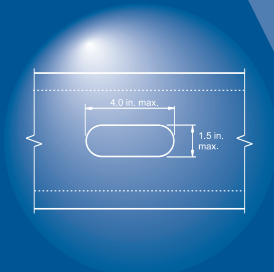
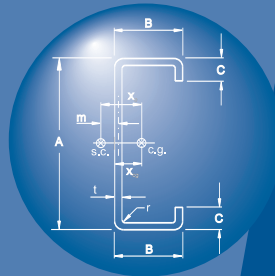
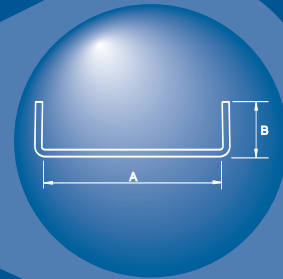


LIGHTWEIGHT STEEL FRAMING

wall stud &
floor joist
load tables



CSSBI 58-2004

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LIGHTWEIGHT STEEL FRAMING WALL STUD & FLOOR JOIST LOAD TABLES

CSSBI 58-2004

Prepared for
Canadian Sheet Steel Building Institute

Prepared by
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CANADIAN
SHEET STEEL
BUILDING INSTITUTE

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PREFACE

The material presented in this publication has been prepared for the general information of the reader. While the material is believed to be technically correct and in accordance with recognized good practice at the time of publication, it should not be used without first securing competent advice with respect to its suitability for any specific application. Neither the *Canadian Sheet Steel Building Institute* nor its Members warrant or assume liability for the suitability of the material for any general or particular use.

COMMENTARY

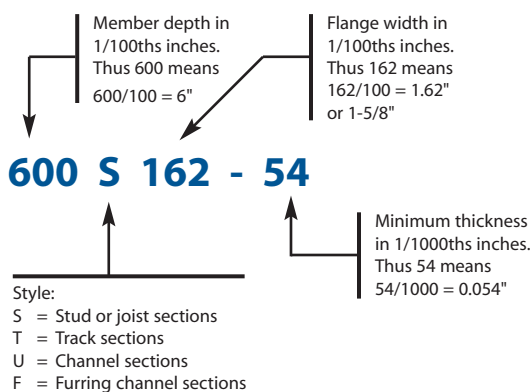
1. INTRODUCTION

The technical data in these reports is intended as an aid to the design professional and should not be used to replace the judgement of a qualified Engineer or Architect.

2. PRODUCT IDENTIFICATION

The cold-formed steel framing manufacturers use a universal designator system for their products. The designator is a four part code which identifies depth, flange width, member type and material thickness.

Example: 600S162-54



Notes:

1. Minimum thickness exclusive of coatings and represents 95% of the design thickness. See CAN/CSA-S136-01 Section A2.4.
2. The yield strength used in design, if greater than 33 ksi, needs to be identified. For example, a 1-5/8" x 6" stud with a design thickness of 0.0566" and a design yield strength of 50 ksi would be designated as : 600S162-54 (50 ksi). Note that if the (50 ksi) is omitted then 33 ksi is assumed.
3. For track, "T", sections, depth is a nominal inside to inside dimension. Other dimensions are out to out.

3. SECTION GEOMETRIES

- 3.1 Section geometries are identified by the product designation as defined in the previous section.

- 3.2 Stud and joist lip lengths are as follows:

Section	Flange Width	Lip Length
S125	1.250	0.188
S162	1.625	0.500
S200	2.000	0.625
S250	2.500	0.750
S300	3.000	0.750

- 3.3 Stud, Joist and Track Inside Bend Radii

For stud, joist and track, the inside radius equals the maximum of $(3/32) - t/2$ or $1.5t$ where t = thickness exclusive of coating in inches. The resulting radii are provided in the following table:

Thickness (in)	Inside Radius (in)
0.0346	0.07645
0.0451	0.07120
0.0566	0.08490
0.0713	0.10695
0.1017	0.15255

4. STUD AND JOIST SECTION PROPERTY TABLES

- 4.1 Structural properties are computed in accordance with CSA Standard CAN/CSA-S136-01, North American Specification for the Design of Cold-Formed Steel Structural Members.
- 4.2 Steel shall meet the requirements of CAN/CSA-S136-01 with a minimum yield strength of 33 ksi for design thicknesses less than or equal to 0.0451" and 50 ksi for design thicknesses greater than or equal to 0.0566".
- 4.3 Section properties are computed on the basis of the design thicknesses shown in the tables. Design thicknesses are exclusive of coating.
- 4.4 Perforations are assumed to be located at mid-depth and spaced at a minimum of 24" o.c. The distance from the centreline of the last perforation to the end of a wall stud or joist is assumed to be 12" minimum.

4.5 The fully braced factored moment resistances, M_{rx} and M_{ry} are derived using effective section properties. The increase in yield from the cold work of forming has been conservatively neglected.

4.6 The maximum unbraced length, L_u , which precludes lateral buckling in beams is calculated from the formulae in the Commentary on North American Specification for the Design of Cold-Formed Steel Structural Members, 2001 Edition, published by the American Iron and Steel Institute (*Formulae C-C3.1.2.1-11, C-C3.1.2.1-12 & C-C3.1.2.1-14*). K_y , K_t and C_b are set equal to one.

4.7 Factored resistances include the following phi factors:

Moment	$\phi_b = 0.90$
Shear	$\phi_v = 0.80$
Web Crippling	See Item 3.9

4.8 The deflection inertia, I_x , includes the effects of local buckling at the stress level resulting from specified live loads (approximated by $0.6 \times F_y$). This inertia is only appropriate for checking serviceability limit states.

4.9 Web Crippling

4.9.1 Wall Studs

No specific provisions are currently included in CAN/CSA-S136-01 for the design of steel stud flexural members with stud to track connections susceptible to web crippling. However, these web crippling provisions are provided in the Standard for Cold-Formed Steel Framing Wall Stud Design, American Iron and Steel Institute (*pre-publication final draft*) and have been adopted herein where they apply.

The revised web crippling coefficients are as follows:

C	$= 3.72$
C_R	$= 0.19$
C_N	$= 0.74$
C_h	$= 0.019$
ϕ_w	$= 0.76$

The 0.76 phi factor was derived specifically for this project and is based on the methodology provided in the Commentary on North American Specification for the Design of Cold-Formed Steel Structural Members, 2001 Edition.

The limits of applicability are as follows:

- Stud design thickness 0.033" to 0.073"
- Stud design yield strength 33 ksi to 50 ksi
- Stud nominal depth 3.50" to 6"
- Track thickness equal to or greater than the stud thickness
- Both flanges of the stud attached to the track
- Studs not adjacent to wall openings

For studs with design thicknesses greater than 0.073" or depths greater than 6", the web crippling provision for CAN/CSA-S136-01 are assumed to apply. The end one-flange loading fastened to support condition (Table C3.4.1-2) is used with a 0.75 resistance factor, ϕ_w .

For both approaches to web crippling, an unperforated section with 1" bearing length is assumed.

4.9.2 Joists

Web crippling capacities are based on the provisions of CAN/CSA-S136-01 with the end one-flange loading fastened to support condition (Table C3.4.1-2) and a 0.75 resistance factor, ϕ_w . A 3" bearing length is assumed.

5. TRACK SECTION PROPERTY TABLES

5.1 The previous Commentary Items 4.1 - 4.3 apply.

5.2 The factored moment resistance, M_{rx} , is derived using effective section properties with the cold work of forming conservatively neglected. Factored shear and moment resistances, V_r and M_{rx} , include a 0.8 and 0.9 resistance factor respectively.

5.3 The deflection inertia, I_x , includes the effects of local buckling at the stress level resulting from specified live loads (approximated by $0.6 \times F_y$). This inertia is only appropriate for checking serviceability limit states.

6. WIND BEARING STUD ALLOWABLE HEIGHT TABLES

6.1 The allowable heights are computed in accordance with the requirements of the National Building Code of Canada 1995 and CAN/CSA S136-01, North

American Specification for the Design of Cold-Formed Steel Structural Members.

- 6.2** Stud material, geometry and properties conform to the Wall Stud Section Property Tables and Commentary Item 4.
- 6.3** Strength allowable heights are limited by end shear or midspan moment at factored loads. The factored shear resistance and factored moment resistance are both based on the perforated section. Sheathing providing full lateral support on both sides of the studs is assumed. The sheathings are to have adequate durability, strength and rigidity to prevent the studs from buckling laterally and to resist the torsional component of loads not applied through the shear centre. Loads are assumed to be uniformly distributed.

In addition to the sheathing requirements outlined above, provide bridging at 5'-0" o.c. or less in order to align members and to provide the necessary structural integrity during construction and in the completed structure. Design the bridging to prevent stud rotation and translation about the minor axis. Provide periodic anchorage and/or blocking-in for the bridging as required structurally.

- 6.4** The deflection allowable height ($L/360$) is calculated for the specified wind loads shown without imposing any strength limit states. In no case shall the deflection allowable height exceed the strength allowable height.

Allowable heights for deflection limits not shown can be calculated by multiplying the $L/360$ allowable heights by the following factors:

Required Deflection Limit	Factor
L/1000	0.711
L/720	0.794
L/600	0.843
L/360	1.000
L/240	1.145
L/180	1.260

- 6.5** Web crippling allowable heights are limited by stud web crippling in the top or bottom track at factored loads.
- 6.6** Design end connections for the applied wind shear. Asterisks indicate heights where the factored end reaction exceeds the factored web crippling resistance, P_r . Reduce the allowable height to the value provided for web crippling or design end connections that are

not susceptible to web crippling.

- 6.7** Refer to the Design Example for Wind Bearing Studs (*Commentary Item 10*).

7. FLOOR JOIST LOAD TABLES

- 7.1** The load tables are computed in accordance with the requirements of the National Building Code of Canada 1995 and CAN/CSA S136-01, North American Specification for the Design of Cold-Formed Steel Structural Members.
- 7.2** Joist material, geometry and properties conform to the Joist Section Property Tables and Commentary Item 4.
- 7.3** Strength loads are limited by end shear or midspan moment. The factored shear resistance and factored moment resistance are both based on the perforated section. Strength loads are to be checked against the sum of the factored live and dead loads. The live load factor is 1.5 and the dead load factor is 1.25. Deflection loads are to be checked against specified (unfactored) design live loads.
- 7.4** No vibration limit state has been imposed.
- 7.5** Joists are analyzed as single span members with adequate web stiffeners provided at the location of reactions or concentrated loads. Spans are not limited by web crippling. Design web stiffeners to accommodate concentrated loads or reactions. Refer to CAN/CSA S136-01.
- 7.6** Joists are assumed to be fully restrained with respect to lateral instability and with respect to torsionally eccentric loads not applied through the shear centre. Loads are assumed to be uniformly distributed.
- 7.7** Allowable specified loads for other deflection limits can be calculated by multiplying the $L/360$ specified loads by the following factors:

Required Deflection Limit	Factor
L/480	0.750
L/360	1.000
L/300	1.200
L/240	1.500
L/180	2.000

- 7.8** Provide floor sheathing supplemented by bridging at 7'-0" o.c. or less in order to align members and to provide the necessary structural integrity during

construction and in the completed structure. Design the bridging to prevent joist rotation and translation about the minor axis. Provide periodic anchorage and/or blocking-in for the bridging as required structurally.

- 7.9** Refer to the Design Example for Floor Joists (*Commentary Item 11*).

8. COMBINED WIND AND AXIAL LOADBEARING STUD TABLES

8.1 SHEATHED AND UNSHEATHED

- 8.1.1 The factored loads are computed in accordance with the requirements of the National Building Code of Canada 1995 and CAN/CSA S136-01, North American Specification for the Design of Cold-Formed Steel Structural Members.
- 8.1.2 Stud material, geometry and properties conform to the Stud Section Properties Table and Commentary Item 4.
- 8.1.3 Factored wind loads for strength are assumed to be based on $q(1/30)$ hourly wind pressures.
- 8.1.4 Specified wind loads for deflection are assumed to be based on $q(1/10)$ hourly wind pressures. Loads without asterisks do not exceed $L/360$ deflection under wind alone. Loads with asterisks do not exceed $L/180$ deflection under wind alone. The wind loads used to calculate these deflection limits are specified wind loads based on an approximation to $q(1/10)$ reference velocity pressures. (*The factored wind load is divided by 1.5 to obtain the specified wind load which in turn is multiplied by 0.80 to obtain an approximation to a wind load based on a $q(1/10)$ reference velocity pressure.*) The magnification of deflection by axial load is neglected.

For a more accurate deflection check, refer to the Wind Bearing Stud Allowable Height Tables.

- 8.1.5 Wind loads are assumed to be uniformly distributed.
- 8.1.6 Web crippling is not checked. Design the stud end connections to transmit the applied wind shear and axial load.
- 8.1.7 Where dead, live and/or wind loads are combined, the appropriate load combination factors must be applied before using the tables.

- 8.1.8 Refer to the Design Example for Combined Wind and Axial Loadbearing Studs (*Commentary Item 12*).

8.2 SHEATHED TABLES

- 8.2.1 The factored loads are limited by the interaction of axial load and major axis bending due to wind. End shear due to wind alone is checked. Factored resistances are based on the perforated section.

Studs subject to web crippling have not been flagged in the tables. Refer to the Wind Bearing Stud Tables for limiting stud heights in situations where web crippling applies. Where web crippling is critical, bearing stiffeners at the top and bottom track may be required. Refer to CAN/CSA-S136-01.

- 8.2.2 For factored axial resistance, $\phi_c = 0.8$.
- 8.2.3 Sheathing providing full lateral support on both sides of the studs is assumed. The sheathings are to have adequate durability, strength and rigidity to prevent the studs from buckling laterally and to resist the torsional component of loads not applied through the shear centre. (*Some wallboard and sheathing materials provide partial support only. Refer to CAN/CSA S136-01 Clause D4.1 or use the unsheathed tables.*)
- 8.2.4 Axial loads are assumed to be concentrically applied to studs with respect to the X and Y axes. (*Some end connection details can introduce significant eccentricities which will reduce the stud capacities given in the tables.*)
- 8.2.5 Provide bridging at 4'-0" o.c. or less in order to align members and to provide the necessary structural integrity during construction and in the completed structure. Design the bridging to prevent stud rotation and translation about the minor axis. Provide periodic anchorage for the bridging as required structurally.
- 8.2.6 Effective lengths are calculated as follows (*only major axis buckling is considered*):
- $K_x = 1$
 - $L_x =$ the overall length of the stud
- 8.2.7 Studs are treated as compressive members in frames that are braced against joint translation. Provide the necessary bracing to adequately control the sidesway of the overall structure

either due to wind, seismic loads or P-delta effects.

8.3 UNSHEATHED TABLES

8.3.1 The factored loads are limited by the interaction of axial load and major axis flexural bending due to wind. End shear due to wind alone is checked. Factored resistances for moment, shear and axial load are based on the perforated section. The factored resistance for moment includes the effects of lateral instability assuming an unsupported length equal to the maximum permitted bridging spacing. The effects of warping torsion due to loads not applied through the shear centre are not included in the tables.

Studs subject to web crippling have not been flagged in the tables. Refer to the Wind Bearing Stud Tables for limiting stud heights in situations where web crippling applies. Where web crippling is critical, bearing stiffeners at the top and bottom track may be required. Refer to CAN/CSA-S136-01.

8.3.2 For factored axial resistance, $\phi_c = 0.8$

8.3.3 Sheathing is not relied on to restrain the studs. Periodic lateral and torsional support is assumed to be provided by bridging spaced at a maximum of 4' - 0" o.c. The bridging need not be spaced equally over the height of the stud provided that the 4' - 0" spacing limit between lines of bridging and between the last line of bridging and the end of the stud is adhered to. The ends of the studs are also assumed to be laterally and torsionally restrained.

Design bridging for the accumulated torsion between bridging lines in combination with 2% of the factored compressive force in each stud. Refer to CAN/CSA S136-01. Provide periodic anchorage for the bridging as required structurally.

8.3.4 Axial loads are assumed to be concentrically applied to studs with respect to the X and Y axes. *(Some end connection details can introduce significant eccentricities which will reduce the stud capacities given in the tables.)*

8.3.5 Effective lengths are calculated as follows *(major axis, minor axis and torsional-flexural buckling is considered):*

- K_x, K_y and $K_t = 1$
- L_x = the overall length of the stud
- L_y, L_t = maximum distance between lines of bridging

8.3.6 Studs are treated as compressive members in frames that are braced against joint translation. Provide the necessary bracing to adequately control the sidesway of the overall structure either due to wind, seismic loads or P-delta effects.

9. SYMBOLS

A	= out to out depth of stud (in.) = nominal depth of track (in.)
Area	= fully effective (unreduced for local buckling) area (in. ²)
B	= out to out width of flange (in.)
C	= out to out depth of lip stiffener (in.)
C_w	= warping torsional constant (in. ⁶)
F_y	= minimum yield strength (ksi)
I_x	= fully effective (unreduced for local buckling) moment of inertia about the major axis (in. ⁴)
I_x (defl.)	= effective moment of inertia about the major axis for checking deflections with specified (unfactored) loads (in. ⁴)
I_y	= fully effective (unreduced for local buckling) moment of inertia about the minor axis (in. ⁴)
J	= St. Venant torsional constant (in. ⁴)
j	= torsional-flexural buckling parameter for singly symmetric beam-columns (in.)
m	= distance from centreline of web to the shear centre (in.)
M_{rx}	= fully braced factored moment resistance about the major axis (in.kips)
M_{ry}	= fully braced factored moment resistance about the minor axis with the web in compression or with the lips in compression (in.kips)
L_u	= maximum unbraced length of flexural members which precludes lateral buckling (in.)
P_r	= factored web crippling resistance (kips)
r	= inside bend radius (in.)
r_x	= fully effective (unreduced for local buckling) radius of gyration about the major axis (in.)
r_y	= fully effective (unreduced for local buckling) radius of gyration about the minor axis (in.)

- S_f = fully effective (unreduced for local buckling) section modulus.
- t = design steel thickness exclusive of coating (in.)
- V_r = factored shear resistance (kips)
- Weight = weight per foot based on uncoated, unperforated steel (lbs./ft.)
- x_{cg} = distance to centroid from back of web for the fully effective section (unreduced for local buckling) (in.)
- x_o = distance from shear centre to centroid (in.)

pressure.
Allowable height = 11.3 ft. > 11.0 ft. **OK**

Conclusion:

Use 600S162-43 (*with design $t=0.0451"$ and $F_y = 33$ ksi*) spaced at 24" o.c. with 2 rows of bridging.

Bridging requirements are based on the recommended 5'-0" maximum spacing from Commentary Item 6.3. In addition, sheathing meeting the requirements of Commentary Item 6.3 is required on both sides of the studs. Provide bridging and bridging connection details in accordance with industry standard practice.

10. DESIGN EXAMPLE NO. 1 – WIND BEARING STUDS

Given:

Specified (unfactored) design wind load derived from $q(1/30)$ reference velocity pressure = 30 psf (for checking strength)

Specified (unfactored) design wind load derived from $q(1/10)$ reference velocity pressure = 24 psf (for checking deflection)

Height of studs = 11'-0"

Maximum allowable deflection = $L/360$

Stud depth for architectural considerations = 6"

Calculations:

Try 600S162-43 (*with design $t=0.0451"$ and $F_y = 33$ ksi*) spaced at 24" o.c.

From the Wind Bearing Stud Allowable Height Tables:

Allowable height for deflection is based on 24 psf specified wind load derived from $q(1/10)$ reference velocity pressure - conservatively use 25 psf.
Allowable height = 12.6 ft. > 11.0 ft. **OK**

Allowable height for strength is based on 30 psf specified wind load (45 psf factored) derived from $q(1/30)$ reference velocity pressure.
Allowable height = 13.0 ft. > 11.0 ft. **OK**

The asterisk on the strength allowable height indicates that an end connection not susceptible to web crippling is required or the allowable height is to be reduced below 13.0 ft.

Allowable height to eliminate web crippling is based on 30 psf specified wind load (45 psf factored) derived from $q(1/30)$ reference velocity

11. DESIGN EXAMPLE NO. 2 – FLOOR JOISTS

Given:

Specified (unfactored) live load = 40 psf

Specified (unfactored) dead load = 15 psf

Required joist depth for architectural considerations = 8 in.

16'-0" single span

Calculations:

Factored load = $\alpha_D D + \alpha_L L = (1.25)(15) + (1.50)(40)$
= 78.8 psf

Try 800S162-54 (50 ksi) joist (*with design $t = 0.0566"$ and $F_y = 50$ ksi*) spaced at 16" o.c.

Strength = 108 > 78.8 psf **OK**
 $L/360 = 44 > 40$ psf **OK**

Conclusion:

Use 800S162-54 (50 ksi) joist (*with design $t = 0.0566"$ and $F_y = 50$ ksi*) spaced at 16" o.c.

Provide web stiffeners over the supports designed in accordance with the requirements of CAN/CSA-S136-01. Provide top flange floor sheathing in combination with 2 rows of bottom flange bridging to restrain the joists. Bridging requirements are based on the recommended 7'-0" maximum spacing from Commentary Item 7.8. Design sheathing and bridging and their connections in accordance with the requirements of CAN/CSA-S136-01.

Where vibration is a concern, additional engineering is required.

12. DESIGN EXAMPLE NO. 3 – COMBINED WIND AND AXIAL LOADBEARING STUDS

Given:

Specified (Unfactored) Loads:

$$\begin{aligned}\text{Axial Live Load} &= 3.9 \text{ kips} \\ \text{Axial Dead Load} &= 1.8 \text{ kips} \\ \text{Wind Load} &= 25 \text{ psf (based on } q_{(1/30)}) \\ &= 20 \text{ psf (based on } q_{(1/10)})\end{aligned}$$

Height of Studs = 10'- 0"

Restraint of sheathing to be neglected. Axial loads are applied concentrically with respect to both the X and the Y axes.

Calculations:

Try 600S162-54 (50 ksi) (*with design $t = 0.0566"$ and $F_y = 50 \text{ ksi}$*) spaced at 16" o.c.

The combination of factored loads is given in the 1995 National Building Code as:

$$\alpha_D D + \gamma \psi (\alpha_L L + \alpha_W W + \alpha_T T)$$

Where:

D = specified axial dead load (kips)

L = specified axial live load (kips)

W = specified wind load (psf)

T = 0 (typically)

$\alpha_D = 1.25$

$\alpha_L = 1.50$

$\alpha_W = 1.25$

$\gamma = 1.00$

$\psi = 1.00$ or 0.70

An asterisk on the strength allowable height indicates that an end connection not susceptible to web crippling is required or the allowable height is to be reduced.

Dead + Wind Load Case

$$\text{Factored Load Combination} = 1.25D + 1.50W$$

$$\begin{aligned}W_f \text{ (factored wind load)} &= 1.50W \\ &= 1.50(25) \\ &= 37.5 \text{ psf}\end{aligned}$$

$$\begin{aligned}C_f \text{ (factored axial load)} &= 1.25D \\ &= 1.25(1.8) \\ &= 2.25 \text{ kips}\end{aligned}$$

From the unsheathed tables determine the maximum factored compressive resistance for 37.5 psf factored wind (interpolate between 30 and 40 psf)

$$\begin{aligned}C_r &= 6.75 \text{ kips (at 30.0 psf)} \\ &= 6.27 \text{ kips (at 40.0 psf)}\end{aligned}$$

$$C_r = 6.39 \text{ kips (at 37.5 psf by interpolation)} > 2.25 \text{ kips}$$

OK

Dead + Live Load Case

$$\text{Factored Load Combination} = 1.25D + 1.50L$$

$$W_f \text{ (factored wind load)} = 0.0$$

$$\begin{aligned}C_f \text{ (factored axial load)} &= 1.25D + 1.50L \\ &= 1.25(1.8) + 1.50(3.9) \\ &= 8.10 \text{ kips}\end{aligned}$$

From the unsheathed tables determine the maximum factored compressive resistance for 0 psf factored wind:

$$C_r = 8.24 \text{ kips} > 8.10 \text{ kips}$$

OK

Dead + Wind + Live Load Case

$$\begin{aligned}\text{Factored Load Combination} &= 1.25D + 0.70(1.50W + 1.50L) \\ &= 1.25D + 1.05W + 1.05L\end{aligned}$$

$$\begin{aligned}W_f \text{ (factored wind load)} &= 1.05W \\ &= 1.05(25) \\ &= 26.3 \text{ psf}\end{aligned}$$

$$\begin{aligned}C_f \text{ (factored axial load)} &= 1.25D + 1.05L \\ &= 1.25(1.8) + 1.05(3.9) \\ &= 6.35 \text{ kips}\end{aligned}$$

From the unsheathed tables, determine the maximum factored compressive resistance for 26.3 psf factored wind by interpolating between 20 and 30 psf:

$$\begin{aligned}C_r &= 7.23 \text{ kips (at 20 psf)} \\ &= 6.75 \text{ kips (at 30 psf)}\end{aligned}$$

$$C_r = 6.93 \text{ kips (at 26.3 psf by interpolation)} > 6.35 \text{ kips}$$

OK

Wind Load Case for Web Crippling Check

From the Wind Bearing Stud Allowable Height Tables, for 25 psf specified (37.5 psf factored) wind load based on $q_{(1/30)}$ reference velocity pressure:

$$\text{Web crippling allowable height} = 46.2 > 10.0 \text{ ft.}$$

OK

Wind Load Case for Deflection Check

From the Wind Bearing Stud Allowable Height Tables, for 20 psf specified (unfactored) wind load based on $q_{(1/10)}$ reference velocity pressure:

$$L/360 \text{ allowable height} = 16.7 > 10.0 \text{ ft.}$$

OK

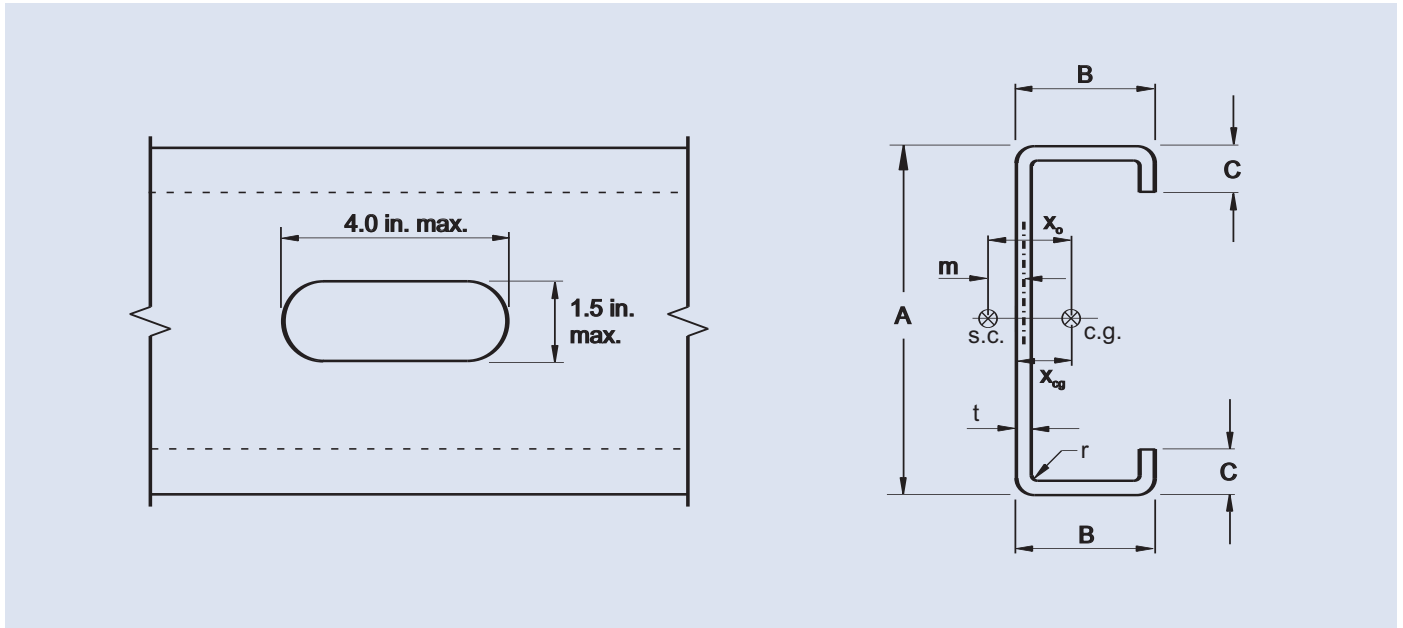
Conclusion:

Use 600S162-54 (50 ksi) (*with design $t = 0.0566"$ and $F_y = 50 \text{ ksi}$*) spaced at 16" o.c. with 2 lines of bridging arranged so that the maximum spacing does not exceed 4' - 0" o.c. See Commentary Item 8.3.3.

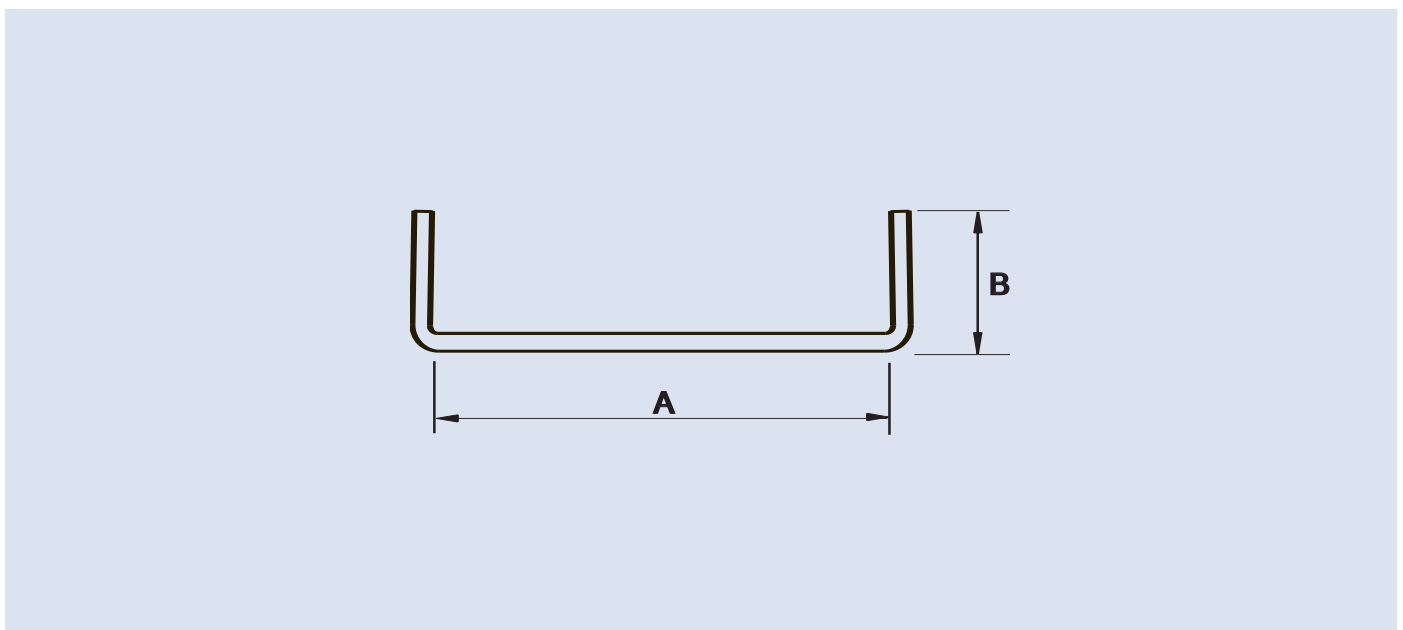
Detail end connections to insure concentric axial loading with respect to the X and the Y axes and to transmit the end shear. Design bridging and its anchorage in accordance with the requirements of CAN/CSA-S136-01.

STUD, JOIST AND TRACK SECTION PROPERTY TABLES

Wall Stud and Joist Section Dimensions



Track Section Dimensions



Wall Stud Section Properties

Stud Designation	DIMENSIONS				UNPERFORATED PROPERTIES											
	Design Thickness (in)	Depth A (in)	Flange B (in)	Lip C (in)	Weight (lbs/ft)	Yield F _y (ksi)	Area (in ²)	x _{cg} (in)	m (in)	x _o (in)	C _w (in ⁶)	J (in ⁴)	j (in)	r _x (in)	r _y (in)	
350S125-33	0.0346	3.500	1.250	0.188	0.72	33	0.210	0.313	0.485	0.781	0.087	.000084	2.04	1.36	0.416	
350S125-43	0.0451	3.500	1.250	0.188	0.93	33	0.272	0.313	0.479	0.769	0.109	.000185	2.04	1.35	0.411	
350S125-54	0.0566	3.500	1.250	0.188	1.15	50	0.337	0.312	0.472	0.755	0.131	.000360	2.07	1.34	0.403	
350S162-33	0.0346	3.500	1.625	0.500	0.88	33	0.258	0.546	0.796	1.320	0.277	.000103	2.07	1.40	0.617	
350S162-43	0.0451	3.500	1.625	0.500	1.14	33	0.334	0.546	0.789	1.310	0.350	.000227	2.07	1.40	0.612	
350S162-54	0.0566	3.500	1.625	0.500	1.41	50	0.415	0.545	0.782	1.300	0.426	.000443	2.07	1.39	0.606	
350S162-68	0.0713	3.500	1.625	0.500	1.75	50	0.515	0.544	0.772	1.280	0.514	.000872	2.07	1.38	0.597	
350S162-97	0.1017	3.500	1.625	0.500	2.42	50	0.711	0.540	0.752	1.240	0.672	.002450	2.09	1.36	0.579	
362S125-33	0.0346	3.625	1.250	0.188	0.73	33	0.215	0.307	0.480	0.770	0.094	.000086	2.11	1.40	0.414	
362S125-43	0.0451	3.625	1.250	0.188	0.95	33	0.278	0.307	0.474	0.758	0.118	.000188	2.11	1.39	0.409	
362S125-54	0.0566	3.625	1.250	0.188	1.17	50	0.344	0.306	0.466	0.744	0.142	.000367	2.15	1.39	0.401	
362S162-33	0.0346	3.625	1.625	0.500	0.89	33	0.262	0.537	0.789	1.310	0.297	.000105	2.12	1.45	0.616	
362S162-43	0.0451	3.625	1.625	0.500	1.16	33	0.340	0.537	0.782	1.300	0.376	.000230	2.11	1.45	0.611	
362S162-54	0.0566	3.625	1.625	0.500	1.44	50	0.422	0.536	0.774	1.280	0.457	.000451	2.11	1.44	0.605	
362S162-68	0.0713	3.625	1.625	0.500	1.78	50	0.524	0.535	0.765	1.260	0.552	.000887	2.12	1.43	0.596	
362S162-97	0.1017	3.625	1.625	0.500	2.46	50	0.724	0.532	0.745	1.230	0.723	.002500	2.14	1.41	0.578	
400S125-33	0.0346	4.000	1.250	0.188	0.77	33	0.228	0.290	0.465	0.738	0.118	.000091	2.36	1.53	0.407	
400S125-43	0.0451	4.000	1.250	0.188	1.00	33	0.295	0.291	0.459	0.727	0.148	.000200	2.36	1.52	0.402	
400S125-54	0.0566	4.000	1.250	0.188	1.24	50	0.365	0.290	0.452	0.713	0.178	.000390	2.41	1.51	0.394	
400S162-33	0.0346	4.000	1.625	0.500	0.94	33	0.275	0.512	0.768	1.260	0.363	.000110	2.25	1.59	0.611	
400S162-43	0.0451	4.000	1.625	0.500	1.21	33	0.357	0.513	0.761	1.250	0.460	.000242	2.25	1.58	0.606	
400S162-54	0.0566	4.000	1.625	0.500	1.51	50	0.443	0.512	0.754	1.240	0.560	.000473	2.25	1.57	0.600	
400S162-68	0.0713	4.000	1.625	0.500	1.87	50	0.550	0.511	0.745	1.220	0.677	.000933	2.26	1.56	0.591	
400S162-97	0.1017	4.000	1.625	0.500	2.59	50	0.762	0.508	0.725	1.180	0.889	.002630	2.30	1.54	0.573	

Stud Designation	UNPERFORATED PROPERTIES									PERFORATED PROPERTIES				
	M _{rx} (in.kips)	L _u (in)	M _{ry} web.comp. (in.kips)	M _{ry} lips.comp. (in.kips)	Shear V _r (kips)	Web Cripp. P _r (kips)	I _x (in ⁴)	I _y (in ⁴)	S _f (in ³)	M _{rx} (in.kips)	M _{ry} web.comp. (in.kips)	M _{ry} lips.comp. (in.kips)	Shear V _r (kips)	I _x defl. (in ⁴)
350S125-33	5.88	28.6	1.11	1.15	1.31	0.325	0.388	0.0363	0.221	5.19	1.03	1.070	0.623	0.381
350S125-43	8.21	28.4	1.45	1.46	2.22	0.543	0.498	0.0459	0.284	7.66	1.34	1.350	0.807	0.493
350S125-54	14.80	22.9	2.62	2.63	4.31	1.220	0.609	0.0547	0.348	13.90	2.43	2.430	1.210	0.603
350S162-33	8.27	42.7	2.55	2.70	1.31	0.325	0.508	0.0981	0.290	7.64	2.37	2.510	0.623	0.508
350S162-43	11.10	42.6	3.36	3.45	2.22	0.543	0.654	0.1250	0.374	10.60	3.12	3.200	0.807	0.654
350S162-54	20.10	34.4	6.21	6.35	4.31	1.220	0.804	0.1520	0.460	19.10	5.76	5.890	1.210	0.804
350S162-68	25.30	34.4	7.64	7.65	5.38	1.820	0.985	0.1840	0.563	24.70	7.07	7.070	1.150	0.985
350S162-97	34.00	34.7	9.90	9.90	7.30	2.400	1.320	0.2390	0.755	33.20	9.08	9.080	0.992	1.320
362S125-33	6.18	28.5	1.12	1.16	1.31	0.324	0.421	0.0367	0.232	5.40	1.04	1.080	0.667	0.414
362S125-43	8.61	28.4	1.45	1.46	2.22	0.541	0.541	0.0464	0.298	7.99	1.35	1.360	0.864	0.535
362S125-54	15.60	22.8	2.62	2.64	4.31	1.220	0.661	0.0553	0.365	14.50	2.44	2.460	1.300	0.655
362S162-33	8.66	42.6	2.55	2.71	1.31	0.324	0.551	0.0993	0.304	7.95	2.38	2.530	0.667	0.551
362S162-43	11.60	42.5	3.37	3.46	2.22	0.541	0.710	0.1270	0.392	11.00	3.13	3.230	0.864	0.710
362S162-54	21.00	34.3	6.22	6.38	4.31	1.220	0.873	0.1540	0.482	20.00	5.78	5.940	1.300	0.873
362S162-68	26.50	34.3	7.66	7.68	5.59	1.810	1.070	0.1860	0.590	25.80	7.13	7.130	1.280	1.070
362S162-97	35.60	34.5	9.95	9.95	7.61	2.400	1.440	0.2420	0.792	34.90	9.18	9.180	1.120	1.440
400S125-33	7.09	28.4	1.12	1.17	1.25	0.320	0.531	0.0377	0.265	6.03	1.04	1.100	0.760	0.523
400S125-43	9.86	28.2	1.46	1.48	2.22	0.535	0.682	0.0477	0.341	8.95	1.36	1.400	1.040	0.676
400S125-54	17.90	22.7	2.64	2.66	4.31	1.210	0.836	0.0568	0.418	16.30	2.47	2.520	1.560	0.828
400S162-33	9.87	42.3	2.56	2.74	1.25	0.320	0.692	0.1030	0.346	8.87	2.39	2.590	0.760	0.692
400S162-43	13.20	42.1	3.38	3.50	2.22	0.535	0.892	0.1310	0.446	12.40	3.15	3.310	1.040	0.892
400S162-54	24.00	34.1	6.25	6.45	4.31	1.210	1.100	0.1590	0.549	22.40	5.83	6.080	1.560	1.100
400S162-68	30.30	34.0	7.71	7.77	6.23	1.800	1.350	0.1920	0.673	29.20	7.21	7.310	1.740	1.350
400S162-97	40.80	34.0	10.10	10.10	8.52	2.380	1.810	0.2500	0.907	40.20	9.43	9.430	1.550	1.810

Wall Stud Section Properties

Stud Designation	DIMENSIONS				UNPERFORATED PROPERTIES											
	Design Thickness (in)	Depth A (in)	Flange B (in)	Lip C (in)	Weight (lbs/ft)	Yield F _y (ksi)	Area (in ²)	x _{cg} (in)	m (in)	x _o (in)	C _w (in ⁶)	J (in ⁴)	j (in)	r _x (in)	r _y (in)	
550S125-33	0.0346	5.500	1.250	0.188	0.95	33	0.279	0.239	0.414	0.636	0.246	.000112	3.65	2.02	0.382	
550S125-43	0.0451	5.500	1.250	0.188	1.23	33	0.362	0.241	0.408	0.626	0.309	.000246	3.66	2.01	0.378	
550S125-54	0.0566	5.500	1.250	0.188	1.53	50	0.450	0.241	0.401	0.613	0.374	.000481	3.76	2.00	0.370	
550S162-33	0.0346	5.500	1.625	0.500	1.11	33	0.327	0.434	0.697	1.110	0.713	.000130	3.02	2.11	0.589	
550S162-43	0.0451	5.500	1.625	0.500	1.44	33	0.424	0.435	0.691	1.100	0.905	.000288	3.02	2.11	0.584	
550S162-54	0.0566	5.500	1.625	0.500	1.80	50	0.528	0.434	0.684	1.090	1.100	.000564	3.04	2.10	0.578	
550S162-68	0.0713	5.500	1.625	0.500	2.24	50	0.657	0.433	0.675	1.070	1.340	.001110	3.08	2.09	0.569	
550S162-97	0.1017	5.500	1.625	0.500	3.11	50	0.915	0.431	0.656	1.040	1.770	.003150	3.18	2.06	0.550	
600S125-33	0.0346	6.000	1.250	0.188	1.01	33	0.297	0.227	0.399	0.608	0.300	.000118	4.18	2.18	0.375	
600S125-43	0.0451	6.000	1.250	0.188	1.31	33	0.385	0.228	0.393	0.598	0.379	.000261	4.20	2.17	0.370	
600S125-54	0.0566	6.000	1.250	0.188	1.63	50	0.479	0.228	0.386	0.586	0.457	.000511	4.32	2.16	0.362	
600S162-33	0.0346	6.000	1.625	0.500	1.17	33	0.344	0.413	0.677	1.070	0.861	.000137	3.35	2.28	0.581	
600S162-43	0.0451	6.000	1.625	0.500	1.52	33	0.447	0.414	0.670	1.060	1.100	.000303	3.35	2.28	0.576	
600S162-54	0.0566	6.000	1.625	0.500	1.89	50	0.556	0.414	0.663	1.050	1.340	.000594	3.38	2.27	0.570	
600S162-68	0.0713	6.000	1.625	0.500	2.36	50	0.693	0.413	0.655	1.030	1.630	.001170	3.43	2.26	0.561	
600S162-97	0.1017	6.000	1.625	0.500	3.29	50	0.966	0.411	0.636	0.997	2.150	.003330	3.56	2.23	0.542	
800S162-43	0.0451	8.000	1.625	0.500	1.83	33	0.537	0.348	0.601	0.926	2.080	.000364	5.04	2.94	0.546	
800S162-54	0.0566	8.000	1.625	0.500	2.28	50	0.670	0.348	0.594	0.914	2.540	.000715	5.11	2.93	0.539	
800S162-68	0.0713	8.000	1.625	0.500	2.84	50	0.836	0.349	0.586	0.899	3.090	.001420	5.22	2.91	0.530	
800S162-97	0.1017	8.000	1.625	0.500	3.98	50	1.170	0.349	0.568	0.866	4.110	.004030	5.47	2.88	0.511	

Stud Designation	UNPERFORATED PROPERTIES									PERFORATED PROPERTIES				
	M _{rx} (in.kips)	L _u (in)	M _{ry} web.comp. (in.kips)	M _{ry} lips.comp. (in.kips)	Shear V _r (kips)	Web Cripp. P _r (kips)	I _x (in ⁴)	I _y (in ⁴)	S _f (in ³)	M _{rx} (in.kips)	M _{ry} web.comp. (in.kips)	M _{ry} lips.comp. (in.kips)	Shear V _r (kips)	I _x defl. (in ⁴)
550S125-33	9.95	27.8	1.13	1.20	0.89	0.305	1.140	0.0409	0.414	9.95	1.06	1.170	0.892	1.100
550S125-43	14.90	27.6	1.48	1.52	1.98	0.515	1.470	0.0516	0.534	14.90	1.39	1.480	1.530	1.460
550S125-54	27.30	22.1	2.67	2.75	3.95	1.170	1.810	0.0616	0.656	27.30	2.52	2.660	2.400	1.790
550S162-33	15.20	41.3	2.58	2.83	0.89	0.305	1.460	0.1130	0.530	15.20	2.41	2.740	0.892	1.460
550S162-43	20.30	41.1	3.42	3.61	1.98	0.515	1.880	0.1450	0.685	20.30	3.20	3.500	1.530	1.880
550S162-54	37.00	33.2	6.32	6.66	3.95	1.170	2.320	0.1760	0.845	37.00	5.92	6.450	2.400	2.320
550S162-68	46.80	33.1	7.83	8.03	6.84	1.740	2.860	0.2130	1.040	46.80	7.38	7.770	3.240	2.860
550S162-97	63.60	32.8	10.40	10.40	12.20	2.320	3.890	0.2770	1.410	63.60	9.98	10.100	3.870	3.890
600S125-33	11.00	27.6	1.13	1.21	0.82	0.301	1.410	0.0417	0.470	11.00	1.06	1.180	0.815	1.340
600S125-43	16.50	27.3	1.48	1.53	1.81	0.509	1.820	0.0527	0.606	16.50	1.39	1.490	1.580	1.790
600S125-54	30.30	21.9	2.68	2.77	3.61	1.160	2.240	0.0628	0.745	30.30	2.53	2.700	2.490	2.220
600S162-33	17.10	41.1	2.58	2.85	0.82	0.301	1.790	0.1160	0.598	17.10	2.41	2.770	0.815	1.790
600S162-43	22.90	40.9	3.42	3.64	1.81	0.509	2.320	0.1480	0.772	22.90	3.21	3.550	1.580	2.320
600S162-54	41.70	33.0	6.33	6.71	3.61	1.160	2.860	0.1810	0.953	41.70	5.94	6.530	2.490	2.860
600S162-68	52.90	32.8	7.85	8.09	6.84	1.730	3.520	0.2180	1.170	52.90	7.41	7.870	3.680	3.520
600S162-97	72.00	32.5	10.50	10.50	13.40	2.300	4.800	0.2840	1.600	72.00	10.00	10.200	4.870	4.800
800S162-43	30.30	39.8	3.44	3.72	1.34	0.324	4.630	0.1600	1.160	30.30	3.23	3.660	1.340	4.480
800S162-54	55.30	32.1	6.37	6.86	2.67	0.754	5.740	0.1950	1.430	55.30	5.97	6.750	2.670	5.570
800S162-68	74.80	31.9	7.92	8.28	5.39	1.160	7.090	0.2350	1.770	74.80	7.47	8.150	4.300	7.050
800S162-97	109.00	31.4	10.60	10.80	13.90	2.230	9.710	0.3060	2.430	109.00	10.20	10.600	7.590	9.710

Joist Section Properties

Joist Designation	DIMENSIONS				UNPERFORATED PROPERTIES											
	Design Thickness (in)	Depth A (in)	Flange B (in)	Lip C (in)	Weight (lbs/ft)	Yield F _y (ksi)	Area (in ²)	x _{CG} (in)	m (in)	x _o (in)	C _w (in ⁶)	J (in ⁴)	j (in)	r _x (in)	r _y (in)	
600S162-43	0.0451	6.000	1.625	0.500	1.52	33	0.447	0.414	0.670	1.060	1.100	.000303	3.35	2.28	0.576	
600S162-54	0.0566	6.000	1.625	0.500	1.89	50	0.556	0.414	0.663	1.050	1.340	.000594	3.38	2.27	0.570	
600S162-68	0.0713	6.000	1.625	0.500	2.36	50	0.693	0.413	0.655	1.030	1.630	.001170	3.43	2.26	0.561	
600S162-97	0.1017	6.000	1.625	0.500	3.29	50	0.966	0.411	0.636	0.997	2.150	.003330	3.56	2.23	0.542	
800S162-43	0.0451	8.000	1.625	0.500	1.83	33	0.537	0.348	0.601	0.926	2.080	.000364	5.04	2.94	0.546	
800S162-54	0.0566	8.000	1.625	0.500	2.28	50	0.670	0.348	0.594	0.914	2.540	.000715	5.11	2.93	0.539	
800S162-68	0.0713	8.000	1.625	0.500	2.84	50	0.836	0.349	0.586	0.899	3.090	.001420	5.22	2.91	0.530	
800S162-97	0.1017	8.000	1.625	0.500	3.98	50	1.170	0.349	0.568	0.866	4.110	.004030	5.47	2.88	0.511	
800S200-43	0.0451	8.000	2.000	0.625	1.98	33	0.582	0.489	0.811	1.280	3.800	.000395	4.52	3.02	0.708	
800S200-54	0.0566	8.000	2.000	0.625	2.47	50	0.726	0.489	0.804	1.260	4.660	.000775	4.56	3.01	0.701	
800S200-68	0.0713	8.000	2.000	0.625	3.09	50	0.907	0.488	0.796	1.250	5.710	.001540	4.62	3.00	0.692	
800S200-97	0.1017	8.000	2.000	0.625	4.32	50	1.270	0.487	0.777	1.210	7.680	.004380	4.76	2.97	0.674	
800S250-43	0.0451	8.000	2.500	0.750	2.17	33	0.639	0.686	1.090	1.750	7.070	.000433	4.32	3.10	0.917	
800S250-54	0.0566	8.000	2.500	0.750	2.71	50	0.797	0.686	1.080	1.740	8.710	.000851	4.34	3.09	0.910	
800S250-68	0.0713	8.000	2.500	0.750	3.39	50	0.996	0.685	1.070	1.720	10.700	.001690	4.37	3.08	0.902	
800S250-97	0.1017	8.000	2.500	0.750	4.76	50	1.400	0.683	1.060	1.690	14.600	.004820	4.44	3.06	0.883	
1000S162-54	0.0566	10.000	1.625	0.500	2.66	50	0.783	0.302	0.538	0.812	4.200	.000836	7.42	3.57	0.511	
1000S162-68	0.0713	10.000	1.625	0.500	3.33	50	0.978	0.303	0.531	0.798	5.120	.001660	7.61	3.55	0.502	
1000S162-97	0.1017	10.000	1.625	0.500	4.67	50	1.370	0.305	0.514	0.768	6.830	.004730	8.03	3.52	0.484	
1000S200-54	0.0566	10.000	2.000	0.625	2.86	50	0.839	0.427	0.737	1.140	7.670	.000896	6.33	3.67	0.671	
1000S200-68	0.0713	10.000	2.000	0.625	3.57	50	1.050	0.427	0.729	1.120	9.400	.001780	6.44	3.65	0.662	
1000S200-97	0.1017	10.000	2.000	0.625	5.02	50	1.470	0.427	0.711	1.090	12.700	.005080	6.68	3.62	0.644	

Joist Designation	UNPERFORATED PROPERTIES									PERFORATED PROPERTIES				
	M _{rx} (in.kips)	L _u (in)	M _{ry} web.comp. (in.kips)	M _{ry} lips.comp. (in.kips)	Shear V _r (kips)	Web Cripp. P _r (kips)	I _x (in ⁴)	I _y (in ⁴)	S _f (in ³)	M _{rx} (in.kips)	M _{ry} web.comp. (in.kips)	M _{ry} lips.comp. (in.kips)	Shear V _r (kips)	I _x defl. (in ⁴)
600S162-43	22.90	40.9	3.42	3.64	1.81	0.524	2.320	0.1480	0.772	22.90	3.21	3.550	1.580	2.320
600S162-54	41.70	33.0	6.33	6.71	3.61	1.190	2.860	0.1810	0.953	41.70	5.94	6.530	2.490	2.860
600S162-68	52.90	32.8	7.85	8.09	6.84	1.790	3.520	0.2180	1.170	52.90	7.41	7.870	3.680	3.520
600S162-97	72.00	32.5	10.50	10.50	13.40	3.350	4.800	0.2840	1.600	72.00	10.00	10.200	4.870	4.800
800S162-43	30.30	39.8	3.44	3.72	1.34	0.500	4.630	0.1600	1.160	30.30	3.23	3.660	1.340	4.480
800S162-54	55.30	32.1	6.37	6.86	2.67	1.150	5.740	0.1950	1.430	55.30	5.97	6.750	2.670	5.570
800S162-68	74.80	31.9	7.92	8.28	5.39	1.730	7.090	0.2350	1.770	74.80	7.47	8.150	4.300	7.050
800S162-97	109.00	31.4	10.60	10.80	13.90	3.250	9.710	0.3060	2.430	109.00	10.20	10.600	7.590	9.710
800S200-43	38.40	50.3	5.21	5.73	1.34	0.500	5.300	0.2920	1.330	38.40	4.87	5.630	1.340	5.300
800S200-54	67.40	40.6	9.69	10.60	2.67	1.150	6.570	0.3570	1.640	67.40	9.07	10.400	2.670	6.570
800S200-68	89.60	40.4	12.20	12.90	5.39	1.730	8.140	0.4350	2.040	89.60	11.50	12.700	4.300	8.140
800S200-97	126.00	40.0	16.80	17.20	13.90	3.250	11.200	0.5770	2.800	126.00	16.00	16.800	7.590	11.200
800S250-43	40.80	63.6	7.83	8.56	1.34	0.500	6.140	0.5370	1.530	40.80	7.32	8.390	1.340	6.080
800S250-54	74.50	51.4	14.70	16.20	2.67	1.150	7.620	0.6600	1.910	74.50	13.70	15.900	2.670	7.560
800S250-68	97.20	51.3	18.60	20.10	5.39	1.730	9.460	0.8100	2.360	97.20	17.40	19.700	4.300	9.460
800S250-97	146.00	50.9	26.20	27.00	13.90	3.250	13.100	1.0900	3.270	146.00	24.80	26.400	7.590	13.100
1000S162-54	70.70	31.3	6.39	6.96	2.12	1.100	9.950	0.2050	1.990	70.70	5.99	6.890	2.120	9.310
1000S162-68	96.90	31.0	7.95	8.40	4.27	1.670	12.300	0.2470	2.470	96.90	7.51	8.320	4.270	11.900
1000S162-97	147.00	30.4	10.70	10.90	12.60	3.170	17.000	0.3210	3.390	147.00	10.30	10.800	9.170	17.000
1000S200-54	76.70	39.8	9.73	10.80	2.12	1.100	11.300	0.3780	2.260	76.70	9.09	10.700	2.120	10.600
1000S200-68	109.00	39.5	12.30	13.20	4.27	1.670	14.000	0.4600	2.800	109.00	11.50	13.000	4.270	13.600
1000S200-97	168.00	39.0	16.90	17.50	12.60	3.170	19.300	0.6110	3.870	168.00	16.10	17.300	9.170	19.300

Joist Section Properties

Joist Designation	DIMENSIONS				UNPERFORATED PROPERTIES											
	Design Thickness (in)	Depth A (in)	Flange B (in)	Lip C (in)	Weight (lbs/ft)	Yield F _y (ksi)	Area (in ²)	x _{cg} (in)	m (in)	x _o (in)	C _w (in ⁶)	J (in ⁴)	j (in)	r _x (in)	r _y (in)	
1000S250-54	0.0566	10.000	2.500	0.750	3.10	50	0.910	0.604	1.000	1.580	14.200	.000972	5.67	3.77	0.879	
1000S250-68	0.0713	10.000	2.500	0.750	3.87	50	1.140	0.604	0.994	1.560	17.500	.001930	5.73	3.76	0.870	
1000S250-97	0.1017	10.000	2.500	0.750	5.45	50	1.600	0.603	0.976	1.530	23.800	.005520	5.87	3.73	0.852	
1000S300-54	0.0566	10.000	3.000	0.750	3.29	50	0.967	0.768	1.230	1.970	21.700	.001030	5.51	3.85	1.060	
1000S300-68	0.0713	10.000	3.000	0.750	4.12	50	1.210	0.767	1.220	1.960	26.800	.002050	5.55	3.84	1.050	
1000S300-97	0.1017	10.000	3.000	0.750	5.79	50	1.700	0.764	1.210	1.920	36.700	.005870	5.64	3.82	1.040	
1200S162-68	0.0713	12.000	1.625	0.500	3.81	50	1.120	0.269	0.485	0.719	7.740	.001900	10.60	4.17	0.478	
1200S162-97	0.1017	12.000	1.625	0.500	5.36	50	1.580	0.272	0.470	0.691	10.300	.005430	11.20	4.14	0.460	
1200S200-68	0.0713	12.000	2.000	0.625	4.06	50	1.190	0.380	0.673	1.020	14.200	.002020	8.74	4.29	0.634	
1200S200-97	0.1017	12.000	2.000	0.625	5.71	50	1.680	0.381	0.656	0.987	19.100	.005780	9.10	4.26	0.616	
1200S250-68	0.0713	12.000	2.500	0.750	4.36	50	1.280	0.540	0.926	1.430	26.300	.002170	7.48	4.42	0.840	
1200S250-97	0.1017	12.000	2.500	0.750	6.14	50	1.800	0.540	0.909	1.400	35.900	.006220	7.69	4.39	0.821	
1400S200-68	0.0713	12.000	3.000	0.750	4.60	50	1.350	0.689	1.150	1.800	40.300	.002290	6.98	4.51	1.020	
1400S300-97	0.1017	12.000	3.000	0.750	6.49	50	1.910	0.688	1.130	1.770	55.300	.006570	7.13	4.48	1.000	
1400S162-68	0.0713	14.000	1.625	0.500	4.30	50	1.260	0.243	0.447	0.654	11.000	.002140	14.20	4.79	0.456	
1400S162-97	0.1017	14.000	1.625	0.500	6.05	50	1.780	0.247	0.433	0.628	14.700	.006130	15.10	4.75	0.438	
1400S200-68	0.0713	14.000	2.000	0.625	4.54	50	1.330	0.343	0.625	0.932	20.100	.002260	11.50	4.92	0.609	
1400S200-97	0.1017	14.000	2.000	0.625	6.40	50	1.880	0.346	0.609	0.904	27.200	.006480	12.00	4.88	0.591	
1400S250-68	0.0713	14.000	2.500	0.750	4.85	50	1.420	0.490	0.867	1.320	37.200	.002410	9.60	5.06	0.811	
1400S250-97	0.1017	14.000	2.500	0.750	6.83	50	2.010	0.491	0.851	1.290	50.800	.006920	9.90	5.03	0.792	
1400S300-68	0.0713	14.000	3.000	0.750	5.09	50	1.500	0.627	1.080	1.670	57.100	.002530	8.73	5.17	0.991	
1400S300-97	0.1017	14.000	3.000	0.750	7.18	50	2.110	0.627	1.060	1.640	78.400	.007270	8.95	5.14	0.972	

Joist Designation	UNPERFORATED PROPERTIES									PERFORATED PROPERTIES				
	M _{rx} (in.kips)	L _u (in)	M _{ry} web.comp. (in.kips)	M _{ry} lips.comp. (in.kips)	Shear V _r (kips)	Web Cripp. P _r (kips)	I _x (in ⁴)	I _y (in ⁴)	S _f (in ³)	M _{rx} (in.kips)	M _{ry} web.comp. (in.kips)	M _{ry} lips.comp. (in.kips)	Shear V _r (kips)	I _x defl. (in ⁴)
1000S250-54	91.90	50.6	14.70	16.50	2.12	1.100	12.900	0.7030	2.590	91.90	13.70	16.300	2.120	12.800
1000S250-68	131.00	50.4	18.70	20.50	4.27	1.670	16.100	0.8620	3.220	131.00	17.50	20.200	4.270	16.100
1000S250-97	199.00	49.9	26.40	27.60	12.60	3.170	22.300	1.1600	4.460	199.00	24.90	27.200	9.170	22.300
1000S300-54	93.10	59.7	19.10	21.80	2.12	1.100	14.300	1.0900	2.870	93.10	17.90	21.500	2.120	13.600
1000S300-68	133.00	59.5	24.40	27.10	4.27	1.670	17.800	1.3500	3.570	133.00	22.80	26.700	4.270	17.300
1000S300-97	211.00	59.1	34.90	36.80	12.60	3.170	24.800	1.8300	4.960	211.00	32.80	36.200	9.170	24.800
1200S162-68	119.00	30.1	7.98	8.49	3.54	1.620	19.500	0.2560	3.250	119.00	7.53	8.430	3.540	18.300
1200S162-97	184.00	29.5	10.80	11.10	10.40	3.090	27.000	0.3330	4.490	184.00	10.30	11.000	9.470	26.600
1200S200-68	133.00	38.7	12.30	13.30	3.54	1.620	21.900	0.4790	3.660	133.00	11.50	13.200	3.540	20.700
1200S200-97	210.00	38.1	17.00	17.70	10.40	3.090	30.400	0.6360	5.070	210.00	16.20	17.500	9.470	30.100
1200S250-68	143.00	49.6	18.70	20.70	3.54	1.620	25.000	0.9030	4.160	143.00	17.50	20.500	3.540	23.800
1200S250-97	239.00	49.1	26.50	27.90	10.40	3.090	34.700	1.2200	5.790	239.00	25.00	27.700	9.470	34.400
1200S300-68	158.00	58.8	24.50	27.50	3.54	1.620	27.500	1.4100	4.590	158.00	22.90	27.200	3.540	26.800
1200S300-97	273.00	58.3	35.10	37.40	10.40	3.090	38.300	1.9200	6.390	273.00	32.90	36.900	9.470	38.300
1400S162-68	141.00	29.3	8.00	8.55	3.02	1.580	29.000	0.2630	4.140	141.00	7.54	8.510	3.020	26.100
1400S162-97	221.00	28.7	10.80	11.20	8.86	3.020	40.100	0.3420	5.730	221.00	10.30	11.100	8.860	38.600
1400S200-68	158.00	37.9	12.30	13.40	3.02	1.580	32.300	0.4950	4.610	158.00	11.60	13.300	3.020	29.500
1400S200-97	251.00	37.2	17.10	17.90	8.86	3.020	44.900	0.6560	6.410	251.00	16.20	17.700	8.860	43.400
1400S250-68	169.00	48.8	18.80	21.00	3.02	1.580	36.500	0.9360	5.210	169.00	17.60	20.800	3.020	33.700
1400S250-97	286.00	48.2	26.60	28.20	8.86	3.020	50.800	1.2600	7.250	286.00	25.10	28.000	8.860	49.300
1400S300-68	174.00	58.1	24.60	27.90	3.02	1.580	39.900	1.4700	5.700	174.00	22.90	27.600	3.020	35.900
1400S300-97	299.00	57.5	35.20	37.80	8.86	3.020	55.700	1.9900	7.960	299.00	33.00	37.500	8.860	54.200

Track Section Properties

Track Designation	DIMENSIONS			Weight (lbs/ft)	Yield F_y (ksi)	Area (in ²)	x_{CG} (in)	x_o (in)	C_w (in ⁶)	J (in ⁴)	j (in)
	Design Thickness (in)	Depth A (in)	Flange B (in)								
350T125-33	0.0346	3.500	1.25	0.706	33	0.207	0.271	0.668	0.0699	0.0000828	2.01
350T125-43	0.0451	3.500	1.25	0.919	33	0.270	0.274	0.663	0.0903	0.0001830	2.01
350T125-54	0.0566	3.500	1.25	1.150	50	0.339	0.278	0.658	0.1140	0.0003620	2.03
350T125-68	0.0713	3.500	1.25	1.450	50	0.427	0.283	0.650	0.1440	0.0007230	2.04
350T125-97	0.1017	3.500	1.25	2.070	50	0.608	0.292	0.636	0.2090	0.0021000	2.08
350T150-33	0.0346	3.500	1.50	0.765	33	0.225	0.356	0.866	0.1140	0.0000897	2.01
350T150-43	0.0451	3.500	1.50	0.996	33	0.293	0.359	0.861	0.1480	0.0001980	2.01
350T150-54	0.0566	3.500	1.50	1.250	50	0.367	0.362	0.855	0.1870	0.0003920	2.02
350T150-68	0.0713	3.500	1.50	1.570	50	0.462	0.367	0.847	0.2380	0.0007830	2.03
350T150-97	0.1017	3.500	1.50	2.240	50	0.659	0.376	0.831	0.3460	0.0022700	2.06
350T200-33	0.0346	3.500	2.00	0.883	33	0.259	0.542	1.290	0.2490	0.0001030	2.19
350T200-43	0.0451	3.500	2.00	1.150	33	0.338	0.545	1.280	0.3230	0.0002290	2.19
350T200-54	0.0566	3.500	2.00	1.440	50	0.424	0.548	1.270	0.4090	0.0004530	2.19
350T200-68	0.0713	3.500	2.00	1.820	50	0.534	0.552	1.260	0.5220	0.0009040	2.20
350T200-97	0.1017	3.500	2.00	2.590	50	0.761	0.560	1.250	0.7650	0.0026200	2.21
362T125-33	0.0346	3.625	1.25	0.721	33	0.212	0.266	0.658	0.0756	0.0000845	2.09
362T125-43	0.0451	3.625	1.25	0.939	33	0.276	0.269	0.654	0.0978	0.0001870	2.09
362T125-54	0.0566	3.625	1.25	1.180	50	0.346	0.273	0.648	0.1230	0.0003690	2.11
362T125-68	0.0713	3.625	1.25	1.480	50	0.436	0.277	0.641	0.1560	0.0007380	2.13
362T125-97	0.1017	3.625	1.25	2.110	50	0.621	0.287	0.626	0.2260	0.0021400	2.17
362T150-33	0.0346	3.625	1.50	0.780	33	0.229	0.350	0.854	0.1240	0.0000914	2.08
362T150-43	0.0451	3.625	1.50	1.020	33	0.298	0.353	0.850	0.1600	0.0002020	2.08
362T150-54	0.0566	3.625	1.50	1.270	50	0.374	0.356	0.844	0.2020	0.0004000	2.09
362T150-68	0.0713	3.625	1.50	1.600	50	0.471	0.361	0.836	0.2570	0.0007990	2.10
362T150-97	0.1017	3.625	1.50	2.290	50	0.672	0.370	0.820	0.3740	0.0023200	2.13
362T200-33	0.0346	3.625	2.00	0.897	33	0.264	0.533	1.270	0.2690	0.0001050	2.23
362T200-43	0.0451	3.625	2.00	1.170	33	0.343	0.536	1.270	0.3500	0.0002330	2.23
362T200-54	0.0566	3.625	2.00	1.470	50	0.431	0.539	1.260	0.4420	0.0004600	2.24
362T200-68	0.0713	3.625	2.00	1.850	50	0.543	0.543	1.250	0.5640	0.0009190	2.24
362T200-97	0.1017	3.625	2.00	2.630	50	0.773	0.551	1.230	0.8250	0.0026700	2.25

Track Designation	r_x (in)	r_y (in)	I_x (in ⁴)	I_y (in ⁴)	S_f (in ³)	M_{rx} (in.kips)	L_u (in)	Shear V_r (kips)	I_x defl. (in ⁴)
350T125-33	1.40	0.379	0.405	0.0299	0.222	4.91	25.7	1.310	0.351
350T125-43	1.40	0.378	0.528	0.0385	0.288	6.92	25.8	2.220	0.485
350T125-54	1.40	0.375	0.668	0.0478	0.361	13.40	20.9	4.310	0.620
350T125-68	1.41	0.373	0.851	0.0592	0.454	18.30	21.1	5.810	0.832
350T125-97	1.43	0.367	1.240	0.0818	0.645	29.00	21.5	8.170	1.240
350T150-33	1.43	0.469	0.461	0.0494	0.253	5.09	30.9	1.310	0.377
350T150-43	1.43	0.467	0.601	0.0638	0.329	7.21	31.0	2.220	0.524
350T150-54	1.44	0.465	0.761	0.0793	0.412	13.90	25.2	4.310	0.671
350T150-68	1.45	0.462	0.972	0.0987	0.518	19.30	25.4	5.810	0.909
350T150-97	1.47	0.456	1.420	0.1370	0.738	31.50	25.8	8.170	1.420
350T200-33	1.49	0.647	0.574	0.1080	0.315	5.37	40.9	1.310	0.423
350T200-43	1.49	0.645	0.749	0.1400	0.409	7.64	41.1	2.220	0.591
350T200-54	1.50	0.642	0.949	0.1750	0.513	14.80	33.4	4.310	0.758
350T200-68	1.51	0.640	1.210	0.2180	0.647	20.60	33.7	5.810	1.040
350T200-97	1.53	0.634	1.780	0.3050	0.924	34.60	34.3	8.170	1.690
362T125-33	1.44	0.377	0.438	0.0301	0.232	5.17	25.7	1.310	0.381
362T125-43	1.44	0.375	0.571	0.0389	0.302	7.27	25.8	2.220	0.525
362T125-54	1.45	0.373	0.723	0.0482	0.378	14.00	20.9	4.310	0.671
362T125-68	1.45	0.370	0.921	0.0598	0.475	19.20	21.0	6.020	0.901
362T125-97	1.47	0.365	1.340	0.0825	0.675	30.40	21.4	8.480	1.340
362T150-33	1.48	0.467	0.499	0.0499	0.264	5.36	30.9	1.310	0.409
362T150-43	1.48	0.465	0.650	0.0645	0.343	7.57	31.0	2.220	0.567
362T150-54	1.48	0.463	0.823	0.0801	0.431	14.60	25.2	4.310	0.726
362T150-68	1.49	0.460	1.050	0.0996	0.542	20.20	25.3	6.020	0.982
362T150-97	1.51	0.454	1.530	0.1380	0.771	33.00	25.8	8.480	1.530
362T200-33	1.53	0.645	0.619	0.1100	0.328	5.65	41.0	1.310	0.458
362T200-43	1.53	0.643	0.808	0.1420	0.427	8.03	41.1	2.220	0.640
362T200-54	1.54	0.641	1.020	0.1770	0.536	15.50	33.4	4.310	0.819
362T200-68	1.55	0.638	1.310	0.2210	0.675	21.60	33.6	6.020	1.120
362T200-97	1.57	0.632	1.920	0.3090	0.963	36.20	34.3	8.480	1.820

Track Section Properties

DIMENSIONS											
Track Designation	Design Thickness (in)	Depth A (in)	Flange B (in)	Weight (lbs/ft)	Yield F_y (ksi)	Area (in ²)	x_{cg} (in)	x_o (in)	C_w (in ⁶)	J (in ⁴)	j (in)
400T125-33	0.0346	4.000	1.25	0.765	33	0.225	0.251	0.630	0.0946	0.0000897	2.35
400T125-43	0.0451	4.000	1.25	0.996	33	0.293	0.255	0.626	0.1220	0.0001980	2.35
400T125-54	0.0566	4.000	1.25	1.250	50	0.367	0.259	0.621	0.1540	0.0003920	2.37
400T125-68	0.0713	4.000	1.25	1.570	50	0.462	0.264	0.614	0.1940	0.0007830	2.39
400T125-97	0.1017	4.000	1.25	2.240	50	0.659	0.274	0.600	0.2800	0.0022700	2.44
400T150-33	0.0346	4.000	1.50	0.824	33	0.242	0.332	0.821	0.1550	0.0000966	2.28
400T150-43	0.0451	4.000	1.50	1.070	33	0.315	0.335	0.817	0.2000	0.0002140	2.28
400T150-54	0.0566	4.000	1.50	1.350	50	0.396	0.339	0.811	0.2520	0.0004220	2.30
400T150-68	0.0713	4.000	1.50	1.690	50	0.498	0.343	0.804	0.3200	0.0008440	2.31
400T150-97	0.1017	4.000	1.50	2.410	50	0.710	0.353	0.788	0.4630	0.0024500	2.35
400T200-33	0.0346	4.000	2.00	0.941	33	0.277	0.509	1.230	0.3360	0.0001100	2.37
400T200-43	0.0451	4.000	2.00	1.230	33	0.360	0.512	1.220	0.4360	0.0002440	2.37
400T200-54	0.0566	4.000	2.00	1.540	50	0.452	0.515	1.220	0.5510	0.0004830	2.38
400T200-68	0.0713	4.000	2.00	1.940	50	0.569	0.519	1.210	0.7020	0.0009650	2.39
400T200-97	0.1017	4.000	2.00	2.760	50	0.811	0.528	1.190	1.0200	0.0028000	2.40
550T125-33	0.0346	5.500	1.25	0.941	33	0.277	0.207	0.541	0.1950	0.0001100	3.68
550T125-43	0.0451	5.500	1.25	1.230	33	0.360	0.211	0.537	0.2520	0.0002440	3.69
550T125-54	0.0566	5.500	1.25	1.540	50	0.452	0.215	0.532	0.3150	0.0004830	3.72
550T125-68	0.0713	5.500	1.25	1.940	50	0.569	0.221	0.526	0.3970	0.0009650	3.76
550T125-97	0.1017	5.500	1.25	2.760	50	0.811	0.232	0.514	0.5640	0.0028000	3.84
550T150-33	0.0346	5.500	1.50	1.000	33	0.294	0.276	0.714	0.3200	0.0001170	3.35
550T150-43	0.0451	5.500	1.50	1.300	33	0.383	0.280	0.709	0.4140	0.0002600	3.36
550T150-54	0.0566	5.500	1.50	1.630	50	0.480	0.284	0.704	0.5190	0.0005130	3.38
550T150-68	0.0713	5.500	1.50	2.060	50	0.605	0.289	0.698	0.6550	0.0010300	3.41
550T150-97	0.1017	5.500	1.50	2.930	50	0.862	0.299	0.684	0.9370	0.0029700	3.47
550T200-33	0.0346	5.500	2.00	1.120	33	0.329	0.431	1.090	0.6940	0.0001310	3.12
550T200-43	0.0451	5.500	2.00	1.460	33	0.428	0.435	1.080	0.9000	0.0002900	3.13
550T200-54	0.0566	5.500	2.00	1.830	50	0.537	0.438	1.080	1.1300	0.0005730	3.14
550T200-68	0.0713	5.500	2.00	2.300	50	0.676	0.443	1.070	1.4300	0.0011500	3.16
550T200-97	0.1017	5.500	2.00	3.280	50	0.964	0.452	1.050	2.0700	0.0033200	3.19

Track Designation	r_x (in)	r_y (in)	I_x (in ⁴)	I_y (in ⁴)	S_f (in ³)	M_{rx} (in.kips)	L_u (in)	Shear V_r (kips)	I_x defl. (in ⁴)
400T125-33	1.56	0.371	0.549	0.0309	0.265	5.97	25.6	1.200	0.480
400T125-43	1.56	0.369	0.716	0.0398	0.344	8.37	25.6	2.220	0.660
400T125-54	1.57	0.367	0.904	0.0494	0.431	16.10	20.8	4.310	0.842
400T125-68	1.58	0.364	1.150	0.0612	0.541	22.00	20.9	6.660	1.130
400T125-97	1.59	0.358	1.670	0.0846	0.768	34.60	21.1	9.390	1.670
400T150-33	1.60	0.460	0.622	0.0513	0.300	6.19	30.8	1.200	0.514
400T150-43	1.60	0.458	0.811	0.0662	0.390	8.71	30.9	2.220	0.711
400T150-54	1.61	0.456	1.030	0.0823	0.489	16.80	25.1	4.310	0.908
400T150-68	1.62	0.453	1.310	0.1020	0.615	23.10	25.2	6.660	1.220
400T150-97	1.64	0.447	1.900	0.1420	0.874	37.40	25.6	9.390	1.900
400T200-33	1.67	0.639	0.768	0.1130	0.371	6.53	41.0	1.200	0.574
400T200-43	1.67	0.637	1.000	0.1460	0.482	9.23	41.1	2.220	0.799
400T200-54	1.67	0.635	1.270	0.1820	0.604	17.80	33.4	4.310	1.020
400T200-68	1.69	0.632	1.620	0.2270	0.761	24.70	33.6	6.660	1.390
400T200-97	1.71	0.626	2.360	0.3180	1.090	41.00	34.1	9.390	2.240
550T125-33	2.05	0.347	1.160	0.0332	0.410	8.00	25.0	0.868	0.987
550T125-43	2.05	0.345	1.510	0.0428	0.533	12.40	25.0	1.920	1.410
550T125-54	2.05	0.343	1.900	0.0531	0.668	24.00	20.3	3.810	1.790
550T125-68	2.06	0.340	2.410	0.0658	0.839	34.60	20.3	6.840	2.370
550T125-97	2.07	0.335	3.480	0.0908	1.190	53.50	20.3	13.100	3.480
550T150-33	2.10	0.435	1.290	0.0555	0.459	9.19	30.4	0.868	1.100
550T150-43	2.10	0.433	1.690	0.0717	0.596	13.90	30.4	1.920	1.500
550T150-54	2.10	0.430	2.130	0.0890	0.747	26.80	24.7	3.810	1.910
550T150-68	2.11	0.428	2.700	0.1110	0.939	36.20	24.7	6.840	2.550
550T150-97	2.13	0.422	3.900	0.1540	1.330	57.50	24.8	13.100	3.900
550T200-33	2.18	0.613	1.570	0.1230	0.555	9.10	41.0	0.868	1.220
550T200-43	2.18	0.611	2.040	0.1600	0.722	14.70	41.0	1.920	1.670
550T200-54	2.19	0.609	2.580	0.1990	0.905	28.30	33.3	3.810	2.130
550T200-68	2.20	0.606	3.270	0.2480	1.140	38.60	33.4	6.840	2.860
550T200-97	2.22	0.600	4.750	0.3470	1.620	62.60	33.6	13.100	4.520

Track Section Properties

Track Designation	DIMENSIONS			Weight (lbs/ft)	Yield F_y (ksi)	Area (in ²)	x_{CG} (in)	x_O (in)	C_w (in ⁶)	J (in ⁴)	j (in)
	Design Thickness (in)	Depth A (in)	Flange B (in)								
600T125-33	0.0346	6.000	1.25	1.000	33	0.294	0.196	0.516	0.2380	0.0001170	4.22
600T125-43	0.0451	6.000	1.25	1.300	33	0.383	0.200	0.513	0.3070	0.0002600	4.24
600T125-54	0.0566	6.000	1.25	1.630	50	0.480	0.204	0.508	0.3840	0.0005130	4.27
600T125-68	0.0713	6.000	1.25	2.060	50	0.605	0.210	0.503	0.4830	0.0010300	4.32
600T125-97	0.1017	6.000	1.25	2.930	50	0.862	0.221	0.491	0.6850	0.0029700	4.41
600T150-33	0.0346	6.000	1.50	1.060	33	0.311	0.262	0.684	0.3900	0.0001240	3.80
600T150-43	0.0451	6.000	1.50	1.380	33	0.405	0.265	0.680	0.5040	0.0002750	3.81
600T150-54	0.0566	6.000	1.50	1.730	50	0.509	0.269	0.675	0.6320	0.0005430	3.83
600T150-68	0.0713	6.000	1.50	2.180	50	0.641	0.275	0.669	0.7970	0.0010900	3.87
600T150-97	0.1017	6.000	1.50	3.110	50	0.913	0.285	0.656	1.1400	0.0031500	3.94
600T200-33	0.0346	6.000	2.00	1.180	33	0.346	0.411	1.050	0.8470	0.0001380	3.44
600T200-43	0.0451	6.000	2.00	1.530	33	0.451	0.414	1.040	1.1000	0.0003050	3.45
600T200-54	0.0566	6.000	2.00	1.920	50	0.565	0.418	1.040	1.3800	0.0006040	3.46
600T200-68	0.0713	6.000	2.00	2.420	50	0.712	0.422	1.030	1.7500	0.0012100	3.48
600T200-97	0.1017	6.000	2.00	3.450	50	1.010	0.432	1.020	2.5100	0.0035000	3.52
800T125-43	0.0451	8.000	1.25	1.610	33	0.473	0.166	0.436	0.5890	0.0003210	6.95
800T125-54	0.0566	8.000	1.25	2.020	50	0.594	0.171	0.432	0.7350	0.0006340	7.01
800T125-68	0.0713	8.000	1.25	2.540	50	0.748	0.177	0.427	0.9200	0.0012700	7.08
800T125-97	0.1017	8.000	1.25	3.630	50	1.070	0.189	0.417	1.3000	0.0036700	7.21
800T150-43	0.0451	8.000	1.50	1.690	33	0.496	0.221	0.584	0.9720	0.0003360	6.03
800T150-54	0.0566	8.000	1.50	2.120	50	0.622	0.226	0.580	1.2200	0.0006640	6.07
800T150-68	0.0713	8.000	1.50	2.670	50	0.783	0.231	0.575	1.5300	0.0013300	6.12
800T150-97	0.1017	8.000	1.50	3.800	50	1.120	0.243	0.564	2.1600	0.0038500	6.23
800T200-43	0.0451	8.000	2.00	1.840	33	0.541	0.349	0.913	2.1200	0.0003670	5.04
800T200-54	0.0566	8.000	2.00	2.310	50	0.679	0.353	0.908	2.6600	0.0007250	5.07
800T200-68	0.0713	8.000	2.00	2.910	50	0.854	0.358	0.902	3.3600	0.0014500	5.10
800T200-97	0.1017	8.000	2.00	4.150	50	1.220	0.369	0.889	4.7900	0.0042000	5.17

Track Designation	r_x (in)	r_y (in)	I_x (in ⁴)	I_y (in ⁴)	S_f (in ³)	M_{rx} (in.kips)	L_u (in)	Shear V_r (kips)	I_x defl. (in ⁴)
600T125-33	2.20	0.339	1.430	0.0338	0.465	8.82	24.8	0.795	1.200
600T125-43	2.20	0.337	1.860	0.0436	0.604	13.70	24.8	1.760	1.720
600T125-54	2.21	0.335	2.340	0.0540	0.756	26.60	20.1	3.480	2.190
600T125-68	2.22	0.333	2.970	0.0670	0.950	38.60	20.1	6.840	2.920
600T125-97	2.23	0.327	4.280	0.0925	1.350	60.60	20.1	13.900	4.280
600T150-33	2.26	0.426	1.590	0.0566	0.517	8.99	30.3	0.795	1.270
600T150-43	2.26	0.425	2.070	0.0731	0.673	14.10	30.2	1.760	1.830
600T150-54	2.27	0.422	2.610	0.0908	0.843	27.40	24.5	3.480	2.330
600T150-68	2.27	0.420	3.310	0.1130	1.060	40.10	24.5	6.840	3.130
600T150-97	2.29	0.414	4.780	0.1570	1.500	65.00	24.6	13.900	4.780
600T200-33	2.35	0.604	1.910	0.1260	0.622	9.89	40.9	0.795	1.500
600T200-43	2.35	0.602	2.490	0.1630	0.809	16.80	40.9	1.760	2.060
600T200-54	2.36	0.600	3.140	0.2040	1.010	32.30	33.2	3.480	2.620
600T200-68	2.37	0.597	3.990	0.2540	1.280	43.80	33.3	6.840	3.510
600T200-97	2.39	0.592	5.770	0.3550	1.820	70.50	33.5	13.900	5.510
800T125-43	2.82	0.311	3.770	0.0459	0.924	19.00	23.8	1.320	3.340
800T125-54	2.83	0.310	4.750	0.0569	1.160	37.00	19.3	2.600	4.260
800T125-68	2.83	0.307	6.000	0.0705	1.450	54.70	19.2	5.220	5.830
800T125-97	2.84	0.302	8.610	0.0974	2.060	92.80	19.2	13.900	8.610
800T150-43	2.89	0.395	4.140	0.0775	1.020	19.40	29.3	1.320	3.520
800T150-54	2.90	0.393	5.210	0.0962	1.270	38.00	23.8	2.600	4.490
800T150-68	2.90	0.391	6.590	0.1200	1.600	56.50	23.8	5.220	6.190
800T150-97	2.91	0.386	9.480	0.1660	2.270	98.60	23.7	13.900	9.480
800T200-43	3.01	0.569	4.890	0.1750	1.200	20.10	40.3	1.320	3.820
800T200-54	3.01	0.567	6.150	0.2180	1.500	39.20	32.7	2.600	4.880
800T200-68	3.02	0.564	7.790	0.2720	1.890	58.90	32.7	5.220	6.810
800T200-97	3.03	0.558	11.200	0.3800	2.680	106.00	32.7	13.900	10.800

Track Section Properties

Track Designation	DIMENSIONS			Weight (lbs/ft)	Yield F_y (ksi)	Area (in ²)	x_{cg} (in)	x_o (in)	C_w (in ⁶)	J (in ⁴)	j (in)
	Design Thickness (in)	Depth A (in)	Flange B (in)								
1000T125-54	0.0566	10.000	1.25	2.410	50	0.707	0.148	0.376	1.2100	0.0007550	10.60
1000T125-68	0.0713	10.000	1.25	3.030	50	0.890	0.154	0.372	1.5100	0.0015100	10.70
1000T125-97	0.1017	10.000	1.25	4.320	50	1.270	0.167	0.363	2.1200	0.0043800	10.80
1000T150-54	0.0566	10.000	1.50	2.500	50	0.735	0.195	0.509	2.0100	0.0007850	8.99
1000T150-68	0.0713	10.000	1.50	3.150	50	0.926	0.201	0.505	2.5200	0.0015700	9.07
1000T150-97	0.1017	10.000	1.50	4.490	50	1.320	0.213	0.495	3.5600	0.0045500	9.22
1000T200-54	0.0566	10.000	2.00	2.690	50	0.792	0.306	0.809	4.4300	0.0008450	7.20
1000T200-68	0.0713	10.000	2.00	3.390	50	0.997	0.312	0.803	5.5800	0.0016900	7.24
1000T200-97	0.1017	10.000	2.00	4.840	50	1.420	0.323	0.791	7.9200	0.0049000	7.35
1200T125-68	0.0713	12.000	1.25	3.510	50	1.030	0.138	0.329	2.2700	0.0017500	15.10
1200T125-97	0.1017	12.000	1.25	5.010	50	1.470	0.151	0.322	3.1700	0.0050800	15.30
1200T150-68	0.0713	12.000	1.50	3.640	50	1.070	0.179	0.450	3.7900	0.0018100	12.70
1200T150-97	0.1017	12.000	1.50	5.180	50	1.520	0.191	0.441	5.3300	0.0052500	12.90
1200T200-68	0.0713	12.000	2.00	3.880	50	1.140	0.277	0.725	8.4300	0.0019300	9.91
1200T200-97	0.1017	12.000	2.00	5.530	50	1.620	0.289	0.714	11.9000	0.0056000	10.00
1400T125-68	0.0713	14.000	1.25	4.000	50	1.180	0.125	0.296	3.1900	0.0019900	20.30
1400T125-97	0.1017	14.000	1.25	5.700	50	1.680	0.138	0.289	4.4400	0.0057800	20.60
1400T150-68	0.0713	14.000	1.50	4.120	50	1.210	0.162	0.407	5.3500	0.0020500	17.00
1400T150-97	0.1017	14.000	1.50	5.880	50	1.730	0.175	0.399	7.5000	0.0059500	17.30
1400T200-68	0.0713	14.000	2.00	4.360	50	1.280	0.250	0.661	11.9000	0.0021700	13.10
1400T200-97	0.1017	14.000	2.00	6.220	50	1.830	0.263	0.651	16.9000	0.0063000	13.20

Track Designation	r_x (in)	r_y (in)	I_x (in ⁴)	I_y (in ⁴)	S_f (in ³)	M_{rx} (in.kips)	L_u (in)	Shear V_r (kips)	I_x defl. (in ⁴)
1000T125-54	3.43	0.289	8.330	0.0588	1.630	47.50	18.5	2.080	7.130
1000T125-68	3.44	0.286	10.500	0.0730	2.050	70.80	18.5	4.170	9.860
1000T125-97	3.45	0.282	15.100	0.1010	2.910	124.00	18.4	12.100	15.100
1000T150-54	3.51	0.369	9.060	0.1000	1.780	48.50	23.0	2.080	7.460
1000T150-68	3.52	0.366	11.400	0.1240	2.230	72.90	23.0	4.170	10.400
1000T150-97	3.53	0.362	16.400	0.1720	3.170	131.00	22.9	12.100	16.400
1000T200-54	3.64	0.537	10.500	0.2280	2.060	50.00	32.0	2.080	8.030
1000T200-68	3.65	0.534	13.300	0.2850	2.590	75.70	32.0	4.170	11.300
1000T200-97	3.66	0.529	19.100	0.3980	3.690	139.00	31.9	12.100	18.400
1200T125-68	4.04	0.269	16.800	0.0747	2.750	87.00	17.8	3.460	15.100
1200T125-97	4.04	0.265	24.100	0.1030	3.900	155.00	17.6	10.100	23.600
1200T150-68	4.12	0.346	18.100	0.1280	2.960	89.30	22.2	3.460	15.800
1200T150-97	4.13	0.341	26.000	0.1770	4.210	163.00	22.1	10.100	25.500
1200T200-68	4.27	0.508	20.800	0.2940	3.390	92.60	31.2	3.460	17.100
1200T200-97	4.28	0.503	29.800	0.4110	4.820	172.00	31.1	10.100	28.200
1400T125-68	4.63	0.254	25.200	0.0761	3.540	103.00	17.1	2.970	21.600
1400T125-97	4.64	0.251	36.000	0.1050	5.020	186.00	16.9	8.640	34.200
1400T150-68	4.72	0.328	27.000	0.1300	3.790	106.00	21.5	2.970	22.600
1400T150-97	4.73	0.324	38.600	0.1810	5.380	195.00	21.4	8.640	36.800
1400T200-68	4.88	0.485	30.600	0.3020	4.290	109.00	30.5	2.970	24.200
1400T200-97	4.89	0.480	43.800	0.4210	6.100	205.00	30.3	8.640	40.400

Wind Bearing Stud Allowable Height Tables (Maximum allowable single span in feet)

Specified Wind Load		30 psf			35 psf			40 psf			50 psf			60 psf		
LSF Factored Wind Load		45.5 psf			52.5 psf			60 psf			75 psf			90 psf		
Designation	Strength or Deflection	Stud Spacing (in)			Stud Spacing (in)			Stud Spacing (in)			Stud Spacing (in)			Stud Spacing (in)		
		12	16	24	12	16	24	12	16	24	12	16	24	12	16	24
350S125-33	Strength	8.8	7.6	6.2	8.1	7.0	5.7	7.6	6.6	5.4	6.8	5.9	4.8*	6.2	5.4	4.4*
	L/360	8.2	7.5	6.5	7.8	7.1	6.2*	7.5	6.8	5.9*	6.9	6.3	5.5*	6.5	5.9*	5.2*
	Web Crippling	14.5	10.8	7.2	12.4	9.3	6.2	10.8	8.1	5.4	8.7	6.5	4.3	7.2	5.4	3.6
350S125-43	Strength	10.7	9.2	7.5	9.9	8.5	7.0	9.2	8.0	6.5	8.3	7.1	5.8	7.5	6.5	5.3
	L/360	8.9	8.1	7.1	8.5	7.7	6.7	8.1	7.4	6.5	7.5	6.9	6.0	7.1	6.5	5.6
	Web Crippling	24.1	18.1	12.1	20.7	15.5	10.3	18.1	13.6	9.1	14.5	10.9	7.2	12.1	9.1	6.0
350S125-54	Strength	14.3	12.4	10.1	13.3	11.5	9.4	12.4	10.7	8.8	11.1	9.6	7.8	10.1	8.8	7.2
	L/360	9.6	8.7	7.6	9.1	8.3	7.2	8.7	7.9	6.9	8.1	7.3	6.4	7.6	6.9	6.0
	Web Crippling	54.4	40.8	27.2	46.6	35.0	23.3	40.8	30.6	20.4	32.6	24.5	16.3	27.2	20.4	13.6
350S162-33	Strength	10.6	9.2	7.5*	9.8	8.5	7.0*	9.2	8.0	6.5*	8.2	7.1*	5.8*	7.5*	6.5*	5.3*
	L/360	9.0	8.2	7.2	8.6	7.8	6.8*	8.2	7.5	6.5*	7.6	6.9*	6.1*	7.2	6.5*	5.7*
	Web Crippling	14.5	10.8	7.2	12.4	9.3	6.2	10.8	8.1	5.4	8.7	6.5	4.3	7.2	5.4	3.6
350S162-43	Strength	12.5	10.8	8.9	11.6	10.0	8.2	10.8	9.4	7.7	9.7	8.4	6.9	8.9	7.7	6.3*
	L/360	9.8	8.9	7.8	9.3	8.5	7.4	8.9	8.1	7.1	8.3	7.5	6.6	7.8	7.1	6.2*
	Web Crippling	24.1	18.1	12.1	20.7	15.5	10.3	18.1	13.6	9.1	14.5	10.9	7.2	12.1	9.1	6.0
350S162-54	Strength	16.8	14.6	11.9	15.6	13.5	11.0	14.6	12.6	10.3	13.0	11.3	9.2	11.9	10.3	8.4
	L/360	10.5	9.6	8.4	10.0	9.1	7.9	9.6	8.7	7.6	8.9	8.1	7.1	8.4	7.6	6.6
	Web Crippling	54.4	40.8	27.2	46.6	35.0	23.3	40.8	30.6	20.4	32.6	24.5	16.3	27.2	20.4	13.6
350S162-68	Strength	19.1	16.6	13.5	17.7	15.3	12.5	16.6	14.4	11.7	14.8	12.8	10.5	13.5	11.7	9.6
	L/360	11.3	10.2	8.9	10.7	9.7	8.5	10.2	9.3	8.1	9.5	8.6	7.5	8.9	8.1	7.1
	Web Crippling	80.8	60.6	40.4	69.2	51.9	34.6	60.6	45.4	30.3	48.5	36.3	24.2	40.4	30.3	20.2
350S162-97	Strength	22.2	19.2	15.7	20.5	17.8	14.5	19.2	16.6	13.6	17.2	14.9	12.2	15.7	13.6	11.0
	L/360	12.4	11.3	9.9	11.8	10.7	9.4	11.3	10.3	9.0	10.5	9.5	8.3	9.9	9.0	7.8
	Web Crippling	106.8	80.1	53.4	91.6	68.7	45.8	80.1	60.1	40.1	64.1	48.1	32.0	53.4	40.1	26.7
362S125-33	Strength	8.9	7.7	6.3	8.3	7.2	5.9	7.7	6.7	5.5*	6.9	6.0	4.9*	6.3	5.5*	4.5*
	L/360	8.4	7.7	6.7	8.0	7.3	6.4*	7.7	7.0	6.1*	7.1	6.5	5.7*	6.7	6.1*	5.3*
	Web Crippling	14.4	10.8	7.2	12.3	9.3	6.2	10.8	8.1	5.4	8.6	6.5	4.3	7.2	5.4	3.6
362S125-43	Strength	10.9	9.4	7.7	10.1	8.7	7.1	9.4	8.2	6.7	8.4	7.3	6.0	7.7	6.7	5.4
	L/360	9.2	8.4	7.3	8.7	7.9	6.9	8.4	7.6	6.6	7.8	7.0	6.2	7.3	6.6	5.8
	Web Crippling	24.0	18.0	12.0	20.6	15.5	10.3	18.0	13.5	9.0	14.4	10.8	7.2	12.0	9.0	6.0
362S125-54	Strength	14.6	12.7	10.4	13.6	11.7	9.6	12.7	11.0	9.0	11.3	9.8	8.0	10.4	9.0	7.3
	L/360	9.8	8.9	7.8	9.3	8.5	7.4	8.9	8.1	7.1	8.3	7.5	6.6	7.8	7.1	6.2
	Web Crippling	54.2	40.7	27.1	46.5	34.9	23.2	40.7	30.5	20.3	32.5	24.4	16.3	27.1	20.3	13.6
362S162-33	Strength	10.9	9.4	7.7*	10.0	8.7	7.1*	9.4	8.1*	6.6*	8.4	7.3*	5.9*	7.7*	6.6*	5.4*
	L/360	9.3	8.4	7.4*	8.8	8.0	7.0*	8.4	7.7	6.7*	7.8	7.1*	6.2*	7.4*	6.7*	5.9*
	Web Crippling	14.4	10.8	7.2	12.3	9.3	6.2	10.8	8.1	5.4	8.6	6.5	4.3	7.2	5.4	3.6
362S162-43	Strength	12.8	11.1	9.0	11.8	10.3	8.4	11.1	9.6	7.8	9.9	8.6	7.0	9.0	7.8	6.4*
	L/360	10.1	9.2	8.0	9.6	8.7	7.6	9.2	8.3	7.3	8.5	7.7	6.8	8.0	7.3	6.4*
	Web Crippling	24.0	18.0	12.0	20.6	15.5	10.3	18.0	13.5	9.0	14.4	10.8	7.2	12.0	9.0	6.0
362S162-54	Strength	17.2	14.9	12.2	15.9	13.8	11.3	14.9	12.9	10.5	13.3	11.5	9.4	12.2	10.5	8.6
	L/360	10.8	9.8	8.6	10.3	9.3	8.2	9.8	8.9	7.8	9.1	8.3	7.2	8.6	7.8	6.8
	Web Crippling	54.2	40.7	27.1	46.5	34.9	23.2	40.7	30.5	20.3	32.5	24.4	16.3	27.1	20.3	13.6
362S162-68	Strength	19.6	16.9	13.8	18.1	15.7	12.8	16.9	14.7	12.0	15.2	13.1	10.7	13.8	12.0	9.8
	L/360	11.6	10.5	9.2	11.0	10.0	8.7	10.5	9.6	8.4	9.8	8.9	7.8	9.2	8.4	7.3
	Web Crippling	80.5	60.4	40.3	69.0	51.8	34.5	60.4	45.3	30.2	48.3	36.2	24.2	40.3	30.2	20.1
362S162-97	Strength	22.7	19.7	16.1	21.1	18.2	14.9	19.7	17.1	13.9	17.6	15.3	12.5	16.1	13.9	11.4
	L/360	12.8	11.6	10.1	12.1	11.0	9.6	11.6	10.5	9.2	10.8	9.8	8.6	10.1	9.2	8.1
	Web Crippling	106.6	79.9	53.3	91.3	68.5	45.7	79.9	59.9	40.0	63.9	48.0	32.0	53.3	40.0	26.6
400S125-33	Strength	9.5	8.2	6.7	8.8	7.6	6.2*	8.2	7.1	5.8*	7.3	6.3	5.2*	6.7	5.8*	4.7*
	L/360	9.1	8.3	7.2*	8.7	7.9	6.9*	8.3	7.5	6.6*	7.7	7.0*	6.1*	7.2*	6.6*	5.7*
	Web Crippling	14.2	10.7	7.1	12.2	9.1	6.1	10.7	8.0	5.3	8.5	6.4	4.3	7.1	5.3	3.6
400S125-43	Strength	11.5	10.0	8.1	10.7	9.2	7.5	10.0	8.6	7.1	8.9	7.7	6.3	8.1	7.1	5.8
	L/360	9.9	9.0	7.9	9.4	8.6	7.5	9.0	8.2	7.2	8.4	7.6	6.7	7.9	7.2	6.3*
	Web Crippling	23.8	17.8	11.9	20.4	15.3	10.2	17.8	13.4	8.9	14.3	10.7	7.1	11.9	8.9	5.9
400S125-54	Strength	15.5	13.4	11.0	14.4	12.4	10.2	13.4	11.6	9.5	12.0	10.4	8.5	11.0	9.5	7.8
	L/360	10.6	9.7	8.4	10.1	9.2	8.0	9.7	8.8	7.7	9.0	8.2	7.1	8.4	7.7	6.7
	Web Crippling	53.7	40.3	26.9	46.0	34.5	23.0	40.3	30.2	20.1	32.2	24.2	16.1	26.9	20.1	13.4

Wind Bearing Stud Allowable Height Tables (Maximum allowable single span in feet)

Specified Wind Load		5 psf			10 psf			15 psf			20 psf			25 psf		
LSF Factored Wind Load		7.5 psf			15 psf			22.5 psf			30 psf			37.5 psf		
Designation	Strength or Deflection	Stud Spacing (in)			Stud Spacing (in)			Stud Spacing (in)			Stud Spacing (in)			Stud Spacing (in)		
		12	16	24	12	16	24	12	16	24	12	16	24	12	16	24
800S162-43	Strength	51.9	44.9	36.7	36.7	31.8	25.9*	29.9*	25.9*	21.2*	25.9*	22.5*	18.3*	23.2*	20.1*	16.4*
	L/360	33.9	30.8	26.9	26.9	24.5	21.4	23.5	21.4	18.7*	21.4	19.4*	17.0*	19.8*	18.0*	15.8*
	Web Crippling	86.4	64.8	43.2	43.2	32.4	21.6	28.8	21.6	14.4	21.6	16.2	10.8	17.3	13.0	8.6
800S162-54	Strength	70.1	60.7	49.6	49.6	42.9	35.0	40.5	35.0	28.6	35.0	30.4	24.8	31.3	27.1	22.2*
	L/360	36.5	33.1	29.0	29.0	26.3	23.0	25.3	23.0	20.1	23.0	20.9	18.2	21.3	19.4	16.9
	Web Crippling	201.1	150.8	100.5	100.5	75.4	50.3	67.0	50.3	33.5	50.3	37.7	25.1	40.2	30.2	20.1
800S162-68	Strength	81.6	70.6	57.7	57.7	49.9	40.8	47.1	40.8	33.3	40.8	35.3	28.8	36.5	31.6	25.8
	L/360	39.5	35.9	31.3	31.3	28.5	24.9	27.4	24.9	21.7	24.9	22.6	19.7	23.1	21.0	18.3
	Web Crippling	308.7	231.5	154.3	154.3	115.8	77.2	102.9	77.2	51.4	77.2	57.9	38.6	61.7	46.3	30.9
800S162-97	Strength	98.6	85.4	69.7	69.7	60.4	49.3	56.9	49.3	40.2	49.3	42.7	34.8	44.1	38.2	31.2
	L/360	43.9	39.9	34.9	34.9	31.7	27.7	30.5	27.7	24.2	27.7	25.1	22.0	25.7	23.3	20.4
	Web Crippling	595.6	446.7	297.8	297.8	223.3	148.9	198.5	148.9	99.3	148.9	111.7	74.4	119.1	89.3	59.6

Wind Bearing Stud Allowable Height Tables (Maximum allowable single span in feet)

Specified Wind Load		30 psf			35 psf			40 psf			50 psf			60 psf		
LSF Factored Wind Load		45.5 psf			52.5 psf			60 psf			75 psf			90 psf		
Designation	Strength or Deflection	Stud Spacing (in)			Stud Spacing (in)			Stud Spacing (in)			Stud Spacing (in)			Stud Spacing (in)		
		12	16	24	12	16	24	12	16	24	12	16	24	12	16	24
800S162-43	Strength	21.2*	18.3*	15.0*	19.6*	17.0*	13.9*	18.3*	15.9*	13.0*	16.4*	14.2*	11.6*	15.0*	13.0*	10.6*
	L/360	18.7*	17.0*	14.8*	17.7*	16.1*	14.1*	17.0*	15.4*	13.5*	15.8*	14.3*	12.5*	14.8*	13.5*	11.8*
	Web Crippling	14.4	10.8	7.2	12.3	9.3	6.2	10.8	8.1	5.4	8.6	6.5	4.3	7.2	5.4	3.6
800S162-54	Strength	28.6	24.8	20.2*	26.5	22.9*	18.7*	24.8	21.5*	17.5*	22.2*	19.2*	15.7*	20.2*	17.5*	14.3*
	L/360	20.1	18.2	15.9	19.1	17.3	15.1*	18.2	16.6	14.5*	16.9	15.4*	13.4*	15.9	14.5*	12.6*
	Web Crippling	33.5	25.1	16.8	28.7	21.5	14.4	25.1	18.9	12.6	20.1	15.1	10.1	16.8	12.6	8.4
800S162-68	Strength	33.3	28.8	23.5	30.8	26.7	21.8	28.8	25.0	20.4*	25.8	22.3	18.2*	23.5	20.4*	16.6*
	L/360	21.7	19.7	17.2	20.6	18.7	16.4	19.7	17.9	15.7	18.3	16.6	14.5	17.2	15.7	13.7*
	Web Crippling	51.4	38.6	25.7	44.1	33.1	22.0	38.6	28.9	19.3	30.9	23.2	15.4	25.7	19.3	12.9
800S162-97	Strength	40.2	34.8	28.5	37.3	32.3	26.3	34.8	30.2	24.6	31.2	27.0	22.0	28.5	24.6	20.1
	L/360	24.2	22.0	19.2	23.0	20.9	18.2	22.0	20.0	17.4	20.4	18.5	16.2	19.2	17.4	15.2
	Web Crippling	99.3	74.4	49.6	85.1	63.8	42.5	74.4	55.8	37.2	59.6	44.7	29.8	49.6	37.2	24.8

Combined Axial and Lateral Loadbearing Stud Tables Maximum factored axial compressive resistance per stud (kips)

60 psf Factored Lateral Load (Sheathed)																
Wall Height (ft)	Spacing (in) o.c.	350S162-(mils)					362S162-(mils)					400S162-(mils)				
		33	43	54	68	97	33	43	54	68	97	33	43	54	68	97
8	12	0.80	2.10	5.55	7.92	11.85	0.93	2.27	5.87	8.42	12.62	1.27	2.73	6.71	9.59	14.87
	16		1.22	4.60	6.92	10.76	0.11	1.40	4.92	7.41	11.53	0.47	1.89	5.79	8.62	13.80
	24			2.89	5.10	8.77			3.21	5.58	9.52		0.33	4.10	6.82	11.78
9	12	0.13*	1.28	4.28	6.33	9.78	0.25	1.44	4.60	6.85	10.54	0.59	1.92	5.48	8.09	12.79
	16		0.32*	3.27	5.25	8.59		0.49*	3.58	5.75	9.33		0.97	4.45	6.99	11.56
	24			1.48*	3.34*	6.46			1.76*	3.78*	7.16			2.59	4.98	9.30
10	12		0.54*	3.15	4.90	7.87		0.70*	3.45	5.37	8.59		1.15	4.31	6.64	10.76
	16			2.11*	3.79	6.64			2.39*	4.23	7.32		0.12*	3.21	5.45	9.42
	24			0.31*	1.86*	4.47*			0.54*	2.23*	5.08*			1.27*	3.33*	7.02
11	12			2.19*	3.66	6.19		0.04*	2.45*	4.08	6.84		0.45*	3.25	5.30	8.87
	16			1.16*	2.57*	4.96			1.39*	2.94*	5.56			2.12*	4.06	7.48
	24				0.68*	2.82*				0.97*	3.34*			0.15*	1.91*	5.03*
12	12			1.39*	2.63*	4.75			1.62*	2.99*	5.33			2.32*	4.10	7.17
	16				1.57*	3.56*			0.58*	1.88*	4.08*			1.19*	2.86*	5.77
	24					1.51*					1.93*				0.72*	3.34*
13	12				1.79*	3.56*			0.93*	2.09*	4.06*			1.53*	3.06*	5.68
	16					2.42*					2.86*			0.42*	1.85*	4.31*
	24															1.95*
14	12					2.58*				1.36*	3.00*			0.88*	2.18*	4.41*
	16										1.87*				1.01*	3.09*
	24															
16	12															2.46*
	16															
	24															
18	12															
	16															
	24															
20	12															
	16															
	24															
22	12															
	16															
	24															
24	12															
	16															
	24															

60 psf Factored Lateral Load (Sheathed)																
Wall Height (ft)	Spacing (in) o.c.	550S162-(mils)					600S162-(mils)					800S162-(mils)				
		33	43	54	68	97	33	43	54	68	97	43	54	68	97	
8	12	2.61	4.29	9.18	12.75	20.57	2.86	4.59	9.59	13.37	21.61	5.23	10.49	14.86	24.18	
	16	2.06	3.69	8.54	12.06	19.76	2.35	4.05	9.02	12.76	20.88	4.81	10.06	14.42	23.69	
	24	0.98	2.52	7.30	10.73	18.17	1.38	2.99	7.91	11.55	19.45	3.97	9.21	13.54	22.73	
9	12	2.11	3.69	8.33	11.69	19.09	2.40	4.05	8.91	12.44	20.31	4.82	10.00	14.22	23.34	
	16	1.43	2.96	7.55	10.85	18.09	1.78	3.38	8.20	11.67	19.40	4.29	9.46	13.67	22.73	
	24	0.16	1.56	6.06	9.23	16.15	0.60	2.09	6.83	10.19	17.63	3.25	8.39	12.57	21.51	
10	12	1.57	3.05	7.40	10.57	17.51	1.91	3.47	8.07	11.43	18.89	4.38	9.47	13.53	22.42	
	16	0.79	2.20	6.49	9.58	16.31	1.18	2.68	7.23	10.52	17.80	3.73	8.80	12.85	21.67	
	24		0.59	4.77	7.69	14.03		1.17	5.62	8.77	15.69	2.47	7.50	11.52	20.18	
11	12	1.03	2.40	6.45	9.40	15.85	1.40	2.86	7.19	10.36	17.39	3.89	8.88	12.78	21.41	
	16	0.16	1.44	5.42	8.27	14.47	0.57	1.96	6.22	9.31	16.11	3.13	8.09	11.97	20.51	
	24			3.51	6.17	11.90		0.26	4.41	7.32	13.69	1.66	6.55	10.40	18.74	
12	12	0.50	1.76	5.50	8.23	14.15	0.89	2.25	6.30	9.27	15.83	3.38	8.23	11.97	20.34	
	16		0.70	4.37	6.99	12.62		1.24	5.22	8.09	14.38	2.51	7.31	11.04	19.28	
	24			2.33*	4.71	9.82			3.23	5.89	11.68	0.82	5.53	9.22	17.21	
13	12		1.14	4.58	7.08	12.47	0.39	1.64	5.41	8.17	14.24	2.85	7.50	11.13	19.19	
	16		0.01*	3.39	5.75	10.83		0.54	4.25	6.88	12.65	1.86	6.46	10.06	17.98	
	24			1.25*	3.36*	7.86			2.12*	4.52	9.73		4.46	8.01	15.63	
14	12		0.55*	3.72	5.99	10.85		1.05	4.55	7.10	12.67	2.31	6.75	10.26	18.00	
	16			2.48*	4.60	9.13			3.32	5.72	10.96	1.21	5.59	9.06	16.63	
	24			0.29*	2.13*	6.06*			1.10*	3.24*	7.88		3.40	6.79	14.00	
16	12			2.20*	4.03*	7.91			2.98*	5.10	9.69	1.21	5.24	8.47	15.51	
	16			0.94*	2.60*	6.12*			1.68*	3.63*	7.85		3.89	7.05	13.85	
	24					3.03*				1.04*	4.61*		1.39*	4.41	10.74	
18	12			1.00*	2.44*	5.46*			1.67*	3.38*	7.08	0.17	3.79	6.70	12.99	
	16				1.04*	3.72*			0.36*	1.90*	5.21*		2.29*	5.11	11.10	
	24										1.99*			2.22*	7.66	
20	12					3.52*				1.99*	4.91*		2.46*	5.05	10.57	
	16										3.10*		0.89*	3.35*	8.53	
	24													0.33*	4.89*	
22	12										3.18*		1.30*	3.56*	8.34	
	16													1.82*	6.23*	
	24														2.51*	
24	12												0.33*	2.28*	6.36*	
	16													0.54*	4.24*	
	24															

Combined Axial and Lateral Loadbearing Stud Tables Maximum factored axial compressive resistance per stud (kips)

70 psf Factored Lateral Load																(Sheathed)
Wall Height (ft)	Spacing (in) o.c.	350S162-(mils)					362S162-(mils)					400S162-(mils)				
		33	43	54	68	97	33	43	54	68	97	33	43	54	68	97
8	12	0.38	1.65	5.07	7.41	11.30	0.51	1.82	5.39	7.91	12.07	0.86	2.31	6.24	9.10	14.33
	16		0.67	4.01	6.29	10.07		0.85	4.33	6.78	10.84		1.35	5.21	8.00	13.11
	24			2.11*	4.26	7.84			2.42*	4.73	8.59			3.31	5.97	10.83
9	12		0.79	3.76	5.78	9.17		0.95	4.08	6.28	9.92	0.13	1.44	4.96	7.53	12.16
	16			2.64*	4.58	7.85			2.94	5.06	8.57		0.37	3.80	6.29	10.78
	24			0.67*	2.47*	5.49			0.94*	2.89*	6.16			1.74*	4.06	8.25
10	12		0.03*	2.62*	4.33	7.24		0.18*	2.91	4.79	7.94		0.62	3.75	6.03	10.08
	16			1.48*	3.11*	5.88			1.74*	3.53*	6.54			2.53*	4.71	8.58
	24				1.00*	3.49*				1.34*	4.07*			0.39*	2.37*	5.93
11	12			1.66*	3.10*	5.56			1.91*	3.50*	6.19			2.67*	4.66	8.15
	16			0.53*	1.90*	4.21*			0.75*	2.25*	4.78*			1.43*	3.30*	6.62
	24					1.87*					2.35*				0.94*	3.92*
12	12			0.88*	2.09*	4.14*			1.08*	2.42*	4.69*			1.74*	3.46*	6.45
	16					2.84*				1.21*	3.32*			0.50*	2.11*	4.91*
	24															2.26*
13	12				1.27*	2.97*				1.54*	3.44*			0.96*	2.44*	4.97*
	16					1.74*					2.14*				1.11*	3.48*
	24															
14	12					2.04*					2.42*				1.58*	3.73*
	16															2.29*
	24															
16	12															1.85*
	16															
	24															
18	12															
	16															
	24															
20	12															
	16															
	24															
22	12															
	16															
	24															
24	12															
	16															
	24															

70 psf Factored Lateral Load																(Sheathed)
Wall Height (ft)	Spacing (in) o.c.	550S162-(mils)					600S162-(mils)					800S162-(mils)				
		33	43	54	68	97	33	43	54	68	97	43	54	68	97	
8	12	2.33	3.99	8.86	12.41	20.16	2.60	4.32	9.31	13.06	21.24	5.02	10.28	14.64	23.93	
	16	1.69	3.29	8.12	11.61	19.22	2.02	3.69	8.65	12.35	20.40	4.53	9.78	14.12	23.37	
	24	0.46	1.96	6.70	10.07	17.39	0.90	2.47	7.36	10.96	18.75	3.55	8.78	13.10	22.24	
9	12	1.77	3.32	7.94	11.27	18.59	2.09	3.71	8.55	12.05	19.85	4.56	9.73	13.95	23.04	
	16	1.00	2.48	7.04	10.30	17.43	1.38	2.95	7.74	11.18	18.80	3.94	9.10	13.30	22.32	
	24		0.89	5.34	8.45	15.21	0.03	1.47	6.16	9.47	16.77	2.73	7.86	12.03	20.91	
10	12	1.18	2.62	6.94	10.07	16.90	1.54	3.07	7.64	10.97	18.34	4.05	9.13	13.19	22.04	
	16	0.29	1.65	5.90	8.93	15.53	0.72	2.17	6.68	9.92	17.09	3.31	8.36	12.41	21.17	
	24			3.95	6.80	12.94			0.45	4.85	7.93	14.68	1.86	6.86	10.86	19.44
11	12	0.59	1.91	5.92	8.83	15.15	0.98	2.40	6.70	9.83	16.75	3.51	8.49	12.37	20.96	
	16		0.83	4.76	7.55	13.59	0.04	1.37	5.60	8.63	15.29	2.64	7.57	11.44	19.92	
	24			2.62	5.18	10.69				3.55	6.37	12.53	0.94	5.79	9.62	17.87
12	12	0.02*	1.22	4.93	7.60	13.38	0.42	1.74	5.75	8.67	15.10	2.94	7.77	11.50	19.81	
	16		0.04*	3.67	6.20	11.65		0.60	4.54	7.33	13.45	1.93	6.71	10.42	18.58	
	24			1.38*	3.66*	8.52			2.30*	4.86	10.41	0.00	4.67	8.33	16.21	
13	12		0.56	3.97	6.40	11.63		1.08	4.82	7.52	13.43	2.35	6.97	10.59	18.58	
	16			2.64*	4.92	9.80			3.51	6.07	11.64	1.22	5.78	9.36	17.18	
	24			0.27*	2.26*	6.51			1.14*	3.42*	8.37		3.51	7.02	14.49	
14	12			3.09*	5.28	9.97		0.46*	3.92	6.40	11.80	1.75	6.16	9.65	17.31	
	16			1.71*	3.74*	8.06			2.55*	4.86	9.89	0.50	4.84	8.29	15.73	
	24				1.02*	4.68*			0.09*	2.11*	6.46		2.37	5.70	12.74	
16	12			1.55*	3.29*	6.99			2.31*	4.34	8.74	0.56	4.55	7.75	14.67	
	16				1.72*	5.03*			0.87*	2.72*	6.71		3.02	6.14	12.78	
	24					1.65*					3.15*		0.22*	3.17	9.28	
18	12				1.72*	4.56*			0.99*	2.62*	6.12*		3.03	5.89	12.03	
	16					2.66*				0.99*	4.08*		1.36*	4.11	9.91	
	24													0.89*	6.06*	
20	12					2.68*				1.24*	3.98*		1.66*	4.18	9.53	
	16										2.00*			2.30*	7.26	
	24														3.23*	
22	12										2.29*		0.48*	2.67*	7.26	
	16													0.75*	4.92*	
	24														0.84*	
24	12													1.38*	5.27*	
	16														2.94*	
	24															

Combined Axial and Lateral Loadbearing Stud Tables Maximum factored axial compressive resistance per stud (kips)

40 psf Factored Lateral Load (Unsheathed)																
Wall Height (ft)	Spacing (in) o.c.	350S162-(mils)					362S162-(mils)					400S162-(mils)				
		33	43	54	68	97	33	43	54	68	97	33	43	54	68	97
8	12	1.30	2.34	4.43	6.00	9.25	1.41	2.48	4.70	6.42	9.85	1.68	2.86	5.40	7.56	11.62
	16	0.82	1.83	3.95	5.50	8.69	0.93	1.98	4.22	5.91	9.29	1.21	2.37	4.92	7.05	11.05
	24		0.89	3.05	4.55	7.62	0.03	1.03	3.30	4.95	8.21	0.33	1.44	4.01	6.06	9.96
9	12	0.86	1.82	3.73	5.16	8.08	0.96	1.96	4.02	5.58	8.70	1.25	2.37	4.76	6.77	10.51
	16	0.32	1.24	3.18	4.58	7.43	0.41	1.38	3.46	4.99	8.03	0.70	1.79	4.19	6.15	9.83
	24		0.18*	2.16	3.51	6.21		0.31*	2.41	3.88	6.78		0.71	3.11	4.98	8.53
10	12	0.44	1.31	3.04	4.31	6.89	0.53	1.45	3.33	4.72	7.50	0.81	1.85	4.07	5.93	9.32
	16		0.67	2.44	3.68	6.17		0.80	2.71	4.06	6.76	0.20	1.20	3.43	5.22	8.53
	24			1.35*	2.53	4.85			1.58*	2.86	5.39			2.23	3.90	7.06
11	12	0.06*	0.83	2.37	3.50	5.73	0.14*	0.96	2.65	3.88	6.32	0.39	1.35	3.39	5.04	8.08
	16		0.16*	1.75*	2.84	4.98		0.28*	2.00	3.18	5.53		0.63	2.68	4.27	7.22
	24			0.65*	1.65*	3.62			0.83*	1.94*	4.10			1.41*	2.87	5.64
12	12		0.40*	1.80*	2.77	4.68		0.52*	2.03	3.10	5.20	0.01*	0.87	2.73	4.18	6.88
	16			1.17*	2.11*	3.92			1.37*	2.40*	4.40		0.12*	1.99*	3.37	5.97
	24				0.92*	2.56*			0.21*	1.15*	2.97*			0.68*	1.93*	4.34
13	12		0.03*	1.30*	2.15*	3.79		0.13*	1.50*	2.43*	4.23		0.43*	2.12	3.37	5.74
	16			0.68*	1.49*	3.03*			0.84*	1.73*	3.44			1.37*	2.56*	4.82
	24					1.69*					2.02*			0.06*	1.12*	3.18*
14	12			0.89*	1.63*	3.03*			1.05*	1.86*	3.41		0.05*	1.58*	2.66	4.71
	16				0.98*	2.29*				1.17*	2.63*			0.84*	1.85*	3.80
	24										1.25*				0.44*	2.20*
16	12					1.87*				0.99*	2.15*			0.73*	1.55*	3.11*
	16										1.40*				0.78*	2.24*
	24															
18	12										1.26*					1.95*
	16															
	24															
20	12															
	16															
	24															
22	12															
	16															
	24															
24	12															
	16															
	24															

40 psf Factored Lateral Load (Unsheathed)																
Wall Height (ft)	Spacing (in) o.c.	550S162-(mils)					600S162-(mils)					800S162-(mils)				
		33	43	54	68	97	33	43	54	68	97	43	54	68	97	
8	12	2.65	4.00	7.23	9.78	15.21	2.78	4.13	7.32	9.89	15.45	4.28	7.31	9.90	15.63	
	16	2.32	3.65	6.88	9.41	14.78	2.49	3.82	7.02	9.57	15.08	4.06	7.09	9.69	15.39	
	24	1.68	2.97	6.20	8.67	13.95	1.91	3.22	6.42	8.92	14.34	3.61	6.68	9.26	14.93	
9	12	2.35	3.67	6.88	9.44	14.81	2.53	3.87	7.05	9.60	15.11	4.10	7.13	9.72	15.43	
	16	1.94	3.23	6.44	8.96	14.26	2.17	3.48	6.67	9.18	14.63	3.81	6.86	9.45	15.13	
	24	1.15	2.39	5.58	8.02	13.19	1.45	2.72	5.91	8.36	13.69	3.24	6.33	8.90	14.53	
10	12	2.02	3.30	6.42	9.02	14.34	2.26	3.57	6.75	9.26	14.71	3.89	6.93	9.51	15.20	
	16	1.53	2.77	5.88	8.42	13.65	1.81	3.09	6.27	8.74	14.11	3.53	6.59	9.17	14.82	
	24	0.60	1.77	4.85	7.27	12.31	0.94	2.17	5.33	7.72	12.93	2.84	5.93	8.49	14.08	
11	12	1.67	2.89	5.90	8.39	13.78	1.94	3.23	6.40	8.88	14.25	3.65	6.70	9.28	14.94	
	16	1.10	2.28	5.27	7.69	12.94	1.41	2.66	5.81	8.24	13.51	3.23	6.30	8.86	14.48	
	24	0.04	1.12	4.07	6.34	11.32	0.41	1.57	4.70	7.01	12.08	2.39	5.50	8.04	13.57	
12	12	1.30	2.47	5.34	7.70	13.10	1.60	2.84	5.93	8.44	13.72	3.40	6.45	9.02	14.65	
	16	0.66	1.77	4.62	6.89	12.09	0.99	2.18	5.25	7.68	12.83	2.89	5.97	8.52	14.09	
	24		0.48	3.27	5.37	10.20		0.95	3.97	6.24	11.13	1.91	5.02	7.54	13.00	
13	12	0.93	2.03	4.74	6.95	11.99	1.24	2.43	5.39	7.82	13.12	3.12	6.17	8.73	14.32	
	16	0.23	1.26	3.95	6.05	10.87	0.57	1.69	4.63	6.95	12.07	2.53	5.61	8.14	13.66	
	24			2.48	4.38	8.78		0.32	3.20	5.34	10.10	1.39	4.50	6.99	12.38	
14	12	0.56	1.58	4.13	6.18	10.83	0.88	2.00	4.82	7.11	12.37	2.82	5.87	8.41	13.95	
	16		0.76	3.28	5.20	9.61	0.16	1.20	3.98	6.15	11.18	2.14	5.21	7.73	13.18	
	24			1.72*	3.43	7.38			2.43	4.39	8.97	0.85	3.94	6.40	11.69	
16	12		0.74*	2.95	4.65	8.49	0.20*	1.16	3.66	5.62	10.14	2.16	5.19	7.68	13.10	
	16			2.02*	3.59	7.16		0.25*	2.71	4.54	8.77	1.32	4.35	6.80	12.09	
	24			0.38*	1.71*	4.80*			1.01*	2.59*	6.31		2.75	5.11	10.16	
18	12		0.01*	1.90*	3.28	6.36		0.39*	2.56	4.20	7.94	1.45	4.42	6.85	12.10	
	16			0.96*	2.20*	5.01			1.57*	3.06*	6.50	0.45	3.40	5.75	10.83	
	24				0.32*	2.66*				1.04*	3.96*		1.51*	3.72	8.45	
20	12			1.05*	2.13*	4.54*			1.61*	2.94*	5.98	0.71	3.56	5.92	10.95	
	16				1.09*	3.25*			0.62*	1.80*	4.54*		2.38	4.63	9.42	
	24										2.04*		0.26*	2.29*	6.65	
22	12				1.25*	3.12*			0.84*	1.90*	4.33*		2.56	4.67	9.41	
	16					1.90*				0.79*	2.94*		1.33*	3.30	7.73	
	24													0.86*	4.71*	
24	12					2.04*				1.09*	3.04*		1.67*	3.51	7.62	
	16										1.71*		0.41*	2.11*	5.88	
	24														2.83*	

Combined Axial and Lateral Loadbearing Stud Tables Maximum factored axial compressive resistance per stud (kips)

50 psf Factored Lateral Load																(Unsheathed)
Wall Height (ft)	Spacing (in) o.c.	350S162-(mils)					362S162-(mils)					400S162-(mils)				
		33	43	54	68	97	33	43	54	68	97	33	43	54	68	97
8	12	0.94	1.96	4.07	5.62	8.83	1.04	2.10	4.34	6.04	9.43	1.33	2.49	5.04	7.18	11.19
	16	0.37	1.35	3.49	5.02	8.15	0.47	1.50	3.75	5.42	8.74	0.76	1.90	4.46	6.55	10.50
	24		0.23	2.41	3.88	6.86		0.37	2.65	4.26	7.44		0.78	3.36	5.35	9.17
9	12	0.45	1.38	3.32	4.72	7.59	0.55	1.52	3.59	5.13	8.20	0.83	1.93	4.33	6.31	10.00
	16		0.69	2.66	4.03	6.81		0.83	2.92	4.42	7.40	0.18	1.23	3.64	5.56	9.17
	24			1.46*	2.76	5.35			1.69*	3.11	5.90			2.36	4.16	7.60
10	12		0.83	2.58	3.83	6.35	0.08*	0.96	2.86	4.22	6.94	0.35	1.36	3.58	5.39	8.72
	16		0.08*	1.88*	3.09	5.49		0.21*	2.13	3.44	6.05		0.58	2.81	4.54	7.78
	24			0.61*	1.74*	3.94			0.81*	2.04*	4.44			1.41*	3.00	6.04
11	12		0.32*	1.90*	3.00	5.16		0.44*	2.16	3.35	5.72		0.81	2.85	4.46	7.43
	16			1.18*	2.23*	4.28			1.40*	2.54*	4.79			2.03	3.55	6.41
	24				0.86*	2.69*			0.05*	1.10*	3.13*			0.55*	1.91*	4.56
12	12			1.32*	2.27*	4.10			1.53*	2.57	4.59		0.30*	2.17	3.57	6.19
	16			0.60*	1.49*	3.22*			0.77*	1.75*	3.66			1.31*	2.63*	5.13
	24					1.64*				0.32*	2.00*				0.96*	3.24*
13	12			0.83*	1.65*	3.21*			1.00*	1.90*	3.63			1.55*	2.75	5.04
	16				0.88*	2.33*				1.09*	2.70*			0.69*	1.81*	3.97
	24										1.08*				0.16*	2.09*
14	12				1.13*	2.47*			0.56*	1.34*	2.82*			1.02*	2.05*	4.02
	16					1.61*					1.91*				1.12*	2.97*
	24															1.13*
16	12					1.33*									0.96*	2.44*
	16															1.45*
	24															
18	12															1.33*
	16															
	24															
20	12															
	16															
	24															
22	12															
	16															
	24															
24	12															
	16															
	24															

50 psf Factored Lateral Load																(Unsheathed)
Wall Height (ft)	Spacing (in) o.c.	550S162-(mils)					600S162-(mils)					800S162-(mils)				
		33	43	54	68	97	33	43	54	68	97	43	54	68	97	
8	12	2.40	3.74	6.97	9.50	14.89	2.56	3.90	7.09	9.65	15.17	4.11	7.15	9.74	15.45	
	16	2.00	3.31	6.54	9.04	14.36	2.20	3.52	6.72	9.24	14.71	3.83	6.88	9.47	15.16	
	24	1.21	2.47	5.70	8.13	13.33	1.49	2.77	5.98	8.44	13.80	3.28	6.36	8.94	14.58	
9	12	2.04	3.34	6.55	9.08	14.40	2.26	3.57	6.76	9.29	14.75	3.88	6.93	9.51	15.20	
	16	1.54	2.81	6.01	8.49	13.72	1.80	3.09	6.29	8.77	14.16	3.53	6.59	9.17	14.83	
	24	0.58	1.78	4.95	7.34	12.40	0.92	2.16	5.35	7.75	12.99	2.82	5.93	8.49	14.08	
10	12	1.65	2.90	6.01	8.57	13.82	1.92	3.21	6.38	8.87	14.26	3.62	6.68	9.26	14.92	
	16	1.06	2.26	5.36	7.84	12.97	1.37	2.62	5.79	8.23	13.52	3.18	6.26	8.83	14.45	
	24		1.05	4.11	6.44	11.34	0.32	1.49	4.65	6.98	12.07	2.32	5.44	7.99	13.52	
11	12	1.24	2.43	5.43	7.86	13.15	1.54	2.80	5.96	8.40	13.70	3.33	6.40	8.97	14.59	
	16	0.56	1.69	4.66	7.00	12.12	0.90	2.11	5.25	7.62	12.79	2.81	5.90	8.45	14.02	
	24		0.30	3.22	5.38	10.17		0.79	3.89	6.13	11.04	1.77	4.91	7.43	12.90	
12	12	0.82	1.94	4.79	7.09	12.34	1.14	2.34	5.42	7.87	13.05	3.02	6.09	8.64	14.23	
	16	0.06	1.11	3.93	6.11	11.13	0.42	1.55	4.60	6.95	11.97	2.40	5.49	8.03	13.55	
	24			2.33	4.30	8.87		0.07	3.05	5.22	9.92	1.19	4.32	6.82	12.20	
13	12	0.40	1.45	4.14	6.27	11.14	0.74	1.87	4.82	7.17	12.33	2.68	5.75	8.29	13.82	
	16		0.54	3.19	5.20	9.80		0.99	3.90	6.13	11.07	1.96	5.05	7.56	13.01	
	24			1.47*	3.23	7.34			2.20	4.20	8.72	0.57	3.69	6.15	11.43	
14	12	0.00*	0.96	3.48	5.44	9.90	0.33	1.39	4.19	6.39	11.47	2.31	5.38	7.90	13.37	
	16			2.48	4.29	8.46		0.44	3.19	5.25	10.05	1.49	4.57	7.06	12.43	
	24			0.66*	2.22*	5.86			1.36*	3.17	7.43		3.03	5.44	10.60	
16	12		0.06*	2.24*	3.85	7.48		0.47*	2.94	4.80	9.10	1.52	4.56	7.01	12.34	
	16			1.17*	2.61*	5.93			1.83*	3.53	7.50	0.51	3.54	5.94	11.11	
	24				0.44*	3.22*				1.27*	4.65*		1.63	3.90	8.77	
18	12			1.19*	2.46*	5.33			1.80*	3.33*	6.85	0.69	3.65	6.02	11.14	
	16				1.22*	3.79*			0.66*	2.01*	5.18		2.43	4.71	9.62	
	24					1.11*				2.27*			0.19*	2.30*	6.79	
20	12				1.34*	3.56*			0.86*	2.07*	4.89*		2.67	4.95	9.80	
	16					2.08*				0.76*	3.24*		1.29*	3.43	8.00	
	24													0.70*	4.75*	
22	12					2.19*				1.06*	3.28*		1.63*	3.64	8.13	
	16										1.70*		0.19*	2.04*	6.17	
	24														2.68*	
24	12										2.03*		0.71*	2.44*	6.30	
	16													0.83*	4.30*	
	24														0.80*	

Combined Axial and Lateral Loadbearing Stud Tables Maximum factored axial compressive resistance per stud (kips)

60 psf Factored Lateral Load (Unsheathed)																
Wall Height (ft)	Spacing (in) o.c.	350S162-(mils)					362S162-(mils)					400S162-(mils)				
		33	43	54	68	97	33	43	54	68	97	33	43	54	68	97
8	12	0.59	1.59	3.72	5.26	8.42	0.69	1.73	3.98	5.67	9.02	0.99	2.13	4.69	6.80	10.77
	16		0.89	3.05	4.55	7.62	0.03	1.03	3.30	4.95	8.21	0.33	1.44	4.01	6.06	9.96
	24			1.80	3.24	6.12			2.03	3.60	6.69		0.15	2.72	4.66	8.40
9	12	0.06*	0.96	2.92	4.30	7.11	0.15	1.10	3.19	4.70	7.71	0.43	1.51	3.91	5.85	9.49
	16		0.18*	2.16	3.51	6.21		0.31*	2.41	3.88	6.78		0.71	3.11	4.98	8.53
	24			0.79*	2.05*	4.53			1.01*	2.38*	5.07			1.64	3.37	6.72
10	12		0.37*	2.15	3.38	5.83		0.50*	2.41	3.75	6.40		0.88	3.11	4.87	8.15
	16			1.35*	2.53	4.85			1.58*	2.86	5.39			2.23	3.90	7.06
	24				1.00*	3.08*			0.09*	1.27*	3.56*			0.64*	2.14*	5.07
11	12			1.46*	2.53	4.62			1.69*	2.86	5.16		0.30*	2.35	3.90	6.81
	16			0.65*	1.65*	3.62			0.83*	1.94*	4.10			1.41*	2.87	5.64
	24				0.11*	1.83*				0.32*	2.23*				1.02*	3.55*
12	12			0.88*	1.79*	3.56			1.06*	2.07*	4.02			1.65*	2.99	5.54
	16				0.92*	2.56*			0.21*	1.15*	2.97*			0.68*	1.93*	4.34
	24					0.80*					1.11*				0.07*	2.21*
13	12				1.18*	2.67*			0.54*	1.41*	3.06*			1.02*	2.18*	4.39
	16					1.69*					2.02*			0.06*	1.12*	3.18*
	24															1.08*
14	12					1.94*				0.86*	2.26*			0.49*	1.48*	3.38*
	16										1.25*				0.44*	2.20*
	24															
16	12															1.83*
	16															
	24															
18	12															
	16															
	24															
20	12															
	16															
	24															
22	12															
	16															
	24															
24	12															
	16															
	24															

60 psf Factored Lateral Load (Unsheathed)																
Wall Height (ft)	Spacing (in) o.c.	550S162-(mils)					600S162-(mils)					800S162-(mils)				
		33	43	54	68	97	33	43	54	68	97	43	54	68	97	
8	12	2.16	3.48	6.71	9.22	14.57	2.34	3.67	6.87	9.41	14.89	3.94	6.99	9.58	15.28	
	16	1.68	2.97	6.20	8.67	13.95	1.91	3.22	6.42	8.92	14.34	3.61	6.68	9.26	14.93	
	24	0.75	1.97	5.20	7.59	12.72	1.07	2.32	5.54	7.97	13.26	2.94	6.05	8.62	14.23	
9	12	1.74	3.02	6.22	8.72	13.99	1.98	3.29	6.48	8.98	14.40	3.67	6.73	9.31	14.98	
	16	1.15	2.39	5.58	8.02	13.19	1.45	2.72	5.91	8.36	13.69	3.24	6.33	8.90	14.53	
	24	0.03	1.18	4.34	6.66	11.62	0.41	1.61	4.80	7.16	12.30	2.41	5.54	8.09	13.64	
10	12	1.29	2.52	5.62	8.13	13.31	1.59	2.86	6.03	8.48	13.81	3.36	6.43	9.00	14.64	
	16	0.60	1.77	4.85	7.27	12.31	0.94	2.17	5.33	7.72	12.93	2.84	5.93	8.49	14.08	
	24		0.35	3.38	5.63	10.39		0.84	3.98	6.25	11.22	1.81	4.96	7.49	12.97	
11	12	0.83	1.98	4.96	7.34	12.53	1.15	2.38	5.53	7.93	13.15	3.02	6.10	8.66	14.25	
	16	0.04	1.12	4.07	6.34	11.32	0.41	1.57	4.70	7.01	12.08	2.39	5.50	8.04	13.57	
	24			2.40	4.46	9.05		0.04	3.11	5.27	10.03	1.17	4.32	6.83	12.23	
12	12	0.36	1.44	4.27	6.49	11.61	0.70	1.87	4.93	7.31	12.40	2.64	5.73	8.27	13.82	
	16		0.48	3.27	5.37	10.20		0.95	3.97	6.24	11.13	1.91	5.02	7.54	13.00	
	24			1.44*	3.28	7.61			2.18	4.23	8.74	0.48	3.64	6.10	11.40	
13	12		0.89	3.57	5.62	10.33	0.25	1.34	4.26	6.54	11.57	2.24	5.33	7.85	13.34	
	16			2.48	4.38	8.78		0.32	3.20	5.34	10.10	1.39	4.50	6.99	12.38	
	24			0.52*	2.14*	5.98			1.25*	3.12	7.40		2.90	5.32	10.50	
14	12		0.37*	2.87	4.74	9.02		0.81	3.58	5.70	10.61	1.82	4.89	7.39	12.81	
	16			1.72*	3.43	7.38			2.43	4.39	8.97	0.85	3.94	6.40	11.69	
	24				1.08*	4.44*			0.36*	2.02*	5.99		2.14	4.50	9.53	
16	12			1.59*	3.09*	6.54			2.26*	4.03	8.12	0.91	3.94	6.36	11.60	
	16			0.38*	1.71*	4.80*			1.01*	2.59*	6.31		2.75	5.11	10.16	
	24					1.76*				0.05*	3.10*		0.55*	2.75	7.43	
18	12			0.53*	1.70*	4.38*			1.10*	2.52*	5.83		2.91	5.23	10.22	
	16				0.32*	2.66*				1.04*	3.96*		1.51*	3.72	8.45	
	24										0.72*			0.96*	5.21	
20	12					2.65*				1.27*	3.87*		1.83*	4.02	8.70	
	16										2.04*		0.26*	2.29*	6.65	
	24														2.97*	
22	12										2.31*		0.75*	2.66*	6.93	
	16													0.86*	4.71*	
	24														0.81*	
24	12													1.45*	5.07*	
	16														2.83*	
	24															

Combined Axial and Lateral Loadbearing Stud Tables Maximum factored axial compressive resistance per stud (kips)

70 psf Factored Lateral Load (Unsheathed)																
Wall Height (ft)	Spacing (in) o.c.	350S162-(mils)					362S162-(mils)					400S162-(mils)				
		33	43	54	68	97	33	43	54	68	97	33	43	54	68	97
8	12	0.26	1.23	3.38	4.90	8.01	0.36	1.38	3.64	5.30	8.61	0.65	1.78	4.35	6.43	10.36
	16		0.45	2.62	4.10	7.11		0.59	2.87	4.49	7.69		1.00	3.57	5.58	9.43
	24			1.21*	2.62	5.41			1.44*	2.97	5.97			2.12	4.00	7.66
9	12		0.56	2.53	3.90	6.65		0.70	2.79	4.28	7.24	0.05	1.10	3.51	5.41	9.00
	16			1.69*	3.01	5.63			1.93	3.36	6.19		0.20	2.61	4.43	7.91
	24			0.16*	1.38*	3.76			0.36*	1.68*	4.27			0.96*	2.62	5.86
10	12			1.74*	2.94	5.33		0.06*	1.99	3.30	5.89		0.43	2.66	4.38	7.60
	16			0.85*	2.00*	4.24			1.06*	2.31*	4.75			1.68*	3.29	6.37
	24				0.30*	2.27*				0.54*	2.72*				1.33*	4.15
11	12			1.04*	2.08*	4.11			1.25*	2.39*	4.62			1.87*	3.37	6.22
	16			0.15*	1.12*	2.99*			0.31*	1.37*	3.45*			0.83*	2.22*	4.91
	24					1.02*					1.38*				0.19*	2.59*
12	12			0.46*	1.35*	3.05*			0.62*	1.60*	3.48*			1.15*	2.45*	4.93
	16					1.94*				0.59*	2.32*			0.09*	1.28*	3.59*
	24															1.25*
13	12				0.74*	2.17*				0.94*	2.53*			0.53*	1.63*	3.77*
	16					1.09*					1.39*				0.47*	2.44*
	24															
14	12					1.45*					1.74*				0.95*	2.77*
	16															1.48*
	24															
16	12															1.26*
	16															
	24															
18	12															
	16															
	24															
20	12															
	16															
	24															
22	12															
	16															
	24															
24	12															
	16															
	24															

70 psf Factored Lateral Load (Unsheathed)																
Wall Height (ft)	Spacing (in) o.c.	550S162-(mils)					600S162-(mils)					800S162-(mils)				
		33	43	54	68	97	33	43	54	68	97	43	54	68	97	
8	12	1.92	3.22	6.46	8.95	14.26	2.13	3.44	6.64	9.16	14.62	3.78	6.83	9.42	15.10	
	16	1.36	2.63	5.87	8.31	13.53	1.63	2.92	6.12	8.60	13.98	3.39	6.47	9.04	14.69	
	24	0.29	1.49	4.71	7.06	12.11	0.66	1.89	5.10	7.50	12.72	2.61	5.74	8.30	13.88	
9	12	1.45	2.70	5.90	8.37	13.59	1.71	3.00	6.19	8.67	14.04	3.46	6.53	9.10	14.75	
	16	0.77	1.98	5.16	7.56	12.66	1.10	2.34	5.53	7.96	13.22	2.96	6.06	8.63	14.23	
	24		0.59	3.74	6.00	10.86		1.07	4.26	6.57	11.62	1.99	5.14	7.69	13.20	
10	12	0.94	2.14	5.23	7.70	12.81	1.26	2.51	5.68	8.10	13.37	3.10	6.18	8.75	14.36	
	16	0.15	1.28	4.35	6.71	11.66	0.52	1.72	4.87	7.23	12.36	2.49	5.61	8.16	13.71	
	24			2.68	4.84	9.47		0.20	3.33	5.54	10.39	1.31	4.48	6.99	12.42	
11	12	0.43	1.55	4.51	6.83	11.92	0.77	1.97	5.11	7.47	12.61	2.70	5.80	8.35	13.91	
	16		0.57	3.50	5.69	10.55		1.05	4.16	6.42	11.38	1.98	5.10	7.63	13.12	
	24			1.62	3.57	7.97			2.36	4.43	9.05	0.57	3.75	6.23	11.56	
12	12		0.95	3.76	5.92	10.89	0.28	1.40	4.44	6.77	11.76	2.27	5.37	7.90	13.41	
	16			2.64	4.65	9.31		0.36	3.35	5.55	10.32	1.43	4.55	7.06	12.46	
	24			0.58*	2.31*	6.39			1.34*	3.28	7.61		2.96	5.40	10.61	
13	12		0.36	3.01	4.99	9.54		0.82	3.72	5.93	10.82	1.81	4.91	7.42	12.85	
	16			1.80*	3.61	7.81			2.52	4.57	9.17	0.84	3.96	6.43	11.74	
	24				1.11*	4.69			0.34*	2.08*	6.13		2.13	4.51	9.59	
14	12			2.28*	4.07	8.19		0.26*	3.00	5.03	9.77	1.33	4.41	6.89	12.24	
	16			1.01*	2.61*	6.36			1.71*	3.57	7.94	0.23	3.33	5.75	10.96	
	24				0.02*	3.11*				0.93*	4.62		1.27	3.58	8.49	
16	12			0.97*	2.38*	5.64			1.62*	3.29	7.20	0.31	3.34	5.73	10.87	
	16				0.85*	3.73*			0.23*	1.70*	5.19		2.00	4.30	9.23	
	24					0.40*					1.65*			1.64	6.14	
18	12				0.99*	3.50*			0.44*	1.76*	4.87*		2.19	4.46	9.32	
	16					1.61*				0.14*	2.82*		0.62*	2.76	7.33	
	24														3.70*	
20	12					1.80*				0.52*	2.93*		1.03*	3.14	7.65	
	16										0.93*			1.22*	5.37	
	24														1.29*	
22	12										1.40*			1.74*	5.79	
	16														3.34*	
	24															
24	12													0.52*	3.92*	
	16														1.46*	
	24															

Floor Joist Load Tables Uniformly distributed single span load (psf)

Span (ft)		800S200-43			800S200-54			800S200-68			800S200-97			800S250-43			800S250-54			800S250-68			800S250-97		
		Spacing (in)			Spacing (in)			Spacing (in)			Spacing (in)			Spacing (in)			Spacing (in)			Spacing (in)			Spacing (in)		
		12	16	24	12	16	24	12	16	24	12	16	24	12	16	24	12	16	24	12	16	24	12	16	24
6	Strength	448	336	224	•	•	445	•	•	•	•	•	•	448	336	224	•	•	445	•	•	•	•	•	•
	L/360	1070	803	535	•	•	664	•	•	•	•	•	•	230	920	614	•	•	763	•	•	•	•	•	•
7	Strength	384	288	192	•	•	382	•	•	•	•	•	•	384	288	192	•	•	382	•	•	•	•	•	•
	L/360	674	506	337	•	•	418	•	•	•	•	•	•	773	580	386	•	•	481	•	•	•	•	•	•
8	Strength	336	252	168	•	501	334	•	•	467	•	•	•	336	252	168	•	•	334	•	•	506	•	•	•
	L/360	452	339	226	•	420	280	•	•	347	•	•	•	518	388	259	•	•	322	•	•	403	•	•	•
9	Strength	298	224	149	•	416	277	•	•	369	•	•	519	298	224	149	•	445	297	•	•	400	•	•	•
	L/360	317	238	159	•	295	197	•	•	244	•	•	335	364	273	182	•	339	226	•	•	283	•	•	•
10	Strength	256	192	128	449	337	225	•	448	299	•	•	420	269	201	134	497	373	248	•	486	324	•	•	486
	L/360	231	173	116	287	215	143	•	266	178	•	•	244	265	199	133	330	247	165	•	309	206	•	•	285
11	Strength	211	158	106	371	278	186	494	370	247	•	521	347	225	168	112	411	308	205	535	402	268	•	602	401
	L/360	174	130	87	215	162	108	267	200	133	•	275	184	199	149	100	248	186	124	310	232	155	•	321	214
12	Strength	178	133	89	312	234	156	415	311	208	584	438	292	189	142	94	345	259	173	450	337	225	•	506	337
	L/360	134	100	67	166	124	83	205	154	103	283	212	141	153	115	77	191	143	95	239	179	119	•	247	165
13	Strength	151	113	76	266	199	133	354	265	177	497	373	249	161	121	80	294	220	147	383	287	192	575	431	287
	L/360	105	79	53	130	98	65	162	121	81	222	167	111	121	90	60	150	113	75	188	141	94	259	195	130
14	Strength	130	98	65	229	172	115	305	229	152	429	322	214	139	104	69	253	190	127	330	248	165	496	372	248
	L/360	84	63	42	104	78	52	129	97	65	178	134	89	97	72	48	120	90	60	150	113	75	208	156	104
15	Strength	114	85	57	200	150	100	266	199	133	373	280	187	121	91	60	221	166	110	288	216	144	432	324	216
	L/360	69	51	34	85	64	42	105	79	53	145	109	72	79	59	39	98	73	49	122	92	61	169	127	84
16	Strength	100	75	50	175	132	88	233	175	117	328	246	164	106	80	53	194	146	97	253	190	127	379	285	190
	L/360	56	42	28	70	52	35	87	65	43	119	89	60	65	49	32	80	60	40	101	76	50	139	104	70
17	Strength	88	66	44	155	117	78	207	155	103	291	218	145	94	71	47	172	129	86	224	168	112	336	252	168
	L/360	47	35	24	58	44	29	72	54	36	99	75	50	54	40	27	67	50	34	84	63	42	116	87	58
18	Strength	79	59	39	139	104	69	184	138	92	259	195	130	84	63	42	153	115	77	200	150	100	300	225	150
	L/360	40	30	20	49	37	25	61	46	30	84	63	42	45	34	23	57	42	28	71	53	35	98	73	49
19	Strength	71	53	35	124	93	62	166	124	83	233	175	116	75	56	38	138	103	69	179	135	90	269	202	135
	L/360	34	25	17	42	31	21	52	39	26	71	53	36	39	29	19	48	36	24	60	45	30	83	62	42
20	Strength	64	48	32	112	84	56	149	112	75	210	158	105	68	51	34	124	93	62	162	121	81	243	182	121
	L/360	29	22	14	36	27	18	44	33	22	61	46	31	33	25	17	41	31	21	52	39	26	71	53	36
21	Strength	58	43	29	102	76	51	136	102	68	191	143	95	62	46	31	113	84	56	147	110	73	220	165	110
	L/360	25	19	12	31	23	15	38	29	19	53	40	26	29	21	14	36	27	18	45	33	22	62	46	31
22	Strength	53	40	26	93	70	46	123	93	62	174	130	87	56	42	28	103	77	51	134	100	67	201	151	100
	L/360	22	16	11	27	20	13	33	25	17	46	34	23	25	19	12	31	23	15	39	29	19	54	40	27
23	Strength	48	36	24	85	64	42	113	85	56	159	119	79	51	39	26	94	70	47	122	92	61	184	138	92
	L/360	19	14	10	24	18	12	29	22	15	40	30	20	22	16	11	27	20	14	34	25	17	47	35	23
24	Strength	44	33	22	78	58	39	104	78	52	146	109	73	47	35	24	86	65	43	112	84	56	169	126	84
	L/360	17	13	8	21	16	10	26	19	13	35	27	18	19	14	10	24	18	12	30	22	15	41	31	21
25	Strength	41	31	20	72	54	36	96	72	48	134	101	67	43	33	22	79	60	40	104	78	52	155	117	78
	L/360	15	11	7	18	14	9	23	17	11	31	23	16	17	13	8	21	16	11	26	20	13	36	27	18
26	Strength	38	28	19	66	50	33	88	66	44	124	93	62	40	30	20	73	55	37	96	72	48	144	108	72
	L/360	13	10	7	16	12	8	20	15	10	28	21	14	15	11	8	19	14	9	23	18	12	32	24	16
27	Strength	35	26	18	62	46	31	82	61	41	115	86	58	37	28	19	68	51	34	89	67	44	133	100	67
	L/360	12	9	6	15	11	7	18	14	9	25	19	12	13	10	7	17	13	8	21	16	10	29	22	14
28	Strength	33	24	16	57	43	29	76	57	38	107	80	54	35	26	17	63	48	32	83	62	41	124	93	62
	L/360	11	8	5	13	10	7	16	12	8	22	17	11	12	9	6	15	11	8	19	14	9	26	19	13
29	Strength	30	23	15	53	40	27	71	53	36	100	75	50	32	24	16	59	44	30	77	58	39	116	87	58
	L/360	9	7	5	12	9	6	15	11	7	20	15	10	11	8	5	14	10	7	17	13	8	23	18	12
30	Strength				50	37	25	66	50	33	93	70	47	30	23	15	55	41	28	72	54	36	108	81	54
	L/360				11	8	5	13	10	7	18	14	9	10	7	5	12	9	6	15	11	8	21	16	11
31	Strength				47	35	23	62	47	31	87	66	44				52	39	26	67	51	34	101	76	51
	L/360				10	7	5	12	9	6	16	12	8				11	8	6	14	10	7	19	14	10
32	Strength							58	44	29	82	62	41				49	36	24	63	47	32	95	71	47
	L/360							11	8	5	15	11	7				10	8	5	13	9	6	17	13	9
33	Strength							55	41	27	77	58	39				46	34	23	59	45	30	89	67	45
	L/360							10	7	5	14	10	7				9	7	5	11	9	6	16	12	8
34	Strength										73	55	36							56	42	28	84	63	42
	L/360										12	9	6							10	8	5	15	11	7

Note:
 • Strength loads are Factored.
 • Deflection loads are Specified.

Floor Joist Load Tables Uniformly distributed single span load (psf)

Span (ft)		1000S162-54			1000S162-68			1000S162-97			1000S200-54			1000S200-68			1000S200-97		
		Spacing (in)			Spacing (in)			Spacing (in)			Spacing (in)			Spacing (in)			Spacing (in)		
		12	16	24	12	16	24	12	16	24	12	16	24	12	16	24	12	16	24
10	Strength	424	318	212	•	485	323	•	•	490	424	318	212	•	•	363	•	•	•
	L/360	406	305	203	•	390	260	•	•	370	465	348	232	•	•	296	•	•	•
11	Strength	386	289	193	•	401	267	•	•	405	386	289	193	•	450	300	•	•	464
	L/360	305	229	153	•	293	195	•	•	278	349	262	175	•	334	223	•	•	317
12	Strength	327	245	164	449	337	224	•	•	341	354	265	177	504	378	252	•	•	390
	L/360	235	176	117	301	226	150	•	•	214	269	202	134	343	257	172	•	•	244
13	Strength	279	209	139	382	287	191	•	435	290	302	227	151	429	322	215	•	498	332
	L/360	185	139	92	237	177	118	•	253	168	211	159	106	270	202	135	•	288	192
14	Strength	240	180	120	330	247	165	500	375	250	261	196	130	370	278	185	•	429	286
	L/360	148	111	74	189	142	95	270	202	135	169	127	85	216	162	108	•	231	154
15	Strength	209	157	105	287	215	144	436	327	218	227	170	114	323	242	161	499	374	249
	L/360	120	90	60	154	116	77	219	164	110	138	103	69	176	132	88	250	187	125
16	Strength	184	138	92	252	189	126	383	287	192	200	150	100	283	213	142	438	329	219
	L/360	99	74	50	127	95	63	181	136	90	113	85	57	145	109	72	206	154	103
17	Strength	163	122	82	224	168	112	339	255	170	177	133	88	251	188	126	388	291	194
	L/360	83	62	41	106	79	53	151	113	75	95	71	47	121	91	60	172	129	86
18	Strength	145	109	73	199	150	100	303	227	151	158	118	79	224	168	112	346	260	173
	L/360	70	52	35	89	67	45	127	95	63	80	60	40	102	76	51	145	108	72
19	Strength	131	98	65	179	134	90	272	204	136	142	106	71	201	151	101	311	233	155
	L/360	59	44	30	76	57	38	108	81	54	68	51	34	86	65	43	123	92	61
20	Strength	118	88	59	162	121	81	245	184	123	128	96	64	181	136	91	281	210	140
	L/360	51	38	25	65	49	32	93	69	46	58	44	29	74	56	37	105	79	53
21	Strength	107	80	53	147	110	73	222	167	111	116	87	58	165	123	82	254	191	127
	L/360	44	33	22	56	42	28	80	60	40	50	38	25	64	48	32	91	68	46
22	Strength	97	73	49	134	100	67	203	152	101	106	79	53	150	112	75	232	174	116
	L/360	38	29	19	49	37	24	70	52	35	44	33	22	56	42	28	79	59	40
23	Strength	89	67	45	122	92	61	185	139	93	97	72	48	137	103	69	212	159	106
	L/360	33	25	17	43	32	21	61	46	30	38	29	19	49	37	24	69	52	35
24	Strength	82	61	41	112	84	56	170	128	85	89	67	44	126	94	63	195	146	97
	L/360	29	22	15	38	28	19	54	40	27	34	25	17	43	32	21	61	46	31
25	Strength	75	57	38	103	78	52	157	118	78	82	61	41	116	87	58	180	135	90
	L/360	26	19	13	33	25	17	47	36	24	30	22	15	38	28	19	54	40	27
26	Strength	70	52	35	96	72	48	145	109	73	76	57	38	107	81	54	166	124	83
	L/360	23	17	12	30	22	15	42	32	21	26	20	13	34	25	17	48	36	24
27	Strength	65	48	32	89	66	44	135	101	67	70	53	35	100	75	50	154	115	77
	L/360	21	15	10	26	20	13	38	28	19	24	18	12	30	23	15	43	32	21
28	Strength	60	45	30	82	62	41	125	94	63	65	49	33	93	69	46	143	107	72
	L/360	18	14	9	24	18	12	34	25	17	21	16	11	27	20	14	38	29	19
29	Strength	56	42	28	77	58	38	117	87	58	61	46	30	86	65	43	133	100	67
	L/360	17	12	8	21	16	11	30	23	15	19	14	10	24	18	12	35	26	17
30	Strength	52	39	26	72	54	36	109	82	54	57	43	28	81	60	40	125	94	62
	L/360	15	11	8	19	14	10	27	21	14	17	13	9	22	16	11	31	23	16
31	Strength	49	37	25	67	50	34	102	77	51	53	40	27	76	57	38	117	88	58
	L/360	14	10	7	17	13	9	25	19	12	16	12	8	20	15	10	28	21	14
32	Strength	46	35	23	63	47	32	96	72	48	50	37	25	71	53	35	110	82	55
	L/360	12	9	6	16	12	8	23	17	11	14	11	7	18	14	9	26	19	13
33	Strength	43	32	22	59	45	30	90	68	45	47	35	23	67	50	33	103	77	52
	L/360	11	8	6	14	11	7	21	15	10	13	10	6	16	12	8	23	18	12
34	Strength	41	31	20	56	42	28	85	64	42	44	33	22	63	47	31	97	73	49
	L/360	10	8	5	13	10	7	19	14	9	12	9	6	15	11	8	21	16	11
35	Strength	38	29	19	53	40	26	80	60	40	42	31	21	59	44	30	92	69	46
	L/360	9	7	5	12	9	6	17	13	9	11	8	5	14	10	7	20	15	10
36	Strength				50	37	25	76	57	38	39	30	20	56	42	28	87	65	43
	L/360				11	8	6	16	12	8	10	7	5	13	10	6	18	14	9
37	Strength				47	35	24	72	54	36				53	40	27	82	61	41
	L/360				10	8	5	15	11	7				12	9	6	17	12	8
38	Strength				45	34	22	68	51	34				50	38	25	78	58	39
	L/360				9	7	5	13	10	7				11	8	5	15	12	8

Note:

- Strength loads are Factored.
- Deflection loads are Specified.

Floor Joist Load Tables Uniformly distributed single span load (psf)

Span (ft)		1000S250-54			1000S250-68			1000S250-97			1000S300-54			1000S300-68			1000S300-97		
		Spacing (in)			Spacing (in)			Spacing (in)			Spacing (in)			Spacing (in)			Spacing (in)		
		12	16	24	12	16	24	12	16	24	12	16	24	12	16	24	12	16	24
10	Strength	424	318	212	•	•	427	•	•	•	424	318	212	•	•	427	•	•	•
	L/360	560	420	280	•	•	351	•	•	•	594	445	297	•	•	378	•	•	•
11	Strength	386	289	193	•	•	362	•	•	•	386	289	193	•	•	367	•	•	•
	L/360	421	316	210	•	•	264	•	•	•	446	334	223	•	•	284	•	•	•
12	Strength	354	265	177	•	457	304	•	•	461	354	265	177	•	462	308	•	•	488
	L/360	324	243	162	•	304	203	•	•	281	343	258	172	•	328	219	•	•	313
13	Strength	326	245	163	•	389	259	•	•	392	326	245	163	•	394	263	•	•	416
	L/360	255	191	127	•	239	160	•	•	221	270	203	135	•	258	172	•	•	246
14	Strength	303	227	152	447	335	224	•	508	338	303	227	152	453	340	226	•	538	359
	L/360	204	153	102	256	192	128	•	266	177	216	162	108	275	207	138	•	296	197
15	Strength	272	204	136	390	292	195	590	442	295	276	207	138	395	296	197	•	468	312
	L/360	166	124	83	208	156	104	288	216	144	176	132	88	224	168	112	•	240	160
16	Strength	239	179	120	342	257	171	518	389	259	242	182	121	347	260	173	549	412	274
	L/360	137	103	68	171	128	86	237	178	119	145	109	72	185	138	92	264	198	132
17	Strength	212	159	106	303	227	152	459	344	230	215	161	107	307	230	154	486	365	243
	L/360	114	85	57	143	107	71	198	148	99	121	91	60	154	115	77	220	165	110
18	Strength	189	142	95	271	203	135	409	307	205	191	144	96	274	206	137	434	325	217
	L/360	96	72	48	120	90	60	167	125	83	102	76	51	130	97	65	185	139	93
19	Strength	170	127	85	243	182	121	367	276	184	172	129	86	246	184	123	389	292	195
	L/360	82	61	41	102	77	51	142	106	71	87	65	43	110	83	55	158	118	79
20	Strength	153	115	77	219	164	110	332	249	166	155	116	78	222	166	111	351	264	176
	L/360	70	53	35	88	66	44	122	91	61	74	56	37	94	71	47	135	101	68
21	Strength	139	104	69	199	149	99	301	226	150	141	106	70	201	151	101	319	239	159
	L/360	60	45	30	76	57	38	105	79	53	64	48	32	82	61	41	117	88	58
22	Strength	127	95	63	181	136	91	274	206	137	128	96	64	183	138	92	290	218	145
	L/360	53	39	26	66	49	33	91	69	46	56	42	28	71	53	35	102	76	51
23	Strength	116	87	58	166	124	83	251	188	125	117	88	59	168	126	84	266	199	133
	L/360	46	35	23	58	43	29	80	60	40	49	37	24	62	47	31	89	67	44
24	Strength	106	80	53	152	114	76	230	173	115	108	81	54	154	116	77	244	183	122
	L/360	41	30	20	51	38	25	70	53	35	43	32	21	55	41	27	78	59	39
25	Strength	98	73	49	140	105	70	212	159	106	99	74	50	142	107	71	225	169	112
	L/360	36	27	18	45	34	22	62	47	31	38	28	19	48	36	24	69	52	35
26	Strength	91	68	45	130	97	65	196	147	98	92	69	46	131	99	66	208	156	104
	L/360	32	24	16	40	30	20	55	42	28	34	25	17	43	32	22	62	46	31
27	Strength	84	63	42	120	90	60	182	136	91	85	64	43	122	91	61	193	145	96
	L/360	28	21	14	36	27	18	49	37	25	30	23	15	38	29	19	55	41	27
28	Strength	78	59	39	112	84	56	169	127	85	79	59	40	113	85	57	179	134	90
	L/360	26	19	13	32	24	16	44	33	22	27	20	14	34	26	17	49	37	25
29	Strength	73	55	36	104	78	52	158	118	79	74	55	37	106	79	53	167	125	84
	L/360	23	17	11	29	22	14	40	30	20	24	18	12	31	23	15	44	33	22
30	Strength	68	51	34	97	73	49	147	111	74	69	52	34	99	74	49	156	117	78
	L/360	21	16	10	26	19	13	36	27	18	22	16	11	28	21	14	40	30	20
31	Strength	64	48	32	91	68	46	138	104	69	65	48	32	92	69	46	146	110	73
	L/360	19	14	9	24	18	12	33	24	16	20	15	10	25	19	13	36	27	18
32	Strength	60	45	30	86	64	43	130	97	65	61	45	30	87	65	43	137	103	69
	L/360	17	13	9	21	16	11	30	22	15	18	14	9	23	17	12	33	25	17
33	Strength	56	42	28	80	60	40	122	91	61	57	43	28	82	61	41	129	97	65
	L/360	16	12	8	20	15	10	27	20	14	17	12	8	21	16	11	30	23	15
34	Strength	53	40	26	76	57	38	115	86	57	54	40	27	77	58	38	122	91	61
	L/360	14	11	7	18	13	9	25	19	12	15	11	8	19	14	10	28	21	14
35	Strength	50	37	25	72	54	36	108	81	54	51	38	25	72	54	36	115	86	57
	L/360	13	10	7	16	12	8	23	17	11	14	10	7	18	13	9	25	19	13
36	Strength	47	35	24	68	51	34	102	77	51	48	36	24	69	51	34	108	81	54
	L/360	12	9	6	15	11	8	21	16	10	13	10	6	16	12	8	23	17	12
37	Strength	45	34	22	64	48	32	97	73	48	45	34	23	65	49	32	103	77	51
	L/360	11	8	6	14	10	7	19	14	10	12	9	6	15	11	7	21	16	11
38	Strength	42	32	21	61	46	30	92	69	46	43	32	21	61	46	31	97	73	49
	L/360	10	8	5	13	10	6	18	13	9	11	8	5	14	10	7	20	15	10

Note:

- Strength loads are Factored.
- Deflection loads are Specified.

Floor Joist Load Tables Uniformly distributed single span load (psf)

		1200S162-68			1200S162-97			1200S200-68			1200S200-97			1200S250-68			1200S250-97			1200S300-68			1200S300-97					
Span (ft)		Spacing (in)			Spacing (in)			Spacing (in)			Spacing (in)			Spacing (in)			Spacing (in)			Spacing (in)			Spacing (in)					
		12	16	24	12	16	24	12	16	24	12	16	24	12	16	24	12	16	24	12	16	24	12	16	24			
13	Strength	469	352	235	•	•	363	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•			
	L/360	362	272	181	•	•	264																					
14	Strength	405	304	202	•	•	470	313	453	340	227	•	•	•	357	•	•	•	•	•	•	•	•	•				
	L/360	290	218	145	•	•	317	211	329	247	165	•	•	•	239	•	•	•	•	•	•	•	•	•				
15	Strength	353	264	176	•	•	409	273	395	296	197	•	•	•	466	311	423	317	212	•	•	•	467	350	234			
	L/360	236	177	118	•	•	258	172	268	201	134	•	•	•	291	194	307	230	154	•	•	•	222	346	259	173		
16	Strength	310	232	155	479	359	240	347	260	174	•	•	•	409	273	372	279	186	•	•	•	467	312	411	308	205		
	L/360	194	146	97	283	213	142	221	165	110	•	•	•	240	160	253	190	127	•	•	•	275	183	285	214	142		
17	Strength	275	206	137	425	318	212	307	231	154	484	363	242	330	247	165	•	•	•	414	276	364	273	182	•	•	471	314
	L/360	162	122	81	236	177	118	184	138	92	267	200	133	211	158	106	•	•	•	229	153	238	178	119	•	•	255	170
18	Strength	245	184	122	379	284	189	274	206	137	431	324	216	294	220	147	492	369	246	324	243	162	561	421	280			
	L/360	137	102	68	199	149	100	155	116	77	225	169	112	178	133	89	257	193	129	200	150	100	287	215	143			
19	Strength	220	165	110	340	255	170	246	185	123	387	290	194	264	198	132	442	331	221	291	218	146	503	377	252			
	L/360	116	87	58	169	127	85	132	99	66	191	143	96	151	113	76	219	164	109	170	128	85	244	183	122			
20	Strength	198	149	99	307	230	153	222	167	111	349	262	175	238	179	119	399	299	199	263	197	131	454	341	227			
	L/360	100	75	50	145	109	73	113	85	56	164	123	82	130	97	65	187	141	94	146	109	73	209	157	105			
21	Strength	180	135	90	278	209	139	201	151	101	317	238	158	216	162	108	362	271	181	238	179	119	412	309	206			
	L/360	86	64	43	125	94	63	98	73	49	142	106	71	112	84	56	162	121	81	126	95	63	181	135	90			
22	Strength	164	123	82	254	190	127	184	138	92	289	217	144	197	148	98	330	247	165	217	163	109	375	282	188			
	L/360	75	56	37	109	82	55	85	64	42	123	92	62	97	73	49	141	106	70	110	82	55	157	118	79			
23	Strength	150	112	75	232	174	116	168	126	84	264	198	132	180	135	90	302	226	151	199	149	99	343	258	172			
	L/360	65	49	33	95	72	48	74	56	37	108	81	54	85	64	43	123	92	62	96	72	48	137	103	69			
24	Strength	138	103	69	213	160	107	154	116	77	243	182	121	165	124	83	277	208	138	182	137	91	315	237	158			
	L/360	58	43	29	84	63	42	65	49	33	95	71	47	75	56	37	108	81	54	84	63	42	121	91	60			
25	Strength	127	95	63	196	147	98	142	107	71	224	168	112	152	114	76	255	191	128	168	126	84	291	218	145			
	L/360	51	38	25	74	56	37	58	43	29	84	63	42	66	50	33	96	72	48	75	56	37	107	80	54			
26	Strength	117	88	59	182	136	91	131	99	66	207	155	103	141	106	70	236	177	118	155	117	78	269	202	134			
	L/360	45	34	23	66	50	33	51	39	26	75	56	37	59	44	29	85	64	43	66	50	33	95	71	48			
27	Strength	109	82	54	168	126	84	122	91	61	192	144	96	131	98	65	219	164	109	144	108	72	249	187	125			
	L/360	40	30	20	59	44	29	46	34	23	67	50	33	53	40	26	76	57	38	59	44	30	85	64	42			
28	Strength	101	76	51	157	117	78	113	85	57	178	134	89	121	91	61	203	153	102	134	101	67	232	174	116			
	L/360	36	27	18	53	40	26	41	31	21	60	45	30	47	35	24	68	51	34	53	40	27	76	57	38			
29	Strength	94	71	47	146	109	73	106	79	53	166	125	83	113	85	57	190	142	95	125	94	62	216	162	108			
	L/360	33	24	16	48	36	24	37	28	19	54	40	27	43	32	21	61	46	31	48	36	24	69	51	34			
30	Strength	88	66	44	136	102	68	99	74	49	155	116	78	106	79	53	177	133	89	117	88	58	202	151	101			
	L/360	29	22	15	43	32	21	33	25	17	49	36	24	38	29	19	56	42	28	43	32	22	62	46	31			
31	Strength	83	62	41	128	96	64	92	69	46	145	109	73	99	74	50	166	124	83	109	82	55	189	142	95			
	L/360	27	20	13	39	29	19	30	23	15	44	33	22	35	26	17	50	38	25	39	29	20	56	42	28			
32	Strength	77	58	39	120	90	60	87	65	43	136	102	68	93	70	46	156	117	78	103	77	51	177	133	89			
	L/360	24	18	12	35	27	18	28	21	14	40	30	20	32	24	16	46	34	23	36	27	18	51	38	26			
33	Strength	73	55	36	113	85	56	82	61	41	128	96	64	87	66	44	146	110	73	97	72	48	167	125	83			
	L/360	22	17	11	32	24	16	25	19	13	36	27	18	29	22	14	42	31	21	32	24	16	47	35	23			
34	Strength	69	51	34	106	80	53	77	58	38	121	91	60	82	62	41	138	103	69	91	68	45	157	118	79			
	L/360	20	15	10	30	22	15	23	17	11	33	25	17	26	20	13	38	29	19	30	22	15	43	32	21			
35	Strength	65	49	32	100	75	50	73	54	36	114	86	57	78	58	39	130	98	65	86	64	43	148	111	74			
	L/360	19	14	9	27	20	14	21	16	11	31	23	15	24	18	12	35	26	17	27	20	14	39	29	19			
36	Strength	61	46	31	95	71	47	69	51	34	108	81	54	73	55	37	123	92	62	81	61	41	140	105	70			
	L/360	17	13	9	25	19	12	19	15	10	28	21	14	22	17	11	32	24	16	25	19	13	36	27	18			
37	Strength	58	43	29	90	67	45	65	49	32	102	77	51	70	52	35	117	87	58	77	58	38	133	100	66			
	L/360	16	12	8	23	17	11	18	13	9	26	19	13	20	15	10	30	22	15	23	17	12	33	25	17			
38	Strength	55	41	27	85	64	42	62	46	31	97	73	48	66	49	33	110	83	55	73	55	36	126	94	63			
	L/360	15	11	7	21	16	11	16	12	8	24	18	12	19	14	9	27	21	14	21	16	11	30	23	15			
39	Strength	52	39	26	81	61	40	58	44	29	92	69	46	63	47	31	105	79	52	69	52	35	119	90	60			
	L/360	13	10	7	20	15	10	15	11	8	22	17	11	17	13	9	25	19	13	20	15	10	28	21	14			
40	Strength	50	37	25	77	58	38	56	42	28	87	66	44	60	45	30	100	75	50	66	49	33	114	85	57			
	L/360	12	9	6	18	14	9	14	11	7	20	15	10	16	12	8	23	18	12	18	14	9	26	20	13			
41	Strength	47	35	24	73	55	36	53	40	26	83	62	42	57	42	28	95	71	47	63	47	31	108	81	54			
	L/360	12	9	6	17	13	8	13	10	7	19	14	10	15	11	8	22	16	11									

Floor Joist Load Tables Uniformly distributed single span load (psf)

Span (ft)		1400S162-68			1400S162-97			1400S200-68			1400S200-97			1400S250-68			1400S250-97			1400S300-68			1400S300-97			
		Spacing (in)			Spacing (in)			Spacing (in)			Spacing (in)			Spacing (in)			Spacing (in)			Spacing (in)			Spacing (in)			
		12	16	24	12	16	24	12	16	24	12	16	24	12	16	24	12	16	24	12	16	24	12	16	24	
13	Strength	465	348	232	•	•	436	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
	L/360	519	389	259	•	•	383	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
14	Strength	431	324	216	•	•	376	431	324	216	•	•	427	431	324	216	•	•	486	431	324	216	•	•	•	
	L/360	415	311	208	•	•	307	469	352	235	•	•	345	536	402	268	•	•	392	571	428	285	•	•	•	
15	Strength	403	302	201	•	•	491 328	403	302	201	•	•	372	403	302	201	•	•	423	403	302	201	•	•	443	
	L/360	338	253	169	•	•	374 249	381	286	191	•	•	280	436	327	218	•	•	319	464	348	232	•	•	350	
16	Strength	367	275	184	•	•	432 288	378	283	189	•	•	327	378	283	189	•	•	372	378	283	189	•	•	390	
	L/360	278	209	139	•	•	308 206	314	236	157	•	•	231	359	269	180	•	•	263	382	287	191	•	•	289	
17	Strength	325	244	163	•	•	383 255	355	266	178	•	•	434 290	355	266	178	•	•	329	355	266	178	•	•	345	
	L/360	232	174	116	•	•	257 171	262	196	131	•	•	289 193	300	225	150	•	•	219	319	239	159	•	•	241	
18	Strength	290	218	145	455	341	227	324	243	162	•	•	376	336	252	168	•	•	441	294	336	252	168	•	462	308
	L/360	195	147	98	289	217	144	221	166	110	•	•	243 162	252	189	126	•	•	277	184	268	201	134	•	304	203
19	Strength	260	195	130	408	306	204	291	218	146	464	348	232	311	234	156	•	•	396	264	318	238	159	•	415	276
	L/360	166	125	83	246	184	123	188	141	94	276	207	138	215	161	107	•	•	235	157	228	171	114	•	259	172
20	Strength	235	176	118	368	276	184	263	197	131	418	314	209	281	211	141	476	357	238	289	217	145	•	374	249	
	L/360	142	107	71	211	158	105	161	121	80	236	177	118	184	138	92	269	202	134	196	147	98	•	222	148	
21	Strength	213	160	107	334	251	167	238	179	119	380	285	190	255	191	127	432	324	216	262	197	131	453	339	228	
	L/360	123	92	62	182	136	91	139	104	69	204	153	102	159	119	79	232	174	116	169	127	85	255	192	126	
22	Strength	194	146	97	305	228	152	217	163	109	346	259	173	232	174	116	393	295	197	239	179	120	412	309	206	
	L/360	107	80	54	158	119	79	121	91	60	178	133	89	138	104	69	202	152	101	147	110	74	222	167	111	
23	Strength	178	133	89	279	209	139	199	149	99	316	237	158	213	159	106	360	270	180	219	164	109	377	283	189	
	L/360	94	70	47	138	104	69	106	79	53	155	117	78	121	91	60	177	133	88	129	97	64	194	146	97	
24	Strength	163	122	82	256	192	128	182	137	91	291	218	145	195	146	98	331	248	165	201	151	100	346	260	173	
	L/360	82	62	41	122	91	61	93	70	47	137	103	68	106	80	53	156	117	78	113	85	57	171	128	86	
25	Strength	150	113	75	236	177	118	168	126	84	268	201	134	180	135	90	305	229	152	185	139	93	319	239	160	
	L/360	73	55	36	108	81	54	82	62	41	121	91	61	94	71	47	138	103	69	100	75	50	151	114	76	
26	Strength	139	104	70	218	164	109	155	117	78	248	186	124	166	125	83	282	211	141	171	128	86	295	221	148	
	L/360	65	49	32	96	72	48	73	55	37	108	81	54	84	63	42	122	92	61	89	67	45	135	101	67	
27	Strength	129	97	64	202	152	101	144	108	72	230	172	115	154	116	77	261	196	131	159	119	79	274	205	137	
	L/360	58	43	29	86	64	43	65	49	33	96	72	48	75	56	37	109	82	55	80	60	40	120	90	60	
28	Strength	120	90	60	188	141	94	134	101	67	213	160	107	143	108	72	243	182	121	148	111	74	255	191	127	
	L/360	52	39	26	77	58	38	59	44	29	86	65	43	67	50	34	98	73	49	71	53	36	108	81	54	
29	Strength	112	84	56	175	131	88	125	94	62	199	149	100	134	100	67	226	170	113	138	103	69	237	178	119	
	L/360	47	35	23	69	52	35	53	40	26	78	58	39	60	45	30	88	66	44	64	48	32	97	73	49	
30	Strength	104	78	52	164	123	82	117	88	58	186	139	93	125	94	62	212	159	106	129	96	64	222	166	111	
	L/360	42	32	21	62	47	31	48	36	24	70	53	35	54	41	27	80	60	40	58	43	29	88	66	44	
31	Strength	98	73	49	153	115	77	109	82	55	174	131	87	117	88	58	198	149	99	120	90	60	208	156	104	
	L/360	38	29	19	57	42	28	43	32	22	63	48	32	49	37	25	72	54	36	53	39	26	79	60	40	
32	Strength	92	69	46	144	108	72	103	77	51	163	123	82	110	82	55	186	139	93	113	85	57	195	146	97	
	L/360	35	26	17	51	39	26	39	29	20	58	43	29	45	34	22	66	49	33	48	36	24	72	54	36	
33	Strength	86	65	43	135	102	68	96	72	48	154	115	77	103	77	52	175	131	87	106	80	53	183	137	92	
	L/360	32	24	16	47	35	23	36	27	18	53	39	26	41	31	20	60	45	30	44	33	22	66	49	33	
34	Strength	81	61	41	128	96	64	91	68	45	145	109	72	97	73	49	165	124	82	100	75	50	173	129	86	
	L/360	29	22	14	43	32	21	33	25	16	48	36	24	37	28	19	55	41	27	40	30	20	60	45	30	
35	Strength	77	58	38	120	90	60	86	64	43	137	102	68	92	69	46	155	117	78	94	71	47	163	122	81	
	L/360	27	20	13	39	29	20	30	23	15	44	33	22	34	26	17	50	38	25	37	27	18	55	41	28	
36	Strength	73	54	36	114	85	57	81	61	41	129	97	65	87	65	43	147	110	73	89	67	45	154	115	77	
	L/360	24	18	12	36	27	18	28	21	14	41	30	20	32	24	16	46	35	23	34	25	17	51	38	25	
37	Strength	69	52	34	108	81	54	77	58	38	122	92	61	82	62	41	139	104	70	85	63	42	146	109	73	
	L/360	22	17	11	33	25	17	25	19	13	37	28	19	29	22	15	42	32	21	31	23	15	47	35	23	
38	Strength	65	49	33	102	77	51	73	55	36	116	87	58	78	58	39	132	99	66	80	60	40	138	104	69	
	L/360	21	16	10	31	23	15	23	18	12	34	26	17	27	20	13	39	29	20	29	21	14	43	32	22	
39	Strength	62	46	31	97	73	48	69	52	35	110	83	55	74	55	37	125	94	63	76	57	38	131	98	66	
	L/360	19	14	10	28	21	14	22	16	11	32	24	16	25	19	12	36	27	18	26	20	13	40	30	20	
40	Strength	59	44	29	92	69	46	66	49	33	105	78	52	70	53	35	119	89	60	72	54	36	125	94	62	
	L/360	18	13	9	26	20	13	20	15	10	30	22	15	23	17	11	34	25	17	24	18	12	37	28	18	
41	Strength	56	42	28	88	66	44	63	47	31	100	75	50	67	50	33	113	85	57	69	52	34				



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