	11.84	11.47	11.12	10.77	10.44	10.13
					6.56	6.24	5.92	5.60	5.31	5.03	4.77	4.53	4.30	4.10	3.89	3.72	3.54	3.38	3.22
32LH13	0.44	813	22.94	272.76 / 272.76	17.88	17.53	17.18	16.87	16.24	15.65	15.10	14.57	14.07	13.59	13.13	12.71	12.30	11.90	11.53
					7.29	7.00	6.72	6.47	6.12	5.79	5.48	5.16	4.90	4.65	4.43	4.20	4.01	3.82	3.63
32LH14	0.48	813	23.62	280.77 / 280.77	18.45	18.08	17.73	17.40	17.07	16.76	16.15	15.60	15.06	14.55	14.07	13.61	13.17	12.76	12.34
					7.51	7.22	6.94	6.68	6.42	6.08	5.76	5.45	5.18	4.91	4.68	4.43	4.23	4.02	3.85
32LH15	0.51	813	24.42	290.24 / 290.24	19.04	18.67	18.32	17.97	17.62	17.31	16.98	16.70	16.41	15.87	15.34	14.84	14.36	13.90	13.48
					7.76	7.45	7.18	6.90	6.62	6.39	6.15	5.93	5.73	5.45	5.18	4.93	4.69	4.46	4.26
			<13106	13106-14021 / 14326-17069 / 17374	17678	17983	18288	18593	18898	19202	19507	19812	20117	20422	20726	21031	21336	21641	21946
36LH07	0.23	914	8.61	112.76 / 112.76	6.39	6.19	5.99	5.82	5.64	5.49	5.34	5.18	5.03	4.90	4.77	4.64	4.53	4.40	4.29
					2.58	2.45	2.33	2.23	2.13	2.04	1.95	1.86	1.78	1.70	1.63	1.56	1.50	1.44	1.38
36LH08	0.26	914	9.47	124.10 / 124.10	7.02	6.80	6.61	6.41	6.21	6.04	5.86	5.69	5.53	5.38	5.23	5.10	4.96	4.83	4.70
					2.83	2.69	2.56	2.45	2.33	2.23	2.13	2.04	1.95	1.86	1.79	1.72	1.64	1.59	1.51
36LH09	0.31	914	12.14	159.06 / 159.06 / 159.06	8.99	8.71	8.44	8.18	7.94	7.70	7.48	7.28	7.07	6.87	6.69	6.50	6.32	6.17	6.01
					3.60	3.42	3.26	3.12	2.97	2.84	2.71	2.61	2.49	2.37	2.29	2.18	2.10	2.01	1.94
36LH10	0.31	914	13.37	175.21 / 175.21	9.93	9.63	9.32	9.04	8.77	8.51	8.27	8.03	7.81	7.59	7.39	7.18	7.00	6.80	6.63
					3.98	3.79	3.61	3.44	3.28	3.13	3.00	2.87	2.74	2.62	2.52	2.40	2.32	2.21	2.13
36LH11	0.34	914	14.60	191.22 / 191.22	10.83	10.50	10.17	9.87	9.58	9.30	9.01	8.77	8.51	8.27	8.05	7.83	7.61	7.42	7.22
					4.33	4.13	3.92	3.75	3.59	3.41	3.26	3.12	2.99	2.86	2.74	2.62	2.52	2.42	2.32
36LH12	0.36	914	17.46	228.86 / 228.86	12.98	12.58	12.19	11.82	11.44	11.12	10.79	10.46	10.15	9.85	9.56	9.28	9.01	8.75	8.51
					5.16	4.93	4.69	4.48	4.26	4.07	3.89	3.72	3.54	3.38	3.23	3.10	2.97	2.84	2.72
36LH13	0.44	914	20.53	269.16 / 269.16	15.25	14.77	14.31	13.87	13.46	13.04	12.67	12.30	11.95	11.62	11.29	10.98	10.68	10.39	10.13
					6.05	5.76	5.48	5.23	4.99	4.77	4.55	4.34	4.15	3.98	3.82	3.66	3.50	3.37	3.23
36LH14	0.53	914	22.63	296.65 / 296.65	16.81	16.52	15.95	15.45	14.95	14.46	14.03	13.59	13.17	12.78	12.41	12.06	11.71	11.38	11.05
					6.65	6.33	6.01	5.72	5.44	5.19	4.94	4.71	4.50	4.30	4.13	3.94	3.77	3.60	3.45
36LH15	0.53	914	23.86	312.79 / 312.79	17.70	17.40	17.09	16.83	16.28	15.78	15.27	14.82	14.36	13.94	13.52	13.13	12.76	12.41	12.06
					7.00	6.77	6.53	6.33	6.02	5.74	5.47	5.22	4.99	4.77	4.55	4.36	4.17	3.99	3.83

LRFD

METRIC LOAD TABLE FOR LONGSPAN STEEL JOISTS, LH-SERIES
Based on 345 MPa Maximum Yield Strength - Loads Shown In Kilonewtons Per Meter (kN/m)

Joist Designation	Approx. Wt in kN Per Meter (Joists Only)	Depth in mm	Max Load (kN/m)	SAFELOAD* in kN Between		SPAN IN MILLIMETERS													
			<14630	14630-17983	18288-19812	20117	20422	20726	21031	21336	21641	21946	22250	22555	22860	23165	23470	23774	24079	24384
40LH08	0.23	1016	7.61	111.29	111.29	5.56	5.40	5.27	5.12	4.99	4.85	4.75	4.61	4.50	4.40	4.29	4.20	4.09	4.00	3.89
						2.18	2.10	2.01	1.92	1.85	1.78	1.70	1.63	1.57	1.51	1.45	1.41	1.35	1.31	1.25
40LH09	0.31	1016	10.00	146.25	146.25	7.26	7.07	6.89	6.69	6.52	6.37	6.19	6.04	5.88	5.75	5.60	5.47	5.34	5.23	5.10
						2.86	2.74	2.62	2.52	2.42	2.33	2.23	2.14	2.05	1.98	1.91	1.83	1.78	1.72	1.64
40LH10	0.31	1016	11.01	160.93	160.93	8.03	7.81	7.59	7.39	7.20	7.02	6.85	6.67	6.50	6.34	6.19	6.04	5.88	5.73	5.58
						3.15	3.02	2.88	2.77	2.67	2.56	2.46	2.36	2.27	2.18	2.10	2.02	1.95	1.88	1.80
40LH11	0.32	1016	12.01	175.74	175.74	8.73	8.49	8.27	8.05	7.83	7.63	7.44	7.26	7.07	6.89	6.74	6.56	6.41	6.26	6.10
						3.41	3.26	3.13	3.02	2.88	2.77	2.67	2.56	2.46	2.37	2.29	2.20	2.11	2.04	1.97
40LH12	0.36	1016	14.62	213.91	213.91	10.63	10.33	10.04	9.78	9.52	9.28	9.04	8.80	8.58	8.36	8.16	7.96	7.77	7.57	7.39
						4.15	3.98	3.80	3.66	3.51	3.37	3.23	3.10	2.99	2.87	2.75	2.65	2.56	2.46	2.37
40LH13	0.44	1016	17.24	252.21	252.21	12.54	12.19	11.86	11.55	11.25	10.94	10.66	10.39	10.13	9.87	9.63	9.39	9.17	8.95	8.73
						4.87	4.67	4.48	4.30	4.13	3.95	3.79	3.64	3.51	3.37	3.25	3.12	3.02	2.90	2.80
40LH14	0.51	1016	19.72	288.37	288.37	14.36	13.96	13.57	13.20	12.84	12.49	12.17	11.86	11.55	11.27	10.98	10.72	10.46	10.20	9.96
						5.58	5.35	5.12	4.90	4.71	4.50	4.33	4.15	3.98	3.83	3.67	3.54	3.40	3.28	3.15
40LH15	0.53	1016	22.05	322.54	322.54	16.06	15.58	15.12	14.68	14.27	13.85	13.48	13.11	12.76	12.41	12.08	11.77	11.47	11.18	10.90
						6.23	5.95	5.69	5.44	5.21	4.99	4.78	4.59	4.40	4.23	4.07	3.91	3.76	3.61	3.48
40LH16	0.61	1016	24.29	355.5	355.5	17.68	17.42	17.16	16.89	16.65	16.44	15.98	15.54	15.12	14.73	14.33	13.96	13.61	13.26	12.93
						6.84	6.64	6.43	6.24	6.07	5.89	5.64	5.41	5.19	4.99	4.80	4.61	4.43	4.26	4.11
			<16154	16154-17983	18288-22250	22555	22860	23165	23470	23774	24079	24384	24689	24994	25298	25603	25908	26213	26518	26822
44LH09	0.28	1118	8.31	134.11	134.11	5.95	5.80	5.66	5.53	5.40	5.29	5.16	5.05	4.94	4.83	4.72	4.61	4.53	4.42	4.33
						2.30	2.21	2.13	2.05	1.98	1.91	1.85	1.78	1.72	1.66	1.60	1.54	1.50	1.44	1.40
44LH10	0.31	1118	9.17	148.12	148.12	6.56	6.41	6.26	6.10	5.95	5.82	5.69	5.56	5.45	5.31	5.21	5.10	4.99	4.88	4.77
						2.53	2.45	2.36	2.26	2.18	2.10	2.02	1.95	1.89	1.82	1.76	1.70	1.64	1.60	1.54
44LH11	0.32	1118	9.91	160.13	160.13	7.11	6.93	6.78	6.61	6.45	6.32	6.17	6.04	5.88	5.77	5.64	5.51	5.40	5.29	5.16
						2.74	2.64	2.55	2.45	2.36	2.29	2.20	2.13	2.04	1.98	1.91	1.85	1.79	1.73	1.67
44LH12	0.36	1118	12.29	198.43	198.43	8.80	8.60	8.38	8.18	7.99	7.79	7.59	7.42	7.24	7.07	6.89	6.74	6.56	6.41	6.28
						3.38	3.26	3.13	3.02	2.91	2.80	2.69	2.61	2.51	2.42	2.33	2.26	2.17	2.10	2.02
44LH13	0.44	1118	14.57	235.26	235.26	10.44	10.20	9.93	9.71	9.47	9.25	9.04	8.84	8.64	8.44	8.25	8.07	7.90	7.72	7.57
						4.01	3.86	3.70	3.59	3.44	3.32	3.21	3.09	2.99	2.88	2.78	2.69	2.61	2.52	2.43
44LH14	0.45	1118	16.76	270.76	270.76	12.01	11.68	11.38	11.07	10.79	10.52	10.26	10.00	9.76	9.54	9.30	9.08	8.88	8.66	8.47
						4.59	4.40	4.24	4.07	3.91	3.77	3.63	3.50	3.37	3.25	3.13	3.02	2.91	2.81	2.72
44LH15	0.53	1118	19.50	315.06	315.06	13.98	13.63	13.30	12.98	12.67	12.36	12.06	11.75	11.47	11.20	10.94	10.68	10.42	10.20	9.96
						5.34	5.13	4.94	4.75	4.58	4.42	4.26	4.10	3.95	3.80	3.67	3.54	3.41	3.31	3.19
44LH16	0.61	1118	22.49	363.24	363.24	16.13	15.73	15.34	14.97	14.62	14.27	13.94	13.61	13.30	13.00	12.69	12.43	12.14	11.88	11.62
						6.14	5.91	5.69	5.47	5.28	5.07	4.90	4.72	4.56	4.40	4.24	4.11	3.96	3.83	3.72
44LH17	0.69	1118	24.16	390.06	390.06	17.29	17.07	16.83	16.61	16.41	16.02	15.65	15.30	14.95	14.60	14.27	13.96	13.65	13.35	13.06
						6.56	6.39	6.21	6.05	5.91	5.69	5.48	5.29	5.12	4.93	4.77	4.61	4.45	4.30	4.15
			<17374	17374-17983	18288-24689	24994	25298	25603	25908	26213	26518	26822	27127	27432	27737	28042	28346	28651	28956	29261
48LH10	0.31	1219	7.70	133.98	133.98	5.38	5.27	5.16	5.05	4.94	4.83	4.75	4.64	4.55	4.46	4.37	4.29	4.20	4.11	4.04
						2.05	1.98	1.92	1.85	1.79	1.73	1.69	1.63	1.57	1.53	1.48	1.44	1.40	1.35	1.31
48LH11	0.32	1219	8.36	145.32	145.32	5.82	5.69	5.58	5.45	5.34	5.23	5.12	5.01	4.92	4.81	4.72	4.64	4.55	4.46	4.37
						2.21	2.14	2.07	1.99	1.94	1.88	1.82	1.75	1.70	1.64	1.60	1.54	1.50	1.45	1.41
48LH12	0.36	1219	10.57	183.48	183.48	7.35	7.20	7.04	6.89	6.74	6.58	6.45	6.32	6.19	6.06	5.95	5.82	5.71	5.60	5.49
						2.78	2.69	2.61	2.52	2.43	2.34	2.27	2.20	2.14	2.07	2.01	1.94	1.88	1.83	1.78
48LH13	0.42	1219	12.65	219.78	219.78	8.80	8.60	8.40	8.23	8.05	7.88	7.72	7.55	7.39	7.26	7.11	6.96	6.82	6.69	6.56
						3.32	3.22	3.10	3.00	2.90	2.81	2.72	2.62	2.55	2.48	2.39	2.32	2.24	2.18	2.11
48LH14	0.47	1219	14.92	259.28	259.28	10.39	10.15	9.93	9.71	9.50	9.30	9.10	8.90	8.73	8.53	8.38	8.20	8.03	7.88	7.72
						3.92	3.79	3.66	3.54	3.41	3.31	3.21	3.09	3.00	2.90	2.81	2.72	2.64	2.56	2.49
48LH15	0.53	1219	17.16	298.11	298.11	11.93	11.66	11.40	11.16	10.92	10.68	10.46	10.24	10.02	9.80	9.61	9.41	9.23	9.04	8.86
						4.49	4.34	4.18	4.05	3.92	3.79	3.67	3.56	3.44	3.32	3.22	3.12	3.03	2.93	2.84
48LH16	0.61	1219	19.78	343.62	343.62	13.76	13.46	13.15	12.87	12.60	12.32	12.06	11.82	11.55	11.33	11.09	10.87	10.66	10.44	10.24
						5.18	5.00	4.83	4.67	4.52	4.36	4.21	4.08	3.95	3.83	3.72	3.60	3.48	3.38	3.28
48LH17	0.69	1219	22.21	385.92	385.92	15.45	15.10	14.77	14.44	14.14	13.83	13.55	13.26	12.98	12.71	12.45	12.21	11.97	11.73	11.49
						5.79	5.58	5.41	5.22	5.04	4.88	4.72	4.58	4.43	4.29	4.15	4.02	3.91	3.79	3.67

American National Standard SJI 100 - 2015

STANDARD ASD LOAD TABLE

LONGSPAN STEEL JOISTS, LH-SERIES

Based on a 50 ksi (345 MPa) Maximum Yield Strength
Adopted by the Steel Joist Institute May 1, 2000
Revised to May 18, 2010 – Effective December 31, 2010

The **BLACK** figures in the Load Table give the TOTAL safe uniformly distributed load-carrying capacities, in pounds per linear foot, of **ASD** LH-Series Steel Joists.

The approximate joist weights, in pounds per linear foot (kiloNewtons per meter), given in the Load Table may be added to the other building weights to determine the DEAD load. In all cases the DEAD load, including the joist self-weight, must be deducted from the TOTAL load to determine the LIVE load. The approximate joist weights do not include accessories.

The **RED** figures in the Load Table represent the uniform load, in pounds per linear foot (kiloNewtons per meter), which will produce an approximate joist deflection of 1/360 of the span. This load can be linearly prorated to obtain the uniform load for supplementary deflection criteria (i.e. a uniform load that will produce a joist deflection of 1/240 of the span may be obtained by multiplying the **RED** figures by 360/240). In no case shall the prorated load exceed the TOTAL load-carrying capacity of the joist.

The Load Table applies to joists with either parallel chords or pitched top chords. Joists can have a top chord pitch up to 1/2 inch per foot (42 mm per meter). If the pitch exceeds this limit, the Load Table does not apply. When top chords are pitched, the load-carrying capacities are determined by the nominal depth of the joists at the center of the span. Sloped parallel-chord joists shall use span as defined by the length along the slope.

Where the joist span is in the **RED SHADED** area of the Load Table, the row of bridging nearest the mid span shall be diagonal bridging with bolted connections at chords and intersections. Hoisting cables shall not be released until this row of bolted diagonal bridging is completely installed. The **RED SHADED** area extends up through 60'–0" (18288 mm).

Where the joist span is in the **BLUE SHADED** area of the Load Table, all rows of bridging shall be diagonal bridging with bolted connections at chords and intersections. Hoisting cables shall not be released until the two rows of bridging nearest the third points are completely installed. The **BLUE SHADED** area starts after 60'–0" (18288 mm) and extends up through 100'–0" (30175 mm).

The approximate gross moment of inertia (not adjusted for shear deformation) of a standard joist listed in the Load Table may be determined as follows:

$I_j = 26.767(W)(L^3)(10^{-6})$ in^4 or $2.6953(W)(L^3)(10^{-5})$ mm^4, where W= **RED** figure in the Load Table, and
L = (span – 0.33) in feet or (span – 102) in millimeters

Loads for span increments not explicitly given in the Load Table may be determined using linear interpolation between the load values given in adjacent span columns.

*The safe uniform load for the spans shown in the SAFE LOAD Column is equal to (SAFE LOAD) / (span). The TOTAL safe uniformly distributed load-carrying capacity, for spans less than those shown in the SAFE LOAD Column are given in the MAX LOAD Column.

To solve for a RED figure for spans shown in the SAFE LOAD Column (or lesser spans), multiply the RED figure of the shortest span shown in the Load Table by (the shortest span shown in the Load Table – 0.33 feet [101 mm])^2 and divide by (the actual span – 0.33 feet [101 mm])^2. In no case shall the calculated load exceed the TOTAL load-carrying capacity of the joist.

ASD

STANDARD LOAD TABLE FOR LONGSPAN STEEL JOISTS, LH-SERIES
Based on a 50 ksi Maximum Yield Strength - Loads Shown In Pounds Per Linear Foot (plf)

Joist Designation	Approx. Wt in Lbs. Per Linear Ft. (Joists only)	Depth in inches	Max Load (plf)	SAFE LOAD* in Lbs. Between	SPAN IN FEET													
			< 22	**22-25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**			
18LH02	10	18	553	12160	468	442	418	391	367	345	324	306	289	273	259			
					313	284	259	234	212	193	175	160	147	135	124			
18LH03	11	18	613	13480	521	493	467	438	409	382	359	337	317	299	283			
					348	317	289	262	236	213	194	177	161	148	136			
18LH04	12	18	714	15700	604	571	535	500	469	440	413	388	365	344	325			
					403	367	329	296	266	242	219	200	182	167	153			
18LH05	15	18	806	17740	684	648	614	581	543	508	476	448	421	397	375			
					454	414	378	345	311	282	256	233	212	195	179			
18LH06	15	18	954	20980	809	749	696	648	605	566	531	499	470	443	418			
					526	469	419	377	340	307	280	254	232	212	195			
18LH07	17	18	990	21780	840	809	780	726	678	635	595	559	526	496	469			
					553	513	476	428	386	349	317	288	264	241	222			
18LH08	19	18	1032	22700	876	843	812	784	758	717	680	641	604	571	540			
					577	534	496	462	427	387	351	320	292	267	246			
18LH09	21	18	1105	24320	936	901	868	838	810	783	759	713	671	633	598			
					616	571	527	491	458	418	380	346	316	289	266			
			< 23	**23-25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
20LH02	10	20	498	11460	442	437	431	410	388	365	344	325	307	291	275	262	249	237	225
					306	303	298	274	250	228	208	190	174	160	147	136	126	117	108
20LH03	11	20	529	12160	469	463	458	452	434	414	395	372	352	333	316	299	283	269	255
					337	333	317	302	280	258	238	218	200	184	169	156	143	133	123
20LH04	12	20	648	14900	574	566	558	528	496	467	440	416	393	372	353	335	318	303	289
					428	406	386	352	320	291	265	243	223	205	189	174	161	149	139
20LH05	14	20	697	16020	616	609	602	595	571	544	513	484	458	434	411	390	371	353	336
					459	437	416	395	366	337	308	281	258	238	219	202	187	173	161
20LH06	15	20	930	21380	822	791	763	723	679	635	596	560	527	497	469	444	421	399	379
					606	561	521	477	427	386	351	320	292	267	246	226	209	192	178
20LH07	17	20	991	22800	878	845	814	786	760	711	667	627	590	556	526	497	471	447	425
					647	599	556	518	484	438	398	362	331	303	278	256	236	218	202
20LH08	19	20	1023	23520	908	873	842	813	785	760	722	687	654	621	588	558	530	503	479
					669	619	575	536	500	468	428	395	365	336	309	285	262	242	225
20LH09	21	20	1119	25740	990	953	918	886	856	828	802	778	755	712	673	636	603	572	544
					729	675	626	581	542	507	475	437	399	366	336	309	285	264	244
20LH10	23	20	1207	27760	1068	1028	991	956	924	894	865	839	814	791	748	707	670	636	604
					786	724	673	626	585	545	510	479	448	411	377	346	320	296	274

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STANDARD LOAD TABLE FOR LONGSPAN STEEL JOISTS, LH-SERIES
Based on a 50 ksi Maximum Yield Strength - Loads Shown In Pounds Per Linear Foot (plf)

Joist Designation	Approx. Wt in Lbs. Per Linear Ft. (Joists only)	Depth in inches	Max Load (plf)	SAFELOAD* in Lbs. Between	SPAN IN FEET														
			< 29	29-33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
24LH03	11	24	401	11620	342	339	336	323	307	293	279	267	255	244	234	224	215	207	199
					235	226	218	204	188	175	162	152	141	132	124	116	109	102	96
24LH04	12	24	491	14240	419	398	379	360	343	327	312	298	285	273	262	251	241	231	222
					288	265	246	227	210	195	182	169	158	148	138	130	122	114	107
24LH05	13	24	526	15260	449	446	440	419	399	380	363	347	331	317	304	291	280	269	258
					308	297	285	264	244	226	210	196	182	171	160	150	141	132	124
24LH06	16	24	708	20520	604	579	555	530	504	480	457	437	417	399	381	364	348	334	320
					411	382	356	331	306	284	263	245	228	211	197	184	172	161	152
24LH07	17	24	777	22540	665	638	613	588	565	541	516	491	468	446	426	407	389	373	357
					452	421	393	367	343	320	297	276	257	239	223	208	195	182	171
24LH08	18	24	829	24040	707	677	649	622	597	572	545	520	497	475	455	435	417	400	384
					480	447	416	388	362	338	314	292	272	254	238	222	208	196	184
24LH09	21	24	976	28300	832	808	785	764	731	696	663	632	602	574	548	524	501	480	460
					562	530	501	460	424	393	363	337	313	292	272	254	238	223	209
24LH10	23	24	1031	29900	882	856	832	809	788	768	737	702	668	637	608	582	556	533	511
					596	559	528	500	474	439	406	378	351	326	304	285	266	249	234
24LH11	25	24	1087	31520	927	900	875	851	829	807	787	768	734	701	671	642	616	590	567
					624	588	555	525	498	472	449	418	388	361	337	315	294	276	259
			< 34	34-41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
28LH05	13	28	415	14120	337	323	310	297	286	275	265	255	245	237	228	220	213	206	199
					219	205	192	180	169	159	150	142	133	126	119	113	107	102	97
28LH06	16	28	552	18760	448	429	412	395	379	364	350	337	324	313	301	291	281	271	262
					289	270	253	238	223	209	197	186	175	166	156	148	140	133	126
28LH07	17	28	623	21180	505	484	464	445	427	410	394	379	365	352	339	327	316	305	295
					326	305	285	267	251	236	222	209	197	186	176	166	158	150	142
28LH08	18	28	667	22680	540	517	496	475	456	438	420	403	387	371	357	344	331	319	308
					348	325	305	285	268	252	236	222	209	196	185	175	165	156	148
28LH09	21	28	821	27920	667	639	612	586	563	540	519	499	481	463	446	430	415	401	387
					428	400	375	351	329	309	291	274	258	243	228	216	204	193	183
28LH10	23	28	898	30540	729	704	679	651	625	600	576	554	533	513	495	477	460	444	429
					466	439	414	388	364	342	322	303	285	269	255	241	228	215	204
28LH11	25	28	964	32760	780	762	736	711	682	655	629	605	582	561	540	521	502	485	468
					498	475	448	423	397	373	351	331	312	294	278	263	249	236	223
28LH12	27	28	1058	35980	857	837	818	800	782	766	737	709	682	656	632	609	587	566	546
					545	520	496	476	454	435	408	383	361	340	321	303	285	270	256
28LH13	30	28	1103	37500	895	874	854	835	816	799	782	766	751	722	694	668	643	620	598
					569	543	518	495	472	452	433	415	396	373	352	332	314	297	281
			< 39	39-46 47-49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
32LH06	14	32	431	16820 16820	338	326	315	304	294	284	275	266	257	249	242	234	227	220	214
					211	199	189	179	169	161	153	145	138	131	125	119	114	108	104
32LH07	16	32	485	18920 18920	379	366	353	341	329	318	308	298	288	279	271	262	254	247	240
					235	223	211	200	189	179	170	162	154	146	140	133	127	121	116
32LH08	17	32	527	20540 20540	411	397	383	369	357	345	333	322	312	302	293	284	275	267	259
					255	242	229	216	205	194	184	175	167	159	151	144	137	131	125
32LH09	21	32	661	25780 25780	516	498	480	463	447	432	418	404	391	379	367	356	345	335	325
					319	302	285	270	256	243	230	219	208	198	189	180	172	164	157
32LH10	21	32	731	28500 28500	571	550	531	512	495	478	462	445	430	416	402	389	376	364	353
					352	332	315	297	282	267	254	240	228	217	206	196	186	178	169
32LH11	24	32	801	31220 31220	625	602	580	560	541	522	505	488	473	458	443	429	416	403	390
					385	363	343	325	308	292	277	263	251	239	227	216	206	196	187
32LH12	27	32	939	36640 36640	734	712	688	664	641	619	598	578	559	541	524	508	492	477	463
					450	428	406	384	364	345	327	311	295	281	267	255	243	232	221
32LH13	30	32	1048	40880 40880	817	801	785	771	742	715	690	666	643	621	600	581	562	544	527
					500	480	461	444	420	397	376	354	336	319	304	288	275	262	249
32LH14	33	32	1079	42080 42080	843	826	810	795	780	766	738	713	688	665	643	622	602	583	564
					515	495	476	458	440	417	395	374	355	337	321	304	290	276	264
32LH15	35	32	1115	43500 43500	870	853	837	821	805	791	776	763	750	725	701	678	656	635	616
					532	511	492	473	454	438	422	407	393	374	355	338	322	306	292
			< 43	43-46 47-56 57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72
36LH07	16	36	393	16900 16900	292	283	274	266	258	251	244	237	230	224	218	212	207	201	196
					177	168	160	153	146	140	134	128	122	117	112	107	103	99	95
36LH08	18	36	433	18600 18600	321	311	302	293	284	276	268	260	253	246	239	233	227	221	215
					194	185	176	168	160	153	146	140	134	128	123	118	113	109	104
36LH09	21	36	554	23840 23840	411	398	386	374	363	352	342	333	323	314	306	297	289	282	275
					247	235	224	214	204	195	186	179	171	163	157	150	144	138	133
36LH10	21	36	611	26260 26260	454	440	426	413	401	389	378	367	357	347	338	328	320	311	303
					273	260	248	236	225	215	206	197	188	180	173	165	159	152	146
36LH11	23	36	667	28660 28660	495	480	465	451	438	425	412	401	389	378	368	358	348	339	330
					297	283	269	257	246	234	224	214	205	196	188	180	173	166	159
36LH12	25	36	798	34300 34300	593	575	557	540	523	508	493	478	464	450	437	424	412	400	389
					354	338	322	307	292	279	267	255	243	232	222	213	204	195	187
36LH13	30	36	938	40340 40340	697	675	654	634	615	596	579	562	546	531	516	502	488	475	463
					415	395	376	359	342	327	312	298	285	273	262	251	240	231	222
36LH14	36	36	1034	44460 44460	768	755	729	706	683	661	641	621	602	584	567	551	535	520	505
					456	434	412	392	373	356	339	323	309	295	283	270	259	247	237
36LH15	36	36	1090	46880 46880	809	795	781	769	744	721	698	677	656	637	618	600	583	567	551
					480	464	448	434	413	394	375	358	342	327	312	299	286	274	263

ASD

STANDARD LOAD TABLE FOR LONGSPAN STEEL JOISTS, LH-SERIES
Based on a 50 ksi Maximum Yield Strength - Loads Shown In Pounds Per Linear Foot (plf)

Joist Designation	Approx. Wt in Lbs. Per Linear Ft. (Joists Only)	Depth in inches	Max Load (plf)	SAFELOAD* in Lbs. Between		SPAN IN FEET														
			< 48	48-59	60-65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
40LH08	16	40	348	16680	16680	254 150	247 144	241 138	234 132	228 127	222 122	217 117	211 112	206 108	201 104	196 100	192 97	187 93	183 90	178 86
40LH09	21	40	457	21920	21920	332 196	323 188	315 180	306 173	298 166	291 160	283 153	276 147	269 141	263 136	256 131	250 126	244 122	239 118	233 113
40LH10	21	40	503	24120	24120	367 216	357 207	347 198	338 190	329 183	321 176	313 169	305 162	297 156	290 150	283 144	276 139	269 134	262 129	255 124
40LH11	22	40	549	26340	26340	399 234	388 224	378 215	368 207	358 198	349 190	340 183	332 176	323 169	315 163	308 157	300 151	293 145	286 140	279 135
40LH12	25	40	668	32060	32060	486 285	472 273	459 261	447 251	435 241	424 231	413 222	402 213	392 205	382 197	373 189	364 182	355 176	346 169	338 163
40LH13	30	40	788	37800	37800	573 334	557 320	542 307	528 295	514 283	500 271	487 260	475 250	463 241	451 231	440 223	429 214	419 207	409 199	399 192
40LH14	35	40	900	43220	43220	656 383	638 367	620 351	603 336	587 323	571 309	556 297	542 285	528 273	515 263	502 252	490 243	478 233	466 225	455 216
40LH15	36	40	1007	48340	48340	734 427	712 408	691 390	671 373	652 357	633 342	616 328	599 315	583 302	567 290	552 279	538 268	524 258	511 248	498 239
40LH16	42	40	1110	53280	53280	808 469	796 455	784 441	772 428	761 416	751 404	730 387	710 371	691 356	673 342	655 329	638 316	622 304	606 292	591 282
			< 53	**53-59**	**60-73**	**74**	**75**	**76**	**77**	**78**	**79**	**80**	**81**	**82**	**83**	**84**	**85**	**86**	**87**	**88**
44LH09	19	44	379	20100	20100	272 158	265 152	259 146	253 141	247 136	242 131	236 127	231 122	226 118	221 114	216 110	211 106	207 103	202 99	198 96
44LH10	21	44	419	22200	22200	300 174	293 168	286 162	279 155	272 150	266 144	260 139	254 134	249 130	243 125	238 121	233 117	228 113	223 110	218 106
44LH11	22	44	453	24000	24000	325 188	317 181	310 175	302 168	295 162	289 157	282 151	276 146	269 140	264 136	258 131	252 127	247 123	242 119	236 115
44LH12	25	44	561	29740	29740	402 232	393 224	383 215	374 207	365 200	356 192	347 185	339 179	331 172	323 166	315 160	308 155	300 149	293 144	287 139
44LH13	30	44	665	35260	35260	477 275	466 265	454 254	444 246	433 236	423 228	413 220	404 212	395 205	386 198	377 191	369 185	361 179	353 173	346 167
44LH14	31	44	766	40580	40580	549 315	534 302	520 291	506 279	493 268	481 259	469 249	457 240	446 231	436 223	425 215	415 207	406 200	396 193	387 187
44LH15	36	44	891	47220	47220	639 366	623 352	608 339	593 326	579 314	565 303	551 292	537 281	524 271	512 261	500 252	488 243	476 234	466 227	455 219
44LH16	42	44	1027	54440	54440	737 421	719 405	701 390	684 375	668 362	652 348	637 336	622 324	608 313	594 302	580 291	568 282	555 272	543 263	531 255
44LH17	47	44	1103	58460	58460	790 450	780 438	769 426	759 415	750 405	732 390	715 376	699 363	683 351	667 338	652 327	638 316	624 305	610 295	597 285
			< 57	**57-59**	**60-81**	**82**	**83**	**84**	**85**	**86**	**87**	**88**	**89**	**90**	**91**	**92**	**93**	**94**	**95**	**96**
48LH10	21	48	352	20080	20080	246 141	241 136	236 132	231 127	226 123	221 119	217 116	212 112	208 108	204 105	200 102	196 99	192 96	188 93	185 90
48LH11	22	48	382	21780	21780	266 152	260 147	255 142	249 137	244 133	239 129	234 125	229 120	225 117	220 113	216 110	212 106	208 103	204 100	200 97
48LH12	25	48	482	27500	27500	336 191	329 185	322 179	315 173	308 167	301 161	295 156	289 151	283 147	277 142	272 138	266 133	261 129	256 126	251 122
48LH13	29	48	578	32940	32940	402 228	393 221	384 213	376 206	368 199	360 193	353 187	345 180	338 175	332 170	325 164	318 159	312 154	306 150	300 145
48LH14	32	48	682	38860	38860	475 269	464 260	454 251	444 243	434 234	425 227	416 220	407 212	399 206	390 199	383 193	375 187	367 181	360 176	353 171
48LH15	36	48	784	44680	44680	545 308	533 298	521 287	510 278	499 269	488 260	478 252	468 244	458 236	448 228	439 221	430 214	422 208	413 201	405 195
48LH16	42	48	904	51500	51500	629 355	615 343	601 331	588 320	576 310	563 299	551 289	540 280	528 271	518 263	507 255	497 247	487 239	477 232	468 225
48LH17	47	48	1015	57840	57840	706 397	690 383	675 371	660 358	646 346	632 335	619 324	606 314	593 304	581 294	569 285	558 276	547 268	536 260	525 252

ASD

METRIC LOAD TABLE FOR LONGSPAN STEEL JOISTS, LH-SERIES
Based on 345 MPa Maximum Yield Strength - Loads Shown In Kilonewtons per Meter (kN/m)

Joist Designation	Approx. Wt in kN Per Meter (Joists only)	Depth in mm	Max Load (kN/m)	SAFE LOAD* in kN Between	SPAN IN MILLIMETERS														
			<6706	6706-7620	7925	8230	8534	8839	9144	9449	9754	10058	10363	10668	10973				
18LH02	0.15	457	8.07	54.0	6.82	6.45	6.10	5.70	5.35	5.03	4.72	4.46	4.21	3.98	3.77				
					4.56	4.14	3.77	3.41	3.09	2.81	2.55	2.33	2.14	1.97	1.80				
18LH03	0.16	457	8.95	59.9	7.60	7.19	6.81	6.39	5.96	5.57	5.23	4.91	4.62	4.36	4.13				
					5.07	4.62	4.21	3.82	3.44	3.10	2.83	2.58	2.34	2.15	1.98				
18LH04	0.18	457	10.42	69.8	8.81	8.33	7.80	7.29	6.84	6.42	6.02	5.66	5.32	5.02	4.74				
					5.88	5.35	4.80	4.31	3.88	3.53	3.19	2.91	2.65	2.43	2.23				
18LH05	0.22	457	11.76	78.9	9.98	9.45	8.96	8.47	7.92	7.41	6.94	6.53	6.14	5.79	5.47				
					6.62	6.04	5.51	5.03	4.53	4.11	3.73	3.40	3.09	2.84	2.61				
18LH06	0.22	457	13.92	93.3	11.80	10.93	10.15	9.45	8.82	8.26	7.74	7.28	6.85	6.46	6.10				
					7.67	6.84	6.11	5.50	4.96	4.48	4.08	3.70	3.38	3.09	2.84				
18LH07	0.25	457	14.45	96.8	12.25	11.80	11.38	10.59	9.89	9.26	8.68	8.15	7.67	7.23	6.84				
					8.07	7.48	6.94	6.24	5.63	5.09	4.62	4.20	3.85	3.51	3.23				
18LH08	0.28	457	15.06	100.9	12.78	12.30	11.85	11.44	11.06	10.46	9.92	9.35	8.81	8.33	7.88				
					8.42	7.79	7.23	6.74	6.23	5.64	5.12	4.67	4.26	3.89	3.59				
18LH09	0.31	457	16.13	108.1	13.65	13.14	12.66	12.22	11.82	11.42	11.07	10.40	9.79	9.23	8.72				
					8.98	8.33	7.69	7.16	6.68	6.10	5.54	5.04	4.61	4.21	3.88				
			<7010	7010-7620	7925	8230	8534	8839	9144	9449	9754	10058	10363	10668	10973	11278	11582	11887	12192
20LH02	0.15	508	7.27	50.9	6.45	6.37	6.28	5.98	5.66	5.32	5.02	4.74	4.48	4.24	4.01	3.82	3.63	3.45	3.28
					4.46	4.42	4.34	3.99	3.64	3.32	3.03	2.77	2.53	2.33	2.14	1.98	1.83	1.70	1.57
20LH03	0.16	508	7.72	54.0	6.84	6.75	6.68	6.59	6.33	6.04	5.76	5.42	5.13	4.85	4.61	4.36	4.13	3.92	3.72
					4.91	4.85	4.62	4.40	4.08	3.76	3.47	3.18	2.91	2.68	2.46	2.27	2.08	1.94	1.79
20LH04	0.18	508	9.46	66.2	8.37	8.26	8.14	7.70	7.23	6.81	6.42	6.07	5.73	5.42	5.15	4.88	4.64	4.42	4.21
					6.24	5.92	5.63	5.13	4.67	4.24	3.86	3.54	3.25	2.99	2.75	2.53	2.34	2.17	2.02
20LH05	0.20	508	10.17	71.2	8.98	8.88	8.78	8.68	8.33	7.93	7.48	7.06	6.68	6.33	5.99	5.69	5.41	5.15	4.90
					6.69	6.37	6.07	5.76	5.34	4.91	4.49	4.10	3.76	3.47	3.19	2.94	2.72	2.52	2.34
20LH06	0.22	508	13.57	95.1	11.99	11.54	11.13	10.55	9.90	9.26	8.69	8.17	7.69	7.25	6.84	6.47	6.14	5.82	5.53
					8.84	8.18	7.60	6.96	6.23	5.63	5.12	4.67	4.26	3.89	3.59	3.29	3.05	2.80	2.59
20LH07	0.25	508	14.46	101.4	12.81	12.33	11.87	11.47	11.09	10.37	9.73	9.15	8.61	8.11	7.67	7.25	6.87	6.52	6.20
					9.44	8.74	8.11	7.55	7.06	6.39	5.80	5.28	4.83	4.42	4.05	3.73	3.44	3.18	2.94
20LH08	0.28	508	14.93	104.6	13.25	12.74	12.28	11.86	11.45	11.09	10.53	10.02	9.54	9.06	8.58	8.14	7.73	7.34	6.99
					9.76	9.03	8.39	7.82	7.29	6.82	6.24	5.76	5.32	4.90	4.50	4.15	3.82	3.53	3.28
20LH09	0.31	508	16.33	114.4	14.44	13.90	13.39	12.93	12.49	12.08	11.70	11.35	11.01	10.39	9.82	9.28	8.80	8.34	7.93
					10.63	9.85	9.13	8.47	7.90	7.39	6.93	6.37	5.82	5.34	4.90	4.50	4.15	3.85	3.56
20LH10	0.34	508	17.61	123.4	15.58	15.00	14.46	13.95	13.48	13.04	12.62	12.24	11.87	11.54	10.91	10.31	9.77	9.28	8.81
					11.47	10.56	9.82	9.13	8.53	7.95	7.44	6.99	6.53	5.99	5.50	5.04	4.67	4.31	3.99

ASD

METRIC LOAD TABLE FOR LONGSPAN STEEL JOISTS, LH-SERIES
Based on 345 MPa Maximum Yield Strength - Loads Shown In Kilonewtons per Meter (kN/m)

Joist Designation	Approx. Wt in kN Per Meter (Joists only)	Depth in mm	Max Load (kN/m)	SAFELOAD* in kN Between	SPAN IN MILLIMETERS													
			<8839	8839-10058	10363	10668	10973	11278	11582	11887	12192	12497	12802	13106	13411	13716	14021	14326	14630
24LH03	0.16	610	5.85	51.6	4.99	4.94	4.90	4.71	4.48	4.27	4.07	3.89	3.72	3.56	3.41	3.26	3.13	3.02	2.90
					3.42	3.29	3.18	2.97	2.74	2.55	2.36	2.21	2.05	1.92	1.80	1.69	1.59	1.48	1.40
24LH04	0.18	610	7.17	63.3	6.11	5.80	5.53	5.25	5.00	4.77	4.55	4.34	4.15	3.98	3.82	3.66	3.51	3.37	3.23
					4.20	3.86	3.59	3.31	3.06	2.84	2.65	2.46	2.30	2.15	2.01	1.89	1.78	1.66	1.56
24LH05	0.19	610	7.68	67.8	6.55	6.50	6.42	6.11	5.82	5.54	5.29	5.06	4.83	4.62	4.43	4.24	4.08	3.92	3.76
					4.49	4.33	4.15	3.85	3.56	3.29	3.06	2.86	2.65	2.49	2.33	2.18	2.05	1.92	1.80
24LH06	0.23	610	10.33	91.2	8.81	8.44	8.09	7.73	7.35	7.00	6.66	6.37	6.08	5.82	5.56	5.31	5.07	4.87	4.67
					5.99	5.57	5.19	4.83	4.46	4.14	3.83	3.57	3.32	3.07	2.87	2.68	2.51	2.34	2.21
24LH07	0.25	610	11.34	100.2	9.70	9.31	8.94	8.58	8.24	7.89	7.53	7.16	6.82	6.50	6.21	5.93	5.67	5.44	5.21
					6.59	6.14	5.73	5.35	5.00	4.67	4.33	4.02	3.75	3.48	3.25	3.03	2.84	2.65	2.49
24LH08	0.26	610	12.10	106.9	10.31	9.88	9.47	9.07	8.71	8.34	7.95	7.58	7.25	6.93	6.64	6.34	6.08	5.83	5.60
					7.00	6.52	6.07	5.66	5.28	4.93	4.58	4.26	3.96	3.70	3.47	3.23	3.03	2.86	2.68
24LH09	0.31	610	14.24	125.8	12.14	11.79	11.45	11.14	10.66	10.15	9.67	9.22	8.78	8.37	7.99	7.64	7.31	7.00	6.71
					8.20	7.73	7.31	6.71	6.18	5.73	5.29	4.91	4.56	4.26	3.96	3.70	3.47	3.25	3.05
24LH10	0.34	610	15.05	133.0	12.87	12.49	12.14	11.80	11.49	11.20	10.75	10.24	9.74	9.29	8.87	8.49	8.11	7.77	7.45
					8.69	8.15	7.70	7.29	6.91	6.40	5.92	5.51	5.12	4.75	4.43	4.15	3.88	3.63	3.41
24LH11	0.36	610	15.86	140.2	13.52	13.13	12.76	12.41	12.09	11.77	11.48	11.20	10.71	10.23	9.79	9.36	8.98	8.61	8.27
					9.10	8.58	8.09	7.66	7.26	6.88	6.55	6.10	5.66	5.26	4.91	4.59	4.29	4.02	3.77
			<10363	10363-12497	12802	13106	13411	13716	14021	14326	14630	14935	15240	15545	15850	16154	16459	16764	17069
28LH05	0.19	711	6.06	62.8	4.91	4.71	4.52	4.33	4.17	4.01	3.86	3.72	3.57	3.45	3.32	3.21	3.10	3.00	2.90
					3.19	2.99	2.80	2.62	2.46	2.32	2.18	2.07	1.94	1.83	1.73	1.64	1.56	1.48	1.41
28LH06	0.23	711	8.06	83.4	6.53	6.26	6.01	5.76	5.53	5.31	5.10	4.91	4.72	4.56	4.39	4.24	4.10	3.95	3.82
					4.21	3.94	3.69	3.47	3.25	3.05	2.87	2.71	2.55	2.42	2.27	2.15	2.04	1.94	1.83
28LH07	0.25	711	9.09	94.2	7.36	7.06	6.77	6.49	6.23	5.98	5.74	5.53	5.32	5.13	4.94	4.77	4.61	4.45	4.30
					4.75	4.45	4.15	3.89	3.66	3.44	3.23	3.05	2.87	2.71	2.56	2.42	2.30	2.18	2.07
28LH08	0.26	711	9.73	100.8	7.88	7.54	7.23	6.93	6.65	6.39	6.12	5.88	5.64	5.41	5.21	5.02	4.83	4.65	4.49
					5.07	4.74	4.45	4.15	3.91	3.67	3.44	3.23	3.05	2.86	2.69	2.55	2.40	2.27	2.15
28LH09	0.31	711	11.98	124.1	9.73	9.32	8.93	8.55	8.21	7.88	7.57	7.28	7.01	6.75	6.50	6.27	6.05	5.85	5.64
					6.24	5.83	5.47	5.12	4.80	4.50	4.24	3.99	3.76	3.54	3.32	3.15	2.97	2.81	2.67
28LH10	0.34	711	13.11	135.8	10.63	10.27	9.90	9.50	9.12	8.75	8.40	8.08	7.77	7.48	7.22	6.96	6.71	6.47	6.26
					6.80	6.40	6.04	5.66	5.31	4.99	4.69	4.42	4.15	3.92	3.72	3.51	3.32	3.13	2.97
28LH11	0.36	711	14.07	145.7	11.38	11.12	10.74	10.37	9.95	9.55	9.17	8.82	8.49	8.18	7.88	7.60	7.32	7.07	6.82
					7.26	6.93	6.53	6.17	5.79	5.44	5.12	4.83	4.55	4.29	4.05	3.83	3.63	3.44	3.25
28LH12	0.39	711	15.44	160.0	12.50	12.21	11.93	11.67	11.41	11.17	10.75	10.34	9.95	9.57	9.22	8.88	8.56	8.26	7.96
					7.95	7.58	7.23	6.94	6.62	6.34	5.95	5.58	5.26	4.96	4.68	4.42	4.15	3.94	3.73
28LH13	0.44	711	16.10	166.8	13.06	12.75	12.46	12.18	11.90	11.66	11.41	11.17	10.96	10.53	10.12	9.74	9.38	9.04	8.72
					8.30	7.92	7.55	7.22	6.88	6.59	6.31	6.05	5.77	5.44	5.13	4.84	4.58	4.33	4.10
			<11887	11887-14021 14326-14935	15240	15545	15850	16154	16459	16764	17069	17374	17678	17983	18288	18593	18898	19202	19507
32LH06	0.20	813	6.29	74.8	4.93	4.75	4.59	4.43	4.29	4.14	4.01	3.88	3.75	3.63	3.53	3.41	3.31	3.21	3.12
					3.07	2.90	2.75	2.61	2.46	2.34	2.23	2.11	2.01	1.91	1.82	1.73	1.66	1.57	1.51
32LH07	0.23	813	7.08	84.1	5.53	5.34	5.15	4.97	4.80	4.64	4.49	4.34	4.20	4.07	3.95	3.82	3.70	3.60	3.50
					3.42	3.25	3.07	2.91	2.75	2.61	2.48	2.36	2.24	2.13	2.04	1.94	1.85	1.76	1.69
32LH08	0.25	813	7.69	91.3	5.99	5.79	5.58	5.38	5.21	5.03	4.85	4.69	4.55	4.40	4.27	4.14	4.01	3.89	3.77
					3.72	3.53	3.34	3.15	2.99	2.83	2.68	2.55	2.43	2.32	2.20	2.10	1.99	1.91	1.82
32LH09	0.31	813	9.65	114.6	7.53	7.26	7.00	6.75	6.52	6.30	6.10	5.89	5.70	5.53	5.35	5.19	5.03	4.88	4.74
					4.65	4.40	4.15	3.94	3.73	3.54	3.35	3.19	3.03	2.88	2.75	2.62	2.51	2.39	2.29
32LH10	0.31	813	10.67	126.7	8.33	8.02	7.74	7.47	7.22	6.97	6.74	6.49	6.27	6.07	5.86	5.67	5.48	5.31	5.15
					5.13	4.84	4.59	4.33	4.11	3.89	3.70	3.50	3.32	3.16	3.00	2.86	2.71	2.59	2.46
32LH11	0.35	813	11.69	138.8	9.12	8.78	8.46	8.17	7.89	7.61	7.36	7.12	6.90	6.68	6.46	6.26	6.07	5.88	5.69
					5.61	5.29	5.00	4.74	4.49	4.26	4.04	3.83	3.66	3.48	3.31	3.15	3.00	2.86	2.72
32LH12	0.39	813	13.70	162.9	10.71	10.39	10.04	9.69	9.35	9.03	8.72	8.43	8.15	7.89	7.64	7.41	7.18	6.96	6.75
					6.56	6.24	5.92	5.60	5.31	5.03	4.77	4.53	4.30	4.10	3.89	3.72	3.54	3.38	3.22
32LH13	0.44	813	15.29	181.8	11.92	11.68	11.45	11.25	10.82	10.43	10.06	9.71	9.38	9.06	8.75	8.47	8.20	7.93	7.69
					7.29	7.00	6.72	6.47	6.12	5.79	5.48	5.16	4.90	4.65	4.43	4.20	4.01	3.82	3.63
32LH14	0.48	813	15.75	187.1	12.30	12.05	11.82	11.60	11.38	11.17	10.77	10.40	10.04	9.70	9.38	9.07	8.78	8.50	8.23
					7.51	7.22	6.94	6.68	6.42	6.08	5.76	5.45	5.18	4.91	4.68	4.43	4.23	4.02	3.85
32LH15	0.51	813	16.27	193.4	12.69	12.44	12.21	11.98	11.74	11.54	11.32	11.13	10.94	10.58	10.23	9.89	9.57	9.26	8.98
					7.76	7.45	7.18	6.90	6.62	6.39	6.15	5.93	5.73	5.45	5.18	4.93	4.69	4.46	4.26
			<13106	13106-14021 14326-17374 17374	17678	17983	18288	18593	18898	19202	19507	19812	20117	20422	20726	21031	21336	21641	21946
36LH07	0.23	914	5.74	75.1	4.26	4.13	3.99	3.88	3.76	3.66	3.56	3.45	3.35	3.26	3.18	3.09	3.02	2.93	2.86
					2.58	2.45	2.33	2.23	2.13	2.04	1.95	1.86	1.78	1.70	1.63	1.56	1.50	1.44	1.38
36LH08	0.26	914	6.32	82.7	4.68	4.53	4.4	4.27	4.14	4.02	3.91	3.79	3.69	3.59	3.48	3.40	3.31	3.22	3.13
					2.83	2.69	2.56	2.45	2.33	2.23	2.13	2.04	1.95	1.86	1.79	1.72	1.64	1.59	1.51
36LH09	0.31	914	8.09	106.0	5.99	5.80	5.63	5.45	5.29	5.13	4.99	4.85	4.71	4.58	4.46	4.33	4.21	4.11	4.01
					3.60	3.42	3.26	3.12	2.97	2.84	2.71	2.61	2.49	2.37	2.29	2.18	2.10	2.01	1.94
36LH10	0.31	914	8.92	116.8	6.62	6.42	6.21	6.02	5.85	5.67	5.51	5.35	5.21	5.06	4.93	4.78	4.67	4.53	4.42
					3.98	3.79	3.61	3.44	3.28	3.13	3.00	2.87	2.74	2.62	2.52	2.40	2.32	2.21	2.13
36LH11	0.34	914	9.73	127.4	7.22	7.00	6.78	6.58	6.39	6.20	6.01	5.85	5.67	5.51	5.37	5.22	5.07	4.94	4.81
					4.33	4.13	3.92	3.75	3.59	3.41	3.26	3.12	2.99	2.86	2.74	2.62	2.52	2.42	2.32
36LH12	0.36	914	11.65	152.5	8.65	8.39	8.12	7.88	7.63	7.41	7.19	6.97	6.77	6.56	6.37	6.18	6.01	5.83	5.67
					5.16	4.93	4.69	4.48	4.26	4.07	3.89	3.72	3.54	3.38	3.23	3.10	2.97	2.84	2.72
36LH13	0.44	914	13.69	179.4	10.17	9.85	9.54	9.25	8.97	8.69	8.44	8.20	7.96	7.74	7.53	7.32	7.12	6.93	6.75
					6.05	5.76	5.48	5.23	4.99	4.77	4.55	4.34	4.15	3.98	3.82	3.66	3.50	3.37	3.23
36LH14	0.53	914	15.09	197.7	11.20	11.01	10.63	10.30	9.96	9.64	9.35	9.06	8.78	8.52	8.27	8.04	7.80	7.58	7.36
					6.65	6.33	6.01	5.72	5.44	5.19	4.94	4.71	4.50	4.30	4.13	3.94	3.77	3.60	3.45
36LH15	0.53	914	15.91	208.5	11.80	11.60	11.39	11.22	10.85	10.52	10.18	9.88	9.57	9.29	9.01	8.75	8.50	8.27	8.04
					7.00	6.77	6.53	6.33	6.02	5.74	5.47	5.22	4.99	4.77	4.55	4.36	4.17	3.99	3.83

ASD

METRIC LOAD TABLE FOR LONGSPAN STEEL JOISTS, LH-SERIES
Based on 345 MPa Maximum Yield Strength - Loads Shown In Kilonewtons per Meter (kN/m)

Joist Designation	Approx. Wt in kN Per Meter (Joists Only)	Depth in mm	Max Load (kN/m)	SAFELOAD* in kN Between		SPAN IN MILLIMETERS													
			<14630	14630-17983	18288-19812	20117	20422	20726	21031	21336	21641	21946	22250	22555	22860	23165	23470	23774	24079	24384
40LH08	0.23	1016	5.08	74.1	74.1	3.70	3.60	3.51	3.41	3.32	3.23	3.16	3.07	3.00	2.93	2.86	2.80	2.72	2.67	2.59
						2.18	2.10	2.01	1.92	1.85	1.78	1.70	1.63	1.57	1.51	1.45	1.41	1.35	1.31	1.25
40LH09	0.31	1016	6.67	97.5	97.5	4.84	4.71	4.59	4.46	4.34	4.24	4.13	4.02	3.92	3.83	3.73	3.64	3.56	3.48	3.40
						2.86	2.74	2.62	2.52	2.42	2.33	2.23	2.14	2.05	1.98	1.91	1.83	1.78	1.72	1.64
40LH10	0.31	1016	7.34	107.2	107.2	5.35	5.21	5.06	4.93	4.80	4.68	4.56	4.45	4.33	4.23	4.13	4.02	3.92	3.82	3.72
						3.15	3.02	2.88	2.77	2.67	2.56	2.46	2.36	2.27	2.18	2.10	2.02	1.95	1.88	1.80
40LH11	0.32	1016	8.01	117.1	117.1	5.82	5.66	5.51	5.37	5.22	5.09	4.96	4.84	4.71	4.59	4.49	4.37	4.27	4.17	4.07
						3.41	3.26	3.13	3.02	2.88	2.77	2.67	2.56	2.46	2.37	2.29	2.20	2.11	2.04	1.97
40LH12	0.36	1016	9.75	142.6	142.6	7.09	6.88	6.69	6.52	6.34	6.18	6.02	5.86	5.72	5.57	5.44	5.31	5.18	5.04	4.93
						4.15	3.98	3.80	3.66	3.51	3.37	3.23	3.10	2.99	2.87	2.75	2.65	2.56	2.46	2.37
40LH13	0.44	1016	11.50	168.1	168.1	8.36	8.12	7.90	7.70	7.50	7.29	7.10	6.93	6.75	6.58	6.42	6.26	6.11	5.96	5.82
						4.87	4.67	4.48	4.30	4.13	3.95	3.79	3.64	3.51	3.37	3.25	3.12	3.02	2.90	2.80
40LH14	0.51	1016	13.13	192.2	192.2	9.57	9.31	9.04	8.80	8.56	8.33	8.11	7.90	7.70	7.51	7.32	7.15	6.97	6.80	6.64
						5.58	5.35	5.12	4.90	4.71	4.50	4.33	4.15	3.98	3.83	3.67	3.54	3.40	3.28	3.15
40LH15	0.53	1016	14.70	215.0	215.0	10.71	10.39	10.08	9.79	9.51	9.23	8.98	8.74	8.50	8.27	8.05	7.85	7.64	7.45	7.26
						6.23	5.95	5.69	5.44	5.21	4.99	4.78	4.59	4.40	4.23	4.07	3.91	3.76	3.61	3.48
40LH16	0.61	1016	16.20	237.0	237.0	11.79	11.61	11.44	11.26	11.10	10.96	10.65	10.36	10.08	9.82	9.55	9.31	9.07	8.84	8.62
						6.84	6.64	6.43	6.24	6.07	5.89	5.64	5.41	5.19	4.99	4.80	4.61	4.43	4.26	4.11
			<16154	16154-17983	18288-22250	22555	22860	23165	23470	23774	24079	24384	24689	24994	25298	25603	25908	26213	26518	26822
44LH09	0.28	1118	5.53	89.4	89.4	3.96	3.86	3.77	3.69	3.60	3.53	3.44	3.37	3.29	3.22	3.15	3.07	3.02	2.94	2.88
						2.30	2.21	2.13	2.05	1.98	1.91	1.85	1.78	1.72	1.66	1.60	1.54	1.50	1.44	1.40
44LH10	0.31	1118	6.11	98.7	98.7	4.37	4.27	4.17	4.07	3.96	3.88	3.79	3.70	3.63	3.54	3.47	3.40	3.32	3.25	3.18
						2.53	2.45	2.36	2.26	2.18	2.10	2.02	1.95	1.89	1.82	1.76	1.70	1.64	1.60	1.54
44LH11	0.32	1118	6.61	106.7	106.7	4.74	4.62	4.52	4.40	4.30	4.21	4.11	4.02	3.92	3.85	3.76	3.67	3.60	3.53	3.44
						2.74	2.64	2.55	2.45	2.36	2.29	2.20	2.13	2.04	1.98	1.91	1.85	1.79	1.73	1.67
44LH12	0.36	1118	8.19	132.2	132.2	5.86	5.73	5.58	5.45	5.32	5.19	5.06	4.94	4.83	4.71	4.59	4.49	4.37	4.27	4.18
						3.38	3.26	3.13	3.02	2.91	2.80	2.69	2.61	2.51	2.42	2.33	2.26	2.17	2.10	2.02
44LH13	0.44	1118	9.70	156.8	156.8	6.96	6.80	6.62	6.47	6.31	6.17	6.02	5.89	5.76	5.63	5.50	5.38	5.26	5.15	5.04
						4.01	3.86	3.70	3.59	3.44	3.32	3.21	3.09	2.99	2.88	2.78	2.69	2.61	2.52	2.43
44LH14	0.45	1118	11.18	180.5	180.5	8.01	7.79	7.58	7.38	7.19	7.01	6.84	6.66	6.50	6.36	6.20	6.05	5.92	5.77	5.64
						4.59	4.40	4.24	4.07	3.91	3.77	3.63	3.50	3.37	3.25	3.13	3.02	2.91	2.81	2.72
44LH15	0.53	1118	13.00	210.0	210.0	9.32	9.09	8.87	8.65	8.44	8.24	8.04	7.83	7.64	7.47	7.29	7.12	6.94	6.80	6.64
						5.34	5.13	4.94	4.75	4.58	4.42	4.26	4.10	3.95	3.80	3.67	3.54	3.41	3.31	3.19
44LH16	0.61	1118	14.99	242.1	242.1	10.75	10.49	10.23	9.98	9.74	9.51	9.29	9.07	8.87	8.66	8.46	8.28	8.09	7.92	7.74
						6.14	5.91	5.69	5.47	5.28	5.07	4.90	4.72	4.56	4.40	4.24	4.11	3.96	3.83	3.72
44LH17	0.69	1118	16.10	260.0	260.0	11.52	11.38	11.22	11.07	10.94	10.68	10.43	10.20	9.96	9.73	9.51	9.31	9.10	8.90	8.71
						6.56	6.39	6.21	6.05	5.91	5.69	5.48	5.29	5.12	4.93	4.77	4.61	4.45	4.30	4.15
			<17374	17374-17983	18288-24689	24994	25298	25603	25908	26213	26518	26822	27127	27432	27737	28042	28346	28651	28956	29261
48LH10	0.31	1219	5.14	89.3	89.3	3.59	3.51	3.44	3.37	3.29	3.22	3.16	3.09	3.03	2.97	2.91	2.86	2.80	2.74	2.69
						2.05	1.98	1.92	1.85	1.79	1.73	1.69	1.63	1.57	1.53	1.48	1.44	1.40	1.35	1.31
48LH11	0.32	1219	5.57	96.8	96.8	3.88	3.79	3.72	3.63	3.56	3.48	3.41	3.34	3.28	3.21	3.15	3.09	3.03	2.97	2.91
						2.21	2.14	2.07	1.99	1.94	1.88	1.82	1.75	1.70	1.64	1.60	1.54	1.50	1.45	1.41
48LH12	0.36	1219	7.03	122.3	122.3	4.90	4.80	4.69	4.59	4.49	4.39	4.30	4.21	4.13	4.04	3.96	3.88	3.80	3.73	3.66
						2.78	2.69	2.61	2.52	2.43	2.34	2.27	2.20	2.14	2.07	2.01	1.94	1.88	1.83	1.78
48LH13	0.42	1219	8.44	146.5	146.5	5.86	5.73	5.60	5.48	5.37	5.25	5.15	5.03	4.93	4.84	4.74	4.64	4.55	4.46	4.37
						3.32	3.22	3.10	3.00	2.90	2.81	2.72	2.62	2.55	2.48	2.39	2.32	2.24	2.18	2.11
48LH14	0.47	1219	9.95	172.8	172.8	6.93	6.77	6.62	6.47	6.33	6.20	6.07	5.93	5.82	5.69	5.58	5.47	5.35	5.25	5.15
						3.92	3.79	3.66	3.54	3.41	3.31	3.21	3.09	3.00	2.90	2.81	2.72	2.64	2.56	2.49
48LH15	0.53	1219	11.44	198.7	198.7	7.95	7.77	7.60	7.44	7.28	7.12	6.97	6.82	6.68	6.53	6.40	6.27	6.15	6.02	5.91
						4.49	4.34	4.18	4.05	3.92	3.79	3.67	3.56	3.44	3.32	3.22	3.12	3.03	2.93	2.84
48LH16	0.61	1219	13.19	229.0	229.0	9.17	8.97	8.77	8.58	8.40	8.21	8.04	7.88	7.70	7.55	7.39	7.25	7.10	6.96	6.82
						5.18	5.00	4.83	4.67	4.52	4.36	4.21	4.08	3.95	3.83	3.72	3.60	3.48	3.38	3.28
48LH17	0.69	1219	14.81	257.2	257.2	10.30	10.06	9.85	9.63	9.42	9.22	9.03	8.84	8.65	8.47	8.30	8.14	7.98	7.82	7.66
						5.79	5.58	5.41	5.22	5.04	4.88	4.72	4.58	4.43	4.29	4.15	4.02	3.91	3.79	3.67

American National Standard SJI 100 - 2015

STANDARD LRFD LOAD TABLE

DEEP LONGSPAN STEEL JOISTS, DLH-SERIES

Based on a 50 ksi (345 MPa) Maximum Yield Strength
Spans up to and including 144 ft. adopted by the Steel Joist Institute May 1, 2000
Spans greater than 144 ft. up to and including 240 ft. adopted by the Steel Joist Institute May 18, 2010
Revised to May 18, 2010 – Effective December, 31, 2010

The **BLACK** figures in the Load Table give the TOTAL safe factored uniformly distributed load-carrying capacities, in pounds per linear foot (kiloNewtons per meter), of **LRFD** DLH-Series Steel Joists.

The approximate joist weights, in pounds per linear foot (kiloNewtons per meter), given in the Load Table may be added to the other building weights to determine the unfactored DEAD load. In all cases the factored DEAD load, including the joist self-weight, must be deducted from the TOTAL load to determine the factored LIVE load. The approximate joist weights do not include accessories.

The **RED** figures in the Load Table represent the unfactored, uniform load, in pounds per linear foot (kiloNewtons per meter), which will produce an approximate joist deflection of 1/360 of the span. This load can be linearly prorated to obtain the unfactored, uniform load for supplementary deflection criteria (i.e. the unfactored uniform load which will produce a joist deflection of 1/240 of the span may be obtained by multiplying the **RED** figures by 360/240). In no case shall the prorated, unfactored load exceed the unfactored TOTAL load-carrying capacity of the joist as given in the Standard **ASD** Load Table for Deep Longspan Steel Joists, DLH-Series.

The Load Table applies to joists with either parallel chords or pitched top chords. Joists can have a top chord pitch up to 1/2 inch per foot (42 mm per meter). If the pitch exceeds this limit, the Load Table does not apply. When top chords are pitched, the load-carrying capacities are determined by the nominal depth of the joists at the center of the span. Sloped parallel-chord joists shall use span as defined by the length along the slope.

Where the joist span is in the **BLUE SHADED** area of the Load Table, all rows of bridging shall be diagonal bridging with bolted connections at chords and intersections. Hoisting cables shall not be released until the two rows of bridging nearest the third points are completely installed. The **BLUE SHADED** area starts after 60'–0" (18288 mm) and extends up through 100'–0" (30175 mm)

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Where the joist span is in the **GRAY SHADED** area of the Load Table, all rows of bridging shall be diagonal bridging with bolted connections at chords and intersections. Hoisting cables shall not be released until all rows of bridging are completely installed. The **GRAY SHADED** area starts after 100'–0" (30175 mm) and extends up through 240'–0" (73152 mm).

The approximate gross moment of inertia (not adjusted for shear deformation) of a standard joist listed in the Load Table may be determined as follows:

$I_j = 26.767(W)(L^3)(10^{-6})$ in^4 or $2.6953(W)(L^3)(10^{-5})$ mm^4, where W= **RED** figure in the Load Table, and
L = (span – 0.33) in feet or (span – 102) in millimeters

Loads for span increments not explicitly given in the Load Table may be determined using linear interpolation between the load values given in adjacent span columns.

*The safe factored uniform load for the spans shown in the SAFE LOAD Column is equal to (SAFE LOAD) / (span). The TOTAL safe factored uniformly distributed load-carrying capacity, for spans less than those shown in the SAFE LOAD Column are given in the MAX LOAD Column.

To solve for an unfactored **RED** figure for spans shown in the SAFE LOAD Column (or lesser spans), multiply the unfactored **RED** figure of the shortest span shown in the Load Table by (the shortest span shown in the Load Table - 0.33 feet [101 mm])^2 and divide by (the actual span - 0.33 feet [101 mm])^2. In no case shall the calculated unfactored load exceed the unfactored TOTAL load-carrying capacity of the joist as determined from the Standard **ASD** Load Table for Deep Longspan Steel Joists, DLH-Series.

LRFD

STANDARD LOAD TABLE LONGSPAN STEEL JOISTS, DLH-SERIES

Based on a 50 ksi Maximum Yield Strength - Loads Shown in Pounds per Linear Foot (plf)

Joist Designation	Approx. Wt in Lbs. Per Linear Ft (Joists only)	Depth in inches	Max Load plf	SAFE LOAD* in Lbs. Between		SPAN IN FEET														
			< 62	62-89		90	91	92	93	94	95	96	97	98	99	100	101	102	103	104
52DLH10	25	52	648	40200		447 171	436 165	427 159	418 154	409 150	400 145	391 140	384 136	376 132	369 128	361 124	354 120	346 116	340 114	334 110
52DLH11	26	52	712	44130		490 187	480 181	469 174	459 169	448 164	439 158	430 153	421 149	412 144	405 140	396 135	388 132	381 128	373 124	366 120
52DLH12	29	52	794	49230		547 204	535 197	523 191	513 185	501 179	490 173	480 168	471 163	460 158	451 153	442 149	433 144	426 140	417 135	409 132
52DLH13	34	52	964	59760		664 247	649 239	636 231	621 224	609 216	595 209	583 203	571 197	559 191	549 185	537 180	526 174	516 170	507 164	496 159
52DLH14	39	52	1103	68370		760 276	745 266	729 258	714 249	699 242	685 234	670 227	657 220	645 213	631 207	619 201	607 194	595 189	585 184	573 178
52DLH15	42	52	1239	76800		853 311	835 301	817 291	799 282	783 272	766 264	750 256	735 247	720 240	705 233	691 226	676 219	664 213	651 207	639 201
52DLH16	45	52	1335	82800		921 346	901 335	882 324	862 314	844 304	826 294	810 285	792 276	777 267	760 260	745 252	730 245	717 237	702 230	688 224
52DLH17	52	52	1537	95310		1059 395	1036 381	1014 369	991 357	970 346	951 335	930 324	912 315	892 304	874 296	858 286	840 279	823 270	808 263	792 255
			<67	67-97		98	99	100	101	102	103	104	105	106	107	108	109	110	111	112
56DLH11	26	56	631	42300		432 169	424 163	415 158	408 153	400 149	393 145	385 140	379 136	372 133	366 129	358 125	352 122	346 118	340 115	334 113
56DLH12	30	56	725	48600		496 184	486 178	477 173	468 168	459 163	450 158	442 153	433 150	426 145	417 141	409 137	402 133	394 130	388 126	381 123
56DLH13	34	56	879	58860		601 223	591 216	579 209	568 204	558 197	547 191	537 186	526 181	516 175	507 171	496 166	487 161	478 157	471 152	462 149
56DLH14	39	56	993	66540		679 249	666 242	652 234	640 228	628 221	616 214	604 209	594 202	582 196	571 190	562 186	552 181	541 175	532 171	523 167
56DLH15	42	56	1135	76020		777 281	762 272	747 264	732 256	717 248	703 242	690 234	676 228	664 221	651 215	639 209	628 204	616 198	604 192	594 188
56DLH16	46	56	1224	82020		838 313	822 304	805 294	789 285	774 277	759 269	744 262	730 254	717 247	703 240	690 233	678 227	666 221	654 214	642 209
56DLH17	51	56	1411	94530		964 356	945 345	927 335	907 325	891 316	873 306	856 298	840 289	823 281	808 273	793 266	780 258	765 251	751 245	738 238
			< 71	71-99	100-105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
60DLH12	29	60	659	46800	46800	442 168	433 163	426 158	418 154	411 150	405 146	397 142	391 138	384 134	378 131	372 128	366 124	360 121	354 118	348 115
60DLH13	35	60	801	56880	56880	537 203	526 197	517 191	508 187	499 181	490 176	483 171	474 167	466 163	459 158	451 154	444 151	436 147	429 143	423 139
60DLH14	40	60	890	63210	63210	597 216	586 210	574 205	564 199	555 193	544 189	534 183	525 178	516 173	507 170	498 165	490 161	481 156	474 152	465 149
60DLH15	43	60	1045	74190	74190	700 255	687 248	675 242	663 235	651 228	640 223	628 216	618 210	607 205	597 200	588 194	577 190	568 185	559 180	550 175
60DLH16	46	60	1149	81570	81570	769 285	756 277	741 269	727 262	714 255	702 247	690 241	676 235	666 228	654 223	642 217	631 211	621 206	610 201	600 196
60DLH17	52	60	1320	93750	93750	885 324	868 315	853 306	837 298	822 290	807 283	793 275	778 267	765 261	751 254	739 247	726 241	714 235	702 228	690 223
60DLH18	59	60	1524	108180	108180	1021 366	1002 357	984 346	966 337	948 327	931 319	915 310	898 303	883 294	867 286	852 279	838 272	823 266	810 259	796 252
			<76	76-99	100-113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128
64DLH12	31	64	594	45120	45120	396 153	388 150	382 146	376 142	370 138	364 135	358 132	352 129	346 125	342 122	336 119	331 116	327 114	321 111	316 109
64DLH13	34	64	720	54750	54750	481 186	472 181	465 176	457 171	450 168	442 163	436 159	429 155	421 152	415 148	409 144	403 141	396 137	390 134	385 131
64DLH14	40	64	825	62730	62730	550 199	540 193	531 189	523 184	514 179	505 174	498 171	489 166	481 162	474 158	466 154	459 151	451 147	444 143	438 140
64DLH15	43	64	946	71910	71910	631 234	621 228	610 223	600 217	591 211	580 206	571 201	562 196	553 191	544 187	537 182	528 177	520 173	511 170	504 165
64DLH16	46	64	1065	80940	80940	711 262	699 254	687 248	675 242	664 235	652 229	642 224	631 218	621 213	610 208	601 203	591 198	582 193	573 189	564 184
64DLH17	52	64	1227	93270	93270	819 298	804 290	790 283	777 275	763 268	751 262	738 255	726 248	714 243	702 237	691 231	681 226	669 220	658 215	648 210
64DLH18	59	64	1417	107700	107700	945 337	928 328	912 320	897 311	880 304	867 296	852 288	838 282	823 274	810 267	798 261	784 255	772 249	760 243	748 237
			< 81	81-99	100-121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136
68DLH13	37	68	650	52650	52650	432 171	426 168	418 164	412 159	406 155	400 152	394 149	388 145	382 142	378 138	372 135	366 133	361 130	355 127	351 124
68DLH14	40	68	749	60630	60630	498 184	490 179	483 175	475 171	468 167	462 163	454 159	448 155	441 152	435 148	429 145	421 141	415 138	409 135	403 133
68DLH15	44	68	839	67980	67980	558 206	547 201	540 196	531 191	522 187	514 182	505 178	498 174	490 170	483 166	475 162	468 158	462 155	454 152	448 148
68DLH16	49	68	995	80610	80610	661 242	649 236	640 230	630 225	619 219	610 214	600 209	591 204	582 199	573 195	564 190	556 186	547 182	540 178	531 174
68DLH17	55	68	1121	90840	90840	745 275	733 268	721 262	711 256	700 249	690 244	679 238	669 232	658 228	649 222	640 217	630 212	621 208	612 203	604 198
68DLH18	61	68	1298	105150	105150	862 311	849 304	835 297	823 289	810 283	798 276	786 269	774 263	762 257	751 251	739 246	729 240	718 234	708 230	697 225
68DLH19	67	68	1495	121080	121080	993 353	976 344	961 336	946 328	931 320	916 313	901 305	888 298	874 291	861 285	847 278	835 272	822 266	810 260	798 254
			< 85	85-99	100-129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144
72DLH14	41	72	694	58950	58950	454 171	447 167	441 163	435 159	427 155	421 152	415 149	411 146	405 143	399 139	393 136	388 133	382 131	378 128	372 125
72DLH15	44	72	794	67530	67530	520 191	513 187	504 183	496 178	489 174	483 171	475 167	468 163	462 160	454 156	448 152	442 150	436 147	429 143	423 140
72DLH16	50	72	918	78060	78060	601 225	592 219	585 214	576 209	567 205	559 200	552 196	544 191	537 188	529 183	522 179	514 175	507 171	501 169	493 165
72DLH17	56	72	1033	87810	87810	676 256	667 250	657 245	648 239	639 233	630 228	621 224	612 218	603 213	595 209	586 205	579 200	571 196	564 191	556 188
72DLH18	59	72	1210	102870	102870	792 289	780 283	768 276	757 270	745 265	735 258	724 252	718 247	705 242	694 236	685 231	675 227	666 222	657 217	648 212
72DLH19	70	72	1419	120600	120600	928 328	913 321	900 313	886 306	873 300	859 293	847 286	835 280	823 274	811 268	799 263	789 257	777 251	766 247	756 241

LRFD

STANDARD LOAD TABLE LONGSPAN STEEL JOISTS, LRFD DLH-SERIES

Based on a 50 ksi Maximum Yield Strength - Loads Shown in Pounds per Linear Foot (plf)

Joist Designation	Approx. Wt in Lbs. Per Linear Ft (Joists only)	Depth in inches	Max Load (plf)	SAFE LOAD* in Lbs. Between		SPAN IN FEET															
			< 81	81-99	100-111	112	115	118	121	124	127	130	133	136	139	142	145	148	151	155	160
80DLH15	40	80	966	78240	78240	699 321	663 296	632 275	602 255	575 236	549 220	525 205	503 192	482 179	461 167	443 157	425 147	408 139	392 130	371 120	347 109
80DLH16	46	80	1161	94020	94020	840 375	802 347	763 321	727 297	691 276	658 257	628 240	600 224	574 209	549 196	525 184	504 172	483 162	463 152	439 141	411 128
80DLH17	53	80	1341	108630	108630	971 451	926 416	881 386	839 358	800 332	765 309	731 288	699 269	669 252	641 235	615 221	590 207	567 195	545 183	517 169	485 154
80DLH18	60	80	1518	122760	122760	1097 516	1044 477	993 441	947 409	903 380	863 354	825 330	789 308	756 288	723 270	695 253	666 237	641 223	615 210	584 194	548 176
80DLH19	67	80	1768	143220	143220	1280 578	1218 533	1160 493	1104 458	1052 425	1005 396	960 369	918 344	878 322	840 301	806 283	774 266	743 250	714 235	677 217	635 197
80DLH20	75	80	1987	160980	160980	1446 646	1382 596	1323 552	1268 512	1211 475	1157 443	1104 412	1056 385	1011 360	968 337	927 316	891 297	855 279	821 263	780 243	731 220
			< 89	89-99	100-120	121	124	127	130	133	136	139	142	145	148	151	155	160	165	170	175
88DLH16	46	88	1048	93270	93270	771 361	735 336	701 313	671 291	642 272	615 254	591 238	567 223	545 210	524 197	503 186	477 172	448 156	422 143	398 130	376 119
88DLH17	51	88	1185	105450	105450	871 404	830 375	789 349	753 325	719 304	687 284	659 266	630 249	605 234	579 220	557 207	528 191	495 173	465 159	437 146	412 133
88DLH18	58	88	1359	120930	120930	1001 460	953 427	908 397	866 370	827 346	791 323	756 303	725 284	695 267	666 250	639 236	607 218	569 199	535 181	503 165	474 152
88DLH19	65	88	1572	139890	139890	1157 521	1101 484	1049 450	999 420	954 392	912 367	873 343	836 322	801 302	770 284	738 267	701 248	657 225	617 205	580 187	547 172
88DLH20	76	88	1808	160950	160950	1334 623	1281 579	1232 539	1184 502	1133 469	1085 438	1041 410	998 385	959 361	921 340	885 320	841 296	790 269	743 246	700 224	660 206
88DLH21	89	88	2231	198540	198540	1649 724	1568 673	1494 626	1425 584	1361 545	1301 509	1244 477	1191 447	1143 420	1097 395	1053 372	999 344	936 313	880 285	827 261	779 239
			< 97	97-99	100-129	130	133	136	139	142	145	148	151	155	160	165	170	175	180	185	190
96DLH17	52	96	1085	105270	105270	810 389	776 363	744 339	711 318	684 298	657 280	632 263	608 247	578 229	542 208	509 190	480 173	452 159	427 146	404 134	382 124
96DLH18	58	96	1222	118500	118500	912 443	875 413	839 386	803 362	770 340	740 319	713 300	686 282	653 261	615 237	579 216	546 198	516 181	488 166	463 153	438 141
96DLH19	66	96	1460	141660	141660	1091 502	1046 469	1001 438	957 410	917 385	878 361	842 340	809 320	768 296	720 269	676 246	636 224	601 206	566 189	536 174	507 161
96DLH20	74	96	1644	159420	159420	1236 569	1184 531	1131 496	1083 465	1037 436	993 409	952 385	915 362	868 336	815 305	766 277	721 254	680 233	642 214	607 196	574 181
96DLH21	90	96	2062	200010	200010	1541 698	1473 652	1410 610	1350 571	1296 535	1243 503	1196 473	1149 445	1093 412	1026 374	965 341	908 312	856 286	809 263	765 242	724 224
96DLH22	102	96	2310	224070	224070	1725 811	1662 757	1601 708	1542 663	1487 622	1436 584	1382 549	1329 517	1264 479	1188 435	1118 396	1054 362	995 332	941 305	890 281	843 259
Joist Designation	Approx. Wt in Lbs. Per Linear Ft (Joists only)	Depth in inches	Max Load (plf)	SAFE LOAD* in Lbs. Between		SPAN IN FEET															
			< 100	100-104	105-138	139	142	145	148	151	155	160	165	170	175	180	185	190	195	200	205
104DLH18	59	104	1100	1100	115470	831 426	798 400	768 375	734 353	708 332	674 307	635 279	601 255	568 233	537 213	508 195	482 180	458 167	435 154	414 142	394 132
104DLH19	67	104	1337	1337	140430	1011 484	971 453	933 426	897 401	861 377	819 349	770 317	727 289	686 265	648 242	613 222	581 204	552 189	524 175	497 162	473 150
104DLH20	75	104	1504	1504	157890	1146 548	1107 513	1071 483	1032 453	992 427	944 395	886 359	833 327	784 299	739 274	698 251	660 232	626 214	593 198	563 184	535 170
104DLH21	90	104	1890	1890	198480	1434 673	1376 632	1322 593	1271 558	1220 525	1160 486	1091 442	1028 403	970 368	917 337	866 307	821 284	779 263	740 244	703 226	668 209
104DLH22	104	104	2119	2119	222540	1607 783	1551 734	1499 689	1449 648	1401 610	1340 564	1261 513	1189 468	1121 428	1059 392	1001 359	949 331	901 306	855 283	812 262	774 244
104DLH23	109	104	2334	2334	245100	1772 819	1712 768	1644 721	1578 678	1514 638	1437 590	1348 536	1267 489	1192 447	1125 410	1062 377	1004 347	952 320	902 296	857 274	814 254
			< 100	100-112	113-147	148	151	155	160	165	170	175	180	185	190	195	200	205	210	215	220
112DLH19	67	112	1223	1223	138150	935 466	900 439	857 406	805 369	759 336	716 308	677 281	643 259	610 238	579 220	549 203	523 189	498 175	476 162	454 151	433 142
112DLH20	76	112	1384	1384	156360	1065 528	1032 497	985 459	927 418	873 381	824 348	780 319	740 293	702 270	667 249	632 231	603 213	574 198	547 184	522 171	500 160
112DLH21	91	112	1743	1743	196950	1337 650	1287 612	1223 566	1150 514	1083 469	1022 429	966 393	915 361	867 333	823 306	782 283	744 263	709 244	676 227	645 211	616 198
112DLH22	104	112	1956	1956	221010	1499 755	1451 711	1392 657	1321 598	1250 545	1181 498	1117 457	1057 419	1002 386	952 356	904 329	860 306	820 283	782 264	745 246	712 229
112DLH23	110	112	2155	2155	243540	1653 790	1601 744	1535 688	1454 625	1369 571	1288 522	1214 478	1147 439	1086 404	1030 373	977 345	928 320	882 297	839 276	800 257	763 239
112DLH24	131	112	2555	2555	286660	1956 957	1895 901	1818 834	1727 758	1631 691	1539 632	1455 579	1379 532	1307 489	1241 451	1179 418	1123 387	1070 359	1019 334	972 311	928 291
			< 100	100-120	121-165	166	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240
120DLH20	77	120	1229	1229	148650	896 430	856 400	808 367	766 338	726 311	691 287	658 265	627 246	598 228	570 212	544 198	521 185	498 172	477 161	457 151	439 142
120DLH21	92	120	1528	1528	184860	1122 530	1072 494	1012 452	959 416	908 383	864 353	821 326	782 303	745 281	710 262	678 244	648 227	620 212	593 199	569 186	545 173
120DLH22	104	120	1751	1751	211920	1283 616	1235 574	1169 526	1106 483	1049 445	997 411	949 380	903 352	860 327	821 304	783 283	749 265	716 247	686 231	657 217	629 204
120DLH23	111	120	1938	1938	234480	1415 644	1361 601	1287 551	1219 506	1157 466	1099 430	1046 397	995 369	948 341	903 318	862 296	822 276	786 258	751 241	719 227	689 213
120DLH24	132	120	2298	2298	278070	1676 781	1610 728	1522 667	1441 613	1367 565	1300 521	1237 482	1177 447	1122 414	1070 386	1022 359	977 335	934 313	894 293	857 275	821 258
120DLH25	152	120	2633	2633	318630	1926 915	1847 853	1748 782	1656 718	1571 661	1492 610	1418 564	1350 523	1287 485	1228 452	1173 421	1122 393	1073 367	1026 344	983 322	943 302

LRFD

METRIC LOAD TABLE LONGSPAN STEEL JOISTS, DLH-SERIES

Based on 345 MPa Maximum Yield Strength - Loads Shown in Kilonewtons per Meter (kN/m)

Joist Designation	Approx. Wt in kN Per Meter (Joists only)	Depth in mm	Max Load kN/m	SAFE LOAD* in kN Between		SPAN IN MILLIMETERS													
			<18898	18898-27127		27432	27737	28042	28346	28651	28956	29261	29566	29870	30175	30480	30785	31090	31394	31699
52DLH10	0.36	1321	9.45	178.81		6.52 2.49	6.37 2.40	6.23 2.32	6.10 2.24	5.97 2.18	5.84 2.11	5.71 2.04	5.60 1.98	5.49 1.92	5.38 1.86	5.27 1.80	5.16 1.75	5.05 1.69	4.96 1.66	4.88 1.60
52DLH11	0.38	1321	10.39	196.30		7.15 2.72	7.00 2.64	6.85 2.53	6.69 2.46	6.54 2.39	6.41 2.30	6.28 2.23	6.15 2.17	6.01 2.10	5.91 2.04	5.77 1.97	5.66 1.92	5.56 1.86	5.45 1.80	5.34 1.75
52DLH12	0.42	1321	11.59	218.98		7.99 2.97	7.81 2.87	7.63 2.78	7.48 2.69	7.31 2.61	7.15 2.52	7.00 2.45	6.87 2.37	6.72 2.30	6.58 2.23	6.45 2.17	6.32 2.10	6.21 2.04	6.08 1.97	5.97 1.92
52DLH13	0.50	1321	14.07	265.82		9.69 3.60	9.47 3.48	9.28 3.37	9.06 3.26	8.88 3.15	8.69 3.05	8.51 2.96	8.34 2.87	8.16 2.78	8.01 2.69	7.83 2.62	7.68 2.53	7.53 2.48	7.39 2.39	7.24 2.32
52DLH14	0.57	1321	16.10	304.12		11.09 4.02	10.87 3.88	10.63 3.76	10.42 3.63	10.20 3.53	10.00 3.41	9.78 3.31	9.58 3.21	9.41 3.10	9.21 3.02	9.04 2.93	8.86 2.83	8.69 2.75	8.53 2.68	8.36 2.59
52DLH15	0.61	1321	18.08	341.62		12.45 4.53	12.19 4.39	11.93 4.24	11.66 4.11	11.42 3.96	11.18 3.85	10.94 3.73	10.72 3.60	10.50 3.50	10.28 3.40	10.09 3.29	9.87 3.19	9.69 3.10	9.50 3.02	9.32 2.93
52DLH16	0.66	1321	19.48	368.31		13.44 5.04	13.15 4.88	12.87 4.72	12.58 4.58	12.32 4.43	12.06 4.29	11.82 4.15	11.55 4.02	11.33 3.89	11.09 3.79	10.87 3.67	10.66 3.57	10.46 3.45	10.24 3.35	10.04 3.26
52DLH17	0.76	1321	22.43	423.96		15.45 5.76	15.12 5.56	14.79 5.38	14.46 5.21	14.16 5.04	13.87 4.88	13.57 4.72	13.30 4.59	13.02 4.43	12.76 4.31	12.52 4.17	12.25 4.07	12.01 3.94	11.79 3.83	11.55 3.72
			<20422	20422-29566		29870	30175	30480	30785	31090	31394	31699	32004	32309	32614	32918	33223	33528	33833	34138
56DLH11	0.38	1422	9.21	188.15		6.30 2.46	6.19 2.37	6.06 2.30	5.95 2.23	5.84 2.17	5.73 2.11	5.62 2.04	5.53 1.98	5.42 1.94	5.34 1.88	5.23 1.82	5.14 1.78	5.05 1.72	4.96 1.67	4.88 1.64
56DLH12	0.44	1422	10.58	216.18		7.24 2.68	7.09 2.59	6.96 2.52	6.82 2.45	6.69 2.37	6.56 2.30	6.45 2.23	6.32 2.18	6.21 2.11	6.08 2.05	5.97 1.99	5.86 1.94	5.75 1.89	5.66 1.83	5.56 1.79
56DLH13	0.50	1422	12.82	261.82		8.77 3.25	8.62 3.15	8.44 3.05	8.29 2.97	8.14 2.87	7.99 2.78	7.83 2.71	7.68 2.64	7.53 2.55	7.39 2.49	7.24 2.42	7.11 2.34	6.98 2.29	6.87 2.21	6.74 2.17
56DLH14	0.57	1422	14.49	295.98		9.91 3.63	9.71 3.53	9.52 3.41	9.34 3.32	9.17 3.22	8.99 3.12	8.82 3.05	8.66 2.94	8.49 2.86	8.34 2.77	8.20 2.71	8.05 2.64	7.90 2.55	7.77 2.49	7.63 2.43
56DLH15	0.61	1422	16.57	338.15		11.33 4.10	11.12 3.96	10.90 3.85	10.68 3.73	10.46 3.61	10.26 3.53	10.06 3.41	9.87 3.32	9.69 3.22	9.50 3.13	9.32 3.05	9.17 2.97	8.99 2.88	8.82 2.80	8.66 2.74
56DLH16	0.67	1422	17.86	364.84		12.23 4.56	11.99 4.43	11.75 4.29	11.51 4.15	11.29 4.04	11.07 3.92	10.85 3.82	10.66 3.70	10.46 3.60	10.26 3.50	10.06 3.40	9.89 3.31	9.71 3.22	9.54 3.12	9.36 3.05
56DLH17	0.74	1422	20.59	420.49		14.07 5.19	13.79 5.03	13.52 4.88	13.24 4.74	13.00 4.61	12.74 4.46	12.49 4.34	12.25 4.21	12.01 4.10	11.79 3.98	11.58 3.88	11.38 3.76	11.16 3.66	10.96 3.57	10.77 3.47
			<21641	21641-30175	30480-32894	32309	32614	32918	33223	33528	33833	34138	34442	34747	35052	35357	35662	35966	36271	36576
60DLH12	0.42	1524	9.62	208.17	208.17	6.45 2.45	6.32 2.37	6.21 2.3	6.10 2.24	5.99 2.18	5.91 2.13	5.80 2.07	5.71 2.01	5.60 1.95	5.51 1.91	5.42 1.86	5.34 1.80	5.25 1.76	5.16 1.72	5.07 1.67
60DLH13	0.51	1524	11.68	253.01	253.01	7.83 2.96	7.68 2.87	7.55 2.78	7.42 2.72	7.28 2.64	7.15 2.56	7.04 2.49	6.91 2.43	6.80 2.37	6.69 2.30	6.58 2.24	6.47 2.20	6.37 2.14	6.26 2.08	6.17 2.02
60DLH14	0.58	1524	12.99	281.17	281.17	8.71 3.15	8.55 3.06	8.38 2.99	8.23 2.90	8.09 2.81	7.94 2.75	7.79 2.67	7.66 2.59	7.53 2.52	7.39 2.48	7.26 2.40	7.15 2.34	7.02 2.27	6.91 2.21	6.78 2.17
60DLH15	0.63	1524	15.25	330.01	330.01	10.22 3.72	10.02 3.61	9.85 3.53	9.67 3.42	9.50 3.32	9.34 3.25	9.17 3.15	9.01 3.06	8.86 2.99	8.71 2.91	8.58 2.83	8.42 2.77	8.29 2.69	8.16 2.62	8.03 2.55
60DLH16	0.67	1524	16.76	362.84	362.84	11.23 4.15	11.03 4.04	10.81 3.92	10.61 3.82	10.42 3.72	10.24 3.60	10.06 3.51	9.87 3.42	9.71 3.32	9.54 3.25	9.36 3.16	9.21 3.07	9.06 3.00	8.90 2.93	8.75 2.86
60DLH17	0.76	1524	19.26	417.02	417.02	12.91 4.72	12.67 4.59	12.45 4.46	12.21 4.34	11.99 4.23	11.77 4.13	11.58 4.01	11.36 3.89	11.16 3.80	10.96 3.70	10.79 3.60	10.59 3.51	10.42 3.42	10.24 3.32	10.06 3.25
60DLH18	0.86	1524	22.24	481.20	481.20	14.90 5.34	14.62 5.21	14.36 5.04	14.09 4.91	13.83 4.77	13.59 4.65	13.35 4.52	13.11 4.42	12.89 4.29	12.65 4.17	12.43 4.07	12.23 3.96	12.01 3.88	11.82 3.77	11.62 3.67
			<23166	23165-30175	30480-34442	34747	35052	35357	35662	35966	36271	36576	36881	37186	37490	37795	38100	38405	38710	39014
64DLH12	0.45	1626	8.66	200.70	200.70	5.77 2.23	5.66 2.18	5.58 2.13	5.49 2.07	5.40 2.01	5.31 1.97	5.23 1.92	5.14 1.88	5.05 1.82	4.99 1.78	4.90 1.73	4.83 1.69	4.77 1.66	4.68 1.61	4.61 1.59
64DLH13	0.50	1626	10.50	243.54	243.54	7.02 2.71	6.89 2.64	6.78 2.56	6.67 2.49	6.56 2.45	6.45 2.37	6.37 2.32	6.26 2.26	6.15 2.21	6.06 2.15	5.97 2.10	5.88 2.05	5.77 1.99	5.69 1.95	5.62 1.91
64DLH14	0.58	1626	12.03	279.03	279.03	8.03 2.90	7.88 2.81	7.74 2.75	7.63 2.68	7.50 2.61	7.37 2.53	7.26 2.49	7.13 2.42	7.02 2.36	6.91 2.30	6.80 2.24	6.69 2.20	6.58 2.14	6.47 2.08	6.39 2.04
64DLH15	0.63	1626	13.81	319.87	319.87	9.21 3.41	9.06 3.32	8.90 3.25	8.75 3.16	8.62 3.07	8.47 3.00	8.34 2.93	8.20 2.86	8.07 2.78	7.94 2.72	7.83 2.65	7.70 2.58	7.59 2.52	7.46 2.48	7.35 2.40
64DLH16	0.67	1626	15.54	360.03	360.03	10.37 3.82	10.20 3.70	10.02 3.61	9.85 3.53	9.69 3.42	9.52 3.34	9.36 3.26	9.21 3.18	9.06 3.10	8.90 3.03	8.77 2.96	8.62 2.88	8.49 2.81	8.36 2.75	8.23 2.68
64DLH17	0.76	1626	17.90	414.88	414.88	11.95 4.34	11.73 4.23	11.53 4.13	11.33 4.01	11.14 3.91	10.96 3.82	10.77 3.72	10.59 3.61	10.42 3.54	10.24 3.45	10.09 3.37	9.93 3.29	9.76 3.21	9.61 3.13	9.45 3.06
64DLH18	0.86	1626	20.68	479.07	479.07	13.79 4.91	13.55 4.78	13.30 4.67	13.09 4.53	12.84 4.43	12.65 4.31	12.43 4.20	12.23 4.11	12.01 3.99	11.82 3.89	11.64 3.80	11.44 3.72	11.27 3.63	11.09 3.54	10.92 3.45
			<24689	24689-30175	30480-36881	37186	37490	37795	38100	38405	38710	39014	39319	39624	39929	40234	40538	40843	41148	41453
68DLH13	0.54	1727	9.49	234.19	234.19	6.30 2.49	6.21 2.45	6.10 2.39	6.01 2.32	5.93 2.26	5.84 2.21	5.75 2.17	5.66 2.11	5.58 2.07	5.51 2.01	5.42 1.97	5.34 1.94	5.27 1.89	5.18 1.85	5.12 1.80
68DLH14	0.58	1727	10.93	269.69	269.69	7.26 2.68	7.15 2.61	7.04 2.55	6.93 2.49	6.82 2.43	6.74 2.37	6.63 2.32	6.54 2.26	6.43 2.21	6.34 2.15	6.26 2.11	6.15 2.05	6.06 2.01	5.97 1.97	5.88 1.94
68DLH15	0.64	1727	12.25	302.39	302.39	8.14 3.00	7.99 2.93	7.88 2.86	7.74 2.78	7.61 2.72	7.50 2.65	7.37 2.59	7.26 2.53	7.15 2.48	7.04 2.42	6.93 2.36	6.82 2.30	6.74 2.26	6.63 2.21	6.54 2.15
68DLH16	0.72	1727	14.52	358.57	358.57	9.65 3.53	9.47 3.44	9.34 3.35	9.19 3.28	9.04 3.19	8.90 3.12	8.75 3.05	8.62 2.97	8.49 2.90	8.36 2.84	8.23 2.77	8.12 2.71	7.99 2.65	7.88 2.59	7.74 2.53
68DLH17	0.80	1727	16.36	404.07	404.07	10.87 4.01	10.70 3.91	10.52 3.82	10.37 3.73	10.22 3.63	10.06 3.56	9.91 3.47	9.76 3.38	9.61 3.32	9.47 3.23	9.34 3.16	9.19 3.09	9.06 3.03	8.93 2.96	8.82 2.88
68DLH18	0.89	1727	18.95	467.73	467.73	12.58 4.53	12.39 4.43	12.19 4.33	12.01 4.21	11.82 4.13	11.64 4.02	11.47 3.92	11.29 3.83	11.12 3.75	10.96 3.66	10.79 3.59	10.63 3.50	10.48 3.41	10.33 3.35	10.17 3.28
68DLH19	0.98	1727	21.82	538.59	538.59	14.49 5.15	14.25 5.02	14.03 4.90	13.81 4.78	13.59 4.67	13.37 4.56	13.15 4.45	12.95 4.34	12.76 4.24	12.56 4.15	12.36 4.05	12.19 3.96	11.99 3.88	11.82 3.79	11.64 3.70
			<25908	25908-30175	30480-39319	39624	39929	40234	40538	40843	41148	41453	41758	42062	42367	42672	42977	43282	43586	43891
72DLH14	0.60	1829	10.13	262.22	262.22	6.63 2.49	6.52 2.43	6.43 2.37	6.34 2.32	6.23 2.26	6.15 2.21	6.06 2.17	5.99 2.13	5.91 2.08	5.82 2.02	5.73 1.98	5.66 1.94	5.58 1.91	5.51 1.86	5.42 1.82
72DLH15	0.64	1829	11.59	300.38	300.38	7.59 2.78	7.48 2.72	7.35 2.67	7.24 2.59	7.13 2.53	7.04 2.49	6.93 2.43	6.82 2.37	6.74 2.33	6.63 2.27	6.54 2.21	6.45 2.18	6.37 2.14	6.26 2.08	6.17 2.04
72DLH16	0.73	1829	13.39	347.22	347.22	8.77 3.28	8.64 3.19	8.53 3.12	8.40 3.05	8.27 2.99	8.16 2.91	8.05 2.86	7.94 2.78	7.83 2.74	7.72 2.67	7.61 2.61	7.50 2.55	7.39 2.49	7.31 2.46	7.20 2.40
72DLH17	0.82	1829	15.08	390.59	390.59	9.87 3.73	9.74 3.64	9.58 3.57	9.45 3.48	9.32 3.40	9.19 3.32	9.06 3.26	8.93 3.18	8.80 3.10	8.69 3.05	8.55 2.99	8.44 2.91	8.34 2.86	8.23 2.78	8.12 2.74
72DLH18	0.86	1829	17.66	457.58	457.58	11.55 4.21	11.38 4.13	11.20 4.02	11.05 3.94	10.87 3.86	10.72 3.76	10.57 3.67	10.48 3.60	10.28 3.53	10.13 3.44	10.00 3.37	9.85 3.31	9.71 3.23	9.58 3.16	9.45 3.09
72DLH19	1.02	1829	20.70	536.45	536.45	13.55 4.78	13.33 4.68	13.13 4.56	12.93 4.46	12.74 4.37	12.54 4.27	12.36 4.17	12.19 4.08	12.01 3.99	11.84 3.91	11.66 3.83	11.51 3.75	11.33 3.66	11.18 3.60	11.03 3.51

LRFD

METRIC LOAD TABLE LONGSPAN STEEL JOISTS, LRFD DLH-SERIES

Based on 345 MPa Maximum Yield Strength - Loads Shown in Kilonewtons per Meter (kN/m)

Joist Designation	Approx. Wt in Kn Per Meter (Joists only)	Depth in mm	Max Load (kN/m)	SAFE LOAD* in kN Between		SPAN IN MILLIMETERS															
			<24689	24689-30175	30480-33833	34138	35052	35966	36881	37795	38710	39624	40538	41453	42367	43282	44196	45110	46025	47244	48768
80DLH15	0.58	2032	14.09	348.02	348.02	10.20 4.68	9.67 4.31	9.21 4.01	8.77 3.72	8.38 3.44	8.01 3.21	7.66 2.99	7.33 2.80	7.02 2.61	6.72 2.43	6.45 2.29	6.19 2.14	5.95 2.02	5.71 1.89	5.42 1.75	5.07 1.59
80DLH16	0.67	2032	16.94	418.22	418.22	12.25 5.47	11.71 5.06	11.14 4.68	10.61 4.33	10.09 4.02	9.61 3.75	9.17 3.50	8.75 3.26	8.38 3.05	8.01 2.86	7.66 2.68	7.35 2.51	7.04 2.36	6.76 2.21	6.41 2.05	5.99 1.86
80DLH17	0.77	2032	19.57	483.21	483.21	14.16 6.58	13.50 6.07	12.84 5.63	12.23 5.22	11.66 4.84	11.16 4.50	10.66 4.20	10.20 3.92	9.76 3.67	9.34 3.42	8.97 3.22	8.60 3.02	8.27 2.84	7.94 2.67	7.55 2.46	7.08 2.24
80DLH18	0.88	2032	22.15	546.06	546.06	16.00 7.53	15.23 6.96	14.49 6.43	13.81 5.96	13.17 5.54	12.58 5.16	12.03 4.81	11.51 4.49	11.03 4.20	10.55 3.94	10.13 3.69	9.71 3.45	9.34 3.25	8.97 3.06	8.53 2.83	8.00 2.56
80DLH19	0.98	2032	25.80	637.07	637.07	18.67 8.43	17.77 7.77	16.92 7.19	16.11 6.68	15.34 6.20	14.66 5.77	14.01 5.38	13.39 5.02	12.80 4.69	12.25 4.39	11.75 4.13	11.29 3.88	10.83 3.64	10.42 3.42	9.88 3.16	9.27 2.87
80DLH20	1.09	2032	29.00	716.07	716.07	21.10 9.42	20.16 8.69	19.30 8.05	18.49 7.47	17.66 6.93	16.87 6.46	16.11 6.01	15.41 5.61	14.75 5.25	14.11 4.91	13.52 4.61	13.00 4.33	12.47 4.07	11.97 3.83	11.38 3.54	10.67 3.21
			<27127	27127-30175	30480-36576	36881	37795	38710	39624	40538	41453	42367	43282	44196	45110	46025	47244	48768	50292	51816	53340
88DLH16	0.67	2235	15.30	414.88	414.88	11.25 5.26	10.72 4.90	10.22 4.56	9.78 4.24	9.36 3.96	8.97 3.70	8.62 3.47	8.27 3.25	7.94 3.06	7.63 2.87	7.33 2.71	6.96 2.51	6.54 2.27	6.16 2.08	5.81 1.89	5.49 1.73
88DLH17	0.74	2235	17.29	469.06	469.06	12.71 5.89	12.10 5.47	11.51 5.09	10.98 4.74	10.48 4.43	10.02 4.14	9.61 3.88	9.19 3.63	8.82 3.41	8.44 3.21	8.12 3.02	7.70 2.78	7.22 2.52	6.78 2.32	6.38 2.13	6.01 1.94
88DLH18	0.85	2235	19.83	537.92	537.92	14.60 6.71	13.90 6.23	13.24 5.79	12.63 5.39	12.06 5.04	11.53 4.71	11.03 4.42	10.57 4.14	10.13 3.89	9.71 3.64	9.32 3.44	8.86 3.18	8.31 2.90	7.81 2.64	7.34 2.40	6.91 2.21
88DLH19	0.95	2235	22.94	622.26	622.26	16.87 7.60	16.06 7.06	15.30 6.56	14.57 6.12	13.92 5.72	13.30 5.35	12.74 5.00	12.19 4.69	11.68 4.40	11.23 4.14	10.77 3.89	10.23 3.61	9.58 3.28	9.01 2.99	8.47 2.72	7.99 2.51
88DLH20	1.11	2235	26.39	715.94	715.94	19.46 9.09	18.69 8.44	17.97 7.86	17.27 7.32	16.52 6.84	15.82 6.39	15.19 5.98	14.55 5.61	13.98 5.26	13.44 4.96	12.91 4.67	12.28 4.31	11.53 3.92	10.85 3.59	10.22 3.26	9.63 3.00
88DLH21	1.30	2235	32.56	883.14	883.14	24.05 10.56	22.87 9.82	21.80 9.13	20.79 8.52	19.85 7.95	18.97 7.42	18.14 6.96	17.38 6.52	16.68 6.12	16.00 5.76	15.36 5.42	14.57 5.02	13.65 4.56	12.84 4.15	12.07 3.80	11.37 3.48
			<29566	29566-30175	30480-39319	39624	40538	41453	42367	43282	44196	45110	46025	47244	48768	50292	51816	53340	54864	56388	57912
96DLH17	0.76	2438	15.84	468.26	468.26	11.82 5.67	11.31 5.29	10.85 4.94	10.37 4.64	9.98 4.34	9.58 4.08	9.21 3.83	8.86 3.60	8.44 3.34	7.91 3.03	7.43 2.77	7.00 2.52	6.60 2.32	6.23 2.13	5.90 1.95	5.58 1.80
96DLH18	0.85	2438	17.84	527.11	527.11	13.30 6.46	12.76 6.02	12.23 5.63	11.71 5.28	11.23 4.96	10.79 4.65	10.39 4.37	10.00 4.11	9.53 3.80	8.97 3.45	8.44 3.15	7.96 2.88	7.53 2.64	7.12 2.42	6.76 2.23	6.39 2.05
96DLH19	0.96	2438	21.31	630.13	630.13	15.91 7.32	15.25 6.84	14.60 6.39	13.96 5.98	13.37 5.61	12.80 5.26	12.28 4.96	11.79 4.67	11.20 4.31	10.50 3.92	9.87 3.59	9.28 3.26	8.77 3.00	8.26 2.75	7.82 2.53	7.39 2.34
96DLH20	1.08	2438	23.99	709.13	709.13	18.03 8.30	17.27 7.74	16.50 7.23	15.80 6.78	15.12 6.36	14.49 5.96	13.90 5.61	13.35 5.28	12.67 4.90	11.90 4.45	11.18 4.04	10.52 3.70	9.93 3.40	9.36 3.12	8.86 2.86	8.38 2.64
96DLH21	1.31	2438	30.09	889.68	889.68	22.48 10.18	21.49 9.51	20.57 8.90	19.70 8.33	18.91 7.80	18.14 7.34	17.44 6.90	16.76 6.49	15.95 6.01	14.97 5.45	14.09 4.97	13.25 4.55	12.49 4.17	11.81 3.83	11.16 3.53	10.57 3.26
96DLH22	1.49	2438	33.71	996.71	996.71	25.17 11.83	24.25 11.04	23.35 10.33	22.50 9.67	21.69 9.07	20.94 8.52	20.16 8.01	19.39 7.54	18.45 6.99	17.33 6.34	16.32 5.77	15.38 5.28	14.52 4.84	13.74 4.45	12.99 4.10	12.30 3.77

Joist Designation	Approx. Wt in Kn Per Meter	Depth in mm	Max Load (kN/m)	SAFE LOAD* in kN Between	SPAN IN MILLIMETERS															
			<30480	30480-31699	32004-42062	42367	43282	44196	45110	46025	47244	48768	50292	51816	53340	54864	56388	57912	59436	60960	62484
104DLH18	0.86	2642	16.06	16.06	513.63	12.12 6.21	11.64 5.83	11.20 5.47	10.70 5.15	10.33 4.84	9.84 4.48	9.27 4.07	8.77 3.72	8.29 3.40	7.83 3.10	7.42 2.84	7.04 2.62	6.69 2.43	6.34 2.24	6.04 2.07	5.75 1.92
104DLH19	0.98	2642	19.51	19.51	624.66	14.75 7.06	14.16 6.61	13.61 6.21	13.09 5.85	12.56 5.50	11.95 5.09	11.24 4.62	10.61 4.21	10.01 3.86	9.45 3.53	8.95 3.23	8.48 2.97	8.05 2.75	7.65 2.55	7.26 2.36	6.91 2.18
104DLH20	1.09	2642	21.95	21.95	702.32	16.72 7.99	16.15 7.48	15.63 7.04	15.06 6.61	14.46 6.23	13.78 5.76	12.93 5.23	12.16 4.77	11.44 4.36	10.79 3.99	10.19 3.66	9.63 3.38	9.14 3.12	8.66 2.88	8.22 2.68	7.81 2.48
104DLH21	1.31	2642	27.58	27.58	882.88	20.92 9.82	20.07 9.22	19.28 8.65	18.54 8.14	17.79 7.66	16.93 7.09	15.92 6.45	15.00 5.88	14.16 5.37	13.38 4.91	12.64 4.48	11.98 4.14	11.37 3.83	10.80 3.56	10.26 3.29	9.75 3.05
104DLH22	1.52	2642	30.93	30.93	989.90	23.44 11.42	22.63 10.71	21.86 10.05	21.14 9.45	20.44 8.90	19.56 8.23	18.41 7.48	17.35 6.82	16.36 6.24	15.45 5.72	14.61 5.23	13.85 4.83	13.15 4.46	12.47 4.13	11.85 3.82	11.29 3.56
104DLH23	1.59	2642	34.06	34.06	1090.00	25.85 11.95	24.97 11.20	23.99 10.52	23.02 9.89	22.08 9.31	20.97 8.61	19.67 7.82	18.49 7.13	17.40 6.52	16.41 5.98	15.49 5.50	14.65 5.06	13.90 4.67	13.17 4.31	12.51 3.99	11.88 3.70
			<30480	30480-34138	34442-44806	45110	46025	47244	48768	50292	51816	53340	54864	56388	57912	59436	60960	62484	64008	65532	67056
112DLH19	0.98	2845	17.85	17.85	614.52	13.63 6.80	13.13 6.40	12.51 5.92	11.75 5.38	11.07 4.90	10.45 4.49	9.88 4.10	9.39 3.77	8.90 3.47	8.44 3.21	8.01 2.96	7.63 2.75	7.26 2.55	6.95 2.36	6.63 2.20	6.32 2.07
112DLH20	1.11	2845	20.20	20.20	695.52	15.54 7.70	15.06 7.25	14.38 6.69	13.52 6.10	12.74 5.56	12.03 5.07	11.38 4.65	10.80 4.27	10.24 3.94	9.74 3.63	9.23 3.37	8.80 3.10	8.38 2.88	7.99 2.68	7.61 2.49	7.30 2.33
112DLH21	1.33	2845	25.43	25.43	876.07	19.50 9.48	18.78 8.93	17.85 8.26	16.79 7.50	15.80 6.84	14.92 6.26	14.09 5.73	13.35 5.26	12.65 4.85	12.01 4.46	11.41 4.13	10.85 3.83	10.35 3.56	9.87 3.31	9.41 3.07	8.99 2.88
112DLH22	1.52	2845	28.54	28.54	983.10	21.86 11.01	21.16 10.37	20.31 9.58	19.28 8.72	18.24 7.95	17.24 7.26	16.30 6.66	15.43 6.11	14.62 5.63	13.90 5.19	13.20 4.80	12.55 4.46	11.97 4.13	11.41 3.85	10.87 3.59	10.39 3.34
112DLH23	1.61	2845	31.45	31.45	1083.00	24.12 11.52	23.35 10.85	22.40 10.04	21.22 9.12	19.98 8.33	18.80 7.61	17.72 6.97	16.74 6.40	15.84 5.89	15.03 5.44	14.26 5.03	13.55 4.67	12.87 4.33	12.25 4.02	11.68 3.75	11.14 3.48
112DLH24	1.91	2845	37.29	37.29	1284.00	28.54 13.96	27.64 13.14	26.53 12.17	25.21 11.06	23.80 10.08	22.46 9.22	21.23 8.44	20.13 7.76	19.08 7.13	18.11 6.58	17.20 6.10	16.39 5.64	15.62 5.23	14.87 4.87	14.18 4.53	13.55 4.24
			<30480	30480-36576	36881-50292	50597	51816	53340	54864	56388	57912	59436	60960	62484	64008	65532	67056	68580	70104	71628	73152
120DLH20	1.12	3048	17.94	17.94	661.22	13.06 6.27	12.49 5.83	11.79 5.35	11.18 4.93	10.59 4.53	10.09 4.18	9.61 3.86	9.15 3.59	8.73 3.32	8.31 3.09	7.94 2.88	7.61 2.69	7.26 2.51	6.96 2.34	6.67 2.20	6.41 2.07
120DLH21	1.34	3048	22.30	22.30	822.29	16.37 7.73	15.65 7.20	14.77 6.59	14.00 6.07	13.25 5.58	12.60 5.15	11.98 4.75	11.41 4.42	10.87 4.10	10.36 3.82	9.89 3.56	9.45 3.31	9.05 3.09	8.66 2.90	8.31 2.71	7.96 2.52
120DLH22	1.52	3048	25.56	25.56	942.66	18.71 8.98	18.03 8.37	17.06 7.67	16.14 7.04	15.31 6.49	14.55 5.99	13.85 5.54	13.17 5.13	12.55 4.77	11.98 4.43	11.42 4.13	10.93 3.86	10.45 3.60	10.01 3.37	9.58 3.16	9.18 2.97
120DLH23	1.62	3048	28.28	28.28	1043.00	20.64 9.39	19.86 8.77	18.78 8.04	17.79 7.38	16.89 6.80	16.04 6.27	15.27 5.79	14.52 5.38	13.83 4.97	13.17 4.64	12.58 4.31	11.99 4.02	11.47 3.76	10.96 3.51	10.50 3.31	10.06 3.10
120DLH24	1.93	3048	33.53	33.53	1237.00	24.45 11.39	23.50 10.62	22.21 9.73	21.03 8.94	19.95 8.24	18.97 7.60	18.05 7.03	17.18 6.52	16.37 6.04	15.62 5.63	14.92 5.23	14.26 4.88	13.63 4.56	13.04 4.27	12.51 4.01	11.98 3.76
120DLH25	2.22	3048	38.43	38.43	1417.00	28.10 13.35	26.96 12.44	25.51 11.41	24.16 10.47	22.93 9.64	21.78 8.90	20.70 8.23	19.70 7.63	18.78 7.07	17.92 6.59	17.11 6.14	16.37 5.73	15.66 5.35	14.97 5.02	14.35 4.69	13.76 4.40

American National Standard SJI 100 - 2015

STANDARD ASD LOAD TABLE

DEEP LONGSPAN STEEL JOISTS, DLH-SERIES

Based on a 50 ksi (345 MPa) Maximum Yield Strength
Spans up to and including 144 ft. adopted by the Steel Joist Institute May 25, 1983
Spans greater than 144 ft. up to and including 240 ft. adopted by the Steel Joist Institute May 18, 2010
Revised to May 18, 2010 – Effective December 31, 2010

The **BLACK** figures in the Load Table give the TOTAL safe uniformly distributed load-carrying capacities, in pounds per linear foot (kiloNewtons per meter), of **ASD** DLH-Series Steel Joists.

The approximate joist weights, in pounds per linear foot (kiloNewtons per meter), given in the Load Table may be added to the other building weights to determine the DEAD load. In all cases the DEAD load, including the joist self-weight, must be deducted from the TOTAL load to determine the LIVE load. The approximate joist weights do not include accessories.

The **RED** figures in the Load Table represent the uniform load, in pounds per linear foot (kiloNewtons per meter), which will produce an approximate joist deflection of 1/360 of the span. This load can be linearly prorated to obtain the uniform load for supplementary deflection criteria (i.e. a uniform load which will produce a joist deflection of 1/240 of the span may be obtained by multiplying the **RED** figures by 360/240). In no case shall the prorated load exceed the TOTAL load-carrying capacity of the joist.

The Load Table applies to joists with either parallel chords or pitched top chords. Joists can have a top chord pitch up to 1/2 inch per foot (42 mm per meter). If the pitch exceeds this limit, the Load Table does not apply. When top chords are pitched, the load-carrying capacities are determined by the nominal depth of the joists at the center of the span. Sloped parallel-chord joists shall use span as defined by the length along the slope.

Where the joist span is in the **BLUE SHADED** area of the Load Table, all rows of bridging shall be diagonal bridging with bolted connections at chords and intersections. Hoisting cables shall not be released until the two rows of bridging nearest the third points are completely installed. The **BLUE SHADED** area starts after 60'–0" (18288 mm) and extends up through 100'–0" (30175 mm).

Where the joist span is in the **GRAY SHADED** area of the Load Table, all rows of bridging shall be diagonal bridging with bolted connections at chords and intersections. Hoisting cables shall not be released until all rows of bridging are completely installed. The **GRAY SHADED** area starts after 100'–0" (30175 mm) and extends up through 240'–0" (73152 mm).

The approximate gross moment of inertia (not adjusted for shear deformation) of a standard joist listed in the Load Table may be determined as follows:

$I_j = 26.767(W)(L^3)(10^{-6})$ in^4 or $2.6953(W)(L^3)(10^{-5})$ mm^4, where W= **RED** figure in the Load Table, and
L = (span – 0.33) in feet or (span – 102) in millimeters

Loads for span increments not explicitly given in the Load Table may be determined using linear interpolation between the load values given in adjacent span columns.

*The safe uniform load for the spans shown in the SAFE LOAD Column is equal to (SAFE LOAD) / (span). The TOTAL safe uniformly distributed load-carrying capacity, for spans less than those shown in the SAFE LOAD Column are given in the MAX LOAD Column.

To solve for a RED figure for spans shown in the SAFE LOAD Column (or lesser spans), multiply the RED figure of the shortest span shown in the Load Table by (the shortest span shown in the Load Table – 0.33 feet [101 mm])^2 and divide by (the actual span – 0.33 feet [101 mm])^2. In no case shall the calculated load exceed the TOTAL load-carrying capacity of the joist.

ASD

STANDARD LOAD TABLE LONGSPAN STEEL JOISTS, DLH-SERIES

Based on a 50 ksi Maximum Yield Strength - Loads Shown in Pounds per Linear Foot (plf)

Joist Designation	Approx. Wt in Lbs. Per Linear Ft (Joists only)	Depth in inches	Max Load plf	SAFE LOAD* in Lbs. Between		SPAN IN FEET														
			< 62	62-89		90	91	92	93	94	95	96	97	98	99	100	101	102	103	104
52DLH10	25	52	432	26800		298	291	285	279	273	267	261	256	251	246	241	236	231	227	223
						171	165	159	154	150	145	140	136	132	128	124	120	116	114	110
52DLH11	26	52	475	29420		327	320	313	306	299	293	287	281	275	270	264	259	254	249	244
						187	181	174	169	164	158	153	149	144	140	135	132	128	124	120
52DLH12	29	52	529	32820		365	357	349	342	334	327	320	314	307	301	295	289	284	278	273
						204	197	191	185	179	173	168	163	158	153	149	144	140	135	132
52DLH13	34	52	643	39840		443	433	424	414	406	397	389	381	373	366	358	351	344	338	331
						247	239	231	224	216	209	203	197	191	185	180	174	170	164	159
52DLH14	39	52	735	45580		507	497	486	476	466	457	447	438	430	421	413	405	397	390	382
						276	266	258	249	242	234	227	220	213	207	201	194	189	184	178
52DLH15	42	52	826	51200		569	557	545	533	522	511	500	490	480	470	461	451	443	434	426
						311	301	291	282	272	264	256	247	240	233	226	219	213	207	201
52DLH16	45	52	890	55200		614	601	588	575	563	551	540	528	518	507	497	487	478	468	459
						346	335	324	314	304	294	285	276	267	260	252	245	237	230	224
52DLH17	52	52	1025	63540		706	691	676	661	647	634	620	608	595	583	572	560	549	539	528
						395	381	369	357	346	335	324	315	304	296	286	279	270	263	255
			<67	**67-97**		**98**	**99**	**100**	**101**	**102**	**103**	**104**	**105**	**106**	**107**	**108**	**109**	**110**	**111**	**112**
56DLH11	26	56	421	28200		288	283	277	272	267	262	257	253	248	244	239	235	231	227	223
						169	163	158	153	149	145	140	136	133	129	125	122	118	115	113
56DLH12	30	56	484	32400		331	324	318	312	306	300	295	289	284	278	273	268	263	259	254
						184	178	173	168	163	158	153	150	145	141	137	133	130	126	123
56DLH13	34	56	586	39240		401	394	386	379	372	365	358	351	344	338	331	325	319	314	308
						223	216	209	204	197	191	186	181	175	171	166	161	157	152	149
56DLH14	39	56	662	44360		453	444	435	427	419	411	403	396	388	381	375	368	361	355	349
						249	242	234	228	221	214	209	202	196	190	186	181	175	171	167
56DLH15	42	56	756	50680		518	508	498	488	478	469	460	451	443	434	426	419	411	403	396
						281	272	264	256	248	242	234	228	221	215	209	204	198	192	188
56DLH16	46	56	816	54680		559	548	537	526	516	506	496	487	478	469	460	452	444	436	428
						313	304	294	285	277	269	262	254	247	240	233	227	221	214	209
56DLH17	51	56	941	63020		643	630	618	605	594	582	571	560	549	539	529	520	510	501	492
						356	345	335	325	316	306	298	289	281	273	266	258	251	245	238
			< 71	**71-99**	**100-105**	**106**	**107**	**108**	**109**	**110**	**111**	**112**	**113**	**114**	**115**	**116**	**117**	**118**	**119**	**120**
60DLH12	29	60	439	31200	31200	295	289	284	279	274	270	265	261	256	252	248	244	240	236	232
						168	163	158	154	150	146	142	138	134	131	128	124	121	118	115
60DLH13	35	60	534	37920	37920	358	351	345	339	333	327	322	316	311	306	301	296	291	286	282
						203	197	191	187	181	176	171	167	163	158	154	151	147	143	139
60DLH14	40	60	594	42140	42140	398	391	383	376	370	363	356	350	344	338	332	327	321	316	310
						216	210	205	199	193	189	183	178	173	170	165	161	156	152	149
60DLH15	43	60	697	49460	49460	467	458	450	442	434	427	419	412	405	398	392	385	379	373	367
						255	248	242	235	228	223	216	210	205	200	194	190	185	180	175
60DLH16	46	60	766	54380	54380	513	504	494	485	476	468	460	451	444	436	428	421	414	407	400
						285	277	269	262	255	247	241	235	228	223	217	211	206	201	196
60DLH17	52	60	880	62500	62500	590	579	569	558	548	538	529	519	510	501	493	484	476	468	460
						324	315	306	298	290	283	275	267	261	254	247	241	235	228	223
60DLH18	59	60	1016	72120	72120	681	668	656	644	632	621	610	599	589	578	568	559	549	540	531
						366	357	346	337	327	319	310	303	294	286	279	272	266	259	252
			<76	**76-99**	**100-113**	**114**	**115**	**116**	**117**	**118**	**119**	**120**	**121**	**122**	**123**	**124**	**125**	**126**	**127**	**128**
64DLH12	31	64	396	30080	30080	264	259	255	251	247	243	239	235	231	228	224	221	218	214	211
						153	150	146	142	138	135	132	129	125	122	119	116	114	111	109
64DLH13	34	64	480	36500	36500	321	315	310	305	300	295	291	286	281	277	273	269	264	260	257
						186	181	176	171	168	163	159	155	152	148	144	141	137	134	131
64DLH14	40	64	550	41820	41820	367	360	354	349	343	337	332	326	321	316	311	306	301	296	292
						199	193	189	184	179	174	171	166	162	158	154	151	147	143	140
64DLH15	43	64	631	47940	47940	421	414	407	400	394	387	381	375	369	363	358	352	347	341	336
						234	228	223	217	211	206	201	196	191	187	182	177	173	170	165
64DLH16	46	64	710	53960	53960	474	466	458	450	443	435	428	421	414	407	401	394	388	382	376
						262	254	248	242	235	229	224	218	213	208	203	198	193	189	184
64DLH17	52	64	818	62180	62180	546	536	527	518	509	501	492	484	476	468	461	454	446	439	432
						298	290	283	275	268	262	255	248	243	237	231	226	220	215	210
64DLH18	59	64	945	71800	71800	630	619	608	598	587	578	568	559	549	540	532	523	515	507	499
						337	328	320	311	304	296	288	282	274	267	261	255	249	243	237
			< 81	**81-99**	**100-121**	**122**	**123**	**124**	**125**	**126**	**127**	**128**	**129**	**130**	**131**	**132**	**133**	**134**	**135**	**136**
68DLH13	37	68	433	35100	35100	288	284	279	275	271	267	263	259	255	252	248	244	241	237	234
						171	168	164	159	155	152	149	145	142	138	135	133	130	127	124
68DLH14	40	68	499	40420	40420	332	327	322	317	312	308	303	299	294	290	286	281	277	273	269
						184	179	175	171	167	163	159	155	152	148	145	141	138	135	133
68DLH15	44	68	560	45320	45320	372	365	360	354	348	343	337	332	327	322	317	312	308	303	299
						206	201	196	191	187	182	178	174	170	166	162	158	155	152	148
68DLH16	49	68	663	53740	53740	441	433	427	420	413	407	400	394	388	382	376	371	365	360	354
						242	236	230	225	219	214	209	204	199	195	190	186	182	178	174
68DLH17	55	68	748	60560	60560	497	489	481	474	467	460	453	446	439	433	427	420	414	408	403
						275	268	262	256	249	244	238	232	228	222	217	212	208	203	198
68DLH18	61	68	865	70100	70100	575	566	557	549	540	532	524	516	508	501	493	486	479	472	465
						311	304	297	289	283	276	269	263	257	251	246	240	234	230	225
68DLH19	67	68	997	80720	80720	662	651	641	631	621	611	601	592	583	574	565	557	548	540	532
						353	344	336	328	320	313	305	298	291	285	278	272	266	260	254
			< 85	**85-99**	**100-129**	**130**	**131**	**132**	**133**	**134**	**135**	**136**	**137**	**138**	**139**	**140**	**141**	**142**	**143**	**144**
72DLH14	41	72	462	39300	39300	303	298	294	290	285	281	277	274	270	266	262	259	255	252	248
						171	167	163	159	155	152	149	146	143	139	136	133	131	128	125
72DLH15	44	72	530	45020	45020	347	342	336	331	326	322	317	312	308	303	299	295	291	286	282
						191	187	183	178	174	171	167	163	160	156	152	150	147	143	140
72DLH16	50	72	612	52040	52040	401	395	390	384	378	373	368	363	358	353	348	343	338	334	329
						225	219	214	209	205	200	196	191	188	183	179	175	171	169	165
72DLH17	56	72	689	58540	58540	451	445	438	432	426	420	414	408	402	397	391	386	381	376	371
						256	250	245	239	233	228	224	218	213	209	205	200	196	191	188
72DLH18	59	72	807	68580	68580	528	520	512	505	497	490	483	479	470	463	457	450	444	438	432
						289	283	276	270	265	258	252	247	242	236	231	227	222	217	212
72DLH19	70	72	946	80400	80400	619	609	600	591	582	573	565	557	549	541	533	526	518	511	504
						328	321	313	306	300	293	286	280	274	268	263	257	251	247	241

ASD

STANDARD LOAD TABLE LONGSPAN STEEL JOISTS, DLH-SERIES

Based on a 50 ksi Maximum Yield Strength - Loads Shown in Pounds per Linear Foot (plf)

Joist Designation	Approx. Wt in Lbs. Per Linear Ft (Joists only)	Depth in inches	Max Load plf	SAFE LOAD* in Lbs. Between		SPAN IN FEET															
			< 81	81-99	100-111	112	115	118	121	124	127	130	133	136	139	142	145	148	151	155	160
80DLH15	40	80	644	52160	52160	466 321	442 296	421 275	401 255	383 236	366 220	350 205	335 192	321 179	307 167	295 157	283 147	272 139	261 130	247 120	231 109
80DLH16	46	80	774	62680	62680	560 375	535 347	509 321	485 297	461 276	439 257	419 240	400 224	383 209	366 196	350 184	336 172	322 162	309 152	293 141	275 128
80DLH17	53	80	894	72420	72420	647 451	617 416	587 386	559 358	533 332	510 309	487 288	466 269	446 252	427 235	410 221	393 207	378 195	363 183	345 169	323 154
80DLH18	60	80	1010	81840	81840	731 516	696 477	662 441	631 409	602 380	575 354	550 330	526 308	504 288	482 270	463 253	444 237	427 223	410 210	389 194	366 176
80DLH19	67	80	1179	95480	95480	853 578	812 533	773 493	736 458	701 425	670 396	640 369	612 344	585 322	560 301	537 283	516 266	495 250	476 235	451 217	423 197
80DLH20	75	80	1325	107320	107320	964 646	921 596	882 552	845 512	807 475	771 443	736 412	704 385	674 360	645 337	618 316	594 297	570 279	547 263	520 243	487 220
			< 89	**89-99**	**100-120**	**121**	**124**	**127**	**130**	**133**	**136**	**139**	**142**	**145**	**148**	**151**	**155**	**160**	**165**	**170**	**175**
88DLH16	46	88	699	62180	62180	514 361	490 336	467 313	447 291	428 272	410 254	394 238	378 223	363 210	349 197	335 186	318 172	299 156	281 143	265 130	251 119
88DLH17	51	88	790	70300	70300	581 404	553 375	526 349	502 325	479 304	458 284	439 266	420 249	403 234	386 220	371 207	352 191	330 173	310 159	292 146	274 133
88DLH18	58	88	906	80620	80620	667 460	635 427	605 397	577 370	551 346	527 323	504 303	483 284	463 267	444 250	426 236	404 218	379 199	356 181	335 165	316 152
88DLH19	65	88	1048	93260	93260	771 521	734 484	699 450	666 420	636 392	608 367	582 343	557 322	534 302	513 284	492 267	467 248	438 225	411 205	387 187	364 172
88DLH20	76	88	1206	107300	107300	889 623	854 579	821 539	789 502	755 469	723 438	694 410	665 385	639 361	614 340	590 320	560 296	527 269	495 246	467 224	440 206
88DLH21	89	88	1487	132340	132340	1099 724	1045 673	996 626	950 584	907 545	867 509	829 477	794 447	762 420	731 395	702 372	666 344	624 313	586 285	551 261	519 239
			< 97	**97-99**	**100-129**	**130**	**133**	**136**	**139**	**142**	**145**	**148**	**151**	**155**	**160**	**165**	**170**	**175**	**180**	**185**	**190**
96DLH17	52	96	724	70180	70180	540 389	517 363	496 339	474 318	456 298	438 280	421 263	405 247	385 229	362 208	339 190	320 173	302 159	284 146	269 134	255 124
96DLH18	58	96	814	79000	79000	608 443	583 413	559 386	535 362	513 340	493 319	475 300	457 282	435 261	410 237	386 216	364 198	344 181	326 166	308 153	292 141
96DLH19	66	96	974	94440	94440	727 502	697 469	667 438	638 410	611 385	585 361	561 340	539 320	512 296	480 269	451 246	424 224	401 206	378 189	357 174	338 161
96DLH20	74	96	1096	106280	106280	824 569	789 531	754 496	722 465	691 436	662 409	635 385	610 362	579 336	543 305	510 277	481 254	453 233	428 214	405 196	382 181
96DLH21	90	96	1375	133340	133340	1027 698	982 652	940 610	900 571	864 535	829 503	797 473	766 445	728 412	684 374	643 341	605 312	571 286	539 263	510 242	482 224
96DLH22	102	96	1540	149380	149380	1150 811	1108 757	1067 708	1028 663	991 622	957 584	921 549	886 517	843 479	792 435	745 396	702 362	664 332	627 305	594 281	562 259
Joist Designation	Approx. Wt in Lbs. Per Linear Ft (Joists only)	Depth in inches	Max Load plf	SAFE LOAD* in Lbs. Between		SPAN IN FEET															
			< 100	100-104	105-138	139	142	145	148	151	155	160	165	170	175	180	185	190	195	200	205
104DLH18	59	104	733	733	76980	554 426	532 400	512 375	489 353	472 332	450 307	423 279	400 255	378 233	358 213	339 195	321 180	305 167	290 154	276 142	263 132
104DLH19	67	104	892	892	93620	674 484	647 453	622 426	598 401	574 377	546 349	513 317	485 289	457 265	432 242	409 222	387 204	368 189	350 175	332 162	315 150
104DLH20	75	104	1002	1002	105260	764 548	738 513	714 483	688 453	661 427	629 395	591 359	555 327	522 299	493 274	465 251	440 232	417 214	395 198	375 184	357 170
104DLH21	90	104	1260	1260	132320	956 673	917 632	881 593	847 558	813 525	773 486	727 442	685 403	647 368	611 337	578 307	547 284	519 263	493 244	469 226	446 209
104DLH22	104	104	1413	1413	148360	1071 783	1034 734	999 689	966 648	934 610	893 564	841 513	792 468	747 428	706 392	668 359	633 331	600 306	570 283	542 262	516 244
104DLH23	109	104	1556	1556	163400	1181 819	1141 768	1096 721	1052 678	1009 638	956 590	899 536	845 489	795 447	750 410	708 377	670 347	635 320	602 296	571 274	543 254
			< 100	**100-112**	**113-147**	**148**	**151**	**155**	**160**	**165**	**170**	**175**	**180**	**185**	**190**	**195**	**200**	**205**	**210**	**215**	**220**
112DLH19	67	112	815	815	91900	623 466	600 439	571 406	537 369	506 336	478 308	451 281	428 259	406 238	386 220	366 203	348 189	332 175	317 162	303 151	289 142
112DLH20	76	112	922	922	104000	710 528	688 497	657 459	618 418	582 381	549 348	520 319	493 293	468 270	445 249	422 231	402 213	383 198	365 184	348 171	333 160
112DLH21	91	112	1162	1162	131000	891 650	858 612	816 566	767 514	722 469	681 429	644 393	610 361	578 333	549 306	521 283	496 263	473 244	450 227	430 211	411 198
112DLH22	104	112	1304	1304	147000	999 755	967 711	928 657	880 598	833 545	787 498	744 457	705 419	668 386	635 356	602 329	574 306	546 283	521 264	497 246	474 229
112DLH23	110	112	1437	1437	162000	1102 790	1067 744	1023 688	970 625	913 571	859 522	810 478	765 439	724 404	686 373	651 345	618 320	588 297	560 276	533 257	509 239
112DLH24	131	112	1703	1703	192000	1304 957	1263 901	1212 834	1151 758	1087 691	1026 632	970 579	919 532	871 489	828 451	786 418	748 387	713 359	680 334	648 311	619 291
			< 100	**100-120**	**121-165**	**166**	**170**	**175**	**180**	**185**	**190**	**195**	**200**	**205**	**210**	**215**	**220**	**225**	**230**	**235**	**240**
120DLH20	77	120	819	819	99100	597 430	571 400	538 367	510 338	484 311	461 287	438 265	418 246	399 228	380 212	362 198	347 185	332 172	318 161	305 151	292 142
120DLH21	92	120	1019	1019	123240	748 530	714 494	675 452	639 416	606 383	576 353	548 326	521 303	497 281	474 262	452 244	432 227	414 212	396 199	379 186	363 175
120DLH22	104	120	1168	1168	141280	855 616	823 574	779 526	737 483	699 445	665 411	632 380	602 352	574 327	547 304	522 283	499 265	477 247	457 231	438 217	420 204
120DLH23	111	120	1292	1292	156320	943 644	907 601	858 551	813 506	771 466	733 430	697 397	664 369	632 341	602 318	574 296	548 276	524 258	501 241	479 227	459 213
120DLH24	132	120	1532	1532	185380	1117 781	1073 728	1015 667	961 613	912 565	867 521	824 482	785 447	748 414	713 386	681 359	651 335	623 313	596 293	571 275	548 258
120DLH25	152	120	1756	1756	212420	1284 915	1231 853	1165 782	1104 718	1047 661	994 610	946 564	900 523	858 485	819 452	782 421	748 393	715 367	684 344	656 322	628 302

ASD

METRIC LOAD TABLE LONGSPAN STEEL JOISTS, DLH-SERIES

Based on 345 MPa Maximum Yield Strength - Loads Shown in Kilonewtons per Meter (kN/m)

Joist Designation	Approx. Wt in kN Per Meter (Joists only)	Depth in mm	Max Load kN/m	SAFE LOAD* in kN Between		SPAN IN MILLIMETERS													
			<18898	18898-27127		27432	27737	28042	28346	28651	28956	29261	29566	29870	30175	30480	30785	31090	31394	31699
52DLH10	0.36	1321	6.30	119.2		4.34	4.24	4.15	4.07	3.98	3.89	3.80	3.73	3.66	3.59	3.51	3.44	3.37	3.31	3.25
						2.49	2.4	2.32	2.24	2.18	2.11	2.04	1.98	1.92	1.86	1.80	1.75	1.69	1.66	1.60
52DLH11	0.38	1321	6.93	130.8		4.77	4.67	4.56	4.46	4.36	4.27	4.18	4.10	4.01	3.94	3.85	3.77	3.70	3.63	3.56
						2.72	2.64	2.53	2.46	2.39	2.30	2.23	2.17	2.10	2.04	1.97	1.92	1.86	1.80	1.75
52DLH12	0.42	1321	7.72	145.9		5.32	5.21	5.09	4.99	4.87	4.77	4.67	4.58	4.48	4.39	4.30	4.21	4.14	4.05	3.98
						2.97	2.87	2.78	2.69	2.61	2.52	2.45	2.37	2.30	2.23	2.17	2.10	2.04	1.97	1.92
52DLH13	0.50	1321	9.38	177.2		6.46	6.31	6.18	6.04	5.92	5.79	5.67	5.56	5.44	5.34	5.22	5.12	5.02	4.93	4.83
						3.60	3.48	3.37	3.26	3.15	3.05	2.96	2.87	2.78	2.69	2.62	2.53	2.48	2.39	2.32
52DLH14	0.57	1321	10.73	202.7		7.39	7.25	7.09	6.94	6.80	6.66	6.52	6.39	6.27	6.14	6.02	5.91	5.79	5.69	5.57
						4.02	3.88	3.76	3.63	3.53	3.41	3.31	3.21	3.10	3.02	2.93	2.83	2.75	2.68	2.59
52DLH15	0.61	1321	12.05	227.7		8.30	8.12	7.95	7.77	7.61	7.45	7.29	7.15	7.00	6.85	6.72	6.58	6.46	6.33	6.21
						4.53	4.39	4.24	4.11	3.96	3.85	3.73	3.60	3.50	3.40	3.29	3.19	3.10	3.02	2.93
52DLH16	0.66	1321	12.99	245.5		8.96	8.77	8.58	8.39	8.21	8.04	7.88	7.70	7.55	7.39	7.25	7.10	6.97	6.82	6.69
						5.04	4.88	4.72	4.58	4.43	4.29	4.15	4.02	3.89	3.79	3.67	3.57	3.45	3.35	3.26
52DLH17	0.76	1321	14.96	282.6		10.30	10.08	9.86	9.64	9.44	9.25	9.04	8.87	8.68	8.50	8.34	8.17	8.01	7.86	7.70
						5.76	5.56	5.38	5.21	5.04	4.88	4.72	4.59	4.43	4.31	4.17	4.07	3.94	3.83	3.72
			<20422	20422-29566		29870	30175	30480	30785	31090	31394	31699	32004	32309	32614	32918	33223	33528	33833	34138
56DLH11	0.38	1422	6.14	125.4		4.20	4.13	4.04	3.96	3.89	3.82	3.75	3.69	3.61	3.56	3.48	3.42	3.37	3.31	3.25
						2.46	2.37	2.30	2.23	2.17	2.11	2.04	1.98	1.94	1.88	1.82	1.78	1.72	1.67	1.64
56DLH12	0.44	1422	7.06	144.1		4.83	4.72	4.64	4.55	4.46	4.37	4.30	4.21	4.14	4.05	3.98	3.91	3.83	3.77	3.70
						2.68	2.59	2.52	2.45	2.37	2.30	2.23	2.18	2.11	2.05	1.99	1.94	1.89	1.83	1.79
56DLH13	0.50	1422	8.55	174.5		5.85	5.74	5.63	5.53	5.42	5.32	5.22	5.12	5.02	4.93	4.83	4.74	4.65	4.58	4.49
						3.25	3.15	3.05	2.97	2.87	2.78	2.71	2.64	2.55	2.49	2.42	2.34	2.29	2.21	2.17
56DLH14	0.57	1422	9.66	197.3		6.61	6.47	6.34	6.23	6.11	5.99	5.88	5.77	5.66	5.56	5.47	5.37	5.26	5.18	5.09
						3.63	3.53	3.41	3.32	3.22	3.12	3.05	2.94	2.86	2.77	2.71	2.64	2.55	2.49	2.43
56DLH15	0.61	1422	11.03	225.4		7.55	7.41	7.26	7.12	6.97	6.84	6.71	6.58	6.46	6.33	6.21	6.11	5.99	5.88	5.77
						4.10	3.96	3.85	3.73	3.61	3.53	3.41	3.32	3.22	3.13	3.05	2.97	2.88	2.80	2.74
56DLH16	0.67	1422	11.91	243.2		8.15	7.99	7.83	7.67	7.53	7.38	7.23	7.10	6.97	6.84	6.71	6.59	6.47	6.36	6.24
						4.56	4.43	4.29	4.15	4.04	3.92	3.82	3.70	3.60	3.50	3.40	3.31	3.22	3.12	3.05
56DLH17	0.74	1422	13.73	280.3		9.38	9.19	9.01	8.82	8.66	8.49	8.33	8.17	8.01	7.86	7.72	7.58	7.44	7.31	7.18
						5.19	5.03	4.88	4.74	4.61	4.46	4.34	4.21	4.10	3.98	3.88	3.76	3.66	3.57	3.47
			<21641	21641-30175	30480-32804	32309	32614	32918	33223	33528	33833	34138	34442	34747	35052	35357	35662	35966	36271	36576
60DLH12	0.42	1524	6.41	138.7	138.7	4.30	4.21	4.14	4.07	3.99	3.94	3.86	3.80	3.73	3.67	3.61	3.56	3.50	3.44	3.38
						2.45	2.37	2.30	2.24	2.18	2.13	2.07	2.01	1.95	1.91	1.86	1.80	1.76	1.72	1.67
60DLH13	0.51	1524	7.79	168.6	168.6	5.22	5.12	5.03	4.94	4.85	4.77	4.69	4.61	4.53	4.46	4.39	4.31	4.24	4.17	4.11
						2.96	2.87	2.78	2.72	2.64	2.56	2.49	2.43	2.37	2.30	2.24	2.20	2.14	2.08	2.02
60DLH14	0.58	1524	8.67	187.4	187.4	5.80	5.70	5.58	5.48	5.39	5.29	5.19	5.10	5.02	4.93	4.84	4.77	4.68	4.61	4.52
						3.15	3.06	2.99	2.90	2.81	2.75	2.67	2.59	2.52	2.48	2.40	2.34	2.27	2.21	2.17
60DLH15	0.63	1524	10.17	220.0	220.0	6.81	6.68	6.56	6.45	6.33	6.23	6.11	6.01	5.91	5.80	5.72	5.61	5.53	5.44	5.35
						3.72	3.61	3.53	3.42	3.32	3.25	3.15	3.06	2.99	2.91	2.83	2.77	2.69	2.62	2.55
60DLH16	0.67	1524	11.18	241.8	241.8	7.48	7.35	7.20	7.07	6.94	6.82	6.71	6.58	6.47	6.36	6.24	6.14	6.04	5.93	5.83
						4.15	4.04	3.92	3.82	3.72	3.60	3.51	3.42	3.32	3.25	3.16	3.07	3.00	2.93	2.86
60DLH17	0.76	1524	12.84	278.0	278.0	8.61	8.44	8.30	8.14	7.99	7.85	7.72	7.57	7.44	7.31	7.19	7.06	6.94	6.82	6.71
						4.72	4.59	4.46	4.34	4.23	4.13	4.01	3.89	3.80	3.70	3.60	3.51	3.42	3.32	3.25
60DLH18	0.86	1524	14.83	320.8	320.8	9.93	9.74	9.57	9.39	9.22	9.06	8.90	8.74	8.59	8.43	8.28	8.15	8.01	7.88	7.74
						5.34	5.21	5.04	4.91	4.77	4.65	4.52	4.42	4.29	4.17	4.07	3.96	3.88	3.77	3.67
			<23165	23165-30175	30480-34442	34747	35052	35357	35662	35966	36271	36576	36881	37186	37490	37795	38100	38405	38710	39014
64DLH12	0.45	1626	5.78	133.8	133.8	3.85	3.77	3.72	3.66	3.60	3.54	3.48	3.42	3.37	3.32	3.26	3.22	3.18	3.12	3.07
						2.23	2.18	2.13	2.07	2.01	1.97	1.92	1.88	1.82	1.78	1.73	1.69	1.66	1.61	1.59
64DLH13	0.50	1626	7.01	162.3	162.3	4.68	4.59	4.52	4.45	4.37	4.30	4.24	4.17	4.10	4.04	3.98	3.92	3.85	3.79	3.75
						2.71	2.64	2.56	2.49	2.45	2.37	2.32	2.26	2.21	2.15	2.10	2.05	1.99	1.95	1.91
64DLH14	0.58	1626	8.03	186.0	186.0	5.35	5.25	5.16	5.09	5.00	4.91	4.84	4.75	4.68	4.61	4.53	4.46	4.39	4.31	4.26
						2.90	2.81	2.75	2.68	2.61	2.53	2.49	2.42	2.36	2.30	2.24	2.20	2.14	2.08	2.04
64DLH15	0.63	1626	9.21	213.2	213.2	6.14	6.04	5.93	5.83	5.74	5.64	5.56	5.47	5.38	5.29	5.22	5.13	5.06	4.97	4.90
						3.41	3.32	3.25	3.16	3.07	3.00	2.93	2.86	2.78	2.72	2.65	2.58	2.52	2.48	2.40
64DLH16	0.67	1626	10.36	240.0	240.0	6.91	6.80	6.68	6.56	6.46	6.34	6.24	6.14	6.04	5.93	5.85	5.74	5.66	5.57	5.48
						3.82	3.70	3.61	3.53	3.42	3.34	3.26	3.18	3.10	3.03	2.96	2.88	2.81	2.75	2.68
64DLH17	0.76	1626	11.94	276.5	276.5	7.96	7.82	7.69	7.55	7.42	7.31	7.18	7.06	6.94	6.82	6.72	6.62	6.50	6.40	6.30
						4.34	4.23	4.13	4.01	3.91	3.82	3.72	3.61	3.54	3.45	3.37	3.29	3.21	3.13	3.06
64DLH18	0.86	1626	13.79	319.3	319.3	9.19	9.03	8.87	8.72	8.56	8.43	8.28	8.15	8.01	7.88	7.76	7.63	7.51	7.39	7.28
						4.91	4.78	4.67	4.53	4.43	4.31	4.20	4.11	3.99	3.89	3.80	3.72	3.63	3.54	3.45
			<24689	24689-30175	30480-36801	37186	37490	37795	38100	38405	38710	39014	39319	39624	39929	40234	40538	40843	41148	41453
68DLH13	0.54	1727	6.32	156.1	156.1	4.20	4.14	4.07	4.01	3.95	3.89	3.83	3.77	3.72	3.67	3.61	3.56	3.51	3.45	3.41
						2.49	2.45	2.39	2.32	2.26	2.21	2.17	2.11	2.07	2.01	1.97	1.94	1.89	1.85	1.80
68DLH14	0.58	1727	7.28	179.7	179.7	4.84	4.77	4.69	4.62	4.55	4.49	4.42	4.36	4.29	4.23	4.17	4.10	4.04	3.98	3.92
						2.68	2.61	2.55	2.49	2.43	2.37	2.32	2.26	2.21	2.15	2.11	2.05	2.01	1.97	1.94
68DLH15	0.64	1727	8.17	201.5	201.5	5.42	5.32	5.25	5.16	5.07	5.00	4.91	4.84	4.77	4.69	4.62	4.55	4.49	4.42	4.36
						3.00	2.93	2.86	2.78	2.72	2.65	2.59	2.53	2.48	2.42	2.36	2.30	2.26	2.21	2.15
68DLH16	0.72	1727	9.68	239.0	239.0	6.43	6.31	6.23	6.12	6.02	5.93	5.83	5.74	5.66	5.57	5.48	5.41	5.32	5.25	5.16
						3.53	3.44	3.35	3.28	3.19	3.12	3.05	2.97	2.90	2.84	2.77	2.71	2.65	2.59	2.53
68DLH17	0.80	1727	10.92	269.3	269.3	7.25	7.13	7.01	6.91	6.81	6.71	6.61	6.50	6.40	6.31	6.23	6.12	6.04	5.95	5.88
						4.01	3.91	3.82	3.73	3.63	3.56	3.47	3.38	3.32	3.23	3.16	3.09	3.03	2.96	2.88
68DLH18	0.89	1727	12.62	311.8	311.8	8.39	8.26	8.12	8.01	7.88	7.76	7.64	7.53	7.41	7.31	7.19	7.09	6.99	6.88	6.78
						4.53	4.43	4.33	4.21	4.13	4.02	3.92	3.83	3.75	3.66	3.59	3.50	3.41	3.35	3.28
68DLH19	0.98	1727	14.55	359.0	359.0	9.66	9.50	9.35	9.20	9.06	8.91	8.77	8.63	8.50	8.37	8.24	8.12	7.99	7.88	7.76
						5.15	5.02	4.90	4.78	4.67	4.56	4.45	4.34	4.24	4.15	4.05	3.96	3.88	3.79	3.70
			<25908	25908-30175	30480-38319	39624	39929	40234	40538	40843	41148	41453	41758	42062	42367	42672	42977	43282	43586	43891
72DLH14	0.60	1829	6.74	174.8	174.8	4.42	4.34	4.29	4.23	4.15	4.10	4.04	3.99	3.94	3.88	3.82	3.77	3.72	3.67	3.61
						2.49	2.43	2.37	2.32	2.26	2.21	2.17	2.13	2.08	2.02	1.98	1.94	1.91	1.86	1.82
72DLH15	0.64	1829	7.73	200.2	200.2	5.06	4.99	4.90	4.83	4.75	4.69	4.62	4.55	4.49	4.42	4.36	4.30	4.24	4.17	4.11
						2.78	2.72	2.67	2.59	2.53	2.49	2.43	2.37	2.33	2.27	2.21	2.18	2.14	2.08	2.04
72DLH16	0.73	1829	8.93	231.4	231.4	5.85	5.76	5.69	5.60	5.51	5.44	5.37	5.29	5.22	5.15	5.07	5.00	4.93	4.87	4.80
						3.28	3.19	3.12	3.05	2.99	2.91	2.86	2.78	2.74	2.67	2.61	2.55	2.49	2.46	2.40
72DLH17	0.82	1829	10.06	260.3	260.3	6.58	6.49	6.39	6.30	6.21	6.12	6.04	5.95	5.86	5.79	5.70	5.63	5.56	5.48	5.41
						3.73	3.64	3.57	3.48	3.40	3.32	3.26	3.18	3.10	3.05	2.99	2.91	2.86	2.78	2.74
72DLH18	0.86	1829	11.78	305.0	305.0	7.70	7.58	7.47	7.36	7.25	7.15	7.04	6.99	6.85	6.75	6.66	6.56	6.47	6.39	6.30
						4.21	4.13	4.02	3.94	3.86	3.76	3.67	3.60	3.53	3.44	3.37	3.31	3.23	3.16	3.09
72DLH19	1.02	1829	13.81	357.6	357.6	9.03	8.88	8.75	8.62	8.49	8.36	8.24	8.12	8.01	7.89	7.77	7.67	7.55	7.45	7.35
						4.78	4.68	4.56	4.46	4.37	4.27	4.17	4.08	3.99	3.91	3.83	3.75	3.66	3.60	3.51

ASD

METRIC LOAD TABLE LONGSPAN STEEL JOISTS, DLH-SERIES

Based on 345 MPa Maximum Yield Strength - Loads Shown in Kilonewtons per Meter (kN/m)

Joist Designation	Approx. Wt in kN Per Meter (Joists only)	Depth in mm	Max Load kN/m	SAFE LOAD* in kN Between		SPAN IN MILLIMETERS														
			<24689	24689-30175	30480-33833	34138	35052	35966	36881	37795	38710	39624	40538	41453	42367	43282	44196	45110	46025	47244	48768
80DLH15	0.58	2032	9.40	232.0	232.0	6.80	6.45	6.14	5.85	5.58	5.34	5.10	4.88	4.68	4.48	4.30	4.13	3.96	3.80	3.60	3.37
						4.68	4.31	4.01	3.72	3.44	3.21	2.99	2.80	2.61	2.43	2.29	2.14	2.02	1.89	1.75	1.59
80DLH16	0.67	2032	11.3	278.8	278.8	8.17	7.80	7.42	7.07	6.72	6.40	6.11	5.83	5.58	5.34	5.10	4.90	4.69	4.50	4.27	4.01
						5.47	5.06	4.68	4.33	4.02	3.75	3.50	3.26	3.05	2.86	2.68	2.51	2.36	2.21	2.05	1.86
80DLH17	0.77	2032	13.05	322.1	322.1	9.44	9.00	8.56	8.15	7.77	7.44	7.10	6.80	6.50	6.23	5.98	5.73	5.51	5.29	5.03	4.71
						6.58	6.07	5.63	5.22	4.84	4.50	4.20	3.92	3.67	3.42	3.22	3.02	2.84	2.67	2.46	2.24
80DLH18	0.88	2032	14.74	364.0	364.0	10.66	10.15	9.66	9.20	8.78	8.39	8.02	7.67	7.35	7.03	6.75	6.47	6.23	5.98	5.67	5.34
						7.53	6.96	6.43	5.96	5.54	5.16	4.81	4.49	4.20	3.94	3.69	3.45	3.25	3.06	2.83	2.56
80DLH19	0.98	2032	17.21	424.7	424.7	12.44	11.85	11.28	10.74	10.23	9.77	9.34	8.93	8.53	8.17	7.83	7.53	7.22	6.94	6.58	6.17
						8.43	7.77	7.19	6.68	6.20	5.77	5.38	5.02	4.69	4.39	4.13	3.88	3.64	3.42	3.16	2.87
80DLH20	1.09	2032	19.34	477.3	477.3	14.06	13.44	12.87	12.33	11.77	11.25	10.74	10.27	9.83	9.41	9.01	8.66	8.31	7.98	7.58	7.10
						9.42	8.69	8.05	7.47	6.93	6.46	6.01	5.61	5.25	4.91	4.61	4.33	4.07	3.83	3.54	3.21
			<27127	27127-30175	30480-36576	36881	37795	38710	39624	40538	41453	42367	43282	44196	45110	46025	47244	48768	50292	51816	53340
88DLH16	0.67	2235	10.20	276.5	276.5	7.50	7.15	6.81	6.52	6.24	5.98	5.74	5.51	5.29	5.09	4.88	4.64	4.36	4.10	3.86	3.66
						5.26	4.90	4.56	4.24	3.96	3.70	3.47	3.25	3.06	2.87	2.71	2.51	2.27	2.08	1.89	1.73
88DLH17	0.74	2235	11.53	312.7	312.7	8.47	8.07	7.67	7.32	6.99	6.68	6.40	6.12	5.88	5.63	5.41	5.13	4.81	4.52	4.26	3.99
						5.89	5.47	5.09	4.74	4.43	4.14	3.88	3.63	3.41	3.21	3.02	2.78	2.52	2.32	2.13	1.94
88DLH18	0.85	2235	13.22	358.6	358.6	9.73	9.26	8.82	8.42	8.04	7.69	7.35	7.04	6.75	6.47	6.21	5.89	5.53	5.19	4.88	4.61
						6.71	6.23	5.79	5.39	5.04	4.71	4.42	4.14	3.89	3.64	3.44	3.18	2.90	2.64	2.40	2.21
88DLH19	0.95	2235	15.29	414.8	414.8	11.25	10.71	10.20	9.71	9.28	8.87	8.49	8.12	7.79	7.48	7.18	6.81	6.39	5.99	5.64	5.31
						7.60	7.06	6.56	6.12	5.72	5.35	5.00	4.69	4.40	4.14	3.89	3.61	3.28	2.99	2.72	2.51
88DLH20	1.11	2235	17.60	477.2	477.2	12.97	12.46	11.98	11.51	11.01	10.55	10.12	9.70	9.32	8.96	8.61	8.17	7.69	7.22	6.81	6.42
						9.09	8.44	7.86	7.32	6.84	6.39	5.98	5.61	5.26	4.96	4.67	4.31	3.92	3.59	3.26	3.00
88DLH21	1.30	2235	21.70	588.3	588.3	16.03	15.25	14.53	13.86	13.23	12.65	12.09	11.58	11.12	10.66	10.24	9.71	9.10	8.55	8.04	7.57
						10.56	9.82	9.13	8.52	7.95	7.42	6.96	6.52	6.12	5.76	5.42	5.02	4.56	4.15	3.80	3.48
			<29566	29566-30175	30480-39319	39624	40538	41453	42367	43282	44196	45110	46025	47244	48768	50292	51816	53340	54864	56388	57912
96DLH17	0.76	2438	10.57	312.1	312.1	7.88	7.54	7.23	6.91	6.65	6.39	6.14	5.91	5.61	5.28	4.94	4.67	4.40	4.14	3.92	3.72
						5.67	5.29	4.94	4.64	4.34	4.08	3.83	3.60	3.34	3.03	2.77	2.52	2.32	2.13	1.95	1.80
96DLH18	0.85	2438	11.88	351.4	351.4	8.87	8.50	8.15	7.80	7.48	7.19	6.93	6.66	6.34	5.98	5.63	5.31	5.02	4.75	4.49	4.26
						6.46	6.02	5.63	5.28	4.96	4.65	4.37	4.11	3.80	3.45	3.15	2.88	2.64	2.42	2.23	2.05
96DLH19	0.96	2438	14.21	420.0	420.0	10.60	10.17	9.73	9.31	8.91	8.53	8.18	7.86	7.47	7.00	6.58	6.18	5.85	5.51	5.21	4.93
						7.32	6.84	6.39	5.98	5.61	5.26	4.96	4.67	4.31	3.92	3.59	3.26	3.00	2.75	2.53	2.34
96DLH20	1.08	2438	15.99	472.7	472.7	12.02	11.51	11.00	10.53	10.08	9.66	9.26	8.90	8.44	7.92	7.44	7.01	6.61	6.24	5.91	5.57
						8.30	7.74	7.23	6.78	6.36	5.96	5.61	5.28	4.90	4.45	4.04	3.70	3.40	3.12	2.86	2.64
96DLH21	1.31	2438	20.07	593.1	593.1	14.98	14.33	13.71	13.13	12.60	12.09	11.63	11.17	10.62	9.98	9.38	8.82	8.33	7.86	7.44	7.03
						10.18	9.51	8.90	8.33	7.80	7.34	6.90	6.49	6.01	5.45	4.97	4.55	4.17	3.83	3.53	3.26
96DLH22	1.49	2438	22.47	664.4	664.4	16.78	16.17	15.57	15.00	14.46	13.96	13.44	12.93	12.30	11.55	10.87	10.24	9.69	9.15	8.66	8.20
						11.83	11.04	10.33	9.67	9.07	8.52	8.01	7.54	6.99	6.34	5.77	5.28	4.84	4.45	4.10	3.77

Joist Designation	Approx. Wt in kN Per Meter (Joists only)	Depth in mm	Max Load kN/m		SAFE LOAD* in kN Between	SPAN IN MILLIMETERS														
			<30480	30480-31699	32004-42062	42367	43282	44196	45110	46025	47244	48768	50292	51816	53340	54864	56388	57912	59436	60960	62484
104DLH18	0.86	2642	10.70	10.70	342.4	8.08	7.76	7.47	7.13	6.88	6.56	6.17	5.83	5.51	5.22	4.94	4.68	4.45	4.23	4.02	3.83
						6.21	5.83	5.47	5.15	4.84	4.48	4.07	3.72	3.40	3.10	2.84	2.62	2.43	2.24	2.07	1.92
104DLH19	0.98	2642	13.02	13.02	416.4	9.83	9.44	9.07	8.72	8.37	7.96	7.48	7.07	6.66	6.30	5.96	5.64	5.37	5.10	4.84	4.59
						7.06	6.61	6.21	5.85	5.50	5.09	4.62	4.21	3.86	3.53	3.23	2.97	2.75	2.55	2.36	2.18
104DLH20	1.09	2642	14.62	14.62	468.2	11.14	10.77	10.42	10.04	9.64	9.17	8.62	8.09	7.61	7.19	6.78	6.42	6.08	5.76	5.47	5.21
						7.99	7.48	7.04	6.61	6.23	5.76	5.23	4.77	4.36	3.99	3.66	3.38	3.12	2.88	2.68	2.48
104DLH21	1.31	2642	18.39	18.39	588.5	13.95	13.38	12.85	12.36	11.86	11.28	10.60	9.99	9.44	8.91	8.43	7.98	7.57	7.19	6.84	6.50
						9.82	9.22	8.65	8.14	7.66	7.09	6.45	5.88	5.37	4.91	4.48	4.14	3.83	3.56	3.29	3.05
104DLH22	1.52	2642	20.62	20.62	659.9	15.63	15.09	14.57	14.09	13.63	13.03	12.27	11.55	10.90	10.30	9.74	9.23	8.75	8.31	7.90	7.53
						11.42	10.71	10.05	9.45	8.90	8.23	7.48	6.82	6.24	5.72	5.23	4.83	4.46	4.13	3.82	3.56
104DLH23	1.59	2642	22.71	22.71	726.8	17.23	16.65	15.99	15.35	14.72	13.95	13.11	12.33	11.60	10.94	10.33	9.77	9.26	8.78	8.33	7.92
						11.95	11.20	10.52	9.89	9.31	8.61	7.82	7.13	6.52	5.98	5.50	5.06	4.67	4.31	3.99	3.70
			<30480	30480-34138	34442-44806	45110	46025	47244	48768	50292	51816	53340	54864	56388	57912	59436	60960	62484	64008	65532	67056
112DLH19	0.98	2845	11.89	11.89	409.6	9.09	8.75	8.33	7.83	7.38	6.97	6.58	6.24	5.92	5.63	5.34	5.07	4.84	4.62	4.42	4.21
						6.80	6.40	5.92	5.38	4.90	4.49	4.10	3.77	3.47	3.21	2.96	2.75	2.55	2.36	2.20	2.07
112DLH20	1.11	2845	13.46	13.46	463.6	10.36	10.04	9.58	9.01	8.49	8.01	7.58	7.19	6.82	6.49	6.15	5.86	5.58	5.32	5.07	4.85
						7.70	7.25	6.69	6.10	5.56	5.07	4.65	4.27	3.94	3.63	3.37	3.10	2.88	2.68	2.49	2.33
112DLH21	1.33	2845	16.96	16.96	584.0	13.00	12.52	11.90	11.19	10.53	9.93	9.39	8.90	8.43	8.01	7.60	7.23	6.90	6.56	6.27	5.99
						9.48	8.93	8.26	7.50	6.84	6.26	5.73	5.26	4.85	4.46	4.13	3.83	3.56	3.31	3.07	2.88
112DLH22	1.52	2845	19.03	19.03	655.4	14.57	14.11	13.54	12.84	12.15	11.48	10.85	10.28	9.74	9.26	8.78	8.37	7.96	7.60	7.25	6.91
						11.01	10.37	9.58	8.72	7.95	7.26	6.66	6.11	5.63	5.19	4.80	4.46	4.13	3.85	3.59	3.34
112DLH23	1.61	2845	20.97	20.97	722.2	16.08	15.57	14.92	14.15	13.32	12.53	11.82	11.16	10.56	10.01	9.50	9.01	8.58	8.17	7.77	7.42
						11.52	10.85	10.04	9.12	8.33	7.61	6.97	6.40	5.89	5.44	5.03	4.67	4.33	4.02	3.75	3.48
112DLH24	1.91	2845	24.85	24.85	856.0	19.03	18.43	17.68	16.79	15.86	14.97	14.15	13.41	12.71	12.08	11.47	10.91	10.40	9.92	9.45	9.03
						13.96	13.14	12.17	11.06	10.08	9.22	8.44	7.76	7.13	6.58	6.10	5.64	5.23	4.87	4.53	4.24
			<30480	30480-36576	36881-50292	50597	51816	53340	54864	56388	57912	59436	60960	62484	64008	65532	67056	68580	70104	71628	73152
120DLH20	1.12	3048	11.95	11.95	440.8	8.71	8.33	7.85	7.44	7.06	6.72	6.39	6.10	5.82	5.54	5.28	5.06	4.84	4.64	4.45	4.26
						6.27	5.83	5.35	4.93	4.53	4.18	3.86	3.59	3.32	3.09	2.88	2.69	2.51	2.34	2.20	2.07
120DLH21	1.34	3048	14.87	14.87	548.1	10.91	10.42	9.85	9.32	8.84	8.40	7.99	7.60	7.25	6.91	6.59	6.30	6.04	5.77	5.53	5.29
						7.73	7.20	6.59	6.07	5.58	5.15	4.75	4.42	4.10	3.82	3.56	3.31	3.09	2.90	2.71	2.55
120DLH22	1.52	3048	17.05	17.05	628.4	12.47	12.01	11.36	10.75	10.20	9.70	9.22	8.78	8.37	7.98	7.61	7.28	6.96	6.66	6.39	6.12
						8.98	8.37	7.67	7.04	6.49	5.99	5.54	5.13	4.77	4.43	4.13	3.86	3.60	3.37	3.16	2.97
120DLH23	1.62	3048	18.86	18.86	695.3	13.76	13.23	12.52	11.86	11.25	10.69	10.17	9.69	9.22	8.78	8.37	7.99	7.64	7.31	6.99	6.69
						9.39	8.77	8.04	7.38	6.80	6.27	5.79	5.38	4.97	4.64	4.31	4.02	3.76	3.51	3.31	3.10
120DLH24	1.93	3048	22.36	22.36	824.6	16.30	15.65	14.81	14.02	13.30	12.65	12.02	11.45	10.91	10.40	9.93	9.50	9.09	8.69	8.33	7.99
						11.39	10.62	9.73	8.94	8.24	7.60	7.03	6.52	6.04	5.63	5.23	4.88	4.56	4.27	4.01	3.76
120DLH25	2.22	3048	25.63	25.63	944.8	18.73	17.96	17.00	16.11	15.27	14.50	13.80	13.13	12.52	11.95	11.41	10.91	10.43	9.98	9.57	9.16
						13.35	12.44	11.41	10.47	9.64	8.90	8.23	7.63	7.07	6.59	6.14	5.73	5.35	5.02	4.69	4.40

STANDARD WEIGHT TABLES FOR JOIST GIRDERS

Based on 50 ksi Maximum Yield Strength
Adopted by the Steel Joist Institute May 17, 2016

The Joist Girders presented in the following tables are based on the Steel Joist Institute Standard Specifications for K-Series, LH- Series, and DLH- Series Open Web Steel Joists and for Joist Girders adopted November 4, 1985 – revised to November 10, 2014, Effective January 1, 2015 and all the requirements contained therein shall be followed.

The Joist Girders top chords are considered as being laterally supported by positive attachment of the supported steel joists to the Joist Girder top chord.

The top of the table presents the total kip load on each panel point (joist location). The tables can be utilized with either an ASD load in the green row, or a LRFD load (factored) in the blue row.

These weight tables are intended to be a tool to assist in the preliminary design and estimate for Joist Girders used in floors and roofs. All of the values are approximate and intended as a guide for the specifying professional. The joist manufacturer will design for the specific loads of the designation at the required span, and the values for self-weight may vary from the tabulated values – the tabulated values are not design minimums or maximums. It is presumed that the designated kip load includes an allowance for the Joist Girder self-weight, unless noted otherwise on the structural drawings.

There are countless combinations of span, number of panels, kip loads, and Joist Girder depth and the tables do not represent all available combinations. Interpolation can be used for approximate values when needed between columns and rows of the tables.

Consult with a joist manufacturer for information regarding web openings available for duct passage through Joist Girders.

Joist Girders that are anticipated to have chord angles of 6 x 6 or smaller which are un-shaded in the table shall have a standard 7 ½ inch bearing seat depth (height). The weight table includes high capacity Joist Girders that may utilize 8 x 8 chord angles. The Joist Girders that weigh 150 plf or more are shaded grey in the table and shall have a standard 10 inch minimum bearing seat depth. It is suggested that the joist manufacturer be consulted for lead times and availability of Joist Girders in the grey shaded portion of the table due to the possibility of 8 x 8 chord angles.

Example

Using the Joist Girder Weight Table

1) Joist Girder depth = 40 inch
2) Joist Girder span = 50 feet
3) Number of joist spaces = 8
4) Load at each panel point =12 kips (ASD)

In this example, the corresponding Joist Girder designation is 40G8N12K.

Entering the weight tables for a Joist Girder span of 50 feet, a number of joist spaces equal to 8, a Joist Girder depth of 40 inch, and a panel point loading of 12 kips (ASD), the approximate self-weight of the Joist Girder is 59 pounds per linear foot.

GIRDER SPAN (ft)	JOIST SPACES (ft)	GIRDER DEPTH (in)	JOIST GIRDER WEIGHT -- POUNDS PER LINEAR FOOT																						
			LOAD ON EACH PANEL POINT -- KIPS																		ASD		LRFD		
			6	8	10	12	14	16	18	20	24	28	32	36	40	44	48	52	56	60	70	80	90	100	
			9	12	15	18	21	24	27	30	36	42	48	54	60	66	72	78	84	90	105	120	135	150	
20	2N@ 10.00	20	19	19	19	19	20	24	24	25	30	37	41	46	50	56	62	70	75	75	80	91	121	128	
		24	19	19	19	19	20	21	21	25	28	32	36	41	42	49	52	53	66	66	74	83	110	118	
		28	19	19	19	19	20	20	21	23	26	28	32	39	40	42	46	48	49	56	58	74	104	108	
	3N@ 6.67	20	15	19	19	20	23	24	27	31	36	44	48	54	74	75	81	84	89	96	110	122			
		24	16	16	16	19	20	23	26	27	33	36	45	47	53	56	68	79	82	84	98	108	126		
		28	16	16	16	17	20	24	24	26	31	36	44	46	49	53	57	68	78	79	80	89	119	124	
	4N@ 5.00	20	15	19	21	25	29	33	38	41	50	57	65	71	88	97	100	107	120	126	149				
		24	16	17	20	23	26	29	32	35	44	50	55	62	71	85	90	100	102	109	130	154			
		28	16	17	19	22	25	28	30	34	39	49	50	59	63	72	86	91	91	93	113	126	141	160	
	5N@ 4.00	20	17	21	26	31	36	39	48	51	62	71	82	99	99	109	120	141	142						
		24	16	20	23	26	30	35	39	43	53	60	68	80	91	101	103	110	120	134	158				
		28	16	18	22	27	28	33	37	39	48	55	64	68	77	93	95	107	111	119	139	162	184	216	
	6N@ 3.33	20	19	25	29	36	41	50	57	58	72	82	99	107	118	138	141								
		24	18	22	28	31	37	43	46	53	61	70	85	102	102	111	123	144	147	175					
		28	18	22	26	30	33	40	42	47	58	68	76	83	96	109	112	119	130	139	183	211	223	263	
	8N@ 2.50	20	25	32	41	51	58	65	72	82	99	118	139	142											
		24	22	29	36	42	50	54	61	69	86	103	107	128	149	153									
		28	22	29	34	40	47	54	61	67	76	88	107	112	124	135	155	166	196	198	246	277	285		
22	2N@ 11.00	20	21	21	22	22	23	24	24	25	34	39	43	49	55	62	69	76	78	82	90	108	129	130	
		24	21	21	22	22	22	23	24	24	30	33	41	41	45	51	55	61	73	76	82	94	112	118	
		28	21	21	21	22	22	22	23	24	29	30	33	41	42	46	48	51	58	59	72	81	106	112	
	3N@ 7.33	20	18	18	19	22	24	26	29	33	42	45	53	68	70	76	84	88	94	104	120	138			
		24	15	19	19	20	23	24	26	30	35	40	45	48	55	61	74	81	84	92	98	113	127		
		28	16	16	16	19	20	23	24	27	32	36	45	47	52	54	59	74	82	76	86	100	121	126	
	4N@ 5.50	20	16	19	23	26	30	36	39	44	55	62	71	82	95	96	106	119	134	144					
		24	15	17	20	25	27	29	34	38	48	52	58	71	79	89	98	101	107	115	144	153			
		28	16	16	19	22	25	28	32	35	40	49	54	60	72	79	87	90	97	109	120	135	158	179	
	5N@ 4.40	20	17	24	27	34	38	42	49	55	65	75	96	98	111	126	137	158							
		24	16	20	24	28	33	38	40	48	56	62	73	85	100	101	110	116	133	153					
		28	16	18	22	26	30	32	38	41	51	57	65	73	86	92	102	105	111	126	159	170	183		
	6N@ 3.67	20	21	27	33	39	49	56	57	65	79	97	106	118	137										
		24	19	23	28	32	39	45	51	58	66	82	98	101	109	120	142	144							
		28	18	22	26	30	34	39	44	50	61	70	76	89	102	104	113	127	148	157	181	204	245	280	
	8N@ 2.75	20	27	36	43	56	64	71	80	96	106	135	138												
		24	24	31	38	46	53	60	68	75	101	105	125	145	149										
		28	22	28	34	40	47	54	62	69	79	87	106	118	131	152	164	192	214	233	265	304	310		
25	3N@ 8.33	20	18	19	22	26	27	30	37	41	49	59	66	70	76	86	89	97	102	115	137				
		24	18	19	20	22	25	26	28	32	39	43	51	59	67	71	81	84	89	96	111	122			
		28	15	19	19	20	23	24	27	29	34	39	45	47	55	59	67	81	82	83	98	113	126	141	
		32	16	16	16	20	21	23	24	27	32	36	44	46	52	54	58	74	81	73	86	100	121	119	
		36	16	16	17	17	20	24	24	26	32	36	40	45	48	53	54	68	79	70	80	89	119	124	
	4N@ 6.25	20	18	20	25	29	35	39	42	49	55	70	78	93	99	109	119	134	135						
		24	16	19	21	26	29	33	37	40	50	57	64	72	88	97	100	106	120	126	149				
		28	15	17	20	24	25	29	34	37	43	51	58	66	72	89	90	101	102	114	129	153	177	203	
		32	16	17	19	21	25	28	32	35	40	49	54	60	69	79	86	91	96	109	117	135	153	188	
		36	16	17	19	21	26	26	29	34	38	49	50	56	63	73	85	88	92	94	110	126	142	161	
	5N@ 5.00	20	18	25	31	38	43	51	55	58	73	93	100	109	125	134									
		24	17	23	26	32	36	42	47	53	61	75	81	98	102	112	129	140	160						
		28	16	20	24	28	31	37	41	47	56	62	72	79	93	101	106	117	125	152	167	195	215	248	
		32	16	19	23	26	30	33	38	41	51	57	65	73	83	93	102	105	111	129	158	169	183	212	
		36	17	18	22	26	28	31	36	39	48	54	64	69	75	88	96	101	108	119	133	159	184	188	
	6N@ 4.17	20	24	29	38	45	55	58	69	78	94	104	116	134											
		24	20	25	31	37	44	50	56	64	75	97	99	107	118	138									
		28	18	23	28	32	38	44	51	55	67	73	87	101	104	120	134	143	145	176	197	234	256	301	
		32	18	22	26	30	34	39	44	50	61	69	77	89	102	105	113	127	148	158	184	215	245	277	
		36	18	24	25	30	36	39	43	49	58	67	74	84	98	108	116	117	129	152	185	202	221	263	
	8N@ 3.12	20	29	39	48	58	70	78	94	99	115	134													
		24	26	33	41	50	57	65	75	81	99	118	138												
		28	23	30	38	44	53	60	67	75	86	103	116	127	147	188	188	207	215	245	284				
		32	24	28	34	39	47	54	65	71	78	87	105	117	129	152	154	192	193	213	258	292	296		
		36	22	29	34	40	46	52	61	63	76	87	101	114	121	136	148	166	167	197	232	267	274		
	10N@ 2.50	20	38	49	63	78	94	100	115	134															
		24	33	42	54	65	75	89	99	104	130														
		28	30	38	48	56	64	74	84	101	109	134	147	179	207	211	234	272	293	308					
		32	28	36	43	52	62	69	76	87	107	118	130	153	193	203	216	240	257	282					
		36	28	37	44	52	64	71	77	85	100	116	130	151	157	179	201	215	235	253	299				

STANDARD WEIGHTS
Joist Girders

GIRDER SPAN (ft)	JOIST SPACES (ft)	GIRDER DEPTH (in)	JOIST GIRDER WEIGHT -- POUNDS PER LINEAR FOOT																						
			LOAD ON EACH PANEL POINT -- KIPS																		ASD		LRFD		
			6	8	10	12	14	16	18	20	24	28	32	36	40	44	48	52	56	60	70	80	90	100	
			9	12	15	18	21	24	27	30	36	42	48	54	60	66	72	78	84	90	105	120	135	150	
28	3N@ 9.33	24	18	19	22	24	27	29	36	39	43	53	62	70	71	78	85	89	98	111	130	138			
		28	18	19	20	22	25	26	28	31	39	43	46	55	61	66	76	83	86	96	112	122	132	160	
		32	18	19	19	21	23	24	27	28	34	39	45	48	53	58	66	80	81	86	98	113	126	135	
	4N@ 7.00	24	16	20	24	27	32	38	40	48	55	62	71	82	95	104	106	120	135	144					
		28	15	18	21	25	28	32	36	39	49	56	64	71	79	96	97	106	107	125	147	171	180	206	
		32	15	17	20	23	25	29	33	37	43	50	58	62	70	85	90	99	102	107	129	153	177	185	
	5N@ 5.60	24	18	24	29	34	39	46	52	58	66	78	96	102	111	126	136								
		28	17	21	26	30	35	39	46	50	61	68	77	90	99	107	114	130	142	162	184	213	239	257	
		32	17	20	24	27	32	37	41	44	56	62	70	80	93	102	107	112	119	143	167	197	215	244	
	6N@ 4.67	24	21	28	35	41	49	55	63	70	79	96	106	134	137										
		28	20	24	30	36	42	50	54	58	71	82	99	107	118	138	142	170	174	193	228	261	268		
		32	19	23	28	32	37	43	49	53	64	74	84	101	102	111	123	144	146	176	198	234	244	297	
	7N@ 4.00	24	24	32	41	49	56	64	74	79	96	110	135	156											
		28	22	27	35	43	51	57	62	69	82	99	108	129	140	162	173	195	198	222	265	305			
		32	21	27	31	38	44	52	55	63	74	85	102	108	123	143	146	175	187	207	241	273	276		
	8N@ 3.50	24	28	37	48	55	64	74	79	95	105	134													
		28	25	32	39	50	58	65	72	81	99	108	129	141	172	197	203	231	237	263					
		32	24	29	38	43	53	60	64	70	86	103	113	127	147	149	188	208	210	244	281				
	10N@ 2.80	24	36	46	57	70	79	96	102	117	137														
		28	30	41	50	60	69	82	99	100	120	141	174	203	219	239	265	295	311						
		32	30	38	46	55	66	71	80	93	109	126	147	179	199	212	226	258	274	292					
30	3N@ 10.00	24	18	21	24	27	31	35	38	40	48	58	66	71	80	92	98	117	119	120	137				
		28	18	19	22	25	27	30	35	37	42	49	56	63	70	79	82	93	99	103	121	132	161	183	
		32	18	19	20	22	26	28	31	32	39	46	51	57	64	71	73	83	84	91	99	113	126	141	
		36	19	19	19	21	23	26	28	31	35	39	46	52	57	64	65	73	75	80	94	101	122	126	
	4N@ 7.50	24	18	23	29	33	37	42	49	53	64	76	85	101	104	126	127	149	150						
		28	16	21	25	30	33	37	42	45	53	61	73	81	86	103	104	126	128	144	156	170	192	231	
		32	16	18	22	26	30	34	37	43	51	55	62	70	77	87	103	105	116	121	148	157	180	202	
		36	16	17	22	24	27	31	34	36	46	52	59	64	74	78	88	91	105	108	119	151	159	187	
	5N@ 6.00	24	19	25	30	37	43	51	55	58	73	86	96	109	125	134									
		28	17	23	27	32	37	44	47	53	61	75	88	97	102	112	128	138	159	170	192	224	242	270	
		32	17	21	24	29	35	39	43	48	56	63	77	90	100	101	107	117	133	154	176	195	227	244	
		36	17	20	24	27	31	36	40	43	51	60	70	80	86	94	103	110	118	135	157	178	185	229	
	6N@ 5.00	24	24	29	37	45	52	58	66	73	94	104	116	134											
		28	20	27	32	38	44	50	57	65	75	97	99	107	137	140	170	180	186	192	227	284			
		32	19	24	29	34	40	45	51	58	65	82	98	100	109	121	142	144	174	183	197	233	257	299	
		36	18	23	26	31	37	41	46	52	61	70	84	101	102	111	123	126	148	155	179	202	246	272	
	8N@ 3.75	24	32	40	51	63	73	83	99	111	124	146													
		28	30	37	44	53	61	73	80	86	114	126	149	170	172	192	220	224	258	284					
		32	26	34	42	49	55	63	71	79	104	117	130	154	161	184	203	208	240	243	307				
		36	23	32	39	46	54	61	69	76	89	108	121	134	154	169	189	194	212	219	256	313			
	10N@ 3.00	24	38	51	66	78	99	111	123	134															
		28	36	47	57	69	80	94	113	116	138	161	183	204	226	249	282								
		32	31	39	52	58	74	82	95	105	129	142	165	185	205	222	252	270	299						
		36	30	39	48	54	68	79	84	91	119	132	151	170	191	210	215	248	261	279					
32	3N@ 10.67	24	19	21	26	27	34	38	40	42	54	61	70	75	84	88	102	102	113	151	160				
		28	17	18	24	26	28	31	34	37	43	55	60	69	70	76	85	89	93	111	121	138	162	196	
		32	17	18	21	25	26	28	32	34	39	44	54	61	62	67	77	80	86	96	112	122	132	160	
		36	17	19	20	23	25	26	28	30	38	40	45	51	53	58	67	81	85	91	98	113	127	136	
	4N@ 8.00	24	19	23	26	32	37	40	47	55	61	72	86	94	103	114	133	134	162						
		28	18	20	24	28	32	37	40	45	55	62	70	78	94	96	105	121	135	144	167	189	235	250	
		32	15	20	22	25	29	32	36	39	49	56	64	71	83	94	97	102	107	125	147	171	180	207	
		36	16	17	21	24	26	30	34	36	43	50	58	65	70	85	90	99	102	107	129	153	177	185	
	5N@ 6.40	24	20	27	33	39	44	51	57	65	77	93	100	123	133										
		28	18	24	28	34	39	46	52	58	66	74	96	101	110	126	137	158	167	180	202	234	253	295	
		32	17	22	26	32	35	41	46	53	61	68	77	90	99	105	114	130	142	162	184	204	240	255	
		36	17	21	24	27	33	37	42	47	56	62	70	79	93	102	106	117	120	144	167	187	203	233	
	6N@ 5.33	24	24	31	39	47	55	61	69	76	94	103	133	134											
		28	21	27	35	40	48	55	60	67	79	96	105	117	137	158	170	190	191	222	246	274			
		32	20	25	30	36	42	50	54	58	71	82	99	103	118	139	142	170	174	193	228	258	268		
		36	19	24	28	34	38	44	49	55	66	73	84	101	102	111	123	144	146	176	206	234	244	293	
	8N@ 4.00	24	32	40	54	61	72	86	93	103	133														
		28	27	35	45	55	63	70	80	95	105	134	137	169	189	198	221	242	264	274					
		32	25	32	39	50	58	65	71	81	99	109	120	141	173	186	202	214	228	261	295				
		36	24	31	38	43	53	59	67	71	86	103	113	127	147	181	188	207	212	242	277	315			

GIRDER SPAN (ft)	JOIST SPACES (ft)	GIRDER DEPTH (in)	JOIST GIRDER WEIGHT -- POUNDS PER LINEAR FOOT																					
			LOAD ON EACH PANEL POINT -- KIPS																	ASD		LRFD		
			6	8	10	12	14	16	18	20	24	28	32	36	40	44	48	52	56	60	70	80	90	100
			9	12	15	18	21	24	27	30	36	42	48	54	60	66	72	78	84	90	105	120	135	150
35	4N@ 8.75	28	19	23	27	31	36	41	46	52	60	74	79	94	100	111	117	137	138	156	185	194	237	256
		32	18	21	24	28	33	37	39	45	53	60	73	80	92	100	106	112	127	144	159	171	196	229
		36	16	20	23	27	30	33	37	41	51	55	62	74	83	94	97	107	113	115	147	162	184	194
		40	16	17	21	26	27	30	37	38	46	52	61	64	75	90	95	96	108	107	129	153	177	185
	5N@ 7.00	28	20	26	32	37	43	52	57	59	73	86	100	109	126	136	137	138	139	190	224	258	273	
		32	18	24	29	34	37	45	50	53	66	75	88	100	102	112	128	138	139	170	194	224	253	292
		36	17	23	27	29	35	40	46	48	62	68	77	90	100	104	115	131	133	153	175	205	240	254
		40	17	22	25	27	33	37	43	47	56	63	70	80	95	102	107	115	125	144	166	199	206	223
	6N@ 5.83	28	24	30	37	44	52	58	65	73	93	103	115	134	154	166	187	202	213	230	270			
		32	21	27	33	38	46	53	57	65	79	96	100	117	139	140	170	172	191	202	236	281		
		36	20	25	31	36	41	48	54	58	70	81	99	102	113	121	142	144	174	187	211	241	269	314
		40	20	24	28	34	38	44	49	55	64	77	84	101	104	115	123	145	146	168	208	215	244	273
	7N@ 5.00	28	27	34	43	52	59	66	74	86	101	115	135	167	178	190	215	233	245	268				
		32	24	30	39	47	53	61	67	75	97	103	118	137	160	171	192	196	226	238	282			
		36	23	28	35	42	48	55	62	69	82	99	105	120	141	144	173	186	196	211	250	291		
		40	22	27	32	39	44	50	55	63	73	86	102	107	118	133	147	166	178	188	219	266	276	
	8N@ 4.38	28	30	39	48	59	69	78	94	98	115	136	165	187	202	217	243	269	289	296				
		32	27	36	42	53	61	69	79	88	101	118	138	170	172	191	219	223	245	272				
		36	26	32	39	48	55	62	71	77	99	109	121	141	164	175	202	207	232	248	294			
		40	24	30	37	44	54	60	65	73	86	102	113	127	147	149	185	198	210	215	273	310		
38	4N@ 9.50	32	19	21	26	31	34	39	43	48	58	67	74	87	100	101	111	127	138	144	168	190	237	248
		36	17	21	24	28	33	35	39	44	53	60	74	75	93	97	106	112	123	125	153	170	180	225
		40	16	20	23	27	30	34	37	41	51	55	62	74	83	94	98	107	109	115	147	153	177	202
		44	16	20	22	26	28	30	35	38	46	52	58	65	75	90	95	95	108	112	124	150	160	177
	5N@ 7.60	32	20	25	31	36	42	46	52	59	70	86	96	101	111	126	137	158	177	185	205	237	253	
		36	20	24	28	33	38	45	47	53	64	74	89	98	103	112	129	138	160	167	184	215	242	270
		40	20	23	26	31	35	40	46	48	59	70	78	91	101	105	113	117	134	153	176	203	216	242
		44	20	22	25	30	33	39	41	48	56	63	75	80	93	102	107	111	118	145	166	199	204	229
	6N@ 6.33	32	24	30	35	41	49	55	62	70	86	98	105	125	136	167	175	189	196	222	247	293		
		36	21	27	33	39	47	50	57	61	75	89	100	107	118	141	142	172	183	194	227	250	273	
		40	21	25	31	36	40	48	55	59	71	82	99	102	109	121	143	142	174	182	206	233	257	294
		44	20	24	29	33	38	44	49	55	64	77	84	102	104	115	123	145	147	169	190	209	245	270
	8N@ 4.75	32	29	38	47	56	64	74	86	95	105	135	156	169	189	217	229	247	271	299				
		36	28	35	42	50	57	65	76	81	101	113	138	140	172	192	212	222	245	260	315			
		40	26	32	40	48	55	62	67	78	100	103	121	142	144	175	202	205	222	238	283			
		44	24	30	39	47	51	57	64	71	86	102	113	127	147	149	187	199	210	222	272	309		
40	4N@ 10.00	32	20	23	29	37	40	47	50	56	64	73	86	103	114	126	128	149	151	164	177	195	238	249
		36	19	22	29	31	37	40	44	51	57	65	74	87	103	104	125	127	128	144	168	180	210	228
		40	18	22	25	29	33	37	40	47	52	62	73	77	87	96	104	117	127	132	148	171	181	203
		44	17	20	24	29	31	36	38	41	49	59	66	74	78	84	96	106	106	111	129	150	177	186
		48	17	20	24	25	30	32	37	39	48	53	59	67	78	78	85	99	106	108	120	144	159	178
	5N@ 8.00	32	21	26	32	38	43	52	55	62	73	86	101	109	124	134	154	167	177	190	224	257	278	
		36	20	24	30	34	39	45	53	55	66	74	88	102	102	112	128	138	159	170	194	235	252	292
		40	20	24	27	32	37	41	46	51	62	68	77	90	100	105	115	130	142	162	183	214	240	253
		44	20	23	29	32	37	41	49	50	58	70	82	84	99	102	118	130	141	144	168	198	212	242
		48	20	23	26	31	34	40	41	50	57	68	75	85	95	100	119	120	132	138	159	182	185	226
	6N@ 6.67	32	24	30	38	44	52	58	65	72	93	100	115	133	154	166	186	190	213	221	269			
		36	22	27	34	39	47	53	60	67	79	97	102	117	137	141	170	172	191	194	235	271		
		40	21	26	30	36	43	48	54	62	71	82	99	103	114	130	142	163	174	185	219	254	271	
		44	21	24	28	36	40	47	51	55	66	78	91	102	107	116	134	142	146	177	208	234	247	291
		48	21	24	31	36	42	46	53	57	69	79	86	100	109	112	133	135	143	174	182	204	237	267
	7N@ 5.71	32	26	33	43	52	58	66	74	86	101	115	135	167	178	191	205	233	245	258				
		36	24	31	39	47	53	61	67	75	97	103	117	136	159	171	191	206	219	237	280			
		40	24	29	35	43	49	55	62	69	82	99	105	119	140	162	174	187	199	213	256	298		
		44	22	28	33	39	48	55	59	64	78	92	102	111	122	143	165	176	187	200	230	269	276	
		48	23	28	36	41	48	54	61	66	80	86	108	110	116	136	164	167	174	192	216	256	268	
	8N@ 5.00	32	29	38	48	58	67	78	94	96	115	135	165	188	195	217	243	259	280					
		36	27	36	46	53	60	68	80	88	102	118	137	170	180	193	219	231	245	276				
		40	25	34	39	49	58	65	72	82	99	109	120	141	173	189	205	220	226	258	291			
		44	27	33	39	47	56	63	70	75	93	103	120	136	147	185	195	205	216	240	275			
		48	25	32	42	47	55	62	69	80	90	104	122	136	155	170	182	189	210	218	261	296	310	
	10N@ 4.00	32	39	51	64	79	92	112	123	125	149	177	195	220	244	268								
		36	36	47	60	69	81	94	103	125	150	161	182	211	234	249	280	290						
		40	36	45	56	66	75	82	96	115	129	152	173	184	216	231	257	274	304					
		44	32	41	51	60	71	82	84	99	119	143	161	178	198	220	234	254	280	297				
		48	32	41	52	58	68	76	85	94	121	134	152	169	181	201	215	242	256	275				

GIRDER SPAN (ft)	JOIST SPACES (ft)	GIRDER DEPTH (in)	JOIST GIRDER WEIGHT -- POUNDS PER LINEAR FOOT LOAD ON EACH PANEL POINT -- KIPS																	ASD		LRFD		
			6	8	10	12	14	16	18	20	24	28	32	36	40	44	48	52	56	60	70	80	90	100
			9	12	15	18	21	24	27	30	36	42	48	54	60	66	72	78	84	90	105	120	135	150
42	4N@ 10.50	32	21	25	29	34	38	43	49	53	67	74	86	99	101	112	125	134	138	163	195	224	250	275
		36	19	22	26	32	35	39	44	47	58	67	73	87	95	101	112	118	129	145	168	191	237	246
		40	19	21	24	28	34	36	41	45	53	61	73	76	93	97	97	113	122	125	147	171	194	210
		44	19	20	23	27	31	34	38	42	51	55	62	74	84	94	97	108	109	118	138	159	179	203
		48	19	21	24	26	29	32	36	39	47	54	62	65	75	90	95	97	108	112	130	150	160	177
	5N@ 8.40	32	22	28	35	41	45	52	57	66	74	88	100	110	125	152	166	176	189	199	225	258		
		36	21	25	31	36	42	46	52	59	70	85	96	102	111	126	137	158	168	179	203	235	253	275
		40	21	24	28	33	39	44	51	54	64	74	89	98	103	113	129	130	160	171	183	213	241	263
		44	20	24	27	31	37	40	46	52	59	69	78	91	101	105	113	126	134	151	176	207	216	242
		48	20	23	27	30	35	39	42	48	57	63	75	81	95	102	107	115	118	145	168	199	206	229
	6N@ 7.00	32	25	32	39	45	55	61	69	77	93	103	124	135	163	175	187	202	213	239	277			
		36	23	30	35	41	49	56	60	67	79	96	105	117	137	158	169	190	204	207	243	282		
		40	21	26	33	39	46	54	57	61	75	89	100	108	119	141	142	172	183	194	227	249	267	
		44	21	24	31	35	41	48	54	59	71	81	100	102	109	121	143	142	174	176	208	233	254	302
		48	20	25	29	33	39	44	49	56	64	77	85	102	104	115	124	145	147	169	191	216	246	269
	7N@ 6.00	32	28	36	45	52	65	72	85	93	102	125	154	166	187	200	225	239	252	277				
		36	26	34	40	49	56	67	74	79	98	110	127	138	169	181	194	208	235	248	289			
		40	24	31	38	46	54	61	68	75	90	101	113	129	142	172	184	195	208	230	267	297		
		44	23	29	35	41	49	55	63	70	78	100	106	116	132	145	166	184	198	203	246	281	299	
		48	23	28	34	39	44	50	56	64	73	92	102	108	118	136	149	169	184	190	220	255	265	
	8N@ 5.25	32	32	40	51	62	72	78	94	100	124	135	166	188	213	235	245	268						
		36	27	38	46	56	64	74	79	96	105	126	138	169	189	208	220	246	263	274				
		40	26	35	42	51	57	65	76	81	101	113	138	141	173	192	211	222	237	256	311			
		44	25	32	39	49	55	63	70	78	99	107	121	142	147	175	201	206	223	238	283			
		48	26	32	41	48	56	63	67	74	93	103	112	128	148	169	188	198	210	230	271	307		
	10N@ 4.20	32	38	52	62	77	94	101	114	134	164	187	215	239	264	291	308							
		36	36	46	60	70	86	97	102	112	140	179	193	223	244	268	298							
		40	34	45	54	64	75	89	99	104	129	161	182	205	218	237	268	301	308					
		44	31	41	52	61	70	79	91	100	114	143	164	185	208	221	241	269	284	310				
		48	30	39	49	56	66	72	80	93	107	125	146	168	199	211	226	252	267	285				
45	4N@ 11.25	36	21	25	28	33	38	42	46	52	62	72	79	95	100	112	117	128	138	154	178	193	238	250
		40	21	22	27	31	35	39	44	47	55	64	75	87	95	101	112	113	128	144	169	180	211	228
		44	21	22	24	29	33	37	39	45	53	61	74	76	89	95	102	108	114	125	148	171	193	215
		48	21	22	24	28	31	34	38	40	51	55	63	75	83	94	95	107	109	115	139	164	180	204
		52	22	23	24	27	29	33	37	39	47	52	60	66	76	91	95	96	109	112	125	153	161	178
	5N@ 9.00	36	22	27	33	38	44	52	55	63	74	86	101	109	125	136	155	167	177	191	224	256	278	
		40	21	25	30	36	42	45	53	56	68	75	88	102	111	122	128	156	159	180	203	234	253	287
		44	21	24	29	34	38	44	46	54	65	74	85	90	103	110	123	130	142	159	184	215	248	263
		48	21	24	27	32	36	41	45	52	59	67	75	91	95	106	112	118	134	151	179	208	232	241
		52	21	24	27	30	35	39	42	48	57	64	75	81	94	98	107	117	119	145	169	200	212	225
	6N@ 7.50	36	24	31	38	45	52	58	66	74	93	100	115	134	154	167	187	190	203	221	258			
		40	23	28	34	40	47	53	60	67	79	97	103	117	137	140	170	181	191	203	244	271		
		44	21	27	32	38	46	50	54	62	76	90	100	107	118	139	142	172	175	194	228	252	280	
		48	21	26	30	36	42	48	55	59	69	78	92	102	110	122	143	143	167	177	207	233	265	289
		52	21	25	29	34	39	44	50	56	64	77	85	102	102	116	124	136	148	169	191	214	246	268
	7N@ 6.43	36	27	35	44	52	58	66	74	86	101	115	135	158	176	191	206	233	246	258				
		40	26	33	40	47	54	61	67	75	97	105	127	138	160	179	192	206	227	237	288			
		44	24	30	39	46	54	61	62	69	90	100	113	129	143	163	184	196	201	221	256	297		
		48	23	29	36	41	49	55	63	70	79	92	107	117	133	145	166	177	190	203	246	277	299	
		52	23	28	34	39	45	50	56	65	73	93	102	109	118	136	149	170	183	194	224	254	274	
	8N@ 5.62	36	30	38	48	58	67	78	94	98	114	135	165	188	193	216	243	259	280					
		40	28	36	46	53	61	68	80	89	105	118	137	170	181	196	219	232	247	275				
		44	27	34	41	51	58	66	73	81	99	109	130	141	173	185	202	215	226	249	298			
		48	26	32	39	47	55	63	68	74	92	104	116	142	146	176	193	208	216	240	270			
		52	28	33	42	48	54	59	67	71	94	102	112	127	148	167	188	198	210	219	259	304		
	9N@ 5.00	36	34	45	55	66	74	88	98	104	135	165	179	203	229	241	271	294						
		40	31	39	49	61	69	80	89	100	113	138	168	188	196	223	247	263	293					
		44	31	39	48	58	66	76	89	99	108	132	162	178	190	216	241	248	275	302				
		48	29	37	47	55	63	70	79	91	106	117	133	166	188	206	224	235	251	279	298			
		52	28	36	46	55	60	70	73	84	102	112	135	148	169	197	200	226	231	259	293			
	10N@ 4.50	36	38	49	60	73	86	98	105	116	137	177	192	220	245	268								
		40	35	47	60	66	76	90	102	112	140	170	182	211	236	264	289	299						
		44	33	46	54	64	72	89	99	104	130	142	173	203	216	239	260	274	302					
		48	31	40	49	62	71	78	91	100	114	134	164	186	205	219	240	267	279	304				
		52	31	39	50	56	67	72	80	93	107	123	147	168	190	211	224	251	264	282				

GIRDER SPAN (ft)	JOIST SPACES (ft)	GIRDER DEPTH (in)	JOIST GIRDER WEIGHT -- POUNDS PER LINEAR FOOT																						
			LOAD ON EACH PANEL POINT -- KIPS																	ASD		LRFD		
			6	8	10	12	14	16	18	20	24	28	32	36	40	44	48	52	56	60	70	80	90	100
			9	12	15	18	21	24	27	30	36	42	48	54	60	66	72	78	84	90	105	120	135	150
48	5N@ 9.60	36	26	31	37	45	52	59	66	71	87	111	113	135	136	152	167	176	189	200	228	269		
		40	23	29	35	41	46	52	59	68	77	92	112	114	136	138	155	161	178	188	203	237	272	
		44	22	27	32	37	44	48	54	61	69	80	93	113	116	126	139	150	160	174	195	226	253	275
		48	21	25	30	36	40	48	48	55	69	78	90	96	115	116	128	140	142	166	185	219	241	263
		52	21	25	29	33	39	42	50	54	62	71	82	92	99	117	118	130	141	157	178	206	224	241
		56	21	24	29	33	38	40	46	50	59	71	79	85	100	100	119	120	133	146	170	200	212	226
	6N@ 8.00	36	28	35	42	51	62	70	78	83	100	122	134	147	163	175	189	202	222	233	277			
		40	25	33	39	47	56	64	71	79	93	112	124	137	148	168	179	189	212	222	247	282		
		44	24	31	36	45	50	57	65	73	81	102	115	127	138	151	168	173	192	204	236	262	292	
		48	23	30	35	40	48	52	59	67	78	95	105	116	129	141	160	166	175	186	220	252	279	310
		52	23	27	32	38	46	51	59	60	75	83	97	107	130	131	144	162	169	178	208	234	259	290
		56	22	27	31	37	42	48	54	61	69	80	91	107	120	132	134	153	165	166	191	208	246	267
	8N@ 6.00	36	36	45	56	64	78	91	100	122	134	153	167	186	213	234	257	278						
		40	33	42	51	59	70	80	92	101	124	148	157	170	191	208	229	248	272	288				
		44	32	39	49	55	65	74	82	95	114	127	150	161	185	193	212	223	244	268				
		48	30	37	47	53	60	68	76	84	105	129	131	154	174	189	197	216	226	247	290			
		52	30	36	44	51	59	65	71	80	99	119	132	146	164	185	195	209	221	239	283			
		56	28	36	43	49	57	63	69	78	90	109	123	136	155	168	189	198	209	228	258	294		
	9N@ 5.33	36	44	55	70	79	91	99	121	122	146	165	190	215	237	252	279							
		40	42	52	63	74	88	93	101	113	136	156	179	195	218	230	256	284						
		44	39	50	59	69	83	91	94	103	126	150	168	182	199	222	236	257	285	302				
		48	37	46	56	66	76	85	94	97	118	130	162	175	190	217	224	247	273	290				
		52	36	46	54	63	72	80	95	101	108	132	152	167	188	212	220	242	251	277				
		56	35	44	53	62	69	80	89	98	103	123	137	165	180	207	211	236	240	271	314			
	12N@ 4.00	36	52	71	84	100	123	135	148	167	190	230	256	289										
		40	48	65	76	93	113	125	137	149	177	206	233	260	288									
		44	44	57	73	82	102	115	126	139	159	193	211	239	271	297								
		48	41	53	67	76	88	104	117	130	153	175	197	221	246	276	301							
		52	39	52	61	76	84	97	107	131	144	168	190	212	237	261	280	306						
		56	38	49	61	70	81	91	108	122	135	165	183	195	217	242	266	287	312					
50	5N@ 10.00	40	23	30	38	44	47	56	60	68	79	93	113	124	136	138	155	165	177	182	216	257	279	
		44	22	29	34	40	46	51	56	61	76	89	94	113	126	137	139	157	172	180	203	236	255	292
		48	22	28	31	38	42	48	55	61	69	78	94	96	115	127	139	141	160	172	192	207	241	262
		52	22	25	31	35	40	45	49	55	62	74	82	96	116	117	129	141	142	161	186	203	227	243
		56	22	25	30	32	40	43	50	51	63	71	83	92	99	117	119	131	142	146	169	199	219	231
		60	20	24	30	33	36	42	46	51	58	65	76	86	96	101	120	121	133	142	166	174	198	226
	6N@ 8.33	40	28	34	42	48	56	64	71	80	100	112	124	147	155	167	178	191	204	231	258			
		44	24	31	38	47	50	57	65	73	85	102	124	127	149	159	168	181	191	213	246	270		
		48	23	30	37	40	49	57	65	67	82	95	115	127	129	151	162	173	184	195	229	250	292	
		52	23	30	36	40	46	52	59	67	75	84	105	117	129	131	153	162	176	188	218	242	269	300
		56	23	26	33	39	42	51	54	60	72	84	98	107	120	132	144	163	164	176	209	225	257	280
		60	23	27	33	38	43	49	53	61	70	80	87	102	110	123	134	154	165	171	182	207	247	264
	8N@ 6.25	40	31	39	51	59	67	78	86	96	110	135	166	177	193	217	244	259	281					
		44	29	37	47	53	61	70	80	96	103	118	139	170	182	198	221	230	254	276				
		48	27	35	42	51	58	69	76	81	99	114	130	142	175	186	201	224	242	255	297			
		52	25	33	40	49	55	63	70	78	99	107	121	141	164	178	197	207	218	236	281			
		56	29	36	42	47	56	64	68	78	94	108	118	137	148	169	192	204	212	230	271	315		
		60	27	35	40	47	55	61	69	74	83	103	110	123	139	149	182	200	208	215	258	291	312	
	9N@ 5.56	40	34	44	55	66	74	86	96	104	134	155	179	203	219	242	256	286						
		44	32	40	53	61	69	80	88	98	113	138	169	195	207	223	244	267	293					
		48	32	42	52	58	69	77	90	99	111	133	163	184	201	216	241	250	274	300				
		52	31	40	47	58	66	74	79	92	106	126	143	178	192	207	222	244	254	278	312			
		56	30	38	46	55	60	68	77	89	102	116	135	166	181	197	211	237	251	272	309			
		60	32	38	49	53	61	70	75	83	97	111	125	141	179	192	209	227	239	266	303			
	10N@ 5.00	40	38	49	60	74	87	96	104	116	139	177	194	220	244	269								
		44	36	47	60	68	84	96	102	112	137	170	188	211	235	264	289	294						
		48	34	46	54	65	76	89	99	103	130	159	182	205	217	239	268	284	298					
		52	34	45	52	62	70	79	91	100	114	134	164	185	207	222	239	270	282	305				
		56	32	41	48	60	70	76	87	93	107	134	146	174	198	211	232	250	279	283				
		60	31	40	49	57	66	73	81	94	109	119	138	169	180	201	225	230	253	272				
	12N@ 4.17	40	49	65	80	100	112	125	147	157	180	206	241	269										
		44	44	57	73	86	102	126	127	149	168	192	227	248	280	302								
		48	41	58	67	82	96	115	127	130	154	184	199	230	254	284	310							
		52	39	53	68	76	84	105	118	130	154	176	189	219	244	263	289	314						
		56	40	52	61	70	85	99	108	122	135	164	182	210	228	252	270	296						
		60	39	49	61	70	82	88	104	112	135	166	175	196	219	242	258	274	302					

GIRDER SPAN (ft)	JOIST SPACES (ft)	GIRDER DEPTH (in)	JOIST GIRDER WEIGHT -- POUNDS PER LINEAR FOOT																				
			LOAD ON EACH PANEL POINT -- KIPS															ASD		LRFD		
			6	8	10	12	14	16	18	20	22	24	26	28	30	35	40	45	50	55	60	65
			9	12	15	18	21	24	27	30	33	36	39	42	45	52.5	60	67.5	75	82.5	90	97.5
55	5N@ 11.00	44	24	29	35	41	47	53	59	63	71	82	83	86	97	110	127	141	157	174	193	207
		48	23	28	32	38	43	49	56	60	64	71	73	83	93	104	121	133	148	167	179	193
		52	23	27	32	36	42	44	52	57	65	66	74	74	90	99	114	124	139	156	170	181
		56	24	26	31	36	39	44	51	53	58	66	66	74	79	92	110	121	135	148	162	173
		60	24	27	31	35	38	45	47	52	60	61	67	68	80	88	101	115	124	138	147	163
		66	24	26	28	34	37	42	47	48	55	56	62	69	73	83	99	109	118	128	143	155
	6N@ 9.17	44	26	33	38	45	52	59	66	75	86	86	98	101	117	136	155	174	189	207	232	247
		48	24	31	36	44	50	56	64	68	75	87	89	94	109	122	147	155	181	194	214	237
		52	24	29	35	41	48	54	61	64	72	75	80	88	106	117	139	149	164	188	196	208
		56	24	28	35	39	47	52	55	63	70	71	78	82	101	113	122	140	158	176	187	195
		60	24	29	33	38	43	48	55	60	64	71	75	80	95	108	116	132	153	158	179	187
		66	22	28	31	36	40	47	50	56	62	65	73	73	86	102	112	128	136	143	160	181
	7N@ 7.86	44	28	36	44	53	59	70	75	87	97	102	111	120	135	152	178	189	219	236	257	274
		48	27	34	43	51	56	65	72	76	89	98	103	110	120	135	171	184	207	228	241	263
		52	26	33	39	46	55	62	69	74	86	91	100	105	116	126	160	175	190	207	234	252
		56	25	31	38	46	53	55	64	70	79	87	92	101	111	118	148	158	182	203	221	240
		60	24	30	36	41	49	56	64	68	72	81	93	94	108	111	140	141	169	192	203	224
		66	24	30	36	40	48	52	58	65	70	74	83	84	103	106	129	134	159	177	196	208
	9N@ 6.11	44	34	46	55	67	74	87	98	105	116	135	137	158	169	199	229	240	284			
		48	32	40	53	61	69	81	97	103	107	118	129	139	165	183	208	238	259	291		
		52	33	43	52	65	73	77	90	104	105	114	125	133	157	177	203	231	249	273	301	
		56	32	43	51	59	67	75	87	92	105	107	117	128	143	161	193	217	242	259	286	302
		60	32	40	47	56	67	71	80	93	95	108	109	118	139	145	188	199	224	248	277	291
		66	31	39	46	54	61	71	78	83	91	97	111	113	127	136	172	185	207	222	255	269
	11N@ 5.00	44	43	55	67	87	97	106	126	137	158	178	180	193	208	246	285					
		48	39	54	65	76	89	103	112	128	139	160	171	183	197	235	263	272				
		52	37	52	62	73	88	99	105	115	131	142	161	174	185	211	243	266	302			
		56	39	48	60	68	80	93	102	107	118	134	146	166	174	198	230	259	290	304		
		60	37	47	58	67	77	82	95	108	110	121	137	148	164	191	227	248	275	289		
		66	36	45	54	65	74	82	97	98	113	117	126	141	151	184	206	226	261	275	301	308
60	5N@ 12.00	48	27	33	39	44	51	57	63	69	76	87	89	94	98	108	128	152	164	180	190	208
		52	27	31	36	44	47	52	60	65	69	77	85	90	94	103	125	133	155	168	179	189
		56	24	30	34	41	45	52	59	63	69	74	78	87	90	100	116	128	139	156	173	185
		60	24	29	34	40	45	49	53	60	66	70	75	80	87	95	112	121	135	145	164	175
		66	24	30	33	36	42	47	51	56	61	67	72	73	81	92	102	117	123	133	148	167
		72	25	27	31	36	39	45	48	56	56	63	69	70	75	83	99	110	118	129	144	150
	6N@ 10.00	48	29	36	41	49	60	67	72	80	93	93	112	113	119	128	156	174	189	205	227	242
		52	28	33	39	48	57	62	69	78	80	94	94	113	116	122	147	159	181	195	214	237
		56	25	33	39	48	51	58	66	69	79	83	95	96	106	107	139	150	174	187	198	222
		60	24	32	39	43	50	57	63	70	75	83	83	96	101	103	123	133	165	176	187	205
		66	24	32	34	42	50	52	61	65	69	77	84	85	96	98	119	126	151	167	179	196
		72	24	28	34	41	44	52	54	63	68	71	75	87	87	93	113	119	145	156	169	182
	8N@ 7.50	48	34	43	56	64	72	80	93	112	123	125	136	148	155	173	194	233	248	262		
		52	31	40	50	58	72	81	94	103	114	125	127	139	146	174	191	209	231	251	276	292
		56	31	38	49	58	66	75	83	96	104	116	127	129	139	148	176	192	215	240	251	269
		60	32	39	47	53	61	69	77	85	98	106	118	122	124	140	170	184	205	229	242	260
		66	33	41	46	53	62	70	78	82	90	100	108	120	122	123	161	171	198	207	231	251
		72	31	36	46	52	59	66	73	80	90	92	104	110	114	118	150	158	190	202	226	244
	10N@ 6.00	48	37	49	60	74	87	97	105	118	137	138	167	180	190	233	245	264				
		52	38	50	64	71	88	97	103	113	130	138	160	173	181	208	237	257				
		56	37	46	58	65	76	90	104	105	123	131	143	160	172	193	228	251	281	305		
		60	37	45	57	66	73	86	93	104	111	126	134	159	167	182	217	244	270	288		
		66	37	49	56	65	74	85	95	102	120	122	134	145	146	164	199	218	242	262	292	307
		72	33	42	50	59	69	74	83	96	98	111	111	121	142	158	193	201	226	250	281	296
	12N@ 5.00	48	46	59	75	87	102	111	135	158	169	181	194	207	233	250	291					
		52	45	57	69	88	98	104	118	139	160	169	183	196	206	241	283					
		56	41	55	66	77	91	104	113	129	140	162	174	185	198	235	266	285				
		60	39	54	64	74	91	102	106	121	133	145	165	177	188	205	245	263	309			
		66	41	53	62	77	87	100	110	119	134	147	164	171	182	194	230	251	283	297		
		72	38	50	60	69	77	86	100	110	114	127	142	151	165	183	218	245	270	286	314	
	15N@ 4.00	48	64	80	102	124	136	158	170	189	209	235	252	267	293							
		52	57	74	94	114	127	150	161	182	193	212	232	252	268							
		56	53	71	83	104	127	140	153	171	186	198	215	234	247	276						
		60	51	68	83	98	118	132	144	162	178	189	207	219	235	261	308					
		66	49	62	81	87	110	123	136	153	167	183	193	210	217	253	289					
		72	46	64	77	90	106	125	139	142	160	171	179	200	208	248	276	289				

GIRDER SPAN (ft)	JOIST SPACES (ft)	GIRDER DEPTH (in)	JOIST GIRDER WEIGHT -- POUNDS PER LINEAR FOOT																				
			LOAD ON EACH PANEL POINT -- KIPS															ASD		LRFD		
			6	8	10	12	14	16	18	20	22	24	26	28	30	35	40	45	50	55	60	65
			9	12	15	18	21	24	27	30	33	36	39	42	45	52.5	60	67.5	75	82.5	90	97.5
65	6N@ 10.83	52	30	39	45	54	61	69	78	83	95	97	115	116	122	137	157	174	192	208	227	240
		56	29	35	42	49	58	63	70	80	84	97	97	117	119	129	148	159	181	201	206	231
		60	29	34	41	50	56	64	71	76	82	92	98	99	111	117	139	150	173	190	198	212
		66	26	33	40	45	51	58	65	73	78	83	87	100	103	106	124	142	165	178	188	200
		72	27	32	37	43	49	54	60	68	76	80	87	89	93	97	117	129	147	164	171	186
	8N@ 8.12	52	38	44	58	66	74	83	97	115	127	129	141	153	161	174	195	234	249	262	286	
		56	34	43	52	63	74	83	97	105	118	129	131	143	151	168	183	209	231	251	277	286
		60	33	41	51	60	69	77	85	99	108	119	130	133	139	151	179	204	214	239	260	269
		66	33	42	49	56	63	75	80	89	101	110	122	124	135	141	170	190	204	229	244	252
		72	39	42	47	56	65	73	78	89	92	104	113	125	131	137	166	182	201	213	238	249
	9N@ 7.22	52	38	49	62	74	83	97	116	128	129	142	153	158	169	190	229	249	284			
		56	39	48	59	68	81	98	106	118	130	142	144	155	161	183	208	238	259	273		
		60	38	47	58	69	78	86	100	109	120	132	145	146	152	177	199	226	240	261	294	
		66	37	44	53	64	72	81	89	103	112	124	136	138	144	162	196	209	235	254	286	305
		72	35	44	52	62	71	79	91	91	108	115	127	140	140	153	182	195	225	249	266	285
	10N@ 6.50	52	41	58	67	82	97	116	128	131	154	155	168	180	191	233	245	276				
		56	40	52	68	77	91	107	119	132	144	151	165	175	181	208	238	262	289			
		60	40	51	61	74	87	100	109	122	134	146	162	172	182	199	228	254	280	298		
		66	39	50	60	72	82	90	103	113	125	138	140	163	169	183	218	245	263	274	296	
		72	37	47	56	67	76	87	93	110	127	129	141	143	146	165	202	219	241	252	293	
	11N@ 5.91	52	45	59	75	89	106	118	131	153	158	178	186	194	209	237	273					
		56	44	60	69	85	99	119	132	144	156	161	182	187	197	226	262	269				
		60	44	55	70	79	92	109	122	134	147	162	170	184	186	214	245	258				
		66	42	54	64	73	90	104	113	125	139	147	164	166	180	188	237	248	296			
		72	41	51	62	77	88	93	110	118	131	144	156	173	169	186	228	240	265	270		
	13N@ 5.00	52	55	72	89	106	130	142	156	169	180	194	208	231	248	267						
		56	53	69	86	99	120	133	146	161	171	186	202	218	242	257						
		60	50	64	77	93	108	131	134	158	164	180	188	201	220	245	299					
		66	49	62	75	87	102	122	134	137	161	167	179	195	205	233	277	290				
		72	46	58	72	85	90	113	127	138	141	170	171	174	187	194	251	256	314			
70	7N@ 10.00	56	30	39	46	56	64	71	83	88	102	102	110	121	136	167	178	203	218	244	257	275
		60	30	37	44	52	61	66	73	85	90	102	105	111	131	160	172	193	208	234	251	263
		66	30	35	44	51	58	67	73	75	87	93	104	106	122	145	164	176	190	208	233	240
		72	29	34	42	47	54	60	69	76	78	89	94	102	116	133	144	160	187	200	215	233
		78	28	34	40	47	50	58	63	71	78	83	90	96	109	119	139	151	179	190	201	208
		84	29	35	39	44	51	57	65	69	72	80	85	94	103	114	129	143	171	179	192	202
	9N@ 7.78	56	37	45	56	67	75	88	102	110	122	128	154	168	180	203	229	249	283			
		60	35	45	54	65	73	89	99	105	114	129	131	159	165	189	218	247	262	279		
		66	38	48	56	67	74	86	92	106	112	122	127	149	160	178	211	227	254	264	297	
		72	37	45	56	64	69	77	89	100	108	114	124	131	145	163	198	211	235	257	285	295
		78	36	45	53	60	66	76	87	93	102	110	116	118	140	153	183	201	225	250	267	282
		84	35	45	50	59	67	72	81	94	95	103	113	118	128	148	176	192	217	226	248	271
	10N@ 7.00	56	38	53	60	75	88	100	106	118	137	161	168	180	192	233	251	264				
		60	41	55	65	71	88	102	109	122	130	157	161	175	184	208	240	254	287			
		66	42	51	62	70	85	91	105	109	123	132	157	161	173	195	228	243	278	287		
		72	38	47	59	66	78	88	94	106	112	127	133	155	162	181	218	233	262	277		
		78	37	46	55	65	71	79	94	96	108	115	130	137	151	176	203	227	247	262	290	
		84	36	47	55	63	72	80	92	98	109	112	121	133	144	167	194	207	228	255	282	298
	11N@ 6.36	56	45	60	71	87	102	108	127	138	162	178	185	204	218	249	282					
		60	44	57	66	85	90	104	114	129	157	162	180	189	207	236	262	271				
		66	43	53	67	76	88	105	106	117	132	160	166	176	181	212	244	259	305			
		72	42	55	62	70	82	94	108	109	119	136	148	167	176	203	233	251	295	302		
		78	40	50	61	73	80	92	98	110	118	124	140	141	169	192	226	242	273	284	310	
		84	39	49	59	68	78	84	97	102	116	124	129	144	154	185	209	228	262	278	304	
	12N@ 5.83	56	50	63	76	88	103	113	129	157	170	181	194	207	234	253	293					
		60	46	58	74	89	103	112	128	139	161	179	183	196	207	248	284					
		66	45	55	67	78	92	105	115	130	143	164	175	186	199	241	267	279	308			
		72	42	55	65	77	89	102	107	119	135	148	168	173	189	215	247	264	298			
		78	42	51	64	72	84	97	106	113	123	141	151	167	179	201	229	256	279	308		
		84	40	51	61	73	83	89	102	115	118	128	144	151	171	192	221	249	274	298	314	
	14N@ 5.00	56	53	71	87	102	120	137	163	180	191	207	227	247	259	287						
		60	54	69	88	99	112	128	153	171	182	196	210	230	251	282						
		66	48	64	77	92	106	115	132	164	176	186	200	219	241	271	287					
		72	49	61	73	91	103	110	120	138	169	181	191	213	216	248	277					
		78	44	58	72	84	97	111	120	138	141	172	182	194	204	226	270	272				
		84	44	58	69	79	97	106	116	127	143	155	171	177	196	202	259	262	315			

GIRDER SPAN (ft)	JOIST SPACES (ft)	GIRDER DEPTH (in)	JOIST GIRDER WEIGHT -- POUNDS PER LINEAR FOOT LOAD ON EACH PANEL POINT -- KIPS															ASD		LRFD		
			6	8	10	12	14	16	18	20	22	24	26	28	30	35	40	45	50	55	60	65
			9	12	15	18	21	24	27	30	33	36	39	42	45	52.5	60	67.5	75	82.5	90	97.5
75	8N@ 9.38	56	40	49	61	73	82	95	115	116	128	140	152	156	166	186	219	245	261	275		
		60	38	48	58	70	80	92	97	116	118	130	142	153	158	177	206	234	251	263	280	
		66	35	44	53	64	72	82	98	99	118	120	132	144	152	169	186	207	234	244	269	289
		72	34	43	52	61	71	79	87	100	101	121	122	134	141	158	178	189	213	237	253	267
		78	34	43	54	61	69	77	81	89	103	105	123	125	131	150	168	183	207	218	246	261
	10N@ 7.50	60	42	59	69	83	98	117	129	131	154	159	170	182	194	234	247	277				
		66	42	55	69	78	87	100	119	132	134	153	163	174	184	207	241	265	292			
		72	42	54	63	73	86	101	111	123	136	138	154	163	176	194	228	256	280	289		
		78	39	48	63	74	82	91	105	114	127	139	152	157	165	177	221	237	261	278		
		84	39	49	59	69	78	94	95	110	128	131	143	156	150	166	197	225	247	267	293	
	12N@ 6.25	60	51	68	84	98	118	131	144	159	181	183	195	206	236	265						
		66	50	62	79	90	110	122	135	148	164	172	185	198	209	249	277					
		72	46	63	73	90	104	124	126	141	154	166	170	188	199	234	259	275				
		78	47	61	76	86	98	105	126	139	152	163	166	178	188	208	250	265	301			
		84	46	56	70	79	92	106	126	139	141	164	171	171	175	191	235	253	279	288		
	14N@ 5.36	66	56	72	89	111	125	137	160	171	184	199	209	232	241	270						
		72	52	70	84	101	121	134	148	166	179	190	202	221	233	260	297					
		78	53	68	80	98	107	125	139	151	174	183	192	215	225	249	277					
		84	52	64	79	92	108	127	130	153	171	179	186	196	204	227	271	284				
		90	50	66	77	94	110	119	142	144	173	176	178	179	197	203	260	275				
	15N@ 5.00	66	60	77	98	118	132	146	164	185	196	215	226	244	268	273						
		72	59	74	87	110	123	146	160	169	189	201	222	221	248	264	312					
		78	54	73	88	104	124	139	152	169	177	195	207	213	228	257	308					
		84	55	67	86	93	116	131	143	171	174	189	193	206	219	250	287	302				
		90	52	69	81	95	118	133	145	146	177	179	182	202	212	246	280	294				
80	8N@ 10.00	60	37	45	56	64	75	88	97	103	112	127	137	156	162	189	208	234	261	277		
		66	35	45	52	62	70	77	90	103	105	113	129	131	155	176	197	226	243	258	287	
		72	33	41	48	59	68	76	87	92	106	108	116	126	141	170	187	203	235	250	268	288
		78	33	41	47	56	64	73	81	88	94	109	111	118	136	156	178	195	216	238	255	269
		84	35	39	48	56	63	71	79	83	96	98	112	114	129	146	173	184	210	216	247	256
		90	56	57	58	63	70	79	79	90	95	103	105	118	127	134	169	179	205	210	243	252
	10N@ 8.00	60	41	53	68	76	97	103	112	129	139	159	180	191	195	234	255	267				
		66	39	52	62	75	90	100	107	115	132	154	167	178	187	210	245	257				
		72	43	55	63	74	87	97	106	120	127	151	161	171	182	195	238	252				
		78	42	51	63	71	86	90	100	112	122	130	155	166	176	187	229	245	281	290		
		84	42	51	61	70	78	91	100	109	115	125	131	157	166	178	222	230	256	277		
		90	40	49	60	68	77	87	92	102	111	118	132	136	160	169	197	221	239	261	293	
	12N@ 6.67	66	50	65	73	90	103	115	130	161	172	180	195	207	220	254	290					
		72	47	59	72	86	101	107	125	133	165	174	183	196	210	243	273					
		78	46	60	69	80	94	108	114	129	136	167	176	189	197	220	263	276				
		84	47	56	70	79	92	99	111	121	138	140	170	175	193	207	250	265	301			
		90	44	56	66	74	86	101	113	116	125	143	149	170	177	193	242	259	281	301		
		96	43	54	68	75	85	98	104	117	120	130	147	156	180	195	233	251	277	295	308	
	14N@ 5.71	66	57	73	89	103	113	129	160	182	186	207	221	231	262	288						
		72	54	67	79	101	106	125	143	165	184	198	211	224	243	277						
		78	50	66	78	95	109	118	136	149	173	191	197	216	226	266	297					
		84	50	64	74	92	99	112	124	143	169	177	191	203	218	250	276					
		90	48	61	74	86	100	115	121	136	146	172	181	195	208	227	264	275				
		96	47	61	74	84	100	108	118	127	145	152	177	181	201	215	258	266				
	16N@ 5.00	66	62	78	101	113	130	161	184	197	212	233	253	268	288	308						
		72	57	76	93	109	118	145	167	187	203	218	246	258	270	291						
		78	58	73	91	104	120	137	149	181	191	208	219	242	252	282						
		84	54	69	84	100	115	126	143	174	185	195	211	223	250	271	315					
		90	54	70	80	101	114	119	144	155	180	191	207	220	233	267	306					
		96	55	68	81	94	110	121	133	155	164	186	201	211	226	264	298	302				

GIRDER SPAN (ft)	JOIST SPACES (ft)	GIRDER DEPTH (in)	JOIST GIRDER WEIGHT -- POUNDS PER LINEAR FOOT																			
			LOAD ON EACH PANEL POINT -- KIPS														ASD		LRFD			
			6	8	10	12	14	16	18	20	22	24	26	28	30	35	40	45	50	55	60	65
			9	12	15	18	21	24	27	30	33	36	39	42	45	52.5	60	67.5	75	82.5	90	97.5
90	9N@ 10.00	72	46	55	64	81	92	98	117	119	141	143	159	160	182	202	233	238	287			
		84	48	50	60	75	84	88	102	121	124	135	148	154	165	180	218	228	254	286	298	
		90	56	57	62	72	85	88	99	105	125	128	138	152	159	174	211	218	251	272	294	
		96	57	58	64	69	80	91	98	107	110	128	131	142	155	170	199	208	246	263	290	302
		102	57	59	62	69	75	87	95	105	112	130	133	134	146	167	191	196	241	257	281	296
	10N@ 9.00	72	48	61	72	85	99	118	130	142	155	160	170	182	186	236	248	255				
		84	49	58	69	81	97	115	117	137	148	153	165	173	177	210	240	252	292	307		
		90	50	56	66	79	89	100	107	126	129	141	157	167	176	186	232	248	283	292		
		96	48	56	66	74	87	95	108	113	129	133	153	159	168	173	217	223	259	268		
		102	48	57	65	76	84	97	105	115	124	131	137	155	162	170	200	222	245	257	288	
	11N@ 8.18	72	51	65	78	99	119	120	143	150	172	182	188	208	219	240	273					
		84	50	62	74	87	100	113	126	138	150	166	177	192	194	215	258	288				
		90	51	59	72	85	93	107	128	129	142	158	170	182	188	204	250	272	291			
		96	53	60	71	81	95	105	113	132	134	148	167	174	183	194	242	266	296	310		
		102	57	61	70	82	94	101	116	124	138	150	163	167	177	191	235	254	278	292		
	12N@ 7.50	78	53	68	79	102	111	124	149	162	172	183	193	210	225	258	276					
		84	52	65	79	91	105	125	137	149	166	176	188	195	213	245	270	277				
		90	52	68	79	89	106	126	128	151	152	169	182	190	205	219	262	269				
		96	52	63	76	90	103	110	129	132	153	156	175	185	198	210	252	265	293			
		108	55	64	76	85	97	107	115	135	137	160	168	179	183	198	237	261	290	295		
	15N@ 6.00	78	66	82	99	121	145	148	179	188	201	216	237	252	270							
		84	62	76	97	122	125	149	169	183	192	204	220	247	252	296						
		90	60	78	90	106	127	140	153	178	183	200	213	221	249	284	308					
		96	58	72	93	108	129	131	154	173	176	196	198	218	226	272	300					
		108	59	72	87	101	115	136	139	168	172	183	186	206	218	263	275	299				
	18N@ 5.00	78	74	99	120	145	159	177	198	215	238	253	270	292								
		84	73	89	113	137	151	169	192	207	216	244	260	272	298							
		90	70	90	106	129	153	166	185	198	212	228	250	267	280							
		96	68	87	108	131	144	158	179	192	204	220	235	260	275	291						
		108	64	85	103	120	139	151	172	189	192	216	231	243	263	276						
100	10N@ 10.00	78	52	58	68	79	92	106	115	131	140	161	182	190	201	236	257	278				
		84	53	58	69	77	93	102	109	118	133	156	165	185	194	210	249	262	294			
		96	56	62	68	84	87	102	108	125	126	150	162	179	186	202	241	252	282			
		102	57	61	66	77	89	100	106	121	127	133	159	169	182	191	234	242	277			
		108	58	61	67	76	87	92	106	107	127	130	154	162	174	176	218	224	261	275		
	12N@ 8.33	78	56	70	86	97	112	124	158	173	182	188	209	222	241	254						
		84	55	68	84	98	107	126	133	163	176	185	191	211	224	243	287					
		96	55	66	75	91	102	111	116	131	158	179	184	196	209	232	270	286				
		102	55	62	73	90	95	113	118	133	141	174	179	191	204	222	257	272				
		108	55	62	72	85	97	106	117	123	139	149	175	186	199	200	248	260	299			
	15N@ 6.67	78	67	86	104	115	133	172	184	207	213	236	261	276	296							
		84	61	78	94	113	128	164	175	188	211	223	241	267	281							
		96	61	72	93	105	118	133	170	179	194	219	224	238	252	286						
		102	60	74	85	102	117	125	144	175	187	201	209	234	241	272	312					
		108	59	73	87	103	118	123	140	149	179	200	204	230	238	261	303					
	16N@ 6.25	84	69	80	106	117	133	164	188	202	214	237	257	268	293							
		96	63	75	98	115	124	140	173	195	200	220	239	245	268	302						
		102	62	74	97	111	118	136	154	178	196	210	224	237	252	292						
		108	62	76	87	104	118	129	148	173	192	202	216	230	246	280						
		120	64	76	86	104	116	128	140	161	188	190	211	219	243	270	303	309				
	17N@ 5.88	84	70	88	107	127	145	168	189	213	237	245	266	294	302							
		96	65	80	99	115	135	151	182	194	211	234	250	268	277	302						
		102	66	79	98	118	127	144	175	187	204	224	242	255	268	300						
		108	65	78	91	107	120	140	160	181	203	218	235	240	261	286						
		120	67	78	93	110	125	133	149	168	189	212	216	235	248	274						
	18N@ 5.56	84	70	94	109	134	164	187	203	215	238	261	282	292								
		96	65	84	100	120	140	172	195	208	221	247	268	276	293							
		102	66	84	102	118	137	154	189	201	215	230	253	269	284							
		108	68	82	104	119	130	148	182	195	206	224	244	263	268	285						
		120	69	84	98	113	129	142	163	192	197	219	236	251	265	278						
	20N@ 5.00	84	77	103	118	146	178	201	219	240	264	295										
		96	73	99	115	125	153	188	212	225	252	269	284	307								
		102	71	89	114	129	147	181	204	219	238	261	278	299	314							
		108	71	89	110	126	149	164	202	211	230	252	270	291	298							
		120	71	89	102	120	133	164	200	205	222	240	262	269	289	314						

STANDARD WEIGHTS
Joist Girders

GIRDER SPAN (ft)	JOIST SPACES (ft)	GIRDER DEPTH (in)	JOIST GIRDER WEIGHT -- POUNDS PER LINEAR FOOT																				
			LOAD ON EACH PANEL POINT -- KIPS															ASD		LRFD		
			6	8	10	12	14	16	18	20	22	24	26	28	30	35	40	45	50	55	60	65
			9	12	15	18	21	24	27	30	33	36	39	42	45	52.5	60	67.5	75	82.5	90	97.5
110	10N@ 11.00	84	61	69	82	94	100	120	143	144	160	172	184	188	209	236	266	271					
		96	63	69	81	91	98	107	125	142	154	166	181	184	201	208	261	264	297				
		108	64	69	75	86	95	105	113	131	133	160	171	181	185	190	248	252	288				
		114	67	72	76	86	96	108	115	133	136	154	158	173	182	188	238	242	280				
		120	66	72	76	83	90	100	111	128	137	140	157	166	176	177	230	238	274	278			
	12N@ 9.17	84	66	74	88	109	122	144	162	175	186	199	218	224	250	255							
		96	66	74	88	101	125	127	151	170	179	187	194	214	224	248	280						
		108	68	75	84	95	111	132	136	159	168	174	190	197	209	230	276	284					
		114	66	75	84	102	107	126	134	156	158	170	186	193	201	226	271	275					
		120	67	74	82	96	109	126	135	158	161	168	179	188	192	202	252	260	299				
	14N@ 7.86	84	71	84	102	123	147	160	182	186	208	222	244	271	274								
		96	69	83	100	124	136	150	165	178	191	213	223	236	257	264							
		108	69	78	99	108	128	142	155	174	186	197	210	220	239	260	304						
		114	69	79	93	105	124	133	157	167	182	194	202	212	230	257	298						
		120	69	80	90	106	126	135	158	160	179	189	198	204	226	234	294	310					
	16N@ 6.88	96	72	89	106	126	149	168	182	196	217	231	250	271	287								
		102	74	89	108	127	152	156	178	195	212	220	242	262	278								
		108	73	83	104	127	142	158	175	188	206	213	234	249	261	292							
		114	74	86	105	114	135	161	162	186	200	209	226	242	256	282							
		120	75	88	99	117	138	152	165	183	184	205	210	237	252	270							
	18N@ 6.11	96	77	99	125	148	167	190	208	215	240	257	284	297									
		102	80	101	127	139	153	182	204	210	232	247	273	290	299								
		108	77	94	111	131	157	174	198	207	224	241	264	279	293								
		114	79	97	113	134	159	163	192	204	218	238	258	272	285								
		120	79	91	110	136	152	166	185	197	209	235	241	266	272	288							
	20N@ 5.50	96	82	106	139	154	185	206	219	242	260	288	300										
		102	81	109	130	154	173	198	212	236	253	279	295	312									
		108	83	106	132	145	169	192	210	229	246	273	285	308									
		114	86	101	134	147	161	185	208	224	238	263	280	304									
		120	77	93	113	128	154	167	193	215	230	248	271	297	302								
120	10N@ 12.00	96	69	76	82	89	94	112	138	152	168	178	189	199	208	242	263	286					
		102	69	75	83	86	92	110	134	148	164	174	186	196	207	219	262	274					
		108	82	83	86	95	100	108	126	145	161	170	184	194	205	214	258	268					
		114	82	83	86	90	95	109	127	140	158	166	179	185	197	206	254	262					
		120	83	84	86	92	97	102	113	133	153	155	174	177	188	200	245	254	260				
	12N@ 10.00	96	71	82	90	100	125	130	168	177	188	198	220	238	254	296							
		102	72	80	88	101	116	130	156	167	184	190	203	223	240	282							
		108	72	81	90	99	105	128	134	159	181	188	196	214	226	268	298						
		114	71	82	87	95	106	121	135	155	168	187	188	208	218	252	286						
		120	72	80	88	93	107	123	133	138	163	185	187	201	211	226	269	276					
	15N@ 8.00	96	77	90	109	125	134	178	189	202	222	238	252	279	296								
		102	78	88	103	118	132	169	179	198	216	231	245	261	284								
		108	80	90	101	115	133	160	178	195	209	224	237	252	276								
		114	78	88	98	117	122	137	176	186	201	212	234	241	269	282							
		120	78	89	99	110	124	140	167	180	189	204	230	238	247	275							
	16N@ 7.50	96	80	90	109	128	163	175	192	213	238	249	268	283									
		102	78	92	110	120	137	172	191	206	228	240	262	282	296								
		108	80	90	100	120	133	168	184	199	220	231	246	269	287								
		114	81	91	101	117	135	145	180	197	202	228	238	255	281	288							
		120	79	90	99	118	126	147	177	190	199	225	228	245	265	278							
	18N@ 6.67	96	85	95	116	136	178	198	214	237	252	279	295										
		102	83	97	113	138	174	192	209	229	243	266	288										
		108	84	94	115	129	170	188	204	221	233	256	273	306									
		114	85	96	116	123	143	183	199	212	230	249	264	294	304								
		120	84	95	105	125	140	179	192	204	227	243	258	282	295								
	20N@ 6.00	96	89	110	130	166	189	213	237	254	280	296											
		102	87	105	123	150	182	209	230	245	269	288											
		108	88	101	121	142	174	205	223	239	255	284	302										
		114	87	103	119	138	176	201	215	230	254	281	295	309									
		120	90	102	121	133	150	186	208	223	242	263	288	305	310								
	24N@ 5.00	96	96	121	168	192	220	244	271	312													
		102	99	118	151	186	212	238	266	303													
		108	96	119	147	181	204	229	257	286	312												
		114	109	141	152	172	202	224	246	278	305												
		120	107	143	152	165	200	221	238	272	301												

GLOSSARY

Accessories. Structural components related to the design, fabrication and erection of *joists* and *Joist Girders* including, but not limited to sloped *end bearings*, *extended ends*, *ceiling extensions*, *bridging* and bridging anchors, *headers* and bottom chord lateral bracing for *Joist Girders*.

ASD (Allowable Strength Design). Method of proportioning structural components such that the *allowable strength* equals or exceeds the *required strength* of the component under the action of the *ASD load combinations*.

ASD Load Combination. *Load* combination in the *applicable building code* intended for allowable *strength design* (allowable stress design).

Allowable Strength*. *Nominal strength* divided by the *safety factor*, R_{Ω}.

Applicable Building Code. Building code under which the structure is designed.

Available Strength*. *Design strength* or *allowable strength* as appropriate.

Bay. The distance between the main structural frames or walls of a building.

Bearing. The distance that the bearing shoe or seat of a *joist* or *Joist Girder* extends over its masonry, concrete or steel support.

Bearing Plate. The steel plate used for a *joist* or *Joist Girder* to bear on when it is supported by masonry or concrete supports. The plate is designed by the *Specifying Professional* to carry the *joist* reaction to the supporting structure.

Bottom Chord Extension (BCX). The two angle extended part of a *joist* bottom chord from the first bottom chord panel point towards the end of the joist.

Bridging. In general, a member connected to a joist to brace it from lateral movement. See also Diagonal Bridging and Horizontal Bridging

Buckling. *Limit state* of sudden change in the geometry of a structure or any of its elements under a critical loading condition.

Buckling Strength. *Nominal strength* for *buckling* or instability *limit states*.

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

Camber. An upward curvature of the chords of a *joist* or *Joist Girder* induced during shop fabrication. Note, this is in addition to the pitch of the top chord.

Ceiling Extension. A *bottom chord extension* except that only one angle of the *joist* bottom chord is extended from the first bottom chord panel point towards the end of the joist.

Chords. The top and bottom members of a *joist* or *Joist Girder*. When a chord is comprised of two angles there is usually a gap between the members.

Clear Span. The actual clear distance or opening between supports for a *joist*, that is the distance between walls or the distance between the edges of flanges of beams.

Cold-Formed Steel Structural Member. Shape manufactured by press-braking blanks sheared from sheets, cut lengths of coils or plates, or by roll forming cold- or hot-rolled coils or sheets; both forming operations being performed at ambient room temperature, that is, without manifest addition of heat such as would be required for hot forming.

Collateral Load. All additional dead loads other than the weight of the building, such as sprinklers, pipes, ceilings, and mechanical or electrical components.

Connection. Combination of structural elements and *joints* used to transmit forces between two or more members. See also Splice.

Deck. A floor or roof covering made out of gage metal attached by welding or mechanical means to *joists*, beams, *purlins*, or other structural members and can be galvanized, painted, or unpainted.

Design Load. Applied *load* determined in accordance with either *LRFD load combinations* or *ASD load combinations*, whichever is applicable.

Design Strength*. *Resistance factor* multiplied by the *nominal strength*, R_ϕ.

Diagonal Bridging. Two angles or other structural shapes connected from the top chord of one *joist* to the bottom chord of the next joist to form an 'X' shape. These members are almost always connected at their point of intersection.

Diaphragm. Roof, floor or other membrane or bracing system that transfers in-plane forces to the lateral force resisting system.

Effective Length. Length of an otherwise identical column with the same strength when analyzed with pin-ended boundary conditions.

Elastic Analysis. *Structural analysis* based on the assumption that the structure returns to its original geometry on removal of the *load*.

End Diagonal or Web. The first web member on either end of a *joist* or *Joist Girder* which begins at the top chord at the seat and ends at the first bottom chord panel point.

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

Extended End. The extended part of a *joist* top chord with the seat angles also being extended from the end of the joist extension back into the joist and maintaining the standard end *bearing* depth over the entire length of the extension.

Factored Load. Product of a *load factor* and the *nominal load*.

Filler. A rod, plate or angle welded between a two angle web member or between a top or bottom chord panel to tie them together, usually located at the middle of the member.

Flexural Buckling. Buckling mode in which a compression member deflects laterally without twist or change in cross-sectional shape.

Flexural-Torsional Buckling. Buckling mode in which a compression member bends and twists simultaneously without change in cross-sectional shape.

Girt. Horizontal structural member that supports wall panels and is primarily subjected to bending under horizontal loads, such as wind load.

Gravity Load. *Load*, such as that produced by dead and live loads, acting in the downward direction.

Header. A structural member located between two *joists* or between a joist and a wall which carries another joist or joists. It is usually made up of an angle, channel, or beam with saddle angle connections on each end for bearing.

Horizontal Bridging*. A continuous angle or other structural shape connected to the top and bottom chord of a joist.

Inelastic Analysis. *Structural analysis* that takes into account inelastic material behavior, including plastic analysis.

Instability. *Limit state* reached in the loading of a *structural component*, frame or structure in which a slight disturbance in the *loads* or geometry produces large displacements.

Joint. Area where two or more ends, surfaces or edges are attached. Categorized by type of fastener or weld used and the method of force transfer.

Joist. A structural load-carrying member with an open web system which supports floors and roofs utilizing hot-rolled or cold-formed steel and is designed as a simple span member. Currently, the SJI has the following joist designations: K-Series including KCS, LH-Series and DLH-Series, and CJ-Series.

Joist Girder. A primary structural load-carrying member with an open web system designed as a simple span supporting equally spaced concentrated loads of a floor or roof system acting at the panel points of the member and utilizing hot-rolled or cold-formed steel.

Joist Substitute. A structural member who's intended use is for very short spans (10 feet or less) where open web steel joists are impractical. They are usually used for short spans in skewed bays, over corridors or for outriggers. It can be made up of two or four angles to form channel sections or box sections.

Lateral Buckling. Buckling mode of a flexural member involving deflection normal to the plane of bending.

Lateral-Torsional Buckling. Buckling mode of a flexural member involving deflection normal to the plane of bending occurring simultaneously with twist about the shear center of the cross section.

Limit State. Condition in which a structure or component becomes unfit for service and is judged either to be no longer useful for its intended function (*serviceability limit state*) or to have reached its ultimate load-carrying capacity (*strength limit state*).

Load. Force or other action that results from the weight of building materials, occupants and their possessions, environmental effects, differential movement, or restrained dimensional changes.

Load Effect. Forces, stresses, and deformations produced in a *structural component* by the applied *loads*.

Load Factor. Factor that accounts for deviations of the *nominal load* from the actual *load*, for uncertainties in the analysis that transforms the *load* into a *load effect*, and for the probability that more than one extreme *load* will occur simultaneously.

Local Buckling.** *Limit state* of *buckling* of a compression element within a cross section.

LRFD (Load and Resistance Factor Design). Method of proportioning *structural components* such that the *design strength* equals or exceeds the *required strength* of the component under the action of the *LRFD load combinations*.

LRFD Load Combination. *Load* combination in the *applicable building code* intended for strength design (*Load and Resistance Factor Design*).

Material. *Joists*, *Joist Girders* and *accessories* as provided by the *Seller*.

Nailers. Strips of lumber attached to the top chord of a *joist* so plywood or other flooring can be nailed directly to the *joist*.

Nominal Load. Magnitude of the *load* specified by the *applicable building code*.

Nominal Strength*. Strength of a structure or component (without the *resistance factor* or *safety factor* applied) to resist the *load effects*, as determined in accordance with these *Standard Specifications*.

Owner. The entity that is identified as such in the Contract Documents.

Permanent Load. *Load* in which variations over time are rare or of small magnitude. All other *loads* are *variable loads*.

Placement Plans. Drawings that are prepared depicting the interpretation of the Contract Documents requirements for the *material* to be supplied by the *Seller*. These floor and/or roof plans are approved by the *Specifying Professional*, *Buyer* or *Owner* for conformance with the design requirements. The *Seller* uses the information contained on these drawings for final material design. A unique piece mark number is typically shown for the individual placement of *joists*, *Joist Girders* and *accessories* along with sections that describe the *end bearing* conditions and minimum attachment required so that *material* is placed in the proper location in the field.

Ponding. Retention of water at low or irregular areas on a roof due solely to the deflection of flat roof framing.

Purlin. Horizontal structural member that supports roof deck and is primarily subjected to bending under vertical loads such as dead, snow or wind loads.

Quality Assurance. System of shop and field activities and controls implemented by the *owner* or his/her designated representative to provide confidence to the *owner* and the building authority that quality requirements are implemented.

Quality Control. System of shop and field controls implemented by the *seller* and *erector* to ensure that contract and company fabrication and erection requirements are met.

Required Strength*. Forces, stress, and deformations produced in a *structural component*, determined by either *structural analysis*, for the *LRFD* or *ASD load combinations*, as appropriate, or as specified by these *Standard Specifications*.

Resistance Factor, ϕ**.** Factor that accounts for unavoidable deviations of the *nominal strength* from the actual strength and for the manner and consequences of failure.

Safety Factor, Ω**.** Factor that accounts for deviations of the actual strength from the *nominal strength*, deviations of the actual *load* from the *nominal load*, uncertainties in the analysis that transforms the *load* into a *load effect* and for the manner and consequences of failure.

Seller. A company certified by the Joist Institute engaged in the manufacture and distribution of *joists*, *Joist Girders* and *accessories*.

Service Load. *Load* under which serviceability limit states are evaluated.

Serviceability Limit State. Limiting condition affecting the ability of a structure to preserve its appearance, maintainability, durability, or the comfort of its occupants or function of machinery, under normal usage.

Slenderness Ratio. The ratio of the effective length of a column to the radius of gyration of the column about the same axis of bending.

Span. The centerline-to-centerline distance between structural steel supports such as a beam, column or *Joist Girder* or the *clear span* distance plus four inches onto a masonry or concrete wall.

Specified Minimum Yield Stress. Lower limit of *yield stress* specified for a material as defined by ASTM.

Specifying Professional. The licensed professional who is responsible for sealing the building Contract Documents, which indicates that he or she has performed or supervised the analysis, design and document preparation for the structure and has knowledge of the load-carrying structural system.

Splice. *Connection* between two structural members joined at their ends by either bolting or welding to form a single, longer member.

Stability. Condition reached in the loading of a *structural component*, frame or structure in which a slight disturbance in the *loads* or geometry does not produce large displacements.

Stabilizer Plate. A steel plate at a column or wall inserted between the end of a bottom *chord* of a *joist* or *Joist Girder*.

Standard Specifications. Documents developed and maintained by the Steel Joist Institute for the design and manufacture of open web steel joists and Joist Girders. The term "SJI Standard Specifications" encompass by reference the following:

ANSI SJI 100 - 2015 Standard Specification for K-Series, LH-Series and DLH-Series Open Web Steel Joists and for Joist Girders
ANSI SJI 200 - 2015 Standard Specifications for Composite Steel Joists.

Strength Limit State. Limiting condition affecting the safety of the structure, in which the ultimate load-carrying capacity is reached.

Structural Analysis. Determination of *load effects* on members and connections based on principles of structural mechanics.

Structural Drawings. The graphic or pictorial portions of the Contract Documents showing the design, location and dimensions of the work. These documents generally include plans, elevations, sections, details, connections, all loads, schedules, diagrams and notes.

Tagged End. The end of a *joist* or *Joist Girder* where an identification or piece mark is shown by a metal tag. The member must be erected with this tagged end in the same position as the tagged end noted on the *placement plan*.

Tensile Strength (of material). Maximum tensile stress that a material is capable of sustaining as defined by ASTM.

Tie Joist. A *joist* that is bolted at a column.

Top Chord Extension (TCX). The extended part of a *joist* top chord. This type of extension only has the two top chord angles extended past the joist seat.

Torsional Buckling. *Buckling* mode in which a compression member twists about its shear center axis.

Unbraced Length. Distance between braced points of a member, measured between the centers of gravity of the bracing members.

Variable Load. *Load* not classified as *permanent load*.

Webs. The vertical or diagonal members joined at the top and bottom *chords* of a *joist* or *Joist Girder* to form triangular patterns.

Yield Point. First stress in a material at which an increase in strain occurs without an increase in stress as defined by ASTM.

Yield Strength. Stress at which a material exhibits a specified limiting deviation from the proportionality of stress to strain as defined by ASTM.

Yield Stress. Generic term to denote either *yield point* or *yield strength*, as appropriate for the material.

NOTES:

* These terms are usually qualified by the type of *load effect*, e.g., nominal tensile strength, available compressive strength, design flexural strength.

** Term usually qualified by the type of component, e.g. local web buckling, local flange buckling, etc.

APPENDIX A

FIRE-RESISTANCE RATINGS WITH STEEL JOISTS

The Underwriters Laboratories (U.L.) Fire Resistance Directory lists hundreds of assemblies and their fire resistance ratings. The Specifying Professional can choose between numerous Floor-Ceiling and Roof-Ceiling assemblies that include steel joists and Joist Girders.

As a convenience, a selected number of assemblies are listed on the following pages. In addition, the Steel Joist Institute's Technical Digest #10 "Design of Fire Resistive Assemblies with Steel Joists" has a complete listing of steel joist assemblies and additional information about fire ratings. However, the listing that follows and the Technical Digest are intended as a guide only, and the Specifying Professional must refer to the current U.L. Fire Resistance Directory for complete design requirements.

Hundreds of fire tests on steel joist-supported assemblies have been conducted at nationally recognized testing laboratories in accordance with ASTM Standard E119, ANSI A2.1/UL 263, and NFPA 251. Because of practical loading restrictions and limitations of furnace dimensions, the vast majority of these tests were run using lightweight joists – normally from 8 inches to 14 inches (203 mm to 356 mm) deep. This practice was advantageous in that it established the *minimum* acceptable joists at the shallow and lightweight end of the joist load tables. This also resulted in a specified minimum joist designation being listed in the U.L. Fire Resistance Assembly, which is the joist that combines the required minimum depth and minimum weight per foot. Joists of the same series which equal or exceed the specified minimum joist depth and joist weight per foot may be used provided the accessories are compatible. The dimension from the bottom chord of the joists to the ceiling, whether given or calculated, is a minimum.

Where a U.L. Fire Resistance Assembly is being utilized, the Specifying Professional shall indicate the assembly number being used on the structural contract drawings. In addition, the Specifying Professional shall consider the following, as applicable:

- Joist designations specified on the structural contract drawings shall not be less than the minimum size for that assembly. The assembly may also require a minimum bridging size that may be larger than required by the SJI Specifications for the particular designation and joist spacing.
- Some assemblies stipulate minimum size materials or minimum cross sectional areas for individual joist and Joist Girder components. It is the responsibility of the Specifying Professional to show all special requirements on the contract drawings.
- Note that the maximum joist spacing shown for Floor-Ceiling Assemblies may be increased from the spacing listed in the U.L. Fire Resistance Directory to a maximum of 48 inches on center, provided the floor slab meets the structural requirements and the spacing of hanger wires supporting the ceiling is not increased.
- Some assemblies stipulate an allowable maximum joist design stress level less than the 30 ksi (207 MPa) used in the joist and Joist Girder specifications. It is the responsibility of the Specifying Professional to apply the proper stress level reductions (when applicable) when selecting joists and/or Joist Girders. This is accomplished by prorating the joist and/or Joist Girder capacities. To adjust the stress level of joists or Joist Girders, multiply the design load by the ratio of the joist design stress to the required maximum [e.g. 30/26 (207/179), 30/24 (207/165), 30/22 (207/152)], and then using this increased load, select a joist or Joist Girder from the load and/or weight tables.

- Some U.L. Roof-Ceiling Assemblies using direct applied protection limit the spacing of the joists for certain types and gages of metal decking – refer to the U.L. Fire Resistance Directory for this information.
- Where fire protective materials are to be applied directly to the steel joists or Joist Girders, it is often desired to have the joist furnished as unpainted. The Specifying Professional should indicate on the structural contract drawings if the joists or Joist Girders are to be painted or not.
- Certain older U.L. fire rated assemblies may refer to joist series that predate the K-series joists. Where one of these assemblies is selected, refer to the U.L Fire Resistance Directory for special provisions for substituting a K-Series joist in lieu of an S-, J-, and/or H-Series joist.

APPENDIX A

FLOOR - CEILING ASSEMBLIES WITH MEMBRANE PROTECTION

Restrained Assembly Rating	Protection Material	Minimum Joist Size	Concrete		Maximum Joist Spacing (in.)	Minimum Primary Support Member	UL Design Number
			Minimum Thickness (in.)	Type			
1 Hr.	Acoustical	12K1, 18LH02	2.5	LW, NW	NL	20G@13plf W8 x 15	D216
							D219
	Exposed Grid	10K1	2.5	NW	48*	20G@14plf W6 x 12	G205
		10K1	2.0		72	W6 x 12	G208
		10K1	2.5		48*	20G@14plf W6 x 12	G256
	Gypsum Board	10K1	2.5	NW	48	W8 x 24	G548
1 1/2 Hr.	Acoustical	12K1, 18LH02	2.5	LW, NW	NL	20G@13plf W8 x 15	D216
							D219
	Gypsum Board			NW		20G@20plf W8 x 28	D502
	Exposed Grid	10K1	2.5	NW	24 (48)	20G@13plf W6 x 12	G203
		10K1	2.5		48*	20G@14plf W6 x 12	G205
		10K1	2.0		72	W6 x 12	G208
		10K1	2.5		24 (48)		G213
		10K1	2.5		24 (48)	20G@13plf W8 x 31	G228
		10K1	2.0		24 (48)	20G@13plf W8 x 24	G229
		10K1	2.5		24 (48)	20G@13plf W6 x 12	G243
		10K1	2.5		24 (48)	20G@13plf W8 x 31	G268
	Gypsum Board	12K1	2.0	NW	24 (48)	NS	G502
2 Hr.	Acoustical	12K1, 18LH02	2.5	LW, NW	NL	20G@13plf W8 x 15	D216
							D219
	Gypsum Board			NW		20G@20plf W8 x 28	D502
	Concealed Grid	10K1	2.25	NW	24 (48)	W6 x 25	G023
		8K1	2.5		24 (48)	20G@13plf W8 x 20	G031
		10K1			30 (48)	20G@13plf W10 x 21	G036
	Exposed Grid	10K1	2.5	NW	24 (48)	20G@13plf W6 x 12	G203
		10K1	2.5		48*	20G@14plf W6 x 12	G205
		10K1	2.5		72	W6 x 12	G208

APPENDIX A

FLOOR - CEILING ASSEMBLIES WITH MEMBRANE PROTECTION

		10K1	2.5		24 (48)		G213
		10K1	2.5		24 (48)	W8 x 31	G227
		10K1	2.5		24 (48)	20G@13plf W8 x 31	G228
		10K1	2.5		24 (48)	20G@13plf W8 x 24	G229
		10K1	2.5		24 (48)	20G@13plf W6 x 12	G243
		10K1	2.5		48*	20G@14plf W6 x 12	G256
		10K1	2.5		24 (48)	20G@13plf W8 x 31	G268
	Gypsum Board	10K1	2.0	NW	24 (48)	NS	G505
		10K1	2.5		24 (48)	20G14plf W8 x 31	G514
		10K1	2.5		24 (48)	20G@13plf W10 x 21	G523
		10K1	2.5		24 (48)	20G@13plf W8 x 24	G529
		10K1	2.5		24 (48)	20G@13plf W10 x 21	G547
3 Hr.	Acoustical	12K1, 18LH02	3.25	LW, NW	NL	20G@13plf W8 x 15	D216 D219
	Concealed Grid	10K1	3.5	NW	24 (48)	20G@13plf W8 x 20	G033
		10K1	3.25		30 (48)	20G@13plf W10 x 21	G036
	Exposed Grid	10K1	3.5	NW	48*	20G@14plf W6 x 12	G205
		10K1	3.5		24 (48)	W6 x 12	G213
		10K1	3.25		24 (48)	20G@13plf W8 x 24	G229
		10K1	3.5		48*	W6 x 12	G256
		10K1 (22 ksi max.)	2.63		24 (48)	20G@13plf W8 x 31	G268
	Gypsum Board	10K1	3.0	NW	24 (48)	20G@13plf W10 x 21	G523
		10K1	2.75		24 (48)	20G@13plf W8 x 24	G529
		10K1	3.0		24 (48)	20G@13plf W10 x 21	G547

APPENDIX A

FLOOR - CEILING ASSEMBLIES WITH SPRAY APPLIED FIRE RESISTIVE MATERIALS

Restrained Assembly Rating	Protection Material	Minimum Joist Size	Concrete		Maximum Joist Spacing	Minimum Primary Support Member	UL Design Number
			Minimum Thickness (in.)	Type			
1 Hr.	SAFRM	NS	2.5	LW, NW	NL	W8 x 28	D759
		10K1	2.5				D779
		10K1	2.5				D780
		NS	3.25	LW			D782
		10K1*	2.5	LW			D925
			3.5	NW			
		16K6*	NS	LW, NW	42	20G@20plf W8 x 28	G701
		16K6	3.0	LW	50.5	NS	G702
			3.75	NW			
		16K6*	2.5	LW, NW	42	NS	G705
		16K6	3.0	LW	50.5	NS	G706
			3.75	NW			
		16K6*	2.5	LW, NW	42	20G@20plf W8 x 28	G708
		NS	2.5		42	W8 x 28	G709
		16K6*	2.5		42	20g@20plf W8 x 24	G801
		12K1	3.0	LW	50.5	NS	G802
			3.75	NW			
1 1/2 Hr.	SAFRM	NS	2.5	LW, NW	NL	W8 x 28	D759
		10K1	2.5				D779
		10K1	2.5				D780
		NS	3.25	LW			D782
		10K1*	3.0	LW			D925
			4.0	NW			
		16K6*	2.5	LW, NW	42	20G@20plf W8 x 28	G701
		16K6	3.5	LW	50.5	NS	G702
			4.5	NW			
		16K6*	2.5	LW, NW	42	NS	G705
		16K6	3.5	LW	50.5	NS	G706
			4.5	NW			
		16K6*	2.5	LW, NW	42	20G@20plf W8 x 28	G708
		NS	2.5		42	W8 x 28	G709
		16K6*	2.5		42	20G@20plf W8 x 24	G801
		12K5	3.5	LW	50.5	NS	G802
			4.5	NW			

APPENDIX A

FLOOR - CEILING ASSEMBLIES WITH SPRAY APPLIED FIRE RESISTIVE MATERIALS

2 Hr.	SAFRM	NS	2.5	LW, NW	NL	W8 x 28	D759
		10K1	2.5				D779
		10K1	2.5				D780
		NS	3.25	LW			D782
		10K1*	3.25	LW			D925
			4.5	NW			
		16K6*	2.5	LW, NW	42	20G@20plf W8 x 28	G701
		16K6	4.0	LW	50.5	NS	G702
			5.25	NW			
		16K6*	2.5	LW,NW	42	NS	G705
		16K6	4.0	LW	50.5	NS	G706
			5.25	NW			
		16K6*	2.5	LW, NW	42	20G@20plf W8 x 28	G708
		NS	2.5		42	W8 x 28	G709
		16K6*	2.5		42	20G@20plf W8 x 24	G801
		12K5	4.0	LW	50.5	NS	G802
			5.25	NW			
3 Hr.	SAFRM	NS	2.5	LW, NW	NL	W8 x 28	D759
		10K1	2.5				D779
		10K1	2.5				D780
		NS	3.25	LW			D782
		10K1*	4.19	LW			D925
			5.25	NW			
		16K6*	NS	LW, NW	42	20G@20plf W8 x 28	G701
		16K6*	2.75		42	NS	G705
		16K6*	2.75		42	20G@20plf W8 x 28	G708
		NS	2.75		42	W8 x 28	G709
		16K6*	2.75		42	20G@20plf W8 x 24	G801
4 Hr.	SAFRM	10K1	2.5	LW, NW	NL	W8 x 28	D779
		NS	3.25	LW			D782

*** Special Area Requirements**

APPENDIX A

ROOF - CEILING ASSEMBLIES WITH MEMBRANE PROTECTION

Restrained Assembly Rating	Protection Material	Minimum Joist Size	Built Up Roof		Maximum Joist Spacing (in.)	Minimum Primary Support Member	UL Design Number
			Deck Material Description	Insulation			
1 Hr.	Exposed Grid	12K1	22 MSG Min.	Fiber Board	84	W8 x 17	P201
		10K1	26 MSG Min.		48	W6 x 12	P202
		10K1	26 MSG Min.		48	20G@13plf	P211
		12K3	28 MSG Min.		72	20G@13plf W8 x 17	P214
		12K1	26 MSG Min.		72	20G@13plf W6 x 12	P225
		12K3	24 MSG Min.	Building Units	48	NS	P227
		12K3	26 MSG Min.	Fiber Board	72	20G@13plf W6 x 12	P230
		12K1	26 MSG Min.	Insulating Concrete	48	20G@14plf* W8 x 15	P231
		12K3	24 MSG Min.	Foamed Plastic	72	W8 x 15	P235
		10K1	28 MSG Min.	Insulating Concrete	72	20G@13plf W8 x 15	P246
		12K5	26 MSG Min.	Fiber Board	48	W6 x 12	P250
		12K1	28 MSG Min.	Insulating Concrete	72	20G@13plf W6 x 12	P251
		10K1	22 MSG Min.	Fiber Board	72	W6 x 12	P254
		10K1	28 MSG Min.	Insulating Concrete	72	W8 x 15	P255
		10K1	24 MSG Min.	Fiber Board	72	NS	P259
		12K1	28 MSG Min.	Insulating Concrete	72	20G@13plf W6 x 12	P261
		12K1	26 MSG Min.	Insulating Concrete	72	W8 x 15	P264
		10K1	Metal Roof Deck Panels	Batts and Blankets	60	NS	P265
		10K1	26 MSG Min.	Fiber Board	48	W6 x 16	P267
		10K1	Metal Roof Deck Panels	Batts and Blankets	60	NS	P268
		12K1	26 MSG Min.	Insulating Concrete	72	20G@14plf* W8 x 15	P269
	Fiber Board	10K1	24 MSG Min.	Fiber Board	NS	W6 x 16	P301
		10K1	22 MSG Min.		48	NS	P302
		10K1	22 MSG Min.		NS	W6 x 16	P303
	Gypsum Board	12K3	26 MSG Min.	Insulating Concrete	60	W8 x 24	P509
		12K3	24 MSG Min.	Fiber Board	72	20G@13plf	P510

APPENDIX A

ROOF - CEILING ASSEMBLIES WITH MEMBRANE PROTECTION

						W8 x 13	
		10K1	22 MSG Min.	Fiber Board	72	20G@13plf	P514
		10K1	20 MSG Min.	Fiber Board	48	NS	P519
1 1/2 Hr.	Exposed Grid	12K1	26 MSG Min.	Fiber Board	72	20G@13plf W6 x 12	P225
		12K3	24 MSG Min.	Building Units	48	NS	P227
		12K3	26 MSG Min.	Fiber Board	48	20G@13plf W6 x 12	P230
		12K1	26 MSG Min.	Insulating Concrete	48	20G@14plf* W8 x 24	P231
		12K5	26 MSG Min.	Fiber Board	48	W6 x 12	P250
		12K1	28 MSG Min.	Insulating Concrete	72	20G@13plf W6 x 12	P251
		10K1	24 MSG Min.	Fiber Board	72	NS	P259
		10K1	Metal Roof Deck Panels	Batts and Blankets	60	NS	P265
		10K1	20 MSG Min.	Fiber Board	48	NS	P266
		10K1	Metal Roof Deck Panels	Batts and Blankets	60	NS	P268
		12K1	26 MSG Min.	Insulating Concrete	72	20G@14plf* W8 x 24	P269
	Fiber Board	10K1	24 MSG Min.	Fiber Board	NS	W6 x 16	P301
	Metal Lath	12K5	22 MSG Min.	Fiber Board	72	NS	P404
	Gypsum Board	12K3	24 MSG Min.	Fiber Board	72	20G@13plf W8 x 13	P510
2 Hr.	Exposed Grid	10K1	24 MSG Min.	Fiber Board	72	W6 x 12	P237
		12K1	28 MSG Min.	Insulating Concrete	72	20G@13plf W6 x 12	P251
		10K1	20 MSG Min.	Fiber Board	48	NS	P266
	Fiber Board	10K1	24 MSG Min.	Fiber Board	NS	W6 x 16	P301
	Metal Lath	12K5	22 MSG Min.	Fiber Board	72	NS	P404
	Gypsum Board	10K1	22 MSG Min.	Fiber Board	72	20G@13plf	P514
			20 MSG Min.		48	NS	P519
		14K1	26 MSG Min.	Insulating Concrete	66	NS	P520
3 Hr.	Metal Lath	10K1	28 MSG Min.	Insulating Concrete	48	NS	P405

*Special Area Requirements

APPENDIX A

ROOF - CEILING ASSEMBLIES WITH SPRAY APPLIED FIRE RESISTIVE MATERIALS

Restrained Assembly Rating	Protection Material	Minimum Joist Size	Built Up Roof		Maximum Joist Spacing (in.)	Minimum Primary Support Member	UL Design Number
			Deck Material Description	Insulation			
1 Hr.	SAFRM	10K1	22 MSG Min.	Building Units	NS	NS	P822
		12K3	22 MSG Min.	Fiber Board	NS	W8 x 20	P824
1 Hr. and 1-1/2 Hr.	SAFRM	12K5	28 MSG Min.	Insulating Concrete	96	W6 x 16	P919
1-1/2 Hr. and 2 Hr.	SAFRM	10K1	22 MSG Min.	Building Units	NS	W6 x 16	P728
1 Hr., 1-1/2 Hr. and 2 Hr.	SAFRM	14K4	22 MSG Min.	Fiber Board	NS	20G@13plf W6 x 16	P701
		14K4	22 MSG Min.	Fiber Board	NS	20G@13plf W6 x 16	P711
		12K3	22 MSG Min.	Foamed Plastic	NS	W6 x 16	P717
		10K1	22 MSG Min.	Foamed Plastic	NS	20G@13plf W8 x 28	P725
		10K1	22 MSG Min.	Fiber Board	NS	20G@13plf W6 x 16	P726
		14K4	22 MSG Min.	Fiber Board	NS	20G@13plf W6 x 16	P734
		14K4	22 MSG Min.	Fiber Board	NS	20G@13plf W6 x 16	P736
		10K1	22 MSG Min.	Foamed Plastic	NS	W6 x 16	P739
		10K1	22 MSG Min.	Fiber Board	NS	W6 x 16	P740
		10K1	22 MSG Min.	Foamed Plastic	NS	W6 x 16	P743
		12K3	22 MSG Min.	Fiber Board	NS	20G@13plf W6 x 16	P801
		10K1	22 MSG Min.	Fiber Board	NS	20G@13plf W6 x 16	P815
		10K1	22 MSG Min.	Fiber Board	NS	W6 x 16	P816
		10K1	22 MSG Min.	Foamed Plastic	NS	W6 x 16	P819
		10K1	22 MSG Min.	Foamed Plastic	NS	W6 x 16	P825
		10K1	22 MSG Min.	Foamed Plastic	NS	W6 x 16	P827
		12K1	22 MSG Min.	Fiber Board	NS	20G@13plf W8 x 20	P828
		10K1	28 MSG Min.	Insulating Concrete	NS	20G@13plf W8 x 10	P902

APPENDIX A

ROOF - CEILING ASSEMBLIES WITH SPRAY APPLIED FIRE RESISTIVE MATERIALS

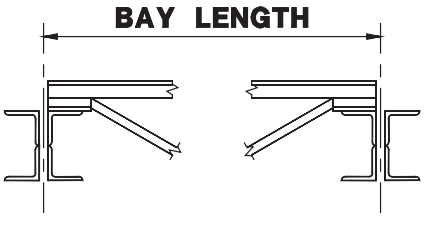
		10K1	28 MSG Min.	Insulating Concrete	NS	W8 x 10	P907
		10K1	28 MSG Min.	Insulating Concrete	NS	20G@13plf W8 x 10	P908
		10K1	28 MSG Min.	Insulating Concrete	NS	W8 x 10	P920
		12K5	28 MSG Min.	Insulating Concrete	NS	20G@13plf W8 x 10	P921
		10K1	28 MSG Min.	Insulating Concrete	NS	W6 x 16	P922
		10K1	28 MSG Min.	Insulating Concrete	NS	20G@13plf W8 x 10	P923
		10K1	28 MSG Min.	Insulating Concrete	NS	20G@13plf W8 x 10	P925
		12K5	28 MSG Min.	Insulating Concrete	NS	W8 x 10	P926
		14K4	28 MSG Min.	Insulating Concrete	NS	20G@13plf W8 x 10	P927
		12K5	28 MSG Min.	Insulating Concrete	NS	20G@13plf W8 x 10	P928
		12K3	28 MSG Min.	Insulating Concrete	NS	20G@13plf W8 x 10	P929
		10K1	28 MSG Min.	Insulating Concrete	NS	W6 x 16	P936
2 Hr.	SAFRM	12K3	22 MSG Min.	Foamed Plastic	NS	W6 x 16	P718
		12K3	22 MSG Min.	Foamed Plastic	NS	20G@13plf W6 x 16	P720
		12K3	22 MSG Min.	Foamed Plastic	NS	W6 x 16	P729
1 Hr., 1-1/2 Hr. 2 Hr. and 3 Hr.	SAFRM	10K1	22 MSG Min.	Foamed Plastic	NS	20G@13plf W6 x 16	P719
		10K1	22 MSG Min.	Foamed Plastic	NS	W6 x 16	P722
		10K1	22 MSG Min.	Foamed Plastic	NS	W6 x 16	P723
		10K1	22 MSG Min.	Foamed Plastic	NS	W8 x 28	P732
		10K1*,16K2	22 MSG Min.	Foamed Plastic	NS	W6 x 16	P733
		10K1*	22 MSG Min.	Foamed Plastic	NS	W6 x 16	P826

*** Special Area Requirements**

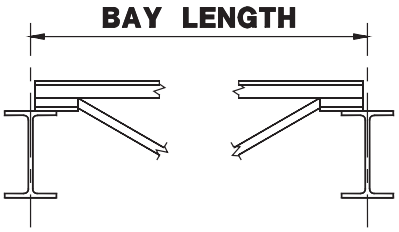
APPENDIX B

**BAY LENGTH, OSHA ERECTION STANDARDS,
BRIDGING ILLUSTRATIONS**

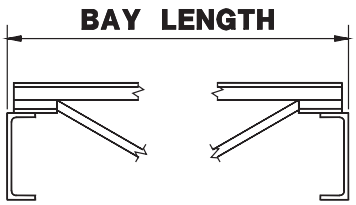
BAY LENGTH DEFINITIONS



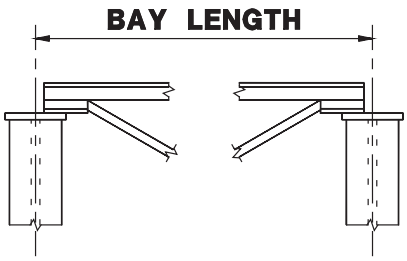
JOIST GIRDERS



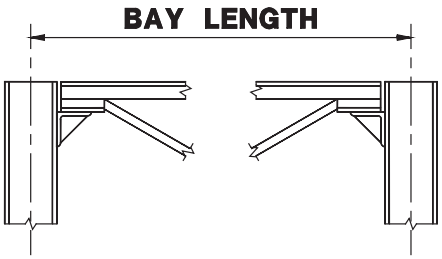
STEEL BEAM



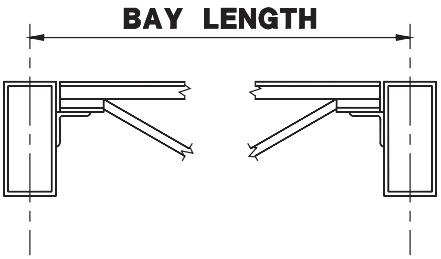
STEEL CHANNEL



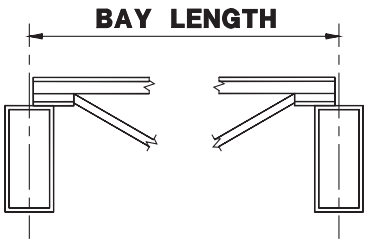
STEEL COLUMN



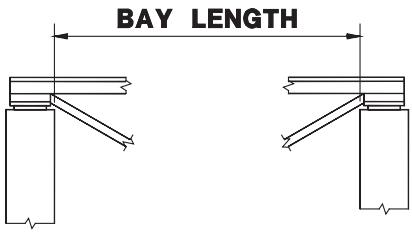
STEEL COLUMN



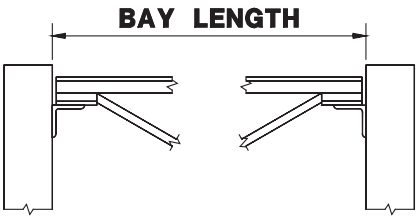
STEEL TUBE



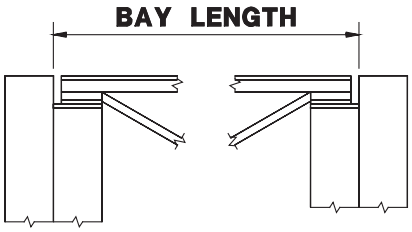
STEEL TUBE



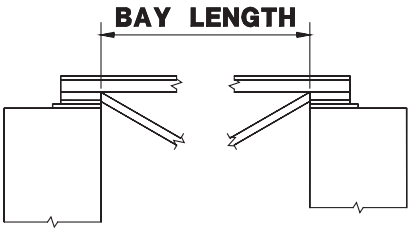
MASONRY OR TILT-UP



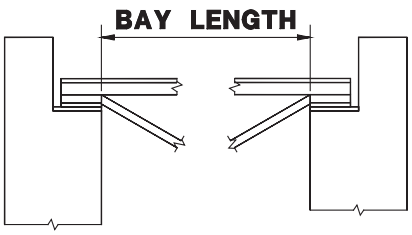
MASONRY OR TILT-UP



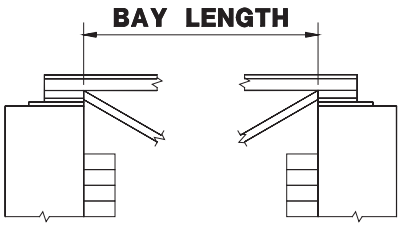
MASONRY WITH PILASTER



MASONRY OR TILT-UP



MASONRY OR TILT-UP



MASONRY WITH FACE BRICK

APPENDIX B

OSHA STEEL ERECTION STANDARD
PARTS §1926.751 AND §1926.757 OPEN WEB STEEL JOISTS

§1926.751 Definitions.

Anchored bridging means that the steel joist bridging is connected to a bridging terminus point.

Bolted diagonal bridging means diagonal bridging that is bolted to a steel joist or joists.

Bridging clip means a device that is attached to the steel joist to allow the bolting of the bridging to the steel joist.

Bridging terminus point means a wall, a beam, tandem joists (with all bridging installed and a horizontal truss in the plane of the top chord) or other element at an end or intermediate point(s) of a line of bridging that provides an anchor point for the steel joist bridging.

Column means a load-carrying vertical member that is part of the primary skeletal framing system. Columns do not include posts.

Constructability means the ability to erect structural steel members in accordance with subpart R without having to alter the over-all structural design.

Construction load (for joist erection) means any load other than the weight of the employee(s), the joists and the bridging bundle.

Erection bridging means the bolted diagonal bridging that is required to be installed prior to releasing the hoisting cables from the steel joists.

Personal fall arrest system means a system used to arrest an employee in a fall from a working level. A personal fall arrest system consists of an anchorage, connectors, a body harness and may include a lanyard, deceleration device, lifeline, or suitable combination of these. The use of a body belt for fall arrest is prohibited.

Project structural engineer means the registered, licensed professional responsible for the design of structural steel framing and whose seal appears on the structural contract documents.

Qualified person means one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated the ability to solve or resolve problems relating to the subject matter, the work, or the project.

Steel joist means an open web, secondary load-carrying member of 144 feet (43.9 m) or less, designed by the manufacturer, used for the support of floors and roofs. This does not include structural steel trusses or cold-formed joists.

Steel joist girder means an open web, primary load-carrying member, designed by the manufacturer, used for the support of floors and roofs. This does not include structural steel trusses.

Structural steel means a steel member, or a member made of a substitute material (such as, but not limited to, fiberglass, aluminum or composite members). These members include, but are not limited to, steel joists, joist girders, purlins, columns, beams, trusses, splices, seats, metal decking, girts, and all bridging, and cold formed metal framing which is integrated with the structural steel framing of a building.

§ 1926.757 Open web steel joists.

(a) General.

(1) Except as provided in paragraph (a)(2) of this section, where steel joists are used and columns are not framed in at least two directions with solid web structural steel members, a steel joist shall be field-bolted at the column to provide lateral stability to the column during erection. For the installation of this joist:

(i) A vertical stabilizer plate shall be provided on each column for steel joists. The plate shall be a minimum of 6 inch by 6 inch (152 mm by 152 mm) and shall extend at least 3 inches (76 mm) below the bottom chord of the joist with a 13 /16 inch (21 mm) hole to provide an attachment point for guying or plumbing cables.

(ii) The bottom chords of steel joists at columns shall be stabilized to prevent rotation during erection.

(iii) Hoisting cables shall not be released until the seat at each end of the steel joist is field-bolted, and each end of the bottom chord is restrained by the column stabilizer plate.

(2) Where constructability does not allow a steel joist to be installed at the column:

i. an alternate means of stabilizing joists shall be installed on both sides near the column and shall:

(A) provide stability equivalent to paragraph (a)(1) of this section;

(B) be designed by a qualified person;

(C) be shop installed; and

(D) be included in the erection drawings.

ii. hoisting cables shall not be released until the seat at each end of the steel joist is field-bolted and the joist is stabilized.

(3) Where steel joists at or near columns span 60 feet (18.3 m) or less, the joist shall be designed with sufficient strength to allow one employee to release the hoisting cable without the need for erection bridging.

SJI User Note: See OSHA Directive number CPL-02-01-040 below for alternate compliance methods.

(4) Where steel joists at or near columns span more than 60 feet (18.3m), the joists shall be set in tandem with all bridging installed unless an alternative method of erection, which provides equivalent stability to the steel joist, is designed by a qualified person and is included in the site-specific erection plan.

(5) A steel joist or steel joist girder shall not be placed on any support structure unless such structure is stabilized.

(6) When steel joist(s) are landed on a structure, they shall be secured to prevent unintentional displacement prior to installation.

(7) No modification that affects the strength of a steel joist or steel joist girder shall be made without the approval of the project structural engineer of record.

(8) Field-bolted joists.

(i) Except for steel joists that have been pre assembled into panels, connections of individual steel joists to steel structures in bays of 40 feet (12.2 m) or more shall be fabricated to allow for field bolting during erection.

(ii) These connections shall be field-bolted unless constructability does not allow.

(9) Steel joists and steel joist girders shall not be used as anchorage points for a fall arrest system unless written approval to do so is obtained from a qualified person.

(10) A bridging terminus point shall be established before bridging is installed.

(b) Attachment of steel joists and steel joist girders.

(1) Each end of ‘‘K’’ series steel joists shall be attached to the support structure with a minimum of two 1 /8 -inch (3 mm) fillet welds 1 inch (25 mm) long or with two 1 /2 -inch (13 mm) bolts, or the equivalent.

SJI User Note: For a welded K-series connection, the SJI Specification requires a minimum final length of 2-1/2 inches.

(2) Each end of ‘‘LH’’ and ‘‘DLH’’ series steel joists and steel joist girders shall be attached to the support structure with a minimum of two 1 /4 –inch (6 mm) fillet welds 2 inches (51 mm) long, or with two 3 /4 -inch (19 mm) bolts, or the equivalent.

(3) Except as provided in paragraph (b)(4) of this section, each steel joist shall be attached to the support structure, at least at one end on both sides of the seat, immediately upon placement in the final erection position and before additional joists are placed.

(4) Panels that have been pre-assembled from steel joists with bridging shall be attached to the structure at each corner before the hoisting cables are released.

(c) Erection of steel joists.

(1) Both sides of the seat of one end of each steel joist that requires bridging under Tables A and B shall be attached to the support structure before hoisting cables are released.

(2) For joists over 60 feet, both ends of the joist shall be attached as specified in paragraph (b) of this section and the provisions of paragraph (d) of this section met before the hoisting cables are released.

(3) On steel joists that do not require erection bridging under Tables A and B, only one employee shall be allowed on the joist until all bridging is installed and anchored.

► TABLE **A**.—ERECTION BRIDGING FOR SHORT SPAN JOISTS

Joist	Span
10K1	NM
12K1	23–0
12K3	NM
12K5	NM
14K1	27–0
14K3	NM
14K4	NM
14K6	NM
16K2	29–0
16K3	30–0
16K4	32–0
16K5	32–0
16K6	NM
16K7	NM
16K9	NM
18K3	31–0
18K4	32–0
18K5	33–0
18K6	35–0
18K7	NM
18K9	NM
18K10	NM
20K3	32–0
20K4	34–0
20K5	34–0
20K6	36–0
20K7	39–0
20K9	39–0
20K10	NM
22K4	34–0
22K5	35–0
22K6	36–0
22K7	40–0
22K9	40–0
22K10	NM
22K11	NM
24K4	36–0
24K5	38–0
24K6	39–0
24K7	43–0
24K8	43–0
24K9	44–0
24K10	NM
24K12	NM
26K5	38–0
26K6	39–0
26K7	43–0
26K8	44–0
26K9	44-0
26K10	49–0
26K12	NM
28K6	40–0
28K7	43–0
28K8	44–0
28K9	45–0
28K10	49–0
28K12	53–0
30K7	44–0
30K8	45–0
30K9	45–0
30K10	50–0
30K11	52–0
30K12	54–0

NM = diagonal bolted bridging not mandatory

► TABLE A.—ERECTION BRIDGING FOR SHORT SPAN JOISTS-[Continued]

Joist	Span
10KCS1	NM
10KCS2	NM
10KCS3	NM
12KCS1	NM
12KCS2	NM
12KCS3	NM
14KCS1	NM
14KCS2	NM
14KCS3	NM
16KCS2	NM
16KCS3	NM
16KCS4	NM
16KCS5	NM
18KCS2	35–0
18KCS3	NM
18KCS4	NM
18KCS5	NM
20KCS2	36–0
20KCS3	39–0
20KCS4	NM
20KCS5	NM
22KCS2	36–0
22KCS3	40–0
22KCS4	NM
22KCS5	NM
24KCS2	39–0
24KCS3	44–0
24KCS4	NM
24KCS5	NM
26KCS2	39–0
26KCS3	44–0
26KCS4	NM
26KCS5	NM
28KCS2	40–0
28KCS3	45–0
28KCS4	53–0
28KCS5	53–0
30KCS3	45–0
30KCS4	54–0
30KCS5	54–0

NM = diagonal bolted bridging not mandatory

► TABLE B.—ERECTION BRIDGING FOR LONG SPAN JOISTS

Joist	Span
18LH02	33–0
18LH03	NM.
18LH04	NM.
18LH05	NM.
18LH06	NM.
18LH07	NM.
18LH08	NM.
18LH09	NM.
20LH02	33–0
20LH03	38–0
20LH04	NM.
20LH05	NM.
20LH06	NM.
20LH07	NM.
20LH08	NM.
20LH09	NM.
20LH10	NM.
24LH03	35–0
24LH04	39–0
24LH05	40–0
24LH06	45–0
24LH07	NM.
24LH08	NM.
24LH09	NM.
24LH10	NM.
24LH11	NM.
28LH05	42–0
28LH06	46-0
28LH07	54-0
28LH08	54-0
28LH09	NM.
28LH10	NM.
28LH11	NM.
28LH12	NM.
28LH13	NM.
32LH06	47–0 through 60–0
32LH07	47–0 through 60–0
32LH08	55–0 through 60–0
32LH09	NM through 60–0
32LH10	NM through 60–0
32LH11	NM through 60–0
32LH12	NM through 60–0
32LH13	NM through 60–0
32LH14	NM through 60–0
32LH15	NM through 60–0
36LH07	47–0 through 60–0
36LH08	47–0 through 60–0
36LH09	57–0 through 60–0
36LH10	NM through 60–0
36LH11	NM through 60–0
36LH12	NM through 60–0
36LH13	NM through 60–0
36LH14	NM through 60–0
36LH15	NM through 60–0

NM = diagonal bolted bridging not mandatory

(4) Employees shall not be allowed on steel joists where the span of the steel joist is equal to or greater than the span shown in Tables A and B except in accordance with § 1926.757(d).

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

(d) Erection bridging.

(1) Where the span of the steel joist is equal to or greater than the span shown in Tables A and B, the following shall apply:
   i. A row of bolted diagonal erection bridging shall be installed near the midspan of the steel joist;
   ii. Hoisting cables shall not be released until this bolted diagonal erection bridging is installed and anchored; and
   iii. No more than one employee shall be allowed on these spans until all other bridging is installed and anchored.

(2) Where the span of the steel joist is over 60 feet (18.3 m) through 100 feet (30.5 m), the following shall apply:
   i. All rows of bridging shall be bolted diagonal bridging;
   ii. Two rows of bolted diagonal erection bridging shall be installed near the third points of the steel joist;
   iii. Hoisting cables shall not be released until this bolted diagonal erection bridging is installed and anchored; and
   iv. No more than two employees shall be allowed on these spans until all other bridging is installed and anchored.

(3) Where the span of the steel joist is over 100 feet (30.5 m) through 144 feet (43.9 m), the following shall apply:
   i. All rows of bridging shall be bolted diagonal bridging;
   ii. Hoisting cables shall not be released until all bridging is installed and anchored; and
   iii. No more than two employees shall be allowed on these spans until all bridging is installed and anchored.

(4) For steel members spanning over 144 feet (43.9 m), the erection methods used shall be in accordance with § 1926.756.

(5) Where any steel joist specified in paragraphs (c)(2) and (d)(1), (d)(2), and (d)(3) of this section is a bottom chord bearing joist, a row of bolted diagonal bridging shall be provided near the support(s). This bridging shall be installed and anchored before the hoisting cable(s) is released.

(6) When bolted diagonal erection bridging is required by this section, the following shall apply:

i. The bridging shall be indicated on the erection drawing;
ii. The erection drawing shall be the exclusive indicator of the proper placement of this bridging;
iii. Shop-installed bridging clips, or functional equivalents, shall be used where the bridging bolts to the steel joists;
iv. When two pieces of bridging are attached to the steel joist by a common bolt, the nut that secures the first piece of bridging shall not be removed from the bolt for the attachment of the second; and
v. Bridging attachments shall not protrude above the top chord of the steel joist.

(e) Landing and placing loads.

(1) During the construction period, the employer placing a load on steel joists shall ensure that the load is distributed so as not to exceed the carrying capacity of any steel joist.

(2) Except for paragraph (e)(4) of this section, no construction loads are allowed on the steel joists until all bridging is installed and anchored and all joist-bearing ends are attached.

(3) The weight of a bundle of joist bridging shall not exceed a total of 1,000 pounds (454 kg). A bundle of joist bridging shall be placed on a minimum of three steel joists that are secured at one end. The edge of the bridging bundle shall be positioned within 1 foot (.30 m) of the secured end.

(4) No bundle of decking may be placed on steel joists until all bridging has been installed and anchored and all joist bearing ends attached, unless all of the following conditions are met:
(i) The employer has first determined from a qualified person and documented in a site-specific erection plan that the structure or portion of the structure is capable of supporting the load;
(ii) The bundle of decking is placed on a minimum of three steel joists;
(iii) The joists supporting the bundle of decking are attached at both ends;
(iv) At least one row of bridging is installed and anchored;
(v) The total weight of the bundle of decking does not exceed 4,000 pounds(1816 kg); and
(vi) Placement of the bundle of decking shall be in accordance with paragraph (e)(5) of this section.

(5) The edge of the construction load shall be placed within 1 foot (.30 m) of the bearing surface of the joist end.

OSHA Directive number CPL 02-01-040

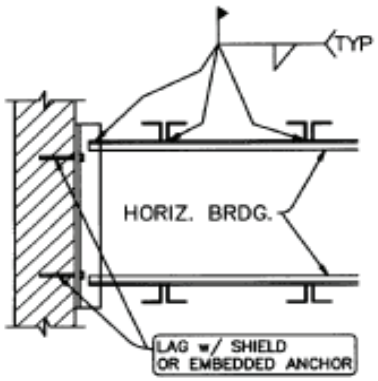
The industry has conducted a number of tests to determine if joists that are now available would meet the requirements of 1926.757(a)(3). Their tests showed that of the joists now available, some would meet the requirement, but only if erectors followed a number of erection criteria that are not in the steel erection standard. Also, for some spans and dimensions, there are still no joists that would meet the requirement (even if those additional criteria were followed). Therefore, the enforcement policy which was set to expire on July 18, 2004, will remain in effect indefinitely. That policy is as follows: for all joists at or near columns that span 60 feet or less, employers will be considered to be in compliance with § 1926.757(a)(3) if they erect these joists either by: (1) installing bridging or otherwise stabilizing the joist prior to releasing the hoisting cable, or (2) releasing the cable without having a worker on the joists.

SJI User Note: While the OSHA directive provides alternates to provision 1926.757(a)(3), SJI member companies do not specifically check or design column joists for self-weight plus the weight of one erector releasing the hoisting cable without any erection bridging; they are NOT designed to satisfy 1926.757(a)(3). The SJI requires that the directive CPL 02-01-040 be followed, and that bridging be installed prior to releasing the hoisting cable or that the hoisting cable be released without walking on the joist. For further information, see Steel Joist Institute Technical Digest No. 9, “Handling and Erection of Steel Joists and Joist Girders”.

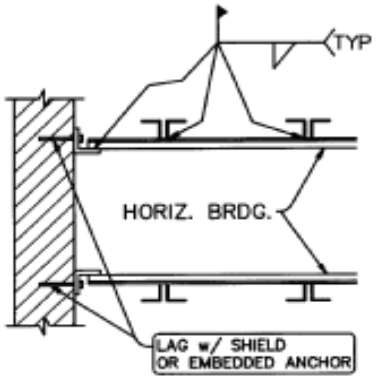
APPENDIX B

ILLUSTRATIONS OF OSHA BRIDGING TERMINUS POINTS (NON-MANDATORY)

Guidelines for Complying with OSHA Steel Erection Standard, Paragraph §1926.757(a)(10) and §1926.757(c)(5).



HORIZONTAL BRIDGING
TERMINUS AT WALL



HORIZONTAL BRIDGING
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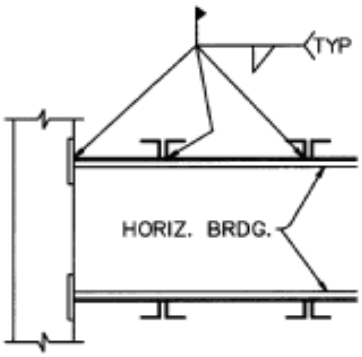
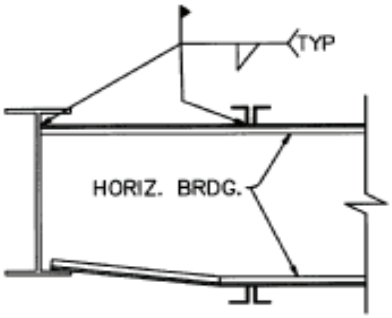


HORIZONTAL BRIDGING
TERMINUS AT PANEL WALL

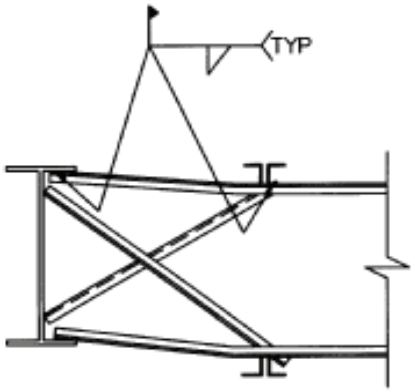


HORIZONTAL BRIDGING
TERMINUS AT
STRUCTURAL SHAPE

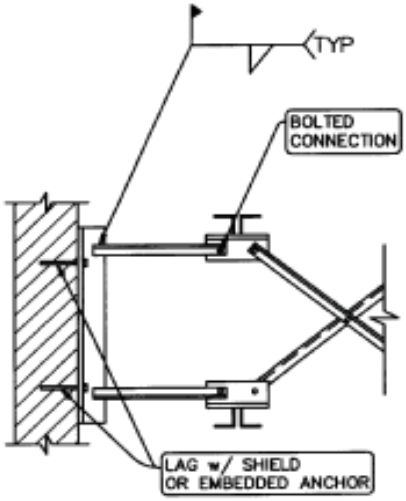
APPENDIX B

ILLUSTRATIONS OF OSHA BRIDGING TERMINUS POINTS (NON-MANDATORY)

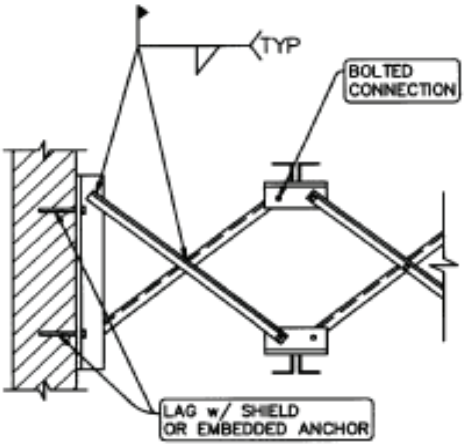
Guidelines for Complying with OSHA Steel Erection Standard, Paragraph §1926.757(a)(10) and §1926.757(c)(5).



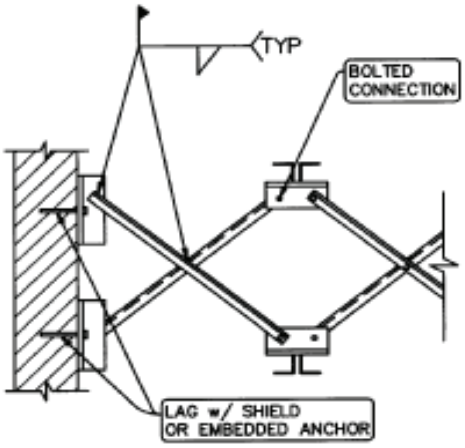
HORIZONTAL BRIDGING TERMINUS AT STRUCTURAL SHAPE WITH OPTIONAL "X-BRIDGING"



BOLTED DIAGONAL BRIDGING TERMINUS AT WALL



BOLTED DIAGONAL BRIDGING TERMINUS AT WALL

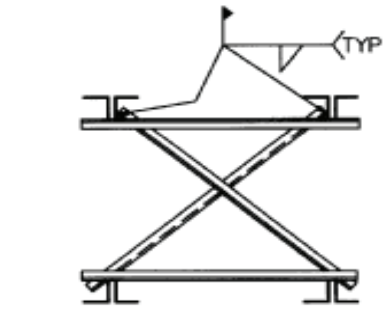


BOLTED DIAGONAL BRIDGING TERMINUS AT WALL

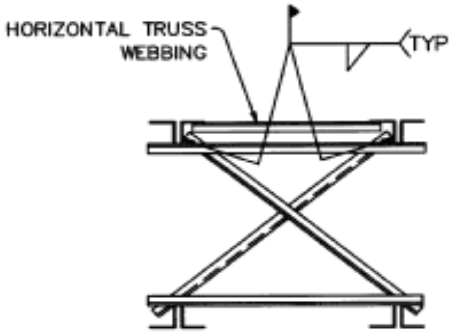
APPENDIX B

ILLUSTRATIONS OF OSHA BRIDGING TERMINUS POINTS (NON-MANDATORY)

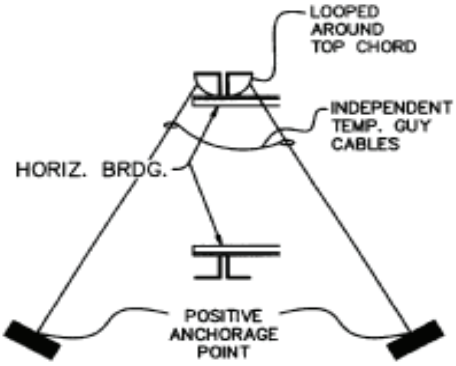
Guidelines for Complying with OSHA Steel Erection Standard, Paragraph §1926.757(a)(10) and §1926.757(c)(5).



JOISTS PAIR BRIDGING
TERMINUS POINT



JOISTS PAIR BRIDGING
TERMINUS POINT



HORIZONTAL BRIDGING
TERMINUS POINT
SECURED BY TEMP.
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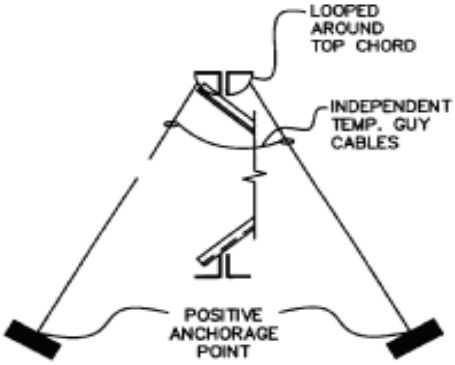

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