



BlueLinX Engineered Products



Residential Floor & Roof Systems  
**SPECIFIER'S GUIDE**

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BLI Joists | onCENTER® LVL

*When it's built right,  
it's onCENTER®!*

**BLUELINX**  
DELIVERING WHAT MATTERS™



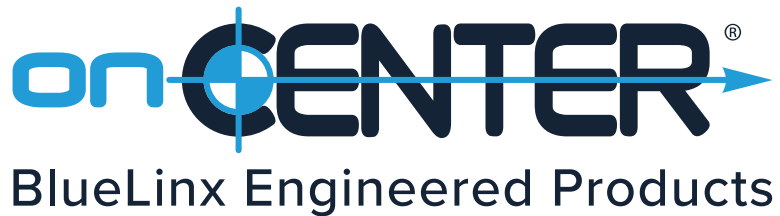
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Additional information available online at  
[www.builtonCENTER.com](http://www.builtonCENTER.com)

**BLUELINX**  
DELIVERING WHAT MATTERS™



***When it's built right, it's onCENTER®!***

**QUALITY • SERVICE • VALUE**

### onCENTER® Delivers **QUALITY**

- Manufactured in state-of-the-art facilities
- Only the highest quality raw materials used
- Consistent depth
- Produced under controlled conditions that reduce moisture content, resulting in:
  - ♦ more stable products
  - ♦ quieter floor systems
  - ♦ dependability and durability
- Meets strict quality standards per APA-EWS third-party mill inspections
- Backed by a lifetime limited warranty\* assuring long-lasting, consistent performance

### onCENTER® Delivers Superior **SERVICE**

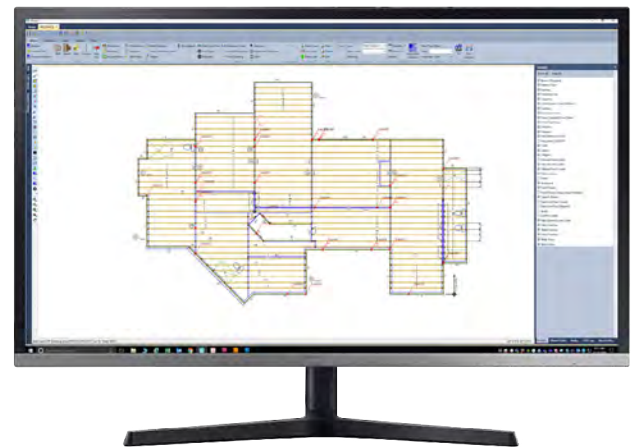
- Complete framing solutions
- Knowledgeable people behind the products: rely on a field team of experts available to consult on a project basis from product selection through installation
- Framing systems backed by a full-service team of engineers and technicians
- Product mix tailored to regional market needs
- BlueLinux is a leading distributor of building products in North America

\* Visit [www.builtonCENTER.com](http://www.builtonCENTER.com) or call 877-914-7770 for terms, conditions, and limitations of limited warranty.



## onCENTER® Delivers **VALUE**

- Our supply chain efficiencies and volume purchasing allow us to provide quality products cost-effectively
- onCENTER® Framing Systems can contribute towards green building certification programs such as LEED®, Green Globes®, and the National Green Building Standard
- FSC® and SFI® certified products available
- Cost-effective versus conventional lumber framing by reducing a project's cycle time with faster installation
  - ♦ less waste
  - ♦ long lengths
  - ♦ lightweight, straight and true products
- Exceed your customer's expectations with strong and quiet floors that offer the flexibility to open up floor plans for today's lifestyles



# isDesign®

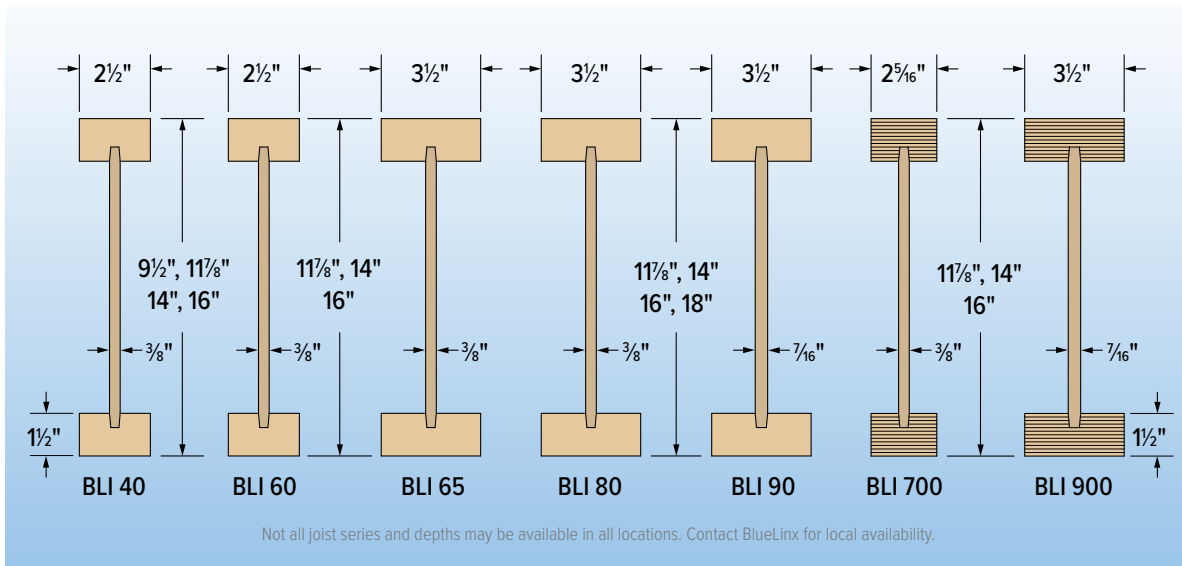
For load or span conditions other than those covered in this guide, onCENTER products can be designed and specified using engineered wood software such as isDesign™, iStruct®, MiTek Sapphire®, and Alpine IntelliVIEW. See page 54 for additional information.



## onCENTER® BLI Joists

- Lightweight and easy to handle, the I-shaped configuration allows for longer spans and more load-carrying capacity than dimension lumber
- Manufactured with machine stress rated (MSR) or laminated veneer lumber (LVL) flanges and an enhanced OSB web
- Low moisture content means greater dimensional stability resulting in quieter floors and fewer costly callbacks
- Wide flanges provide more support for floor sheathing and more surface area for nailing, saving time and money
- Available in value lengths up to 48' (up to 60' by special order)





## Design Properties for BLI Joists

Joist Series	Joist Depth	EI (10 <sup>6</sup> in <sup>2</sup> -lbs)	Maximum Moment <sup>a,b</sup> (ft-lbs)	Maximum Shear <sup>b</sup> (lbs)	1 1/4" End Reaction <sup>b,c,d</sup> (lbs)	3 1/2" Intermediate Reaction <sup>b,c</sup> (lbs)	Weight (plf)
BLI 40	9 1/2"	193	2735	1185	1130	2160	2.6
	11 1/8"	330	3545	1480	1200	2500	2.9
	14"	482	4270	1750	1200	2500	3.1
	16"	657	4950	2000	1200	2500	3.4
BLI 60	11 1/8"	396	4900	1570	1200	2500	2.9
	14"	584	5895	1750	1200	2500	3.1
	16"	799	6835	2000	1200	2500	3.4
BLI 65	11 1/8"	454	5085	1620	1200	2810	3.3
	14"	664	6125	1815	1200	3020	3.6
	16"	901	7105	2000	1200	3265	3.8
BLI 80	11 1/8"	547	6970	1590	1290	2810	3.7
	14"	802	8390	1835	1325	3020	3.9
	16"	1092	9730	2070	1330	3100	4.1
	18"	1413	11000	2300	1340	3100	4.3
BLI 90	11 1/8"	601	8515	1650	1315	2810	3.7
	14"	877	10255	1865	1325	3020	3.9
	16"	1187	11895	2070	1330	3265	4.1
	18"	1546	13455	2450	1340	3200	4.3
BLI 700	11 1/8"	420	6595	1420	1160	2460	2.9
	14"	613	7865	1710	1160	2460	3.2
	16"	841	9010	1970	1160	2460	3.5
BLI 900	11 1/8"	661	10145	1925	1400	3355	4.1
	14"	965	12100	2125	1400	3355	4.4
	16"	1306	13865	2330	1400	3355	4.7

- No increase permitted for repetitive member use factor.
- Tabulated values for maximum moment, shear, and reactions are for normal load duration and may be increased for other load durations in accordance with applicable building codes.
- Tabulated maximum reactions are without bearing stiffeners. For maximum reactions with bearing stiffeners or with other bearing lengths, visit [www.buildonCENTER.com](http://www.buildonCENTER.com).
- For the maximum end reaction with an end bearing length of 4", use the tabulated maximum shear value. Maximum reactions for end bearing lengths between 1 1/4" and 4" may be determined by interpolation. Bearing stiffeners are required for end reactions exceeding 1550 lbs.

$$\text{Deflection (inches)} = \frac{22.5wL^4}{EI} + \frac{2.308wL^2}{d \times 10^5}$$

$w$  = uniform load (plf)  
 $L$  = span (feet)  
 $EI$  = stiffness constant (in<sup>2</sup>-lbs)  
 $d$  = joist depth (inches)



## FRAMING SYSTEM DESIGN CONSIDERATIONS



onCENTER® BLI joists provide the floor system designer several alternatives regarding joist series and depths. Exploring these options along with joist spacing should enable the designer to determine the optimal floor with consideration to the satisfaction of the end-user and the costs associated with the selection.

**The following factors will affect floor system performance:**

- *Span*
- *Spacing*
- *Joist series and depth*
- *Type of subfloor used, and how it is attached*
- *Elevation of supports*
- *Type of support*
- *Presence of gypsum wallboard underneath*
- *Size of room and contents the floor is supporting*

Floor performance may be estimated by the familiar “L/x” fraction, where “x” is span divided by live load deflection (both in inches). The traditional building code requirement of L/360 was developed over a century ago. The wood I-joist industry has found through experience that I-joist floors should be designed to a more stringent L/480, which results in a floor that is one-third stiffer than one designed at the code minimum L/360.

There are other factors that influence floor performance. Gluing the subfloor to the joist framing has been found to significantly enhance floor performance. All floor span tables in this guide reflect this enhancement. A thicker subfloor will increase

composite action with the joists as well as transverse floor stiffness. X-bridging or BLI blocking panels (refer to detail F21 on page 16) properly installed at the center of the span will also increase transverse floor stiffness. A gypsum wallboard ceiling attached directly to the joists will enhance system performance by providing damping.

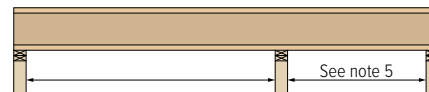
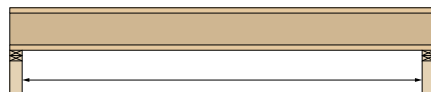
Note that a floor supporting large open areas with minimal furniture, such as an oversized great room, may be more prone to vibration than the same floor supporting smaller rooms, since the latter will have added damping from partition walls and contents of the additional rooms.

Quality of workmanship also can contribute to floor performance. Uneven bearing elevations, while generally not detrimental to the structural integrity of the building, may result in the perception of a poor performing floor. A floor with joists supported by beams will feel less solid than one with joists supported by walls.

When installing hangers, the installer should leave a  $\frac{1}{16}$ " gap between the header and joist and firmly seat each joist in the bottom of the hanger. The gap, firm seating and tight nailing will help reduce squeaks caused by movement in the hanger.

As part of our commitment to customer service, you may call BlueLinx at 877-914-7770 to discuss your project needs and determine how the superior performance of onCENTER Framing Systems best fits into your next project.

## 40 PSF Live Load + 10 PSF Dead Load (L/480)

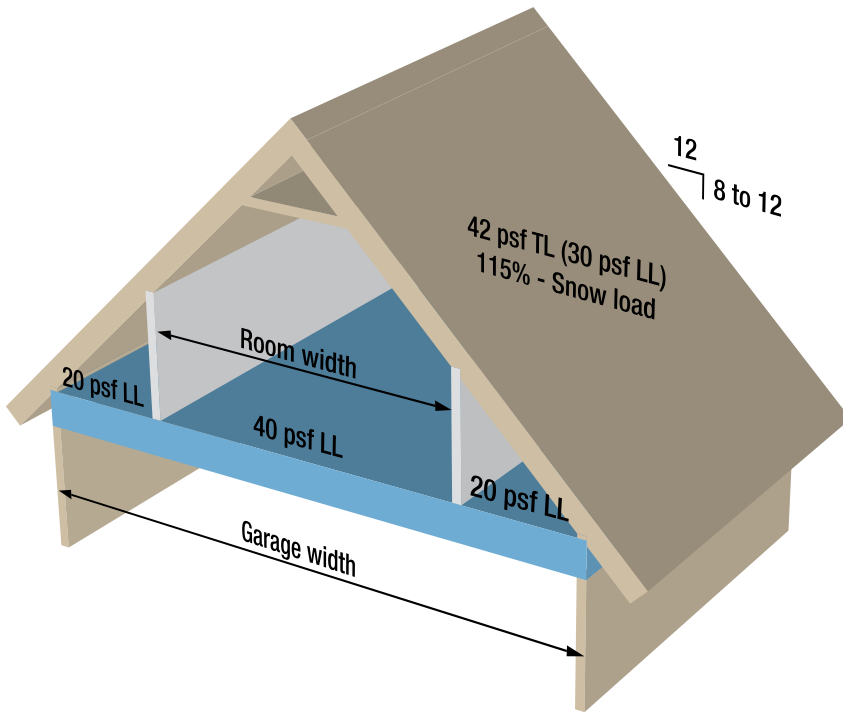


Joist Series	Joist Depth	Simple Span				Multiple Span			
		12" o.c.	16" o.c.	19.2" o.c.	24" o.c.	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.
BLI 40	9½"	17'-11"	16'-05"	15'-06"	14'-06"	19'-07"	17'-10"	16'-04"	14'-07"
	11⅞"	21'-05"	19'-07"	18'-06"	16'-08"	23'-04"	20'-05"	18'-07"	16'-07"
	14"	24'-04"	22'-02"	20'-06"	18'-04"	25'-11"	22'-05"	20'-05"	18'-03"
	16"	26'-11"	24'-03"	22'-01"	19'-09"	27'-11"	24'-02"	22'-00"	19'-08"
BLI 60	11⅞"	22'-07"	20'-08"	19'-06"	18'-02"	24'-07"	22'-06"	21'-02"	19'-07"
	14"	25'-08"	23'-06"	22'-02"	20'-08"	28'-00"	25'-07"	24'-01"	19'-09"
	16"	28'-06"	26'-00"	24'-07"	22'-10"	31'-01"	28'-04"	24'-09"	19'-09"
BLI 65	11⅞"	23'-06"	21'-05"	20'-02"	18'-09"	25'-06"	23'-02"	21'-10"	19'-10"
	14"	26'-08"	24'-03"	22'-10"	21'-03"	28'-11"	26'-04"	24'-05"	21'-10"
	16"	29'-06"	26'-10"	25'-04"	23'-06"	32'-01"	28'-10"	26'-04"	23'-06"
BLI 80	11⅞"	24'-10"	22'-08"	21'-04"	19'-10"	27'-01"	24'-08"	23'-02"	21'-07"
	14"	28'-03"	25'-09"	24'-03"	22'-07"	30'-09"	28'-00"	26'-04"	23'-11"
	16"	31'-04"	28'-06"	26'-10"	25'-00"	34'-02"	31'-00"	29'-02"	24'-07"
	18"	34'-02"	31'-01"	29'-03"	24'-10"	37'-03"	33'-10"	30'-09"	24'-07"
BLI 90	11⅞"	25'-07"	23'-03"	21'-11"	20'-05"	27'-10"	25'-03"	23'-10"	21'-10"
	14"	29'-00"	26'-05"	24'-11"	23'-02"	31'-07"	28'-09"	27'-01"	23'-11"
	16"	32'-01"	29'-03"	27'-06"	25'-05"	34'-11"	31'-10"	29'-11"	25'-11"
	18"	35'-01"	31'-11"	30'-01"	24'-10"	38'-03"	34'-09"	31'-09"	25'-05"
BLI 700	11⅞"	23'-00"	21'-00"	19'-10"	18'-06"	25'-01"	22'-10"	21'-07"	19'-06"
	14"	26'-01"	23'-10"	22'-06"	20'-11"	28'-05"	25'-11"	24'-05"	19'-06"
	16"	29'-00"	26'-05"	24'-11"	23'-01"	31'-07"	28'-09"	24'-05"	19'-06"
BLI 900	11⅞"	26'-04"	24'-00"	22'-07"	21'-00"	28'-08"	26'-01"	24'-07"	22'-10"
	14"	29'-11"	27'-02"	25'-07"	23'-10"	32'-07"	29'-07"	27'-10"	25'-11"
	16"	33'-01"	30'-01"	28'-04"	26'-04"	36'-01"	32'-09"	30'-10"	26'-07"

### NOTES:

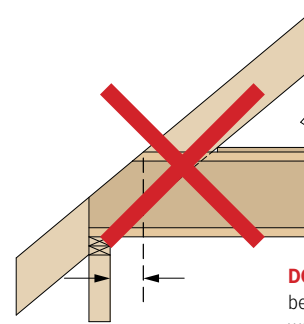
- Spans are maximum clear distances between supports. Uniform loading is assumed.
- Live load deflection is limited to L/480, providing joists that are one-third stiffer than required by code. Experience has shown that floors designed to the code minimum live load deflection (L/360) may not meet the occupant's expectations for floor performance.
- Spans are based on composite action with glued-nailed APA Rated Sheathing or Sturd-I-Floor® panels of minimum thickness ⅝" (40/20 or 20 oc) for joist spacing of 19.2" or less, or ⅞" (48/24 or 24 oc) for a joist spacing of 24". Apply a ¼" diameter continuous bead of adhesive (meeting APA AFG-01 or ASTM D 3498) to top flange of joists. Surfaces must be clean and dry. If adhesive is not used, reduce spans by 12".
- Minimum bearing length: 1¼" (end), 3½" (intermediate).
- For multiple-span joists, end spans must be at least 40% of adjacent span.
- Tabulated spans for multiple-span conditions cover a wide range of span combinations. Neither simple nor multiple spans require bearing stiffeners. Longer spans may be possible by analyzing a specific span condition and/or by adding bearing stiffeners. Check using Doma Sizer™ software.
- For span charts with 40 psf live load and 20 psf dead load, refer to Specifier's Guide addendum at [www.buildonCENTER.com](http://www.buildonCENTER.com). For other loads or deflection criteria, refer to Floor Load Table on page 10.

## BONUS ROOM FLOORS



### NOTES:

1. LL = live load, TL = total load.
2. In addition to loads shown on the graphic, chart is based on the following:
  - 10 psf floor dead load
  - 40 plf kneewall weight
  - L/240 total load deflection
  - L/480 live load deflection
  - Room width centered about garage width
  - Floor sheathing glued and nailed along entire length of joist
  - Gable roof framing only (no hip framing)
3. For other conditions use Doma Sizer™ software or contact BlueLinX at 1-877-914-7770.



**DO NOT** bevel cut BLI joist beyond the inside face of wall. Refer to detail F22 for alternative method of framing.

### Bonus Room Joist Selection

Garage Width	Room Width	Joist Spacing			
		12" o.c.	16" o.c.	19.2" o.c.	24" o.c.
20'	8'	BLI 40 - 11 <sup>5</sup> / <sub>8</sub> "	BLI 60 - 11 <sup>5</sup> / <sub>8</sub> " BLI 40 - 14"	BLI 65 - 11 <sup>5</sup> / <sub>8</sub> " BLI 60 - 14"	BLI 90 - 11 <sup>5</sup> / <sub>8</sub> " BLI 65 - 14"
	10'	BLI 40 - 11 <sup>5</sup> / <sub>8</sub> "	BLI 60 - 11 <sup>5</sup> / <sub>8</sub> " BLI 40 - 14"	BLI 65 - 11 <sup>5</sup> / <sub>8</sub> " BLI 60 - 14"	<b>BLI 90 - 11<sup>5</sup>/<sub>8</sub>"</b> <b>BLI 65 - 14"</b>
	12'	BLI 40 - 11 <sup>5</sup> / <sub>8</sub> "	BLI 60 - 11 <sup>5</sup> / <sub>8</sub> " BLI 40 - 14"	<b>BLI 65 - 11<sup>5</sup>/<sub>8</sub>"</b> <b>BLI 60 - 14"</b>	<b>BLI 90 - 11<sup>5</sup>/<sub>8</sub>"</b> <b>BLI 60 - 14"<sup>1</sup></b>
22'	10'	BLI 60 - 11 <sup>5</sup> / <sub>8</sub> " BLI 40 - 14"	BLI 80 - 11 <sup>5</sup> / <sub>8</sub> " BLI 60 - 14"	BLI 900 - 11 <sup>5</sup> / <sub>8</sub> " BLI 65 - 14"	<b>BLI 80 - 14"</b>
	12'	BLI 60 - 11 <sup>5</sup> / <sub>8</sub> " BLI 40 - 14"	BLI 80 - 11 <sup>5</sup> / <sub>8</sub> " BLI 60 - 14"	<b>BLI 900 - 11<sup>5</sup>/<sub>8</sub>"</b> <b>BLI 60 - 14"</b>	<b>BLI 80 - 14"<sup>1</sup></b>
	14'	BLI 60 - 11 <sup>5</sup> / <sub>8</sub> " BLI 40 - 14"	BLI 80 - 11 <sup>5</sup> / <sub>8</sub> " BLI 60 - 14"	<b>BLI 90 - 11<sup>5</sup>/<sub>8</sub>"</b> <b>BLI 60 - 14"</b>	<b>BLI 80 - 14"<sup>2,4</sup></b>
24'	10'	BLI 80 - 11 <sup>5</sup> / <sub>8</sub> " BLI 60 - 14"	BLI 65 - 14" BLI 60 - 16"	BLI 90 - 14" BLI 65 - 16"	<b>BLI 80 - 16"<sup>1</sup></b>
	12'	BLI 80 - 11 <sup>5</sup> / <sub>8</sub> " BLI 40 - 14"	BLI 65 - 14" BLI 60 - 16"	<b>BLI 90 - 14"</b> <b>BLI 60 - 16"</b>	<b>BLI 900 - 16"</b> <b>BLI 80 - 16"<sup>3</sup></b>
	14'	BLI 80 - 11 <sup>5</sup> / <sub>8</sub> " BLI 40 - 14"	BLI 65 - 14" BLI 60 - 16"	<b>BLI 80 - 14"</b> <b>BLI 60 - 16"</b>	<b>BLI 900 - 16"<sup>1,4</sup></b> <b>BLI 80 - 16"<sup>3,4</sup></b>
	16'	BLI 80 - 11 <sup>5</sup> / <sub>8</sub> " BLI 40 - 14"	<b>BLI 900 - 11<sup>5</sup>/<sub>8</sub>"</b> <b>BLI 65 - 14"</b>	<b>BLI 80 - 14"</b> <b>BLI 60 - 16"</b>	<b>BLI 900 - 14"<sup>2,5</sup></b> <b>BLI 80 - 16"<sup>3,5</sup></b>
	18'	BLI 80 - 11 <sup>5</sup> / <sub>8</sub> " BLI 40 - 14"	<b>BLI 900 - 11<sup>5</sup>/<sub>8</sub>"</b> <b>BLI 65 - 14"</b>	<b>BLI 80 - 14"</b> <b>BLI 60 - 16"</b>	<b>BLI 900 - 14"<sup>2,5</sup></b> <b>BLI 80 - 16"<sup>3,5</sup></b>
26'	12'	BLI 65 - 14" BLI 60 - 16"	BLI 90 - 14" BLI 65 - 16"	<b>BLI 80 - 16"</b>	<b>BLI 80 - 18"<sup>3</sup></b>
	14'	BLI 900 - 11 <sup>5</sup> / <sub>8</sub> " BLI 65 - 14"	BLI 90 - 14" BLI 65 - 16"	<b>BLI 80 - 16"</b>	<b>BLI 900 - 16"<sup>2,4</sup></b> <b>BLI 80 - 18"<sup>3,4</sup></b>
	16'	BLI 900 - 11 <sup>5</sup> / <sub>8</sub> " BLI 65 - 14"	<b>BLI 90 - 14"</b> <b>BLI 65 - 16"</b>	<b>BLI 80 - 16"</b>	<b>BLI 900 - 16"<sup>2,5</sup></b> <b>BLI 80 - 18"<sup>3,5</sup></b>
	18'	BLI 900 - 11 <sup>5</sup> / <sub>8</sub> " BLI 60 - 14"	<b>BLI 80 - 14"</b> <b>BLI 60 - 16"</b>	<b>BLI 80 - 16"<sup>1,4</sup></b>	<b>BLI 900 - 16"<sup>3,5</sup></b> <b>BLI 80 - 18"<sup>3,5</sup></b>
	20'	BLI 900 - 11 <sup>5</sup> / <sub>8</sub> " BLI 60 - 14"	<b>BLI 80 - 14"</b> <b>BLI 60 - 16"</b>	<b>BLI 80 - 16"<sup>1,4</sup></b>	<b>BLI 900 - 16"<sup>3,5</sup></b> <b>BLI 80 - 18"<sup>3,5</sup></b>

1. Minimum bearing length of 2" required.
2. Minimum bearing length of 2<sup>3</sup>/<sub>8</sub>" required.
3. Bearing stiffeners required.
4. When detail F22 is used, rafter slope cannot be less than 9/12.
5. When detail F22 is used, rafter slope cannot be less than 11/12.

Note: When detail F22 is used, **bolded and italicized** joists indicate the need for one A3 angle per rafter.



MATERIAL	PSF
<b>Ceilings</b>	
½" gypsum wallboard .....	2.0
⅝" gypsum wallboard .....	2.5
1" plaster with lath .....	8.0
Metal suspension system	
w/ acoustical tile .....	1.8
Wood suspension system	
w/ acoustical tile .....	2.5

## Floors

Carpet and pad .....	2.0
Hardwood (nominal 1") .....	4.0
Linoleum or soft tile .....	1.5
Ceramic tile (⅜") .....	4.7
Ceramic or quarry tile (¾") .....	10.0
Marble tile (⅜") .....	5.2
Mortar bed (½") .....	6.0
Mortar bed (1") .....	12.0
GYP-CRETE® (¾") .....	6.5
Light weight concrete (1½") .....	12.0
Regular weight concrete (1½") .....	18.0

## Framing

	12" oc	16" oc	19.2" oc	24" oc
2x4	1.1	0.8	0.7	0.6
2x6	1.7	1.3	1.1	0.9
2x8	2.8	2.1	1.8	1.4
2x10	3.5	2.7	2.2	1.8
2x12	4.3	3.2	2.7	2.2

See page 5 for plf weight of BLI joists.

An additional 1.0 - 2.0 psf is recommended for miscellaneous dead loads.

MATERIAL	PSF
<b>Insulation (per 1" thickness)</b>	
Extruded polystyrene (XPS) .....	0.16
Fiberglass batts .....	0.11
Mineral fiber batts (2.5 pcf) .....	0.21
Rigid .....	1.5
<b>Miscellaneous</b>	
4" glass block .....	18.0
Granite countertop 1¼" .....	18.0
Windows, glass, frame and sash .....	8.0

## Roofing

3-ply ready roofing .....	1.0
4-ply felt and gravel .....	5.5
5-ply felt and gravel .....	6.0
<b>Shingles</b>	
Asbestos-cement .....	4.0
Asphalt .....	2.5
Clay tile (min.), for mortar add 10 psf .....	10.0
Concrete tile (MonierLifetile) .....	5.7-10.4
Duration® .....	2.3
Duration® Premium .....	2.6
Slate (⅜") .....	14.0-15.0
Spanish tile .....	19.0
Wood .....	3.0
Skylight, metal frame ⅜" glass .....	8.0

MATERIAL	PSF
<b>Sheathing and Decking</b>	
OSB	
⅞" .....	1.4
1⅝" .....	1.5
1⅞" .....	2.0
2⅜" .....	2.4
⅞" .....	2.9
<b>Plywood</b>	
⅜" .....	1.1
1⅝" .....	1.4
1⅞" .....	1.8
2⅜" .....	2.2
⅞" .....	2.6
1⅞" .....	3.3
Dimension lumber decking (2" nom.) .....	4.5
18 ga. corrugated metal deck .....	3.0
20 ga. corrugated metal deck .....	2.5

## Walls - Int. (2x4 wood or NLB steel studs)

½" gypsum wallboard (GWB) each side .....	6.0
½" GWB one side, plaster one side .....	12.0
Plaster both sides .....	18.0

## Walls - Ext. (½" GWB, 2x6, 5½" FG batts)

⅞" OSB, ½" XPS, vinyl siding .....	8.0
1" XPS, ⅜" composite siding .....	8.0
1" XPS, ⅝" fiber cement siding .....	9.0
⅞" OSB, ⅞" stucco on wire mesh .....	17.0
⅞" OSB, brick veneer .....	48.0

Note: Wall weights are per square foot of wall  
For plf, multiply psf weight by wall height.

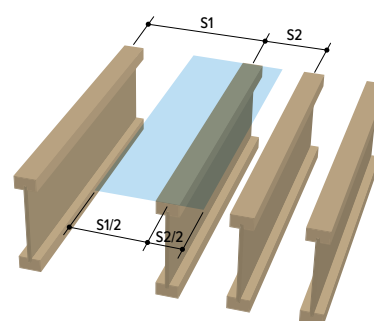
# GENERAL NOTES FOR LOAD TABLES

- The uniform load table values on pages 10 and 26 are based on simple or multiple span configurations, clear distance between bearing points, and spans of multiple span joists at least 40% of adjacent spans.
- Calculated live and total loads must be checked against the tabular values. Live load must be checked against the Live row and total load against the Total row. Total load will control if the Live row is blank.
- The values indicated cover a broad range of applications, none of which require bearing stiffeners. Greater loads may be possible by analyzing a specific application and/or by adding stiffeners. Check these and other conditions such as cantilevers and point loads using Doma Sizer™ software.
- Minimum bearing length: 1¼" (end), 3½" (intermediate).
- Local building codes can vary. Prior to installation, confirm that the table deflection criteria used are accepted in your location.
- Provide lateral support at all bearing locations and continuous lateral support along the compression flange of each joist.
- Table values can be doubled for double joists. Refer to detail F11 for connection information.
- No additional stiffness from glued and nailed sheathing (composite action) has been incorporated into tabular values.

## PSF to PLF Conversion

Joist Spacing	Spacing Factor	Load in pounds per square foot (PSF)											
		20	25	30	35	40	45	50	55	60	65	70	75
12"	1.00	20	25	30	35	40	45	50	55	60	65	70	75
16"	1.33	27	33	40	47	53	60	67	73	80	87	93	100
19.2"	1.60	32	40	48	56	64	72	80	88	96	104	112	120
24"	2.00	40	50	60	70	80	90	100	110	120	130	140	150

## Calculating Uniform Loads



### Joist Spacing (S1, S2)

$$\left( \frac{S1(ft)}{2} + \frac{S2(ft)}{2} \right) \times LL(psf) = LL(plf)$$

$$\left( \frac{S1(ft)}{2} + \frac{S2(ft)}{2} \right) \times TL(psf) = TL(plf)$$

Check resulting values against those in the appropriate uniform load table.

# FLOOR LOAD TABLE (PLF)

# BLI 100%

Joist Series	Joist Depth	Load Type / Deflection	Clear Span																							
			6'	7'	8'	9'	10'	11'	12'	13'	14'	15'	16'	17'	18'	19'	20'	21'	22'	23'	24'	25'	26'			
BLI 40	9½"	Live L/600				179	136	106	83	67	54	45	37	31	27											
		L/480					170	132	104	84	68	56	47	39	33											
	Total L/240	286	244	214	190	171	155	142	125	108	94	83	73	65												
	11½"	Live L/600						172	137	110	90	75	62	53	45	38	33	29	25	22						
		L/480								138	113	93	78	66	56	48	41	36	31	28						
	Total L/240	334	285	249	221	198	180	165	152	140	122	107	95	85	76	69	62	57	52							
	14"	Live L/600									128	106	89	75	64	55	48	42	36	32	28	25	22			
		L/480											112	94	81	69	60	52	46	40	35	31	28			
	Total L/240	336	287	250	222	199	181	165	153	142	132	124	115	102	92	83	75	69	63	58	53	49				
	16"	Live L/600											119	101	86	74	64	56	49	43	38	34	30			
L/480														108	93	80	70	61	54	48	43	38				
BLI 60	11½"	Live L/600							159	129	106	88	73	62	53	45	39	34	30	26						
		L/480									132	110	92	78	66	57	49	43	37	33						
	Total L/240	336	286	250	221	199	181	165	153	142	132	124	116	110	104	95	86	75	66							
	14"	Live L/600										126	106	89	76	66	57	50	43	38	34	30	27			
		L/480												112	96	82	71	62	55	48	42	38	34			
	Total L/240	339	288	251	223	200	181	166	153	142	132	124	117	110	104	99	94	90	86	80	74	68				
	16"	Live L/600													102	88	77	67	59	52	46	41	36			
		L/480															96	84	74	65	58	51	46			
	Total L/240	341	290	253	224	201	182	166	153	142	133	124	117	110	104	99	94	90	86	83	79	76				
	BLI 65	11½"	Live L/600							178	144	119	99	83	70	60	51	45	39	34	30					
L/480											149	124	104	88	75	65	56	49	43	37						
Total L/240		379	323	282	250	224	203	186	172	159	149	139	131	122	110	99	90	82	75							
14"		Live L/600									167	140	118	100	86	74	64	56	49	43	38	34	30			
		L/480										147	125	107	92	80	70	61	54	48	43	38				
Total L/240		390	335	294	262	236	215	197	182	169	158	148	139	132	125	119	108	99	90	83	77	71				
16"		Live L/600												132	114	98	85	75	66	58	51	46	41			
		L/480														123	107	93	82	72	64	57	51			
Total L/240		390	335	294	262	236	215	197	182	169	158	148	139	132	125	119	113	108	103	96	89	82				
BLI 80		11½"	Live L/600								168	139	116	97	83	71	61	53	46	40	36					
	L/480											145	122	104	89	76	66	58	51	45						
	Total L/240	379	325	283	251	225	204	187	172	160	149	140	131	124	117	111	106	101	90							
	14"	Live L/600											138	117	101	87	76	66	58	51	46	41	36			
		L/480													126	109	95	83	73	64	57	51	45			
	Total L/240	415	353	307	271	243	220	202	186	172	161	150	141	134	126	120	114	109	104	100	96	92				
	16"	Live L/600															116	101	88	78	69	61	55	49		
		L/480																	111	97	86	77	68	61		
	Total L/240	416	355	309	273	244	221	202	186	173	161	151	142	134	127	120	114	109	104	100	96	92				
	18"	Live L/600																	112	99	88	78	70	62		
L/480																				98	87	78				
Total L/240	406	349	306	273	246	224	205	190	176	165	154	145	137	130	124	118	112	107	103	99	95					
BLI 90	11½"	Live L/600									150	125	105	90	77	66	57	50	44	39						
		L/480											132	112	96	83	72	63	55	49						
	Total L/240	379	325	284	251	226	205	187	172	160	149	140	131	124	117	112	106	101	97							
	14"	Live L/600											148	127	109	94	82	72	63	56	49	44	39			
		L/480														118	102	90	79	70	62	55	49			
	Total L/240	416	354	308	272	244	221	202	186	173	161	151	142	134	127	120	114	109	104	100	96	92				
	16"	Live L/600															124	108	95	84	74	66	59	53		
		L/480																	119	105	93	82	74	66		
	Total L/240	416	358	314	279	252	229	210	194	180	169	158	149	141	133	127	121	115	110	106	101	97				
	18"	Live L/600																		107	95	84	75	68		
L/480																						94	85			
Total L/240	406	349	306	273	246	224	205	190	176	165	154	145	137	130	124	118	112	108	103	99	95					



# FLOOR LOAD TABLE (PLF)

# BLI 100%

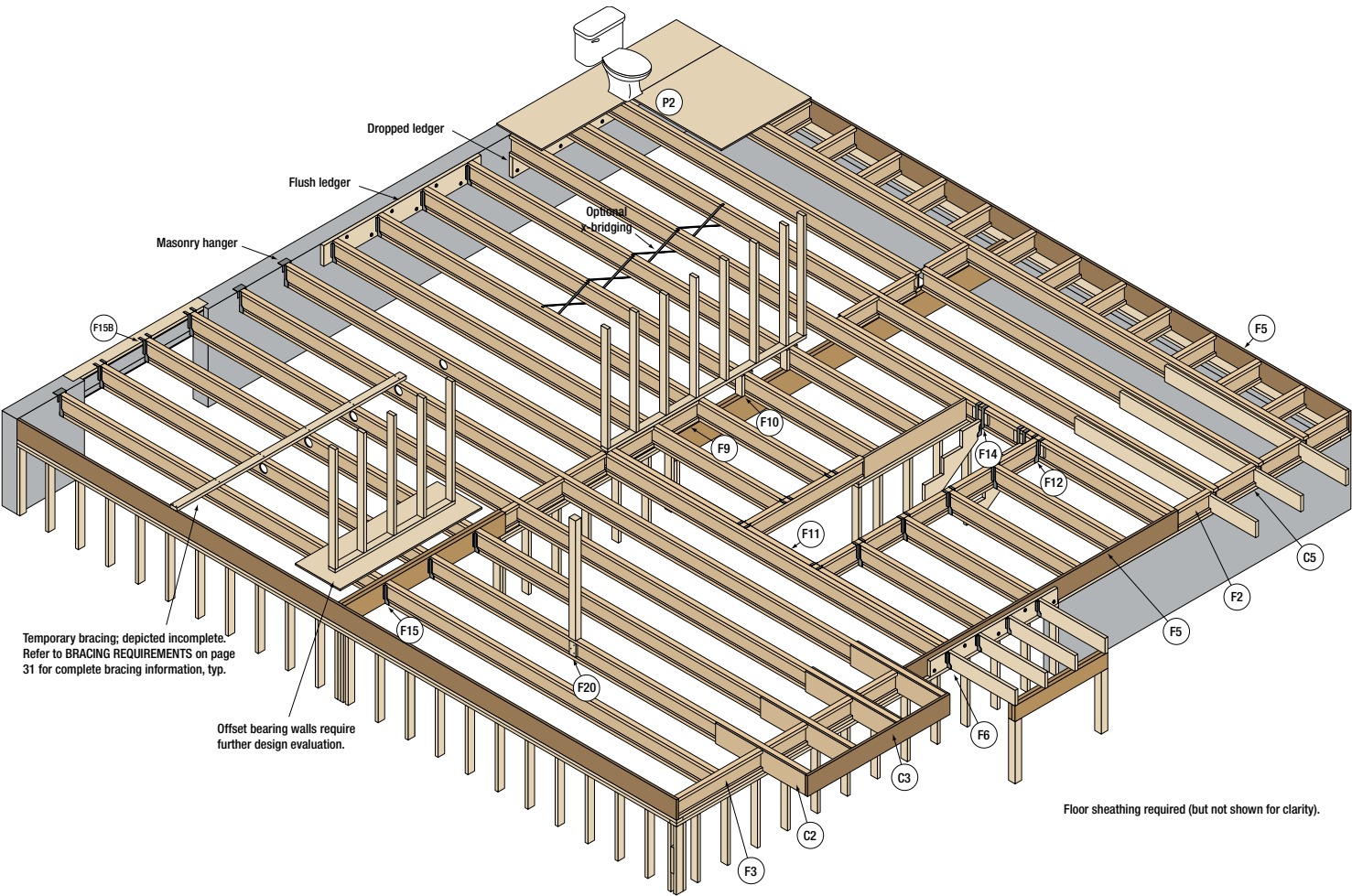
Joist Series	Joist Depth	Load Type / Deflection	Clear Span																							
			6'	7'	8'	9'	10'	11'	12'	13'	14'	15'	16'	17'	18'	19'	20'	21'	22'	23'	24'	25'	26'			
BLI 700	11½"	Live L/600								135	111	92	77	65	56	48	41	36	32	28						
		L/480										116	97	82	70	60	52	45	40	35						
		Total L/240	331	282	246	218	196	178	163	150	139	130	122	115	108	103	97	91	80	70						
	14"	Live L/600											110	93	80	69	60	52	45	40	35	32	28			
		L/480													100	86	75	65	57	50	44	40	35			
		Total L/240	334	284	247	219	197	179	163	151	140	130	122	115	108	103	97	93	89	85	81	78	71			
	16"	Live L/600													107	92	80	70	62	54	48	43	38			
		L/480															88	77	68	60	54	48				
		Total L/240	336	286	249	220	198	179	164	151	140	131	122	115	109	103	98	93	89	85	81	78	75			
BLI 900	11½"	Live L/600								194	161	135	114	97	83	72	63	55	48	42						
		L/480										169	143	122	104	90	78	68	60	53						
		Total L/240	455	391	340	301	270	245	224	206	191	178	167	157	148	140	133	127	121	107						
	14"	Live L/600											160	137	118	102	89	78	69	61	54	48	43			
		L/480													147	128	111	98	86	76	67	60	54			
		Total L/240	455	391	343	303	272	246	225	207	192	179	168	158	149	141	134	127	121	116	111	107	103			
	16"	Live L/600														134	117	103	91	81	72	64	57			
		L/480																114	101	90	80	72				
		Total L/240	455	391	343	305	273	247	226	208	193	180	168	158	149	141	134	127	122	116	111	107	103			

## NOTES:

1. Refer to General Notes on page 9.
2. Live load deflection of L/480 is recommended. For allowable live load at L/360 deflection (minimum code requirement), multiply L/480 values by 1.33. Refer to page 6 for framing system design considerations.

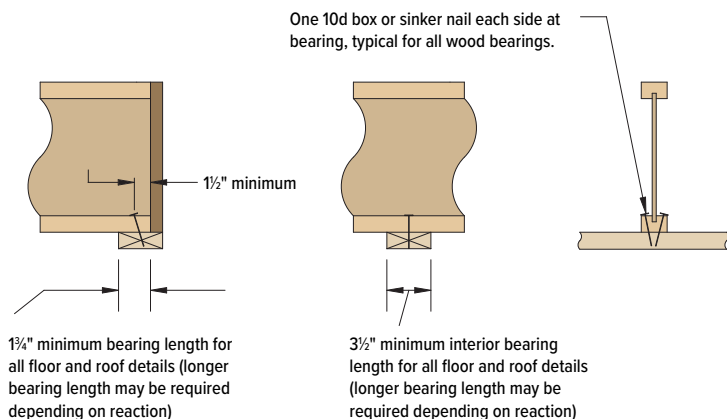


onCENTER® FLOOR FRAMING SYSTEM





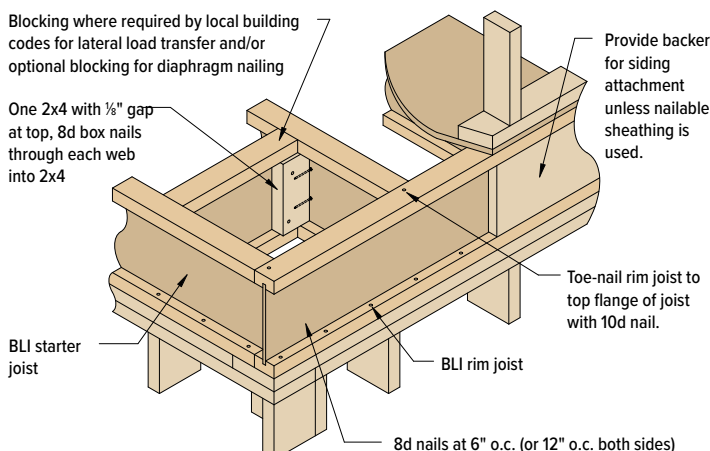
## F1 ATTACHMENT AT BEARING



To minimize splitting of flange and bearing plate, angle nails and start at least 1 1/2" from end.

## F3 BLI RIM JOIST / STARTER JOIST

Vertical load transfer = 2000 plf max. (18" - 1810 plf)



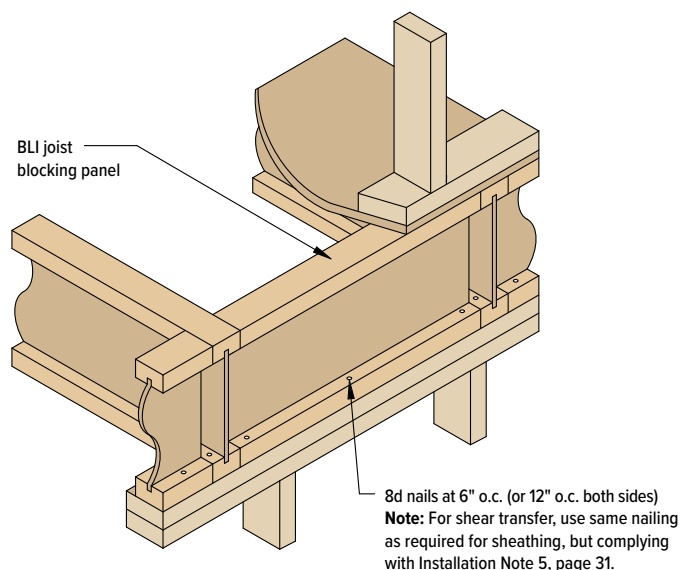
**Note:** Minimum 1 3/4" bearing length for all BLI joists

**Note:** For shear transfer, use same nailing as required for sheathing, but complying with Installation Note 5, page 31.

## BLOCKING PANEL, EXTERIOR

Vertical load transfer = 2000 plf max. (18" - 1810 plf)

## F2



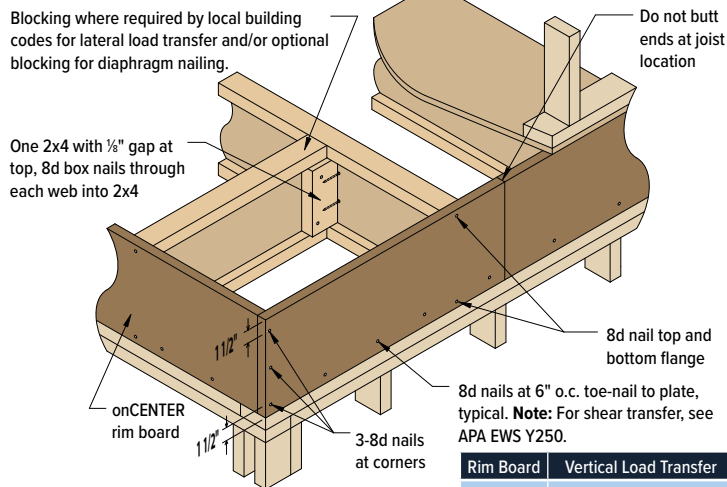
## F3

## BLI RIM JOIST / STARTER JOIST

Vertical load transfer = 2000 plf max. (18" - 1810 plf)

## onCENTER® RIM BOARD CLOSURE

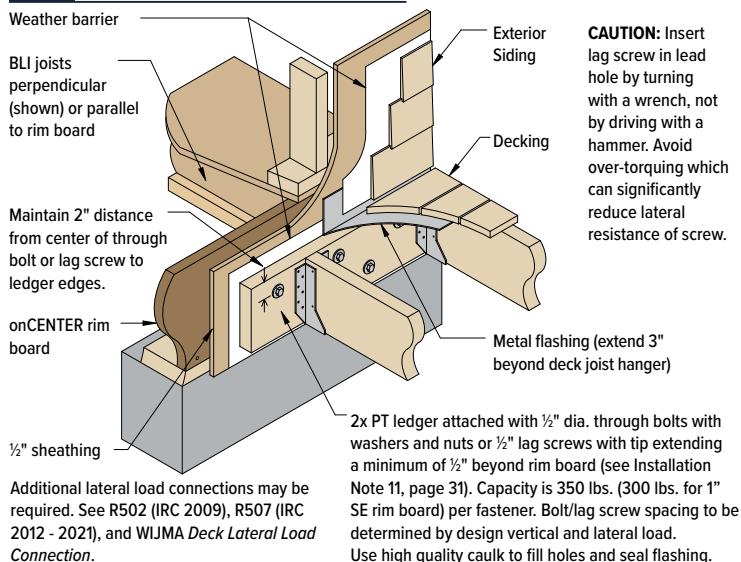
## F5



Check local building code for appropriate detail in areas of high lateral load.

Rim Board	Vertical Load Transfer
1" SE	3300 plf (18" - 2750 plf)
1 1/2" SE	4400 plf (18" - 3950 plf)

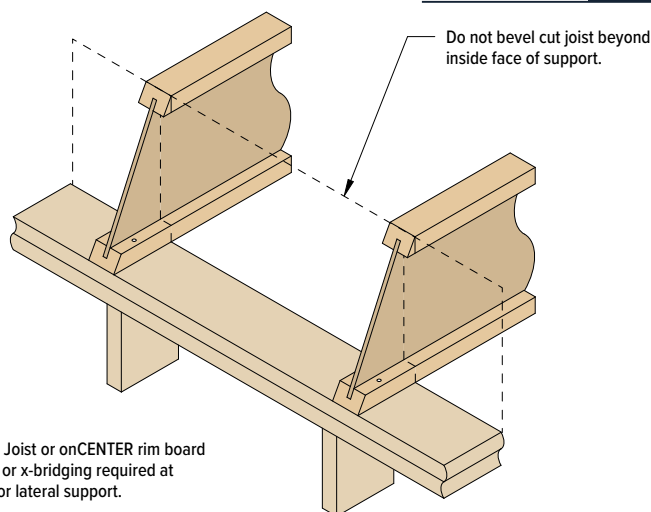
## F6 DECK ATTACHMENT TO RIM BOARD



Additional lateral load connections may be required. See R502 (IRC 2009), R507 (IRC 2012 - 2021), and WJMA Deck Lateral Load Connection.

## BEVEL CUT JOIST

## F8

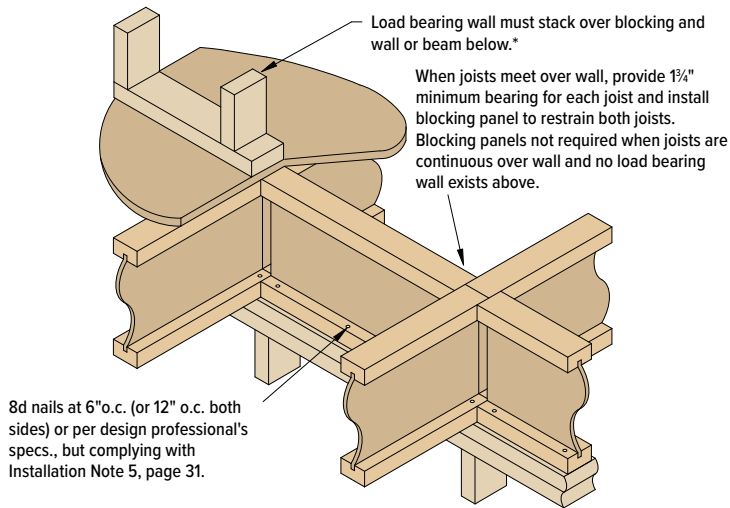


**Note:** BLI Joist or onCENTER rim board blocking, or x-bridging required at bearing for lateral support.

Check local building code for appropriate detail in areas of high lateral load.

**BLOCKING PANEL, INTERIOR**

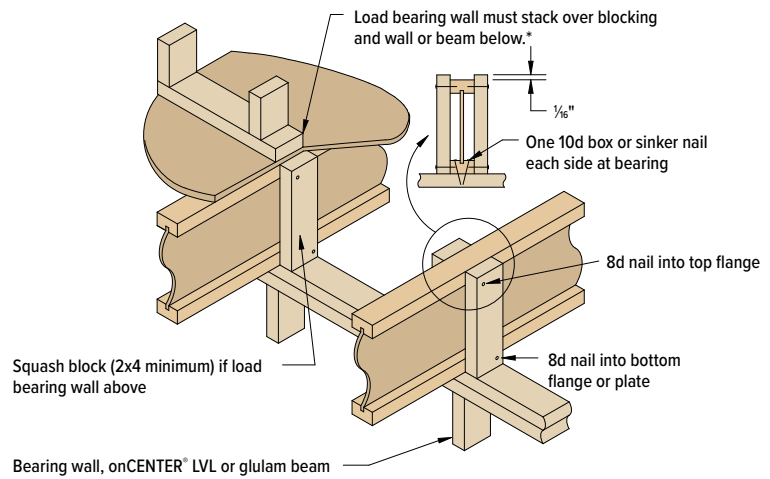
Vertical load transfer = 2000 plf max. (18" - 1810 plf)



\* Non-stacking load bearing walls require additional consideration.

**SQUASH BLOCKS AT INTERIOR BEARING**

Vertical load transfer = 2000 plf max. along load bearing wall

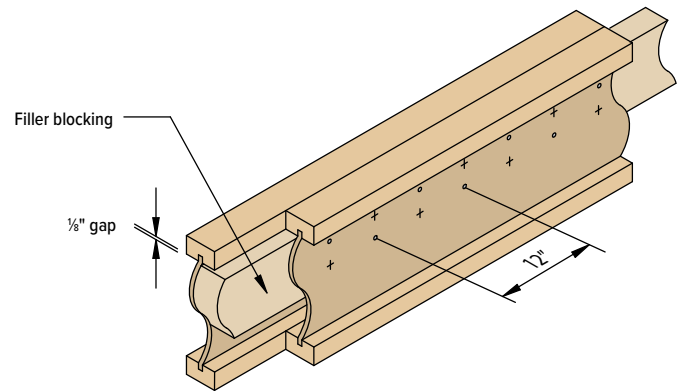


\* Non-stacking load bearing walls require additional consideration. Check local building code for appropriate detail in areas of high lateral load.

**DOUBLE JOIST CONSTRUCTION WITH FILLER**

**Note:** Filler blocks and fastening between joists can be omitted when double joists are loaded evenly from above to the tops of both joists, such as when a parallel bearing wall is directly centered over the double joist.

Joist		Regular Filler Blocking (Detail F12)	Full-depth Filler Blocking (Details C4, F13, F14 & R7)
Series	Depth		
BLI 700	11 1/2"	2x6 + 3/8" OSB/Plywood	2x8 + 3/8" OSB/Plywood
	14"	2x8 + 3/8" OSB/Plywood	2x10 + 3/8" OSB/Plywood
	16"	2x8 + 3/8" OSB/Plywood	2x12 + 3/8" OSB/Plywood
BLI 40	9 1/2"	2x6 + 3/8" OSB/Plywood	2x6 + 3/8" OSB/Plywood
	11 1/2"	2x6 + 3/8" OSB/Plywood	2x8 + 3/8" OSB/Plywood
	14"	2x8 + 3/8" OSB/Plywood	2x10 + 3/8" OSB/Plywood
BLI 40, 60	16"	2x8 + 3/8" OSB/Plywood	2x12 + 3/8" OSB/Plywood
	11 1/2"	2-2x8	2-2x8
	14"	2-2x8	2-2x10
BLI 65, 80, 90, 900	16"	2-2x8	2-2x12
	18"	2-2x8	2-2x12



1. Support back of web during nailing to prevent damage to web-flange connection.
2. Leave 1/8" gap between top of filler blocking and bottom of top flange.
3. Block solid between joists. For all applications except cantilever reinforcement, filler need not be one continuous length, but must extend the entire length of span. For double I-joist cantilever reinforcement C4, filler must be one continuous piece extending the full length of the reinforcement.
4. Place joists together and nail from each side with 2 rows of 10d common nails (16d common for BLI 65, BLI 80, BLI 90, and BLI 900) at 12" o.c. Offset rows on opposite side 6".

**FLOOR OPENING, TOP MOUNT HANGERS****Backer Blocks\***

Joist Series	Material
BLI 700	3/8"
BLI 40, 60	1/2" + 1/2"
BLI 65, 80, 90, 900	1 1/2"

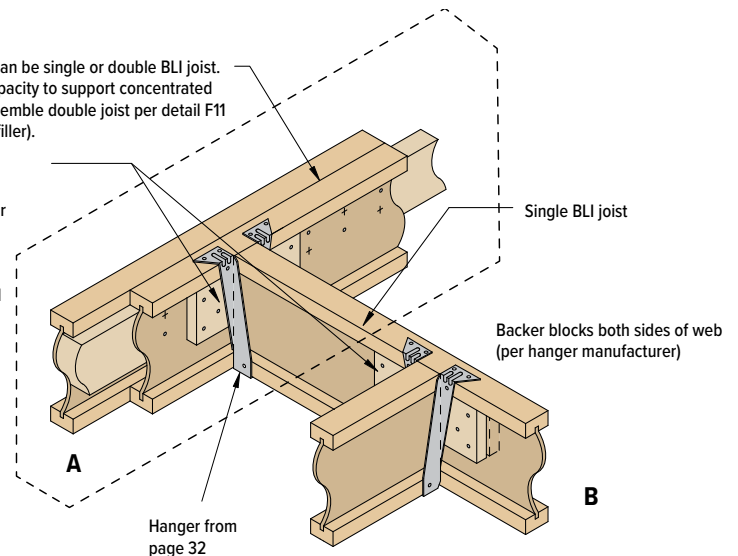
Joist Depth	Block Depth
9 1/2", 11 1/2"	5 1/2"
14" - 18"	7 1/4"

\* Block centered on hanger location. Minimum length 24".

**Backer Block (use if hanger load exceeds 250 lbs.)**

Before installing backer to double joist, drive an additional 4-10d common nails through web into filler where backer will fit. Repeat on back side of double joist. Install backer tight to top flange. Use 8-10d common nails (15-10d common nails for BLI 65, 80, 90, 700 and 900 series joists). Stagger nails to avoid splitting. Clinch nails when possible.

Header can be single or double BLI joist. Verify capacity to support concentrated load. Assemble double joist per detail F11 (regular filler).





## F13 FLOOR OPENING, FACE MOUNT HANGERS

### Backer Blocks\*

Joist Series	Material
BLI 40, 60	1/2" x 1/2"
BLI 700	7/8"
BLI 65, 80, 90, 900	1 1/2"

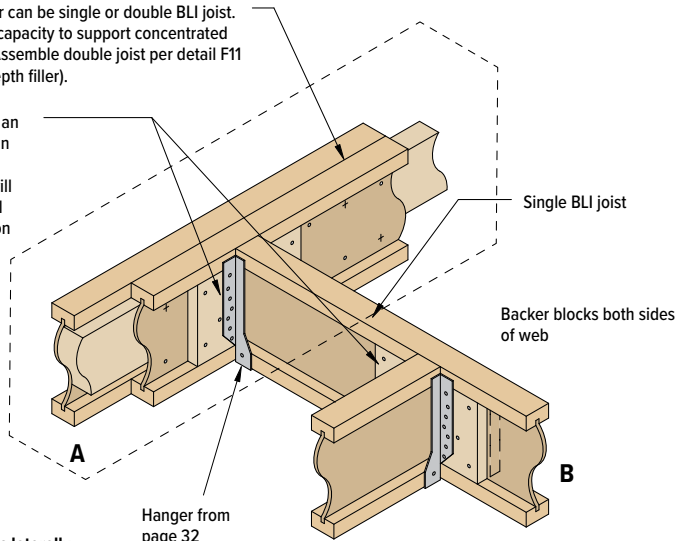
Joist Depth	Block Depth
9 1/2"	6 1/4"
11 7/8"	8 5/8"
14"	10 3/4"
16"	12 3/4"
18"	14 3/4"

\* Block centered on hanger location.  
Minimum length 24".

### Backer Block

Before installing backer to double joist, drive an additional 7-10d common nails (4-10d common nails for BLI 65, 80, 90, 700 and 900 series joists) through web into filler where backer will fit. Repeat on back side of double joist. Install backer tight to top flange. Use 18-10d common nails. Stagger nails to avoid splitting. Clinch nails when possible.

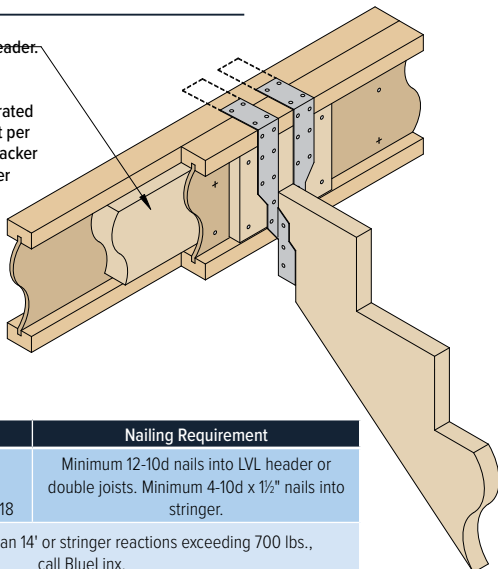
Header can be single or double BLI joist. Verify capacity to support concentrated load. Assemble double joist per detail F11 (full-depth filler).



Unless hanger sides laterally restrain top flange, bearing stiffeners are required at hangers (see detail F18).

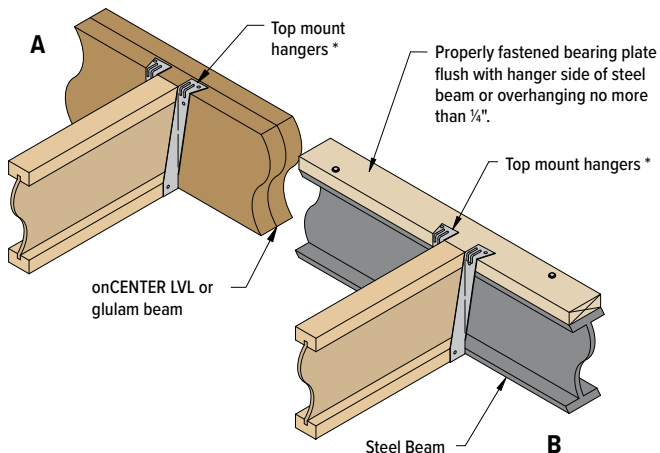
## F14 STAIR STRINGER TO JOIST CONNECTION

Double BLI joist shown as header. onCENTER® LVL may also be used. Verify header capacity to support concentrated loads. Assemble double joist per detail F11 (full depth filler). Backer block size and installation per detail F13.



Hangers	Nailing Requirement
USP MSH218 or Simpson Strong-Tie® THA218	Minimum 12-10d nails into LVL header or double joists. Minimum 4-10d x 1 1/2" nails into stringer.
For stringers longer than 14' or stringer reactions exceeding 700 lbs., call BlueLinX.	

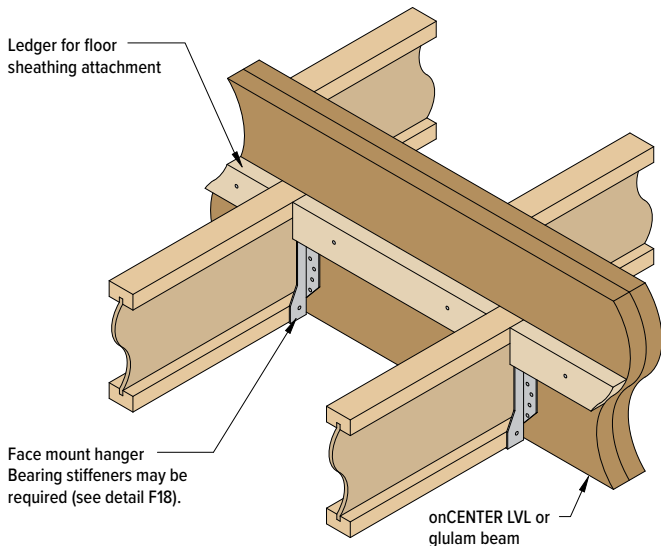
## F15 JOIST TO BEAM CONNECTION



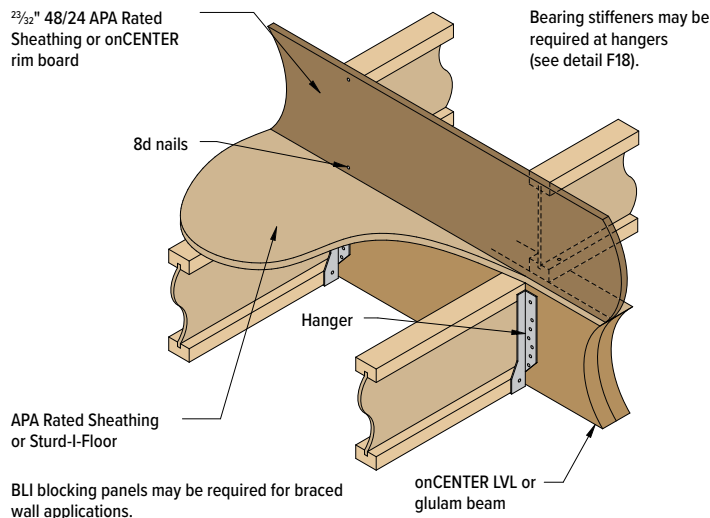
Bearing stiffeners may be required at hangers (see detail F18).

\* Appropriate face mount hanger may be substituted, but 'B' requires solid wood blocking properly attached to the steel beam.

## F16 JOIST TO BEAM CONNECTION, STEP DOWN



## F17 JOIST TO DROPPED BEAM CONNECTION, STEP DOWN

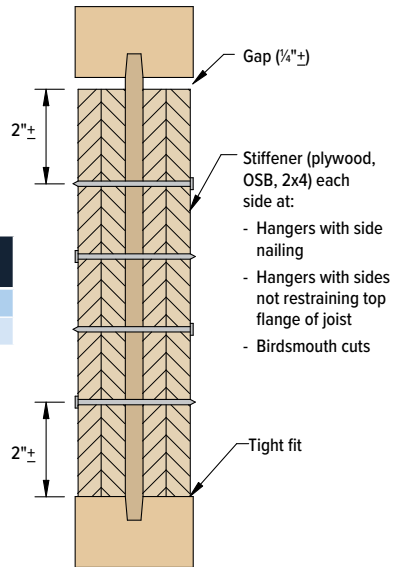


## F18 BEARING STIFFENERS

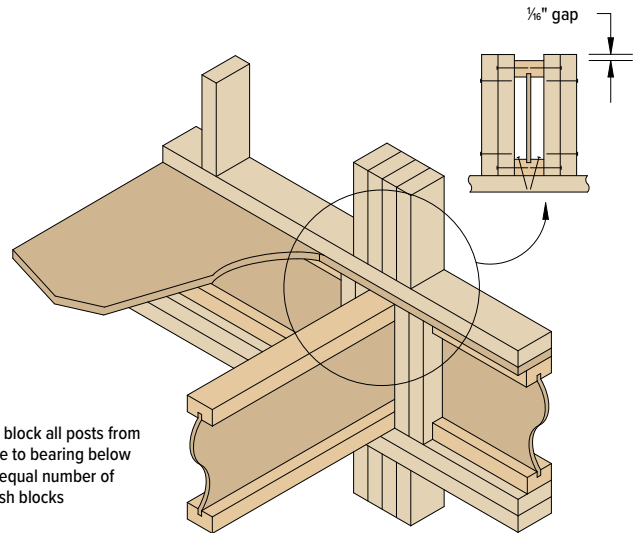
Joist Series	Stiffener Material	Nails
BLI 40, 60, 700	$\frac{1}{2}" \times \frac{1}{2}"$	4-8d*
BLI 65, 80, 90, 900	$1\frac{1}{2}"$	4-10d*

Minimum stiffener width is  $2\frac{5}{8}"$ .

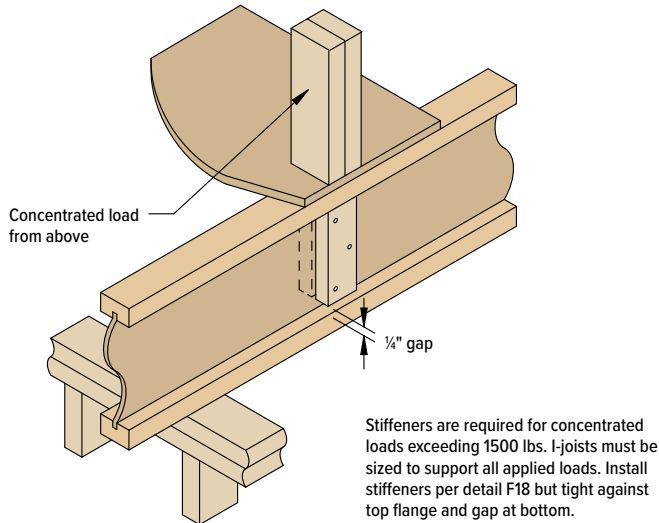
\* Use 6 nails for 18" joists.



## F19 SQUASH BLOCKS AT CONCENTRATED LOADS



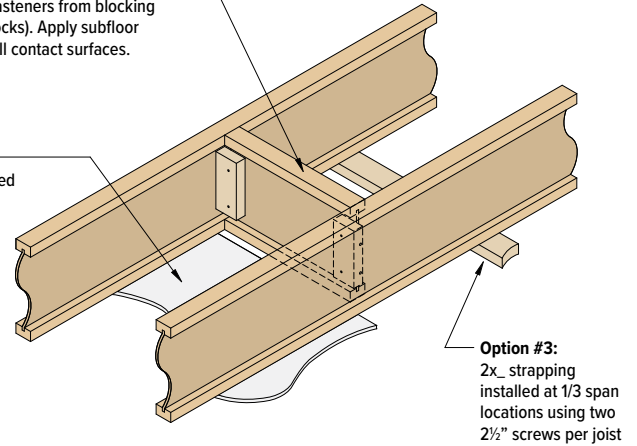
## F20 WEB STIFFENERS



## F21 FLOOR PERFORMANCE ENHANCERS

**Option #1:** Blocking panel with end blocks installed at  $\frac{1}{3}$  span locations using #8 x 2" screws (two fasteners from joist web into blocks, two fasteners from blocking panel into blocks). Apply subfloor adhesive to all contact surfaces.

**Option #2:** Directly applied ceiling

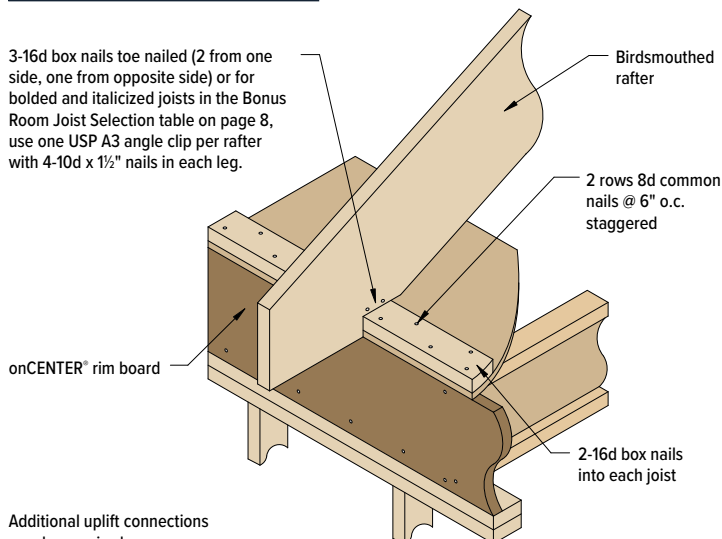


**Option #3:** 2x strapping installed at  $\frac{1}{3}$  span locations using two  $2\frac{1}{2}"$  screws per joist

## F22 RAISED RAFTER BEARING

Bonus room floors only, page 8

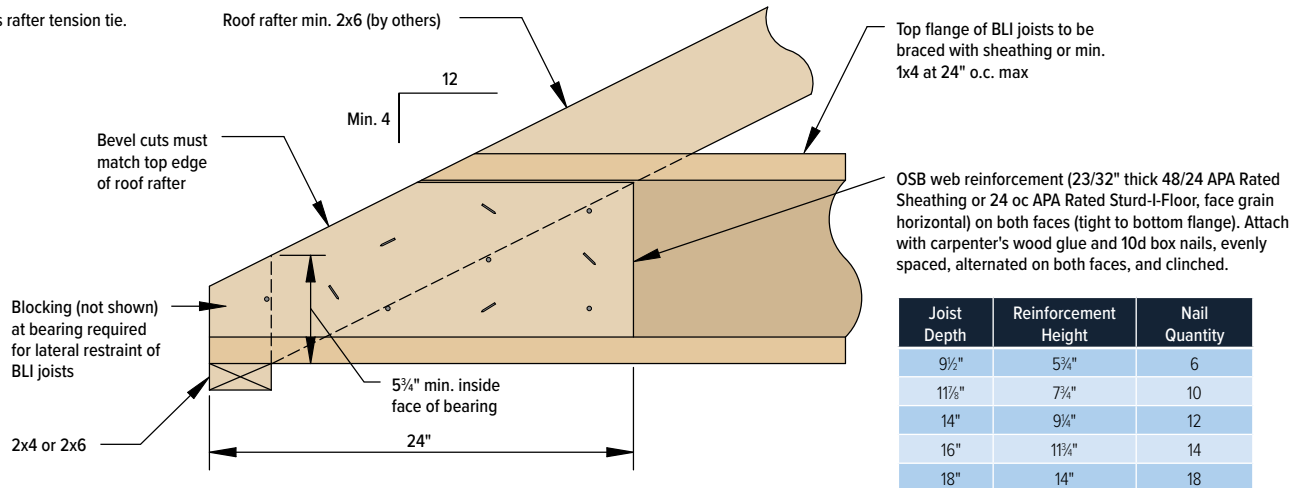
3-16d box nails toe nailed (2 from one side, one from opposite side) or for bolded and italicized joists in the Bonus Room Joist Selection table on page 8, use one USP A3 angle clip per rafter with 4-10d x  $1\frac{1}{2}"$  nails in each leg.





**Note:**

BLI joist not to act as rafter tension tie.

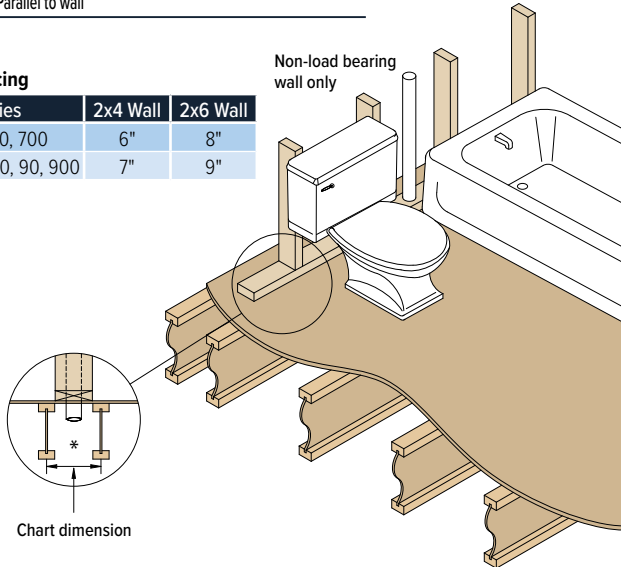
**P1****JOIST SPACING BELOW PLUMBING WALL**

Parallel to wall

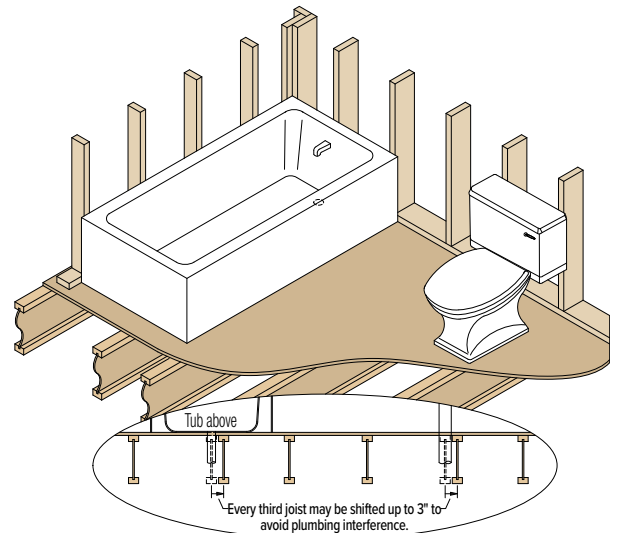
**Joist Spacing**

Joist Series	2x4 Wall	2x6 Wall
BLI 40, 60, 700	6"	8"
BLI 65, 80, 90, 900	7"	9"

Non-load bearing wall only



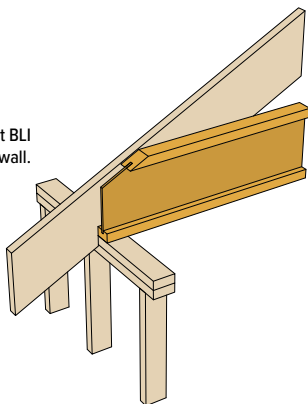
\*Provide blocking between adjacent joists when needed to support panel ends.

**JOIST SPACING BELOW PLUMBING FIXTURES****P2**

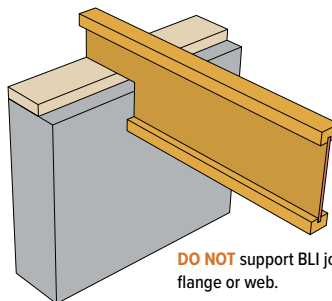
May not be appropriate for some sheathing and finished flooring applications.

**INSTALLATION CAUTIONS**

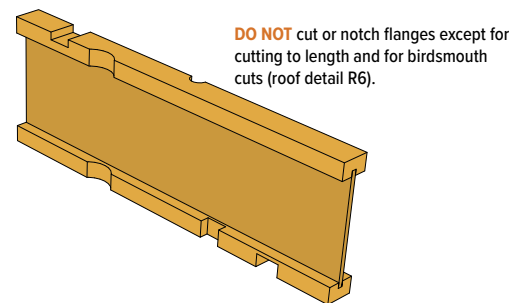
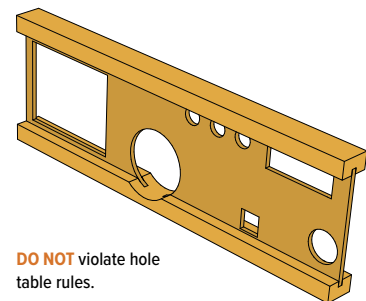
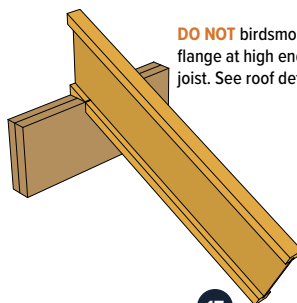
**DO NOT** bevel cut BLI joist past face of wall. See detail F8.



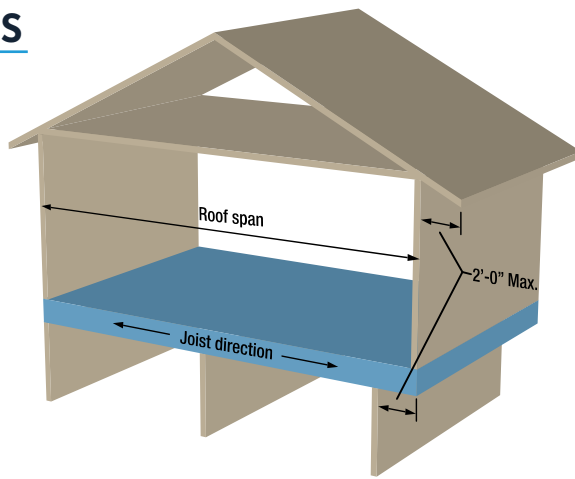
**DO NOT** support BLI joist by top flange or web.



**DO NOT** birdsmouth cut bottom flange at high end of roof BLI joist. See roof detail R2.



# CANTILEVERS



## NOTES:

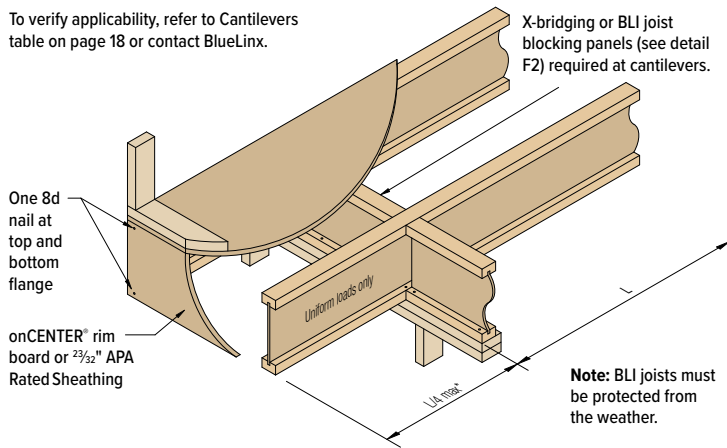
- Chart based on the following:  
40 psf live and 10 psf dead load floor loading  
15 to 25 psf roof dead load  
80 plf exterior wall load  
115% roof load duration
- Joist must meet span limitations on page 7.
- For other conditions use Doma Sizer™ software or contact BlueLinX.
- A joist may be required beneath the ends of headers that exceed 3' in length and support roof framing.

Joist Depth	Roof Span	Roof total load = 35 psf				Roof total load = 45 psf				Roof total load = 55 psf				Roof total load = 65 psf			
		Joist spacing				Joist spacing				Joist spacing				Joist spacing			
		12" o.c.	16" o.c.	19.2" o.c.	24" o.c.	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.
9½"	26'	0	0	0	1	0	1	1	2	1	2	X	X	2	X	X	X
	28'	0	0	1	1	0	1	2	X	1	2	X	X	2	X	X	X
	30'	0	0	1	2	0	1	2	X	1	2	X	X	2	X	X	X
	32'	0	1	1	2	1	1	2	X	2	X	X	X	2	X	X	X
	34'	0	1	1	2	1	2	2	X	2	X	X	X	X	X	X	X
	36'	0	1	1	2	1	2	X	X	2	X	X	X	X	X	X	X
11½"	26'	0	0	0	0	0	0	0	1	0	0	1	2	0	1	2	X
	28'	0	0	0	0	0	0	0	1	0	1	1	2	1	1	2	X
	30'	0	0	0	0	0	0	0	1	0	1	1	2	1	2	2	X
	32'	0	0	0	0	0	0	1	1	0	1	2	X	1	2	2	X
	34'	0	0	0	1	0	0	1	2	0	1	2	X	1	2	X	X
	36'	0	0	0	1	0	0	1	2	1	1	2	X	1	2	X	X
14"	38'	0	0	0	1	0	1	1	2	1	2	2	X	1	2	X	X
	26'	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
	28'	0	0	0	0	0	0	0	1	0	0	1	1	0	1	1	2
	30'	0	0	0	1	0	0	0	1	0	0	1	2	0	1	1	X
	32'	0	0	0	1	0	0	0	1	0	0	1	2	0	1	2	X
	34'	0	0	0	1	0	0	0	1	0	0	1	X	0	1	2	X
16"	36'	0	0	0	1	0	0	1	2	0	1	1	X	1	1	2	X
	38'	0	0	0	1	0	0	1	2	0	1	2	X	1	1	X	X
	40'	0	0	0	1	0	0	1	2	0	1	2	X	1	2	X	X
	26'	0	0	0	1	0	0	0	1	0	0	0	1	0	0	1	2
	28'	0	0	0	1	0	0	0	1	0	0	0	1	0	0	1	2
	30'	0	0	0	1	0	0	0	1	0	0	1	1	0	0	1	X
18"	32'	0	0	0	1	0	0	0	1	0	0	1	2	0	1	1	X
	34'	0	0	0	1	0	0	0	1	0	0	1	2	0	1	2	X
	36'	0	0	0	1	0	0	0	1	0	0	1	2	0	1	2	X
	38'	0	0	0	1	0	0	1	2	0	1	1	X	0	1	2	X
	40'	0	0	0	1	0	0	1	2	0	1	2	X	0	1	X	X
	42'	0	0	0	1	0	0	1	2	0	1	2	X	0	2	X	X
18"	26'	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
	28'	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
	30'	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
	32'	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	X
	34'	0	0	0	0	0	0	0	1	0	0	1	2	0	0	1	X
	36'	0	0	0	0	0	0	0	1	0	0	1	2	0	1	2	X
18"	38'	0	0	0	0	0	0	0	1	0	0	1	2	0	1	2	X
	40'	0	0	0	0	0	0	0	2	0	0	1	X	0	1	2	X
	42'	0	0	0	0	0	0	0	2	0	1	2	X	0	1	X	X

0 = No reinforcement required. See Detail C1.  
 1 = Single reinforcement required. See Detail C2.  
 2 = Double reinforcement required. See Detail C3 or C4.  
 X = Joist does not work. Select closer spacing or deeper joist.

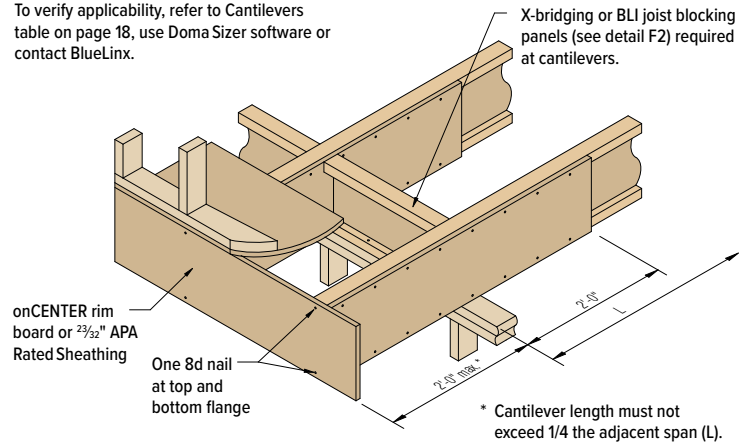
Refer to details on the following page for reinforcement information.

To verify applicability, refer to Cantilevers table on page 18 or contact BlueLinX.



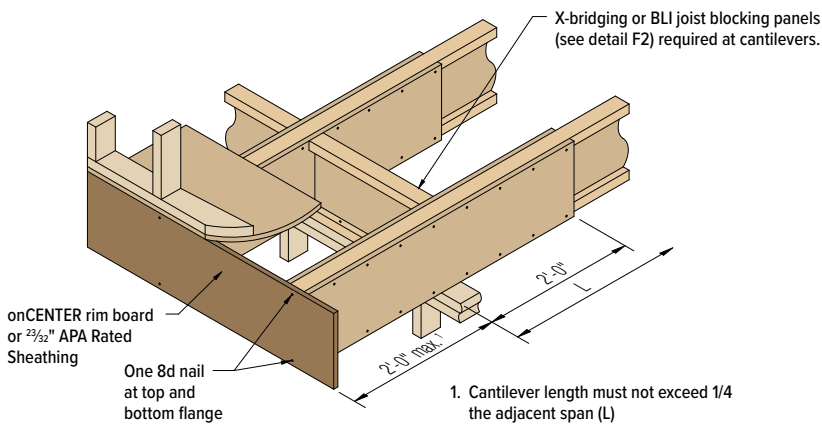
\*Cantilever length must not exceed 1/4 the adjacent span (L). Nor may it exceed:  
a) 2'-0" (if end of cantilever supports wall/roof loads)  
b) 4'-0" (if no loads are placed on end of cantilever)  
For other conditions contact BlueLinX.

To verify applicability, refer to Cantilevers table on page 18, use DomaSizer software or contact BlueLinX.



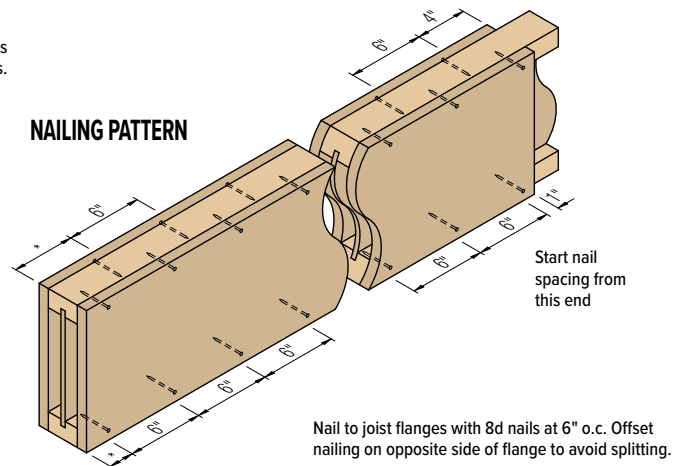
**Note:** onCENTER rim board or 48/24 APA Rated Sheathing (strength axis horizontal) required one side of joist. Depth must match full depth of joist. Nail to joist flanges with 8d nails at 6" o.c. Minimum end distance for flange edge nailing is 2" (3" for BLI 700/900).

To verify applicability, refer to Cantilevers table on page 18 or contact BlueLinX.



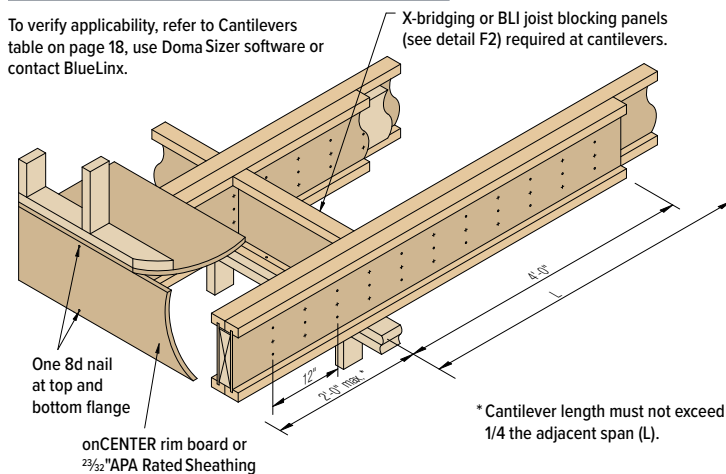
**Note:** onCENTER rim board or 48/24 APA Rated Sheathing (strength axis horizontal) required both sides of joist. Depth must match full depth of joist.

## NAILING PATTERN



\* Minimum end distance for flange edge nailing is 2" (3" for BLI 700/900).

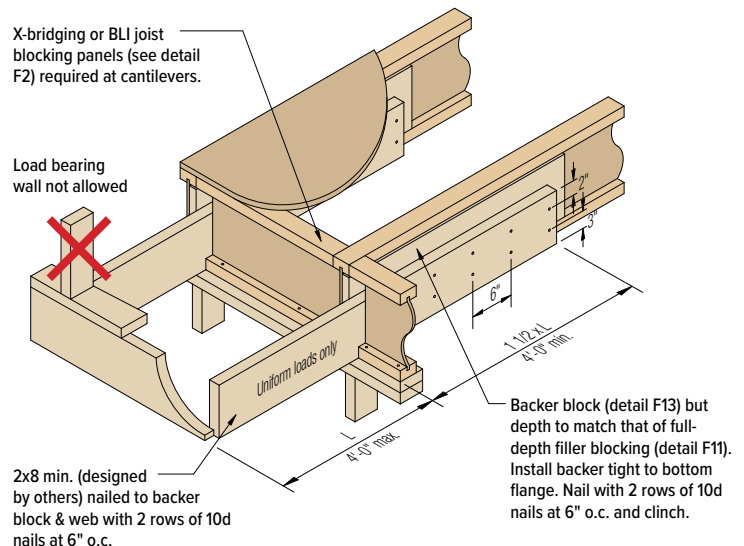
To verify applicability, refer to Cantilevers table on page 18, use DomaSizer software or contact BlueLinX.



**Note:** Block together full length with full-depth filler blocking. See detail F11 for filler size, except filler must be one continuous length. For 9 1/2" joists, use 2 rows of 10d nails at 12" o.c. from each side; for other depths, use 3 rows of 10d nails (16d for BLI 65, 80, 90, and 900) at 12" o.c. from each side. Offset opposite side nailing by 6".

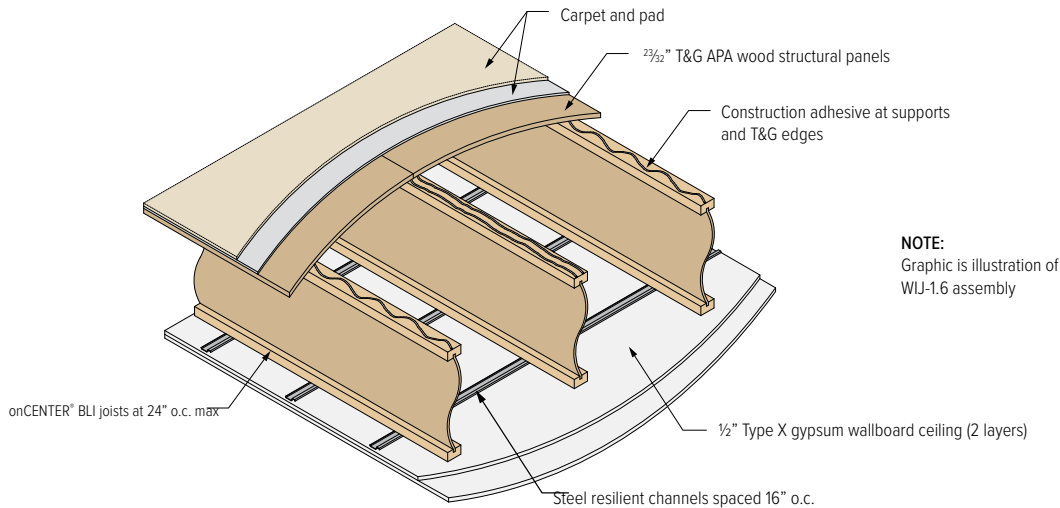
X-bridging or BLI joist blocking panels (see detail F2) required at cantilevers.

Load bearing wall not allowed





# FIRE AND SOUND RATED ASSEMBLIES



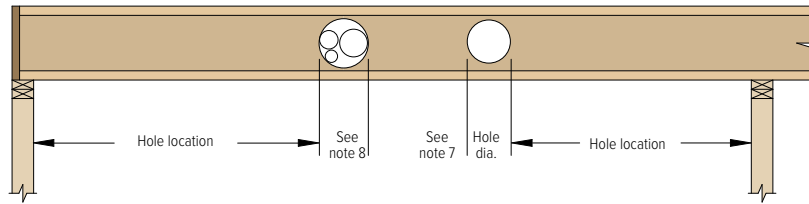
## One-Hour Fire-Rated Floor / Ceiling Assemblies<sup>1</sup>

	BLI 65, 80, 90, 900	BLI 90, 900	All BLI <sup>2</sup>	All BLI <sup>2</sup>	All BLI <sup>2</sup>	All BLI <sup>2</sup>	All BLI <sup>2</sup>
Assembly Ref. (DCA 3 <sup>3</sup> )	WIJ-1.1	WIJ-1.2	WIJ-1.3	WIJ-1.4	WIJ-1.5	WIJ-1.6	WIJ-1.7
Ref. (IBC <sup>4</sup> )	24-1.1	25-1.1	23-1.1		26-1.1	27-1.1	30-1.1
Insulation	$\frac{1}{2}$ " mineral wool batts (2.5 pcf - nominal) resting on hat-shaped furring channels	$\frac{1}{2}$ " mineral wool batts (2.5 pcf - nominal) resting on resilient channels	2" mineral wool batts (3.5 pcf - nominal) resting on 1x4 setting strips (use 1x6 with joists having $\frac{3}{4}$ " flanges)	1" mineral wool batts (6 pcf - nominal) resting on hat-shaped furring channels under I-joist bottom flange	(none)	(none)	$\frac{3}{4}$ " fiberglass insulation
Furring Channels	Hat-shaped	Resilient	Resilient	Hat-shaped supported by CSC clips		Resilient	Resilient
Ceiling GWB <sup>5,6</sup> (Base)					$\frac{1}{2}$ " Type C	$\frac{1}{2}$ " Type X	$\frac{1}{2}$ " Type X
Drywall Screws					1" Type S @ 12" o.c.	$\frac{1}{4}$ " Type S @ 12" o.c.	$\frac{1}{4}$ " Type S @ 12" o.c.
Ceiling GWB <sup>5</sup> (Face)	$\frac{5}{8}$ " Type C	$\frac{5}{8}$ " Type C	$\frac{5}{8}$ " Type C	$\frac{1}{2}$ " Type C	$\frac{1}{2}$ " Type C	$\frac{1}{2}$ " Type X	$\frac{1}{2}$ " Type X
Drywall Screws	$\frac{1}{8}$ " Type S @ 12" o.c.	1" Type S @ 12" o.c.	$\frac{1}{8}$ " Type S @ 7" o.c.	1" Type S @ 12" o.c.	$\frac{1}{8}$ " Type S @ 12" o.c. $\frac{1}{2}$ " Type G @ 8" o.c.	$\frac{1}{8}$ " Type S @ 12" o.c. $\frac{1}{2}$ " Type G @ 8" o.c.	$\frac{1}{8}$ " Type S @ 12" o.c. $\frac{1}{2}$ " Type G @ 8" o.c.

## Sound Attenuation<sup>7</sup>

Flooring Material	STC	IIC	STC	IIC	STC	IIC	STC	IIC	STC	IIC	STC	IIC	STC	IIC
W/out Gypsum Concrete														
Cushioned Vinyl	-	-	51	46	51	46	-	-	-	-	-	-	59	50
Carpet & Pad	-	-	51	64	52	66	46	68	-	-	54	68	55	68
With Gypsum Concrete <sup>6,8</sup>														
Cushioned Vinyl	-	-	60	50	60	48	51	47	-	-	-	-	65	51
Carpet & Pad	49	59	60	65	60	60	50	73	49	55	58	55	63	65

- This is a summary only, and is meant to assist the user in selecting an appropriate fire/sound rated assembly. For complete details, including a two-hour fire-rated assembly, see DCA 3<sup>3</sup>.
- BLI 40, 60, 65, 80, 90, 700 and 900.
- Design for Code Acceptance 3, published by the American Wood Council (<http://www.awc.org/Publications/dca/dca3/DCA3.pdf>).
- International Building Code. Table 720.1(3) (2009), Table 721.1(3) (2012, 2015, 2018, 2021).
- Gypsum wallboard.
- Dead load due to additional GWB and/or gypsum concrete must be considered, and the ability of the joists to support these extra loads must be verified.
- Some STC and IIC ratings are estimates; see DCA 3<sup>3</sup> for more information.
- Thickness per gypsum concrete manufacturer's recommendations.



Hole location is minimum distance from inside face of support to nearest edge of hole.

**DO NOT** cut or drill flanges.

### Allowable Hole Location for all BLI Joists (Simple or Multiple Span)

Joist Depth	Joist Clear Span	2"	3"	4"	5"	6 1/4"	7"	Hole Diameter		8"	8 3/4"	9"	10"	10 3/4"	11"	12"	12 3/4"
9 1/2"	10'	0'-6"	0'-6"	0'-9"	1'-9"	3'-3"											
	12'	0'-6"	1'-3"	2'-3"	3'-3"	4'-6"											
	14'	0'-6"	1'-0"	2'-3"	3'-6"	5'-6"											
	16'	0'-6"	0'-6"	2'-0"	3'-6"	5'-9"											
	18'	0'-6"	0'-6"	0'-9"	2'-6"	5'-0"											
11 1/8"	12'	0'-6"	0'-6"	0'-9"	1'-0"	1'-9"	2'-6"	3'-9"	4'-6"								
	14'	0'-6"	0'-6"	0'-9"	1'-9"	3'-3"	4'-0"	5'-3"	6'-0"								
	16'	0'-6"	1'-3"	2'-3"	3'-3"	4'-6"	5'-6"	6'-6"	7'-6"								
	18'	1'-6"	2'-6"	3'-6"	4'-6"	6'-0"	6'-9"	8'-0"									
	20'	0'-9"	2'-0"	3'-3"	4'-6"	6'-3"	7'-3"	8'-9"									
	22'	1'-6"	2'-9"	4'-0"	5'-6"	7'-3"	8'-3"	9'-9"									
14"	24'	0'-6"	1'-9"	3'-3"	4'-9"	7'-0"	8'-3"	10'-0"	11'-3"								
	14'	0'-6"	0'-6"	0'-9"	1'-0"	1'-0"	1'-6"	2'-6"	3'-3"	3'-9"	4'-9"	5'-9"					
	16'	0'-6"	0'-6"	0'-9"	1'-0"	2'-0"	2'-9"	4'-0"	4'-6"	5'-0"	6'-3"	7'-3"					
	18'	0'-6"	0'-6"	1'-0"	2'-0"	3'-3"	4'-3"	5'-3"	6'-0"	6'-6"	7'-9"						
	20'	0'-6"	0'-6"	0'-9"	1'-6"	3'-0"	4'-0"	5'-3"	6'-3"	6'-9"	8'-6"						
	22'	0'-6"	0'-6"	1'-6"	2'-9"	4'-3"	5'-6"	6'-9"	7'-9"	8'-3"	10'-0"						
	24'	0'-6"	1'-0"	2'-3"	3'-6"	5'-3"	6'-3"	7'-9"	8'-9"	9'-3"	10'-9"						
	26'	0'-6"	0'-6"	1'-0"	2'-6"	4'-6"	5'-9"	7'-6"	8'-6"	9'-3"	11'-3"						
16"	28'	0'-6"	0'-9"	2'-3"	3'-9"	5'-9"	7'-0"	8'-9"	10'-0"	10'-6"	12'-6"						
	14'	0'-6"	0'-6"	0'-9"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-3"	2'-6"	3'-3"	3'-6"	4'-9"	5'-6"		
	16'	0'-6"	0'-6"	0'-9"	1'-0"	1'-0"	1'-0"	1'-6"	2'-3"	2'-9"	3'-9"	4'-6"	5'-0"	6'-3"	7'-0"		
	18'	0'-6"	0'-6"	0'-9"	1'-0"	1'-0"	2'-0"	3'-0"	3'-6"	4'-0"	5'-3"	6'-0"	6'-3"	7'-6"			
	20'	0'-6"	0'-6"	0'-9"	1'-3"	2'-6"	3'-3"	4'-3"	5'-0"	5'-6"	6'-6"	7'-6"	7'-9"	9'-0"			
	22'	0'-6"	0'-6"	0'-9"	1'-0"	1'-9"	2'-9"	4'-0"	4'-9"	5'-3"	6'-9"	7'-9"	8'-3"	9'-9"			
	24'	0'-6"	0'-6"	0'-9"	1'-6"	3'-0"	4'-0"	5'-3"	6'-0"	6'-9"	8'-0"	9'-3"	9'-9"	11'-3"			
	26'	0'-6"	0'-6"	0'-9"	2'-0"	3'-9"	4'-9"	6'-0"	7'-0"	7'-6"	9'-0"	10'-3"	10'-6"	12'-3"			
	28'	0'-6"	0'-6"	0'-9"	1'-0"	2'-6"	3'-6"	5'-3"	6'-3"	7'-0"	8'-9"	10'-3"	10'-9"	12'-9"			
	30'	0'-6"	0'-6"	0'-9"	1'-9"	3'-9"	5'-0"	6'-6"	7'-6"	8'-3"	10'-0"	11'-6"	11'-9"	13'-9"			
18"	32'	0'-6"	0'-6"	0'-9"	1'-0"	2'-3"	3'-6"	5'-6"	6'-9"	7'-6"	9'-6"	11'-0"	11'-6"	13'-9"			
	16'	0'-6"	0'-6"	0'-9"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-6"	2'-3"	2'-6"	3'-6"	4'-6"		
	18'	0'-6"	0'-6"	0'-9"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-6"	2'-6"	3'-3"	3'-9"	4'-9"	5'-9"		
	20'	0'-6"	0'-6"	0'-9"	1'-0"	1'-0"	1'-0"	1'-9"	2'-3"	2'-9"	3'-9"	4'-9"	5'-0"	6'-3"	7'-3"		
	22'	0'-6"	0'-6"	0'-9"	1'-0"	1'-0"	1'-0"	1'-0"	1'-6"	2'-0"	3'-6"	4'-6"	4'-9"	6'-3"	7'-6"		
	24'	0'-6"	0'-6"	0'-9"	1'-0"	1'-0"	1'-0"	2'-0"	3'-0"	3'-3"	4'-9"	5'-9"	6'-3"	7'-9"	8'-9"		
	26'	0'-6"	0'-6"	0'-9"	1'-0"	1'-0"	1'-0"	2'-0"	2'-9"	3'-3"	4'-9"	6'-0"	6'-3"	8'-0"	9'-3"		
	28'	0'-6"	0'-6"	0'-9"	1'-0"	1'-0"	1'-0"	1'-3"	2'-3"	3'-0"	4'-9"	6'-0"	6'-6"	8'-3"	9'-9"		
	30'	0'-6"	0'-6"	0'-9"	1'-0"	1'-0"	1'-0"	2'-6"	3'-9"	4'-3"	6'-0"	7'-3"	7'-9"	9'-9"	11'-3"		
	32'	0'-6"	0'-6"	0'-9"	1'-0"	1'-0"	1'-0"	1'-0"	1'-9"	2'-6"	4'-6"	6'-0"	6'-6"	8'-9"	10'-6"		
	34'	0'-6"	0'-6"	0'-9"	1'-0"	1'-0"	1'-0"	1'-0"	2'-0"	2'-9"	4'-9"	6'-6"	7'-0"	9'-3"	11'-3"		

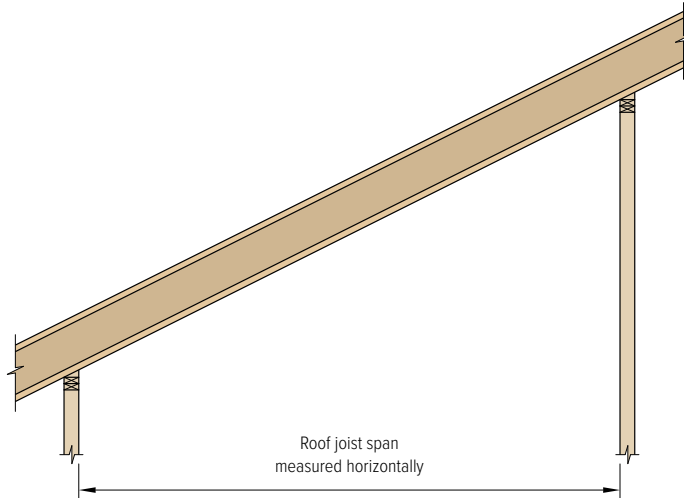
#### NOTES:

- Hole locations are based on uniform loads of 40 psf live and 10 or 20 psf dead, and worst case of simple or multiple spans from page 7.
- For joist clear spans between those shown, check minimum distance for both spans adjacent to that span, and use the larger distance. Example: 7" diameter hole in 16" joist clear spanning 21'-9". At 20', tabulated distance is 3'-3"; at 22', distance is 2'-9". Use 3'-3" as minimum distance.
- For multiple span applications, use longest span to determine permissible hole locations in either span.
- Holes may be placed vertically anywhere in web, but a minimum clearance of 1/8" must be maintained from flange.
- To determine locations for rectangular holes, multiply longest side of rectangular hole by 1.33 and use table to find location for that round hole diameter. Then add (round hole diameter – rectangular hole length) / 2. Example: for a rectangular hole 4" long and 6" high, the longest side is 6", so the round hole diameter to look up would be 1.33 x 6, or 8". Say the tabulated minimum distance for the 8" hole is 10'-0". Adding (8" - 4") / 2, or 2" gives a minimum distance of 10'-2" for the rectangular hole.
- Small holes (1 1/2" diameter and less) may be located anywhere in web if:
  - Spaced a minimum horizontal clear distance of 2 diameters, but no less than 1", from any hole,
  - No more than 2 small holes are placed next to each other and/or adjacent to larger holes, and
  - Adjacent groups of small holes are spaced a minimum horizontal clear distance of 12".
- Holes larger than 1 1/2" diameter must meet the following requirements for minimum clear distance between holes:
  - Two round holes - 2 times the larger hole diameter.
  - A rectangular hole and a round hole - 2 times the hole diameter or 2 times the rectangular hole width, whichever is greater.
- Multiple round holes grouped closely together may be considered as a single hole circumscribing them.
- For other conditions, or for more precise hole locations, use DomaSizer™ software.

#### EXAMPLE:

Determine the allowable location for an 8" round hole in an 11 1/8" BLI 60 joist spanning 17'-4". In the leftmost column locate the joist depth of 11 1/8". In the next column, find both the 16' row and the 18' row. Following the 16' row across to the column for an 8" diameter hole yields a distance of 6'-6". The 18' row yields a distance of 8'-0". The larger distance controls, so 8'-0" is the minimum clear distance for an 8" round hole.

## ROOF SPAN GENERAL NOTES



### NOTES:

1. Allowable spans are based on the most restrictive of simple or multiple spans.
2. Dead load is calculated along the sloped length of the roof joist.
3. Per code, a live load reduction has been applied to 20 psf non-snow live loads for slopes of 8/12 through 12/12.
4. Maximum deflection is limited to L/240 live load and L/180 total load.
5. For multiple span joists, end spans must be at least 40% of adjacent span.
6. Minimum bearing length: 1¾" (end), 3½" (intermediate).
7. A minimum slope of 0.25/12 is required for BLI joists used in roof applications.
8. Tabulated spans for multiple-span conditions cover a wide range of span combinations. Neither simple nor multiple spans require bearing stiffeners. Longer spans may be possible by analyzing a specific span condition and/or by adding bearing stiffeners. Check using Doma Sizer™ software.
9. For loading other than shown below, refer to the Roof Load Table on page 26, use Doma Sizer software, or contact BlueLinX Engineered Lumber Technical Services.

## ROOF SPAN TABLES (SNOW)

**BLI 115%**

Load (psf)	Joist Series	Joist Depth	Slope ≤ 4/12			4/12 < Slope ≤ 8/12			8/12 < Slope ≤ 12/12		
			16" o.c.	19.2" o.c.	24" o.c.	16" o.c.	19.2" o.c.	24" o.c.	16" o.c.	19.2" o.c.	24" o.c.
25 Live 15 Dead	BLI 40	9½"	21'-01"	19'-05"	17'-04"	19'-10"	18'-08"	16'-11"	18'-05"	17'-03"	16'-00"
		11⅞"	24'-03"	22'-02"	19'-09"	23'-07"	21'-07"	19'-03"	22'-00"	20'-08"	18'-07"
		14"	26'-08"	24'-04"	21'-09"	25'-11"	23'-08"	21'-02"	25'-00"	22'-10"	20'-05"
		16"	28'-09"	26'-02"	23'-05"	27'-11"	25'-06"	22'-09"	27'-00"	24'-07"	22'-00"
	BLI 60	11⅞"	26'-10"	25'-02"	23'-03"	25'-03"	23'-09"	22'-00"	23'-05"	22'-00"	20'-04"
		14"	30'-07"	28'-07"	25'-07"	28'-10"	27'-01"	24'-11"	26'-08"	25'-01"	23'-03"
		16"	33'-09"	30'-10"	27'-06"	32'-00"	30'-00"	26'-10"	29'-08"	27'-10"	25'-09"
	BLI 65	11⅞"	28'-01"	26'-04"	23'-09"	26'-05"	24'-10"	23'-00"	24'-06"	23'-00"	21'-04"
		14"	31'-11"	29'-02"	26'-01"	30'-01"	28'-03"	25'-04"	27'-10"	26'-02"	24'-03"
		16"	34'-05"	31'-05"	28'-01"	33'-03"	30'-07"	27'-04"	30'-10"	29'-00"	26'-04"
	BLI 80	11⅞"	29'-10"	28'-00"	25'-11"	28'-01"	26'-05"	24'-05"	26'-01"	24'-06"	22'-08"
		14"	33'-11"	31'-10"	29'-06"	32'-00"	30'-00"	27'-10"	29'-08"	27'-10"	25'-09"
		16"	37'-08"	35'-04"	32'-09"	35'-06"	33'-04"	30'-10"	32'-10"	30'-11"	28'-07"
		18"	41'-01"	38'-07"	35'-00"	38'-08"	36'-04"	33'-03"	35'-10"	33'-08"	31'-00"
	BLI 90	11⅞"	30'-09"	28'-11"	26'-09"	29'-00"	27'-03"	25'-03"	26'-11"	25'-03"	23'-05"
		14"	35'-00"	32'-10"	30'-05"	32'-11"	30'-11"	28'-08"	30'-06"	28'-08"	26'-07"
		16"	38'-08"	36'-04"	33'-08"	36'-06"	34'-03"	31'-09"	33'-09"	31'-09"	29'-05"
		18"	42'-04"	39'-09"	35'-01"	39'-10"	37'-05"	33'-03"	36'-11"	34'-08"	31'-00"
	BLI 700	11⅞"	27'-04"	25'-08"	23'-09"	25'-09"	24'-02"	22'-05"	23'-10"	22'-05"	20'-09"
		14"	31'-01"	29'-02"	27'-00"	29'-03"	27'-06"	25'-05"	27'-01"	25'-06"	23'-07"
		16"	34'-07"	32'-05"	28'-01"	32'-06"	30'-07"	28'-04"	30'-02"	28'-04"	26'-03"
	BLI 900	11⅞"	31'-09"	29'-10"	27'-07"	29'-11"	28'-01"	26'-00"	27'-09"	26'-01"	24'-01"
		14"	36'-01"	33'-10"	31'-04"	34'-00"	31'-11"	29'-07"	31'-06"	29'-07"	27'-05"
		16"	39'-11"	37'-06"	34'-09"	37'-08"	35'-04"	32'-09"	34'-10"	32'-09"	30'-04"

Refer to General Notes above.



# ROOF SPAN TABLES (SNOW)

# BLI 115%

Load (psf)	Joist Series	Joist Depth	Slope ≤ 4/12			4/12 < Slope ≤ 8/12			8/12 < Slope ≤ 12/12		
			16" o.c.	19.2" o.c.	24" o.c.	16" o.c.	19.2" o.c.	24" o.c.	16" o.c.	19.2" o.c.	24" o.c.
30 Live 15 Dead	BLI 40	9½"	20'-01"	18'-04"	16'-04"	19'-01"	17'-11"	16'-00"	17'-09"	16'-08"	15'-05"
		11⅞"	22'-11"	20'-11"	18'-08"	22'-04"	20'-05"	18'-02"	21'-03"	19'-09"	17'-08"
		14"	25'-02"	22'-11"	20'-06"	24'-07"	22'-05"	20'-00"	23'-09"	21'-08"	19'-04"
		16"	27'-01"	24'-08"	22'-01"	26'-05"	24'-02"	21'-07"	25'-07"	23'-04"	20'-10"
	BLI 60	11⅞"	25'-09"	24'-02"	22'-00"	24'-04"	22'-10"	21'-02"	22'-07"	21'-03"	19'-08"
		14"	29'-05"	27'-00"	24'-01"	27'-09"	26'-01"	23'-07"	25'-09"	24'-02"	22'-05"
		16"	31'-10"	29'-01"	25'-04"	30'-10"	28'-05"	25'-04"	28'-07"	26'-11"	24'-07"
	BLI 65	11⅞"	27'-00"	25'-01"	22'-05"	25'-05"	23'-11"	21'-10"	23'-08"	22'-02"	20'-07"
		14"	30'-02"	27'-06"	24'-07"	28'-11"	26'-10"	24'-00"	26'-10"	25'-03"	23'-03"
		16"	32'-06"	29'-08"	26'-06"	31'-09"	28'-11"	25'-10"	29'-09"	28'-00"	25'-01"
	BLI 80	11⅞"	28'-08"	26'-11"	24'-11"	27'-01"	25'-05"	23'-06"	25'-02"	23'-07"	21'-10"
		14"	32'-07"	30'-07"	28'-04"	30'-10"	28'-11"	26'-09"	28'-07"	26'-10"	24'-11"
		16"	36'-02"	34'-00"	30'-08"	34'-02"	32'-01"	29'-08"	31'-09"	29'-10"	27'-07"
		18"	39'-06"	36'-11"	31'-00"	37'-03"	35'-00"	29'-09"	34'-07"	32'-06"	27'-11"
	BLI 90	11⅞"	29'-07"	27'-09"	25'-08"	27'-11"	26'-03"	24'-03"	25'-11"	24'-04"	22'-07"
		14"	33'-07"	31'-06"	29'-02"	31'-09"	29'-09"	27'-07"	29'-06"	27'-08"	25'-07"
		16"	37'-02"	34'-11"	32'-00"	35'-01"	33'-00"	30'-06"	32'-07"	30'-08"	28'-04"
		18"	40'-08"	38'-02"	31'-03"	38'-05"	36'-01"	29'-09"	35'-08"	33'-06"	27'-11"
	BLI 700	11⅞"	26'-03"	24'-08"	22'-10"	24'-10"	23'-04"	21'-07"	23'-00"	21'-08"	20'-00"
		14"	29'-10"	28'-00"	24'-11"	28'-02"	26'-06"	24'-06"	26'-02"	24'-07"	22'-09"
		16"	33'-02"	31'-02"	24'-11"	31'-04"	29'-05"	25'-10"	29'-01"	27'-04"	25'-04"
	BLI 900	11⅞"	30'-06"	28'-08"	26'-06"	28'-10"	27'-01"	25'-00"	26'-09"	25'-02"	23'-03"
		14"	34'-08"	32'-07"	30'-01"	32'-09"	30'-09"	28'-05"	30'-05"	28'-07"	26'-05"
		16"	38'-05"	36'-00"	33'-04"	36'-03"	34'-00"	31'-06"	33'-08"	31'-07"	29'-03"
40 Live 15 Dead	BLI 40	9½"	18'-02"	16'-07"	14'-10"	17'-10"	16'-03"	14'-06"	16'-08"	15'-08"	14'-01"
		11⅞"	20'-09"	18'-11"	16'-10"	20'-04"	18'-06"	16'-07"	19'-09"	18'-00"	16'-01"
		14"	22'-09"	20'-09"	18'-06"	22'-04"	20'-04"	18'-02"	21'-09"	19'-10"	17'-08"
		16"	24'-06"	22'-04"	20'-00"	24'-01"	21'-11"	19'-07"	23'-05"	21'-04"	19'-01"
	BLI 60	11⅞"	24'-01"	22'-03"	19'-11"	22'-10"	21'-05"	19'-06"	21'-03"	20'-00"	18'-06"
		14"	26'-09"	24'-05"	20'-08"	26'-00"	23'-11"	21'-05"	24'-03"	22'-09"	20'-10"
		16"	28'-10"	25'-11"	20'-08"	28'-03"	25'-10"	21'-06"	26'-11"	25'-01"	22'-05"
	BLI 65	11⅞"	24'-10"	22'-08"	20'-03"	23'-10"	22'-03"	19'-10"	22'-03"	20'-11"	19'-04"
		14"	27'-04"	24'-11"	22'-03"	26'-09"	24'-05"	21'-10"	25'-03"	23'-09"	21'-03"
		16"	29'-05"	26'-10"	24'-00"	28'-10"	26'-04"	23'-06"	28'-00"	25'-07"	22'-05"
	BLI 80	11⅞"	26'-09"	25'-02"	23'-03"	25'-04"	23'-10"	22'-00"	23'-08"	22'-03"	20'-07"
		14"	30'-06"	28'-07"	25'-00"	28'-10"	27'-01"	25'-01"	26'-11"	25'-03"	23'-05"
		16"	33'-10"	31'-05"	25'-09"	32'-00"	30'-01"	25'-03"	29'-10"	28'-00"	23'-11"
		18"	36'-08"	32'-01"	25'-07"	34'-11"	30'-10"	24'-08"	32'-07"	29'-03"	23'-04"
	BLI 90	11⅞"	27'-07"	25'-11"	22'-10"	26'-02"	24'-07"	22'-09"	24'-05"	22'-11"	21'-02"
		14"	31'-04"	29'-05"	25'-00"	29'-09"	27'-11"	25'-03"	27'-09"	26'-00"	23'-11"
		16"	34'-09"	32'-07"	26'-03"	32'-11"	30'-11"	25'-03"	30'-08"	28'-10"	23'-11"
		18"	38'-00"	32'-01"	25'-07"	35'-11"	30'-10"	24'-08"	33'-06"	29'-03"	23'-04"
	BLI 700	11⅞"	24'-07"	23'-00"	20'-04"	23'-03"	21'-10"	20'-02"	21'-08"	20'-04"	18'-10"
		14"	27'-11"	25'-06"	20'-04"	26'-05"	24'-09"	21'-02"	24'-07"	23'-01"	21'-05"
		16"	30'-08"	25'-06"	20'-04"	29'-04"	26'-06"	21'-02"	27'-05"	25'-09"	21'-08"
	BLI 900	11⅞"	28'-06"	26'-09"	24'-09"	27'-00"	25'-04"	23'-05"	25'-02"	23'-08"	21'-11"
		14"	32'-04"	30'-05"	27'-10"	30'-08"	28'-09"	26'-08"	28'-07"	26'-10"	24'-10"
		16"	35'-10"	33'-08"	27'-10"	33'-11"	31'-10"	27'-07"	31'-08"	29'-09"	26'-02"

Refer to General Notes on page 22.

# ROOF SPAN TABLES (SNOW & NON-SNOW)

## BLI 115&125%

Load (psf)	Joist Series	Joist Depth	Slope ≤ 4/12			4/12 < Slope ≤ 8/12			8/12 < Slope ≤ 12/12		
			16" o.c.	19.2" o.c.	24" o.c.	16" o.c.	19.2" o.c.	24" o.c.	16" o.c.	19.2" o.c.	24" o.c.
50 Live (115%) 15 Dead	BLI 40	9½"	16'-09"	15'-03"	13'-07"	16'-05"	15'-00"	13'-05"	15'-10"	14'-08"	13'-01"
		11⅞"	19'-01"	17'-05"	15'-06"	18'-09"	17'-01"	15'-03"	18'-04"	16'-08"	14'-11"
		14"	20'-11"	19'-01"	17'-01"	20'-07"	18'-09"	16'-09"	20'-01"	18'-04"	16'-05"
		16"	22'-07"	20'-07"	17'-06"	22'-02"	20'-03"	18'-01"	21'-08"	19'-09"	17'-08"
	BLI 60	11⅞"	22'-05"	20'-06"	17'-06"	21'-07"	20'-02"	18'-00"	20'-02"	18'-11"	17'-06"
		14"	24'-08"	21'-11"	17'-06"	24'-03"	22'-01"	18'-02"	23'-00"	21'-07"	19'-03"
		16"	26'-04"	21'-11"	17'-06"	26'-01"	22'-10"	18'-02"	25'-06"	23'-03"	19'-03"
	BLI 65	11⅞"	22'-10"	20'-10"	18'-08"	22'-06"	20'-06"	18'-04"	21'-01"	19'-10"	17'-11"
		14"	25'-01"	22'-11"	20'-06"	24'-08"	22'-06"	20'-02"	24'-00"	22'-00"	19'-03"
		16"	27'-01"	24'-08"	20'-10"	26'-08"	24'-03"	20'-02"	26'-00"	23'-09"	19'-03"
	BLI 80	11⅞"	25'-02"	23'-07"	19'-08"	24'-00"	22'-06"	20'-06"	22'-05"	21'-01"	19'-06"
		14"	28'-08"	26'-06"	21'-02"	27'-04"	25'-08"	21'-06"	25'-06"	24'-00"	20'-06"
		16"	31'-09"	27'-02"	21'-09"	30'-04"	26'-11"	21'-06"	28'-04"	25'-08"	20'-06"
		18"	32'-07"	27'-02"	21'-08"	31'-07"	26'-03"	21'-00"	30'-02"	25'-01"	20'-00"
	BLI 90	11⅞"	25'-11"	24'-02"	19'-04"	24'-09"	23'-03"	20'-01"	23'-02"	21'-09"	20'-01"
		14"	29'-06"	26'-06"	21'-02"	28'-01"	26'-05"	21'-06"	26'-04"	24'-08"	20'-06"
		16"	32'-08"	27'-10"	22'-03"	31'-02"	26'-11"	21'-06"	29'-01"	25'-08"	20'-06"
		18"	32'-07"	27'-02"	21'-08"	31'-07"	26'-03"	21'-00"	30'-02"	25'-01"	20'-00"
	BLI 700	11⅞"	23'-01"	21'-07"	17'-02"	22'-00"	20'-08"	17'-11"	20'-07"	19'-04"	17'-10"
		14"	25'-11"	21'-07"	17'-02"	25'-00"	22'-05"	17'-11"	23'-04"	21'-11"	18'-07"
		16"	25'-11"	21'-07"	17'-02"	27'-00"	22'-05"	17'-11"	26'-00"	23'-03"	18'-07"
	BLI 900	11⅞"	26'-09"	25'-01"	23'-02"	25'-07"	24'-00"	22'-02"	23'-11"	22'-05"	20'-09"
		14"	30'-05"	28'-06"	23'-06"	29'-00"	27'-03"	23'-06"	27'-02"	25'-06"	22'-06"
		16"	33'-08"	29'-06"	23'-06"	32'-02"	29'-05"	23'-06"	30'-01"	28'-01"	22'-06"
20 Live (125%) 10 Dead	BLI 40	9½"	23'-04"	21'-11"	20'-03"	22'-00"	20'-08"	19'-01"	21'-03"	20'-00"	18'-06"
		11⅞"	27'-11"	26'-03"	23'-10"	26'-04"	24'-09"	22'-11"	25'-06"	23'-11"	22'-02"
		14"	31'-08"	29'-04"	26'-03"	29'-11"	28'-01"	25'-07"	28'-11"	27'-02"	25'-03"
		16"	34'-08"	31'-07"	28'-03"	33'-02"	30'-10"	27'-07"	32'-01"	30'-02"	28'-00"
	BLI 60	11⅞"	29'-08"	27'-10"	25'-09"	28'-00"	26'-03"	24'-04"	27'-01"	25'-05"	23'-07"
		14"	33'-09"	31'-09"	29'-05"	31'-10"	29'-11"	27'-09"	30'-10"	29'-00"	26'-10"
		16"	37'-06"	35'-03"	32'-08"	35'-05"	33'-03"	30'-10"	34'-03"	32'-03"	29'-10"
	BLI 65	11⅞"	31'-00"	29'-02"	27'-00"	29'-03"	27'-06"	25'-05"	28'-04"	26'-08"	24'-08"
		14"	35'-03"	33'-01"	30'-08"	33'-03"	31'-03"	28'-11"	32'-02"	30'-03"	28'-00"
		16"	39'-00"	36'-08"	33'-11"	36'-10"	34'-07"	32'-01"	35'-08"	33'-06"	31'-01"
	BLI 80	11⅞"	33'-00"	31'-00"	28'-08"	31'-01"	29'-03"	27'-01"	30'-02"	28'-04"	26'-03"
		14"	37'-06"	35'-03"	32'-07"	35'-05"	33'-03"	30'-10"	34'-03"	32'-03"	29'-10"
		16"	41'-07"	39'-01"	36'-02"	39'-03"	36'-11"	34'-02"	38'-00"	35'-09"	33'-01"
		18"	45'-04"	42'-07"	39'-06"	42'-10"	40'-03"	37'-03"	41'-05"	39'-00"	36'-01"
	BLI 90	11⅞"	34'-00"	31'-11"	29'-07"	32'-01"	30'-02"	27'-11"	31'-01"	29'-03"	27'-01"
		14"	38'-08"	36'-03"	33'-07"	36'-05"	34'-03"	31'-09"	35'-04"	33'-02"	30'-09"
		16"	42'-09"	40'-02"	37'-02"	40'-04"	37'-11"	35'-01"	39'-01"	36'-09"	34'-00"
		18"	46'-09"	43'-11"	40'-08"	44'-01"	41'-05"	38'-05"	42'-09"	40'-02"	37'-02"
	BLI 700	11⅞"	30'-03"	28'-05"	26'-03"	28'-06"	26'-09"	24'-10"	27'-07"	25'-11"	24'-01"
		14"	34'-04"	32'-03"	29'-10"	32'-04"	30'-05"	28'-02"	31'-04"	29'-06"	27'-04"
		16"	38'-02"	35'-10"	33'-02"	36'-00"	33'-10"	31'-04"	34'-10"	32'-09"	30'-04"
	BLI 900	11⅞"	35'-01"	33'-00"	30'-06"	33'-02"	31'-01"	28'-10"	32'-01"	30'-02"	27'-11"
		14"	39'-10"	37'-05"	34'-08"	37'-07"	35'-04"	32'-09"	36'-05"	34'-03"	31'-09"
		16"	44'-02"	41'-05"	38'-05"	41'-08"	39'-02"	36'-03"	40'-04"	37'-11"	35'-02"

Refer to General Notes on page 22.

# ROOF SPAN TABLES (NON-SNOW)

**BLI 125%**

Load (psf)	Joist Series	Joist Depth	Slope $\leq 4/12$			4/12 < Slope $\leq 8/12$			8/12 < Slope $\leq 12/12$		
			16" o.c.	19.2" o.c.	24" o.c.	16" o.c.	19.2" o.c.	24" o.c.	16" o.c.	19.2" o.c.	24" o.c.
20 Live 15 Dead	BLI 40	9½"	22'-01"	20'-09"	19'-02"	20'-09"	19'-06"	18'-00"	19'-10"	18'-07"	17'-03"
		11⅞"	26'-05"	24'-08"	22'-00"	24'-10"	23'-04"	21'-04"	23'-09"	22'-03"	20'-08"
		14"	29'-08"	27'-01"	24'-02"	28'-02"	26'-03"	23'-06"	26'-11"	25'-04"	23'-06"
		16"	32'-00"	29'-02"	26'-01"	31'-00"	28'-04"	25'-04"	29'-11"	28'-01"	25'-07"
	BLI 60	11⅞"	28'-01"	26'-04"	24'-05"	26'-04"	24'-09"	22'-11"	25'-02"	23'-08"	21'-11"
		14"	32'-00"	30'-00"	27'-10"	30'-00"	28'-03"	26'-02"	28'-09"	27'-00"	25'-00"
		16"	35'-06"	33'-04"	30'-08"	33'-04"	31'-04"	29'-00"	31'-11"	30'-00"	27'-09"
	BLI 65	11⅞"	29'-04"	27'-07"	25'-06"	27'-07"	25'-11"	24'-00"	26'-04"	24'-09"	22'-11"
		14"	33'-04"	31'-04"	29'-00"	31'-04"	29'-05"	27'-03"	30'-00"	28'-02"	26'-01"
		16"	37'-00"	34'-09"	31'-03"	34'-09"	32'-08"	30'-03"	33'-02"	31'-02"	28'-11"
	BLI 80	11⅞"	31'-03"	29'-04"	27'-02"	29'-04"	27'-07"	25'-06"	28'-01"	26'-04"	24'-05"
		14"	35'-06"	33'-04"	30'-10"	33'-04"	31'-04"	29'-00"	31'-11"	30'-00"	27'-09"
		16"	39'-05"	37'-00"	34'-03"	37'-00"	34'-09"	32'-02"	35'-05"	33'-03"	30'-10"
		18"	42'-11"	40'-04"	37'-04"	40'-04"	37'-11"	35'-01"	38'-07"	36'-03"	33'-07"
	BLI 90	11⅞"	32'-03"	30'-03"	28'-00"	30'-03"	28'-05"	26'-04"	28'-11"	27'-02"	25'-02"
		14"	36'-07"	34'-04"	31'-09"	34'-04"	32'-03"	29'-11"	32'-10"	30'-11"	28'-07"
		16"	40'-06"	38'-00"	35'-02"	38'-01"	35'-09"	33'-01"	36'-05"	34'-02"	31'-08"
		18"	44'-03"	41'-07"	38'-06"	41'-07"	39'-01"	36'-02"	39'-09"	37'-04"	34'-07"
	BLI 700	11⅞"	28'-07"	26'-10"	24'-11"	26'-11"	25'-03"	23'-05"	25'-08"	24'-02"	22'-04"
		14"	32'-06"	30'-06"	28'-03"	30'-06"	28'-08"	26'-07"	29'-02"	27'-05"	25'-05"
		16"	36'-02"	33'-11"	31'-05"	33'-11"	31'-11"	29'-06"	32'-05"	30'-06"	28'-03"
	BLI 900	11⅞"	33'-03"	31'-02"	28'-11"	31'-03"	29'-04"	27'-02"	29'-10"	28'-01"	26'-00"
		14"	37'-09"	35'-05"	32'-10"	35'-06"	33'-04"	30'-10"	33'-11"	31'-10"	29'-06"
		16"	41'-09"	39'-03"	36'-04"	39'-03"	36'-11"	34'-02"	37'-07"	35'-03"	32'-08"
20 Live 20 Dead	BLI 40	9½"	21'-00"	19'-09"	18'-00"	19'-08"	18'-06"	17'-02"	18'-08"	17'-06"	16'-03"
		11⅞"	25'-02"	23'-00"	20'-07"	23'-07"	22'-02"	19'-10"	22'-04"	21'-00"	19'-05"
		14"	27'-08"	25'-03"	22'-07"	26'-09"	24'-05"	21'-10"	25'-05"	23'-10"	21'-09"
		16"	29'-10"	27'-03"	24'-04"	28'-10"	26'-03"	23'-06"	28'-02"	26'-03"	23'-05"
	BLI 60	11⅞"	26'-09"	25'-02"	23'-03"	25'-01"	23'-07"	21'-10"	23'-09"	22'-04"	20'-08"
		14"	30'-06"	28'-08"	26'-06"	28'-07"	26'-10"	24'-10"	27'-01"	25'-05"	23'-07"
		16"	33'-11"	31'-10"	28'-07"	31'-09"	29'-10"	27'-07"	30'-01"	28'-03"	26'-02"
	BLI 65	11⅞"	28'-00"	26'-04"	24'-04"	26'-03"	24'-08"	22'-10"	24'-10"	23'-04"	21'-07"
		14"	31'-10"	29'-11"	27'-01"	29'-10"	28'-00"	25'-11"	28'-03"	26'-06"	24'-07"
		16"	35'-03"	32'-08"	29'-02"	33'-00"	31'-00"	28'-02"	31'-03"	29'-05"	27'-03"
	BLI 80	11⅞"	29'-09"	27'-11"	25'-10"	27'-11"	26'-02"	24'-03"	26'-05"	24'-10"	23'-00"
		14"	33'-10"	31'-10"	29'-05"	31'-09"	29'-10"	27'-07"	30'-01"	28'-03"	26'-02"
		16"	37'-07"	35'-03"	32'-08"	35'-02"	33'-01"	30'-07"	33'-04"	31'-04"	29'-00"
		18"	41'-00"	38'-06"	35'-07"	38'-05"	36'-01"	33'-05"	36'-04"	34'-02"	31'-08"
	BLI 90	11⅞"	30'-09"	28'-10"	26'-08"	28'-09"	27'-00"	25'-00"	27'-03"	25'-07"	23'-09"
		14"	34'-11"	32'-09"	30'-04"	32'-08"	30'-08"	28'-05"	31'-00"	29'-01"	26'-11"
		16"	38'-07"	36'-03"	33'-07"	36'-02"	34'-00"	31'-05"	34'-03"	32'-02"	29'-10"
		18"	42'-02"	39'-08"	36'-08"	39'-06"	37'-02"	34'-05"	37'-06"	35'-02"	32'-07"
	BLI 700	11⅞"	27'-04"	25'-08"	23'-09"	25'-07"	24'-00"	22'-03"	24'-03"	22'-09"	21'-01"
		14"	31'-00"	29'-01"	26'-11"	29'-00"	27'-03"	25'-03"	27'-06"	25'-10"	23'-11"
		16"	34'-06"	32'-04"	30'-00"	32'-03"	30'-04"	28'-01"	30'-07"	28'-09"	26'-07"
	BLI 900	11⅞"	31'-08"	29'-09"	27'-06"	29'-08"	27'-11"	25'-10"	28'-02"	26'-05"	24'-06"
		14"	36'-00"	33'-10"	31'-03"	33'-09"	31'-08"	29'-04"	32'-00"	30'-00"	27'-10"
		16"	39'-10"	37'-05"	34'-08"	37'-04"	35'-01"	32'-06"	35'-05"	33'-03"	30'-09"

Refer to General Notes on page 22.



# ROOF LOAD TABLE (PLF)

# BLI 115&125%

Joist Series	Joist Depth	Load Type / Deflection	Clear Span																							
			6'	7'	8'	9'	10'	11'	12'	13'	14'	15'	16'	17'	18'	19'	20'	21'	22'	23'	24'	25'	26'			
BLI 40	9½"	Live L/240										113	94	79	67	57	49	43	37	33	29	26	23			
		115%	329	281	246	218	196	178	164	144	124	108	95	84	75	68	61	55	50	44	39	34	31			
		125%	357	306	267	237	213	194	178	156	135	118	103	92	82	74	66	57	50	44	39	34	31			
	11⅞"	Live L/240															83	73	63	56	49	44	39			
		115%	384	328	286	254	228	207	190	175	161	140	123	110	98	88	79	72	66	60	55	51	47			
		125%	417	356	311	276	248	225	206	190	175	153	134	119	106	95	86	78	71	65	60	55	51			
	14"	Live L/240																			71	63	57			
		115%	387	330	287	255	229	208	190	176	163	152	142	132	118	106	96	87	79	72	66	61	57			
		125%	420	358	312	277	249	226	207	191	177	165	155	144	128	115	104	94	86	79	72	67	62			
	16"	Live L/240																								
		115%	389	332	289	256	230	208	191	176	163	152	143	134	127	120	111	101	92	84	77	71	66			
		125%	423	360	314	278	250	227	207	191	178	166	155	146	138	130	121	109	100	91	84	77	72			
BLI 60	11⅞"	Live L/240													133	114	99	86	75	66	59	52	46			
		115%	386	329	287	255	229	208	190	176	163	152	142	134	127	120	110	100	91	83	76	70	62			
		125%	420	358	312	277	249	226	207	191	177	165	155	146	138	130	119	108	99	89	78	70	62			
	14"	Live L/240																	110	97	86	76	68			
		115%	389	332	289	256	230	209	191	176	163	152	143	134	127	120	114	109	104	99	92	85	78			
		125%	423	361	314	278	250	227	208	191	178	166	155	146	138	130	124	118	113	108	100	92	85			
	16"	Live L/240																					92			
		115%	392	334	290	257	231	209	191	176	164	153	143	134	127	120	114	109	104	99	95	91	88			
		125%	427	363	316	280	251	227	208	192	178	166	155	146	138	131	124	118	113	108	103	99	95			
	BLI 65	11⅞"	Live L/240													151	130	112	98	86	75	67	59	53		
			115%	436	372	324	287	258	234	214	198	183	171	160	151	140	126	114	103	94	86	79	73	68		
			125%	474	404	352	312	280	254	233	215	199	186	174	164	153	137	124	112	103	94	86	79	71		
14"		Live L/240																	123	109	96	86	77			
		115%	449	386	338	301	272	247	227	209	195	182	170	160	152	144	137	125	114	104	96	88	81			
		125%	488	419	368	328	295	269	246	228	212	198	185	174	165	156	148	136	124	113	104	96	89			
16"		Live L/240																								
		115%	449	386	338	301	272	247	227	209	195	182	170	160	152	144	137	130	124	119	111	102	95			
		125%	488	419	368	328	295	269	246	228	212	198	185	174	165	156	148	141	135	129	121	111	103			
BLI 80		11⅞"	Live L/240															133	116	102	90	80	71	63		
			115%	436	374	326	288	259	235	215	198	184	171	161	151	143	135	128	122	117	111	106	95	85		
			125%	474	406	354	314	281	255	234	215	200	186	175	164	155	147	139	133	127	120	106	95	85		
	14"	Live L/240																		129	115	102	92			
		115%	477	406	353	312	280	254	232	214	198	185	173	163	154	145	138	131	125	120	115	110	106			
		125%	519	441	383	339	304	276	252	232	215	201	188	177	167	158	150	143	136	130	125	120	115			
	16"	Live L/240																								
		115%	479	409	355	314	281	255	233	214	199	185	173	163	154	146	138	132	126	120	115	110	106			
		125%	520	444	386	341	306	277	253	233	216	201	189	177	167	158	150	143	137	131	125	120	115			
	18"	Live L/240																								
		115%	467	402	352	314	283	257	236	218	203	189	178	167	158	150	142	135	129	123	118	113	109			
		125%	508	437	383	341	308	280	257	237	220	206	193	182	172	163	155	147	140	134	129	123	119			

## NOTES:

1. Refer to General Notes on page 9.
2. A minimum slope of 0.25/12 is required for BLI joists used in roof applications.
3. For slopes over 2/12, horizontal span length must be converted to an up-the-slope span length using the slope factors found on page 30.
4. Maximum total load deflection is limited to L/180.

# BLI 115&125% ROOF LOAD TABLE (PLF)

Joist Series	Joist Depth	Load Type / Deflection	Clear Span																							
			6'	7'	8'	9'	10'	11'	12'	13'	14'	15'	16'	17'	18'	19'	20'	21'	22'	23'	24'	25'	26'			
BLI 90	11⅞"	Live L/240																126	111	98	87	77	69			
		115%	436	374	327	289	259	235	215	198	184	172	161	151	143	135	128	122	117	111	107	103	92			
		125%	474	406	355	314	282	256	234	216	200	187	175	164	155	147	140	133	127	121	116	103	92			
	14"	Live L/240																			124	111	99			
		115%	479	407	354	313	280	254	232	214	198	185	173	163	154	146	138	132	126	120	115	110	106			
		125%	520	442	385	340	305	276	253	233	216	201	188	177	167	158	150	143	136	131	125	120	115			
	16"	Live L/240																								
		115%	479	411	361	321	290	264	242	223	208	194	182	171	162	153	146	139	132	127	121	117	112			
		125%	520	447	392	349	315	287	263	243	226	211	198	186	176	167	158	151	144	138	132	127	122			
	18"	Live L/240																								
		115%	467	402	352	314	283	257	236	218	203	189	178	167	158	150	142	135	129	124	119	114	109			
		125%	508	437	383	341	308	280	257	237	220	206	193	182	172	163	155	147	141	135	129	124	119			
BLI 700	11⅞"	Live L/240														121	105	91	80	70	62	55	49			
		115%	381	325	283	251	225	205	187	173	160	150	140	132	125	118	112	107	102	94	83	74	66			
		125%	414	353	308	273	245	222	204	188	174	163	152	143	135	128	122	116	106	94	83	74	66			
	14"	Live L/240																		101	90	80	71			
		115%	384	327	285	252	226	205	188	173	161	150	140	132	125	118	112	107	102	97	93	90	86			
		125%	417	355	309	274	246	223	204	188	175	163	153	144	136	128	122	116	111	106	102	97	94			
	16"	Live L/240																								
		115%	387	329	286	253	227	206	189	174	161	150	141	132	125	118	112	107	102	98	93	90	86			
		125%	421	358	311	275	247	224	205	189	175	163	153	144	136	129	122	116	111	106	102	98	94			
BLI 900	11⅞"	Live L/240															157	138	121	107	95	84	76			
		115%	523	450	391	346	311	282	258	237	220	205	192	181	171	162	153	146	139	133	127	113	101			
		125%	569	489	426	377	338	306	280	258	239	223	209	197	186	176	167	159	152	143	127	113	101			
	14"	Live L/240																			136	121	108			
		115%	523	450	395	349	312	283	259	238	221	206	193	181	171	162	154	146	140	133	128	123	118			
		125%	569	489	429	379	340	308	281	259	240	224	210	197	186	176	167	159	152	145	139	133	128			
	16"	Live L/240																								
		115%	523	450	395	351	314	284	260	239	222	207	193	182	171	162	154	147	140	134	128	123	118			
		125%	569	489	429	381	342	309	283	260	241	225	210	198	186	176	167	159	152	145	139	134	128			

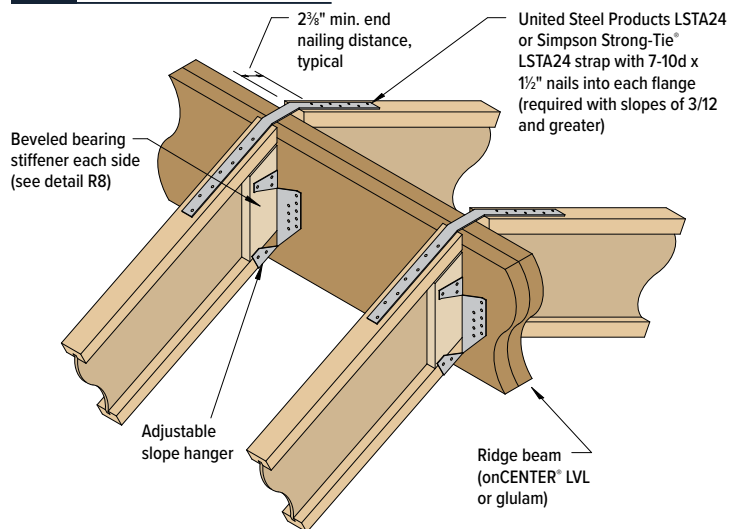
## NOTES:

1. Refer to General Notes on page 9.
2. A minimum slope of 0.25/12 is required for BLI joists used in roof applications.
3. For slopes over 2/12, horizontal span length must be converted to an up-the-slope span length using the slope factors found on page 30.
4. Maximum total load deflection is limited to L/180.

R1

## RIDGE-JOIST CONNECTION

12/12 maximum slope



Additional uplift connections may be required.

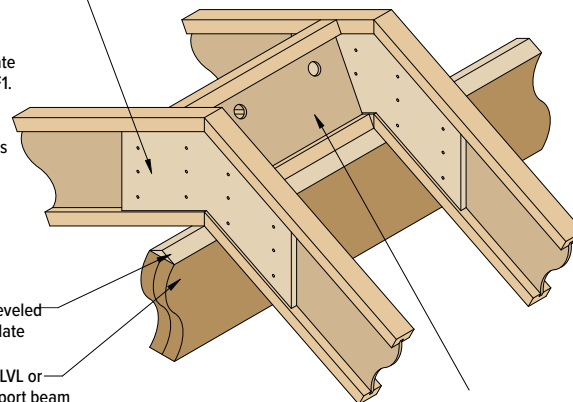
## JOISTS ABOVE RIDGE SUPPORT BEAM

12/12 maximum slope

R2

$\frac{23}{32}$ " x 2'-0" 48/24 APA Rated Sheathing gusset (strength axis horizontal) each side with 12-8d nails clinched or strap with 16-10d x 1½" nails applied to top flange per detail R1.

Attach to bearing plate per detail F1. Additional uplift connections may be required.



For BLI joist blocking panel shear transfer, use same nailing as required for sheathing, but complying with Installation Note 5, page 31. For rim board shear transfer, see APA EWS Y250.

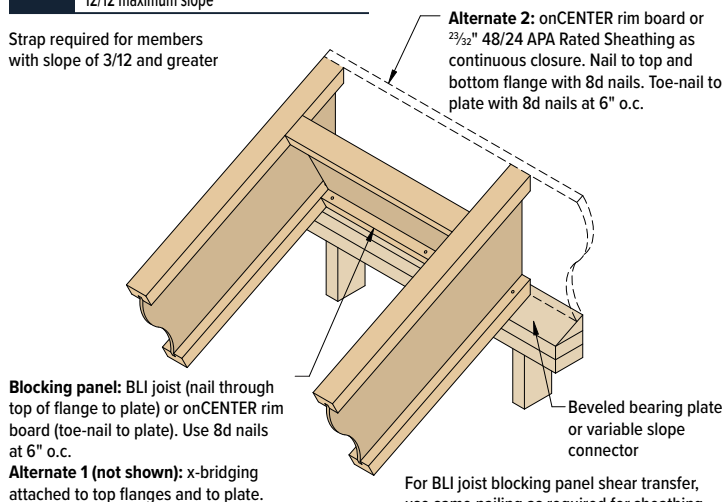
**Blocking panel:** BLI joist (nail through top of flange to plate) or onCENTER rim board (toe-nail to plate). Use 8d nails at 6" o.c. **Alternate (not shown):** x-bridging attached to top flanges and to plate.

R3

## UPPER END, BEARING ON WALL

12/12 maximum slope

Strap required for members with slope of 3/12 and greater



**Blocking panel:** BLI joist (nail through top of flange to plate) or onCENTER rim board (toe-nail to plate). Use 8d nails at 6" o.c.

**Alternate 1 (not shown):** x-bridging attached to top flanges and to plate.

Attach to bearing plate per detail F1. Additional uplift connections may be required.

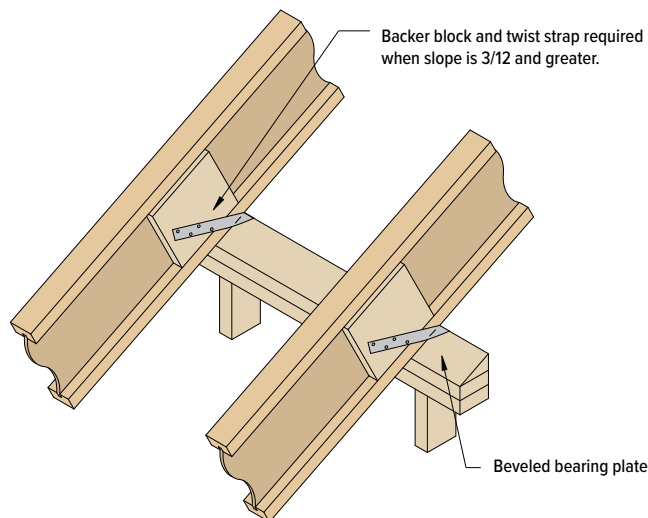
For BLI joist blocking panel shear transfer, use same nailing as required for sheathing, but complying with Installation Note 5, page 31. For rim board or continuous closure shear transfer, see APA EWS Y250.

## INTERMEDIATE BEARING

12/12 maximum slope

R4

Backer block and twist strap required when slope is 3/12 and greater.



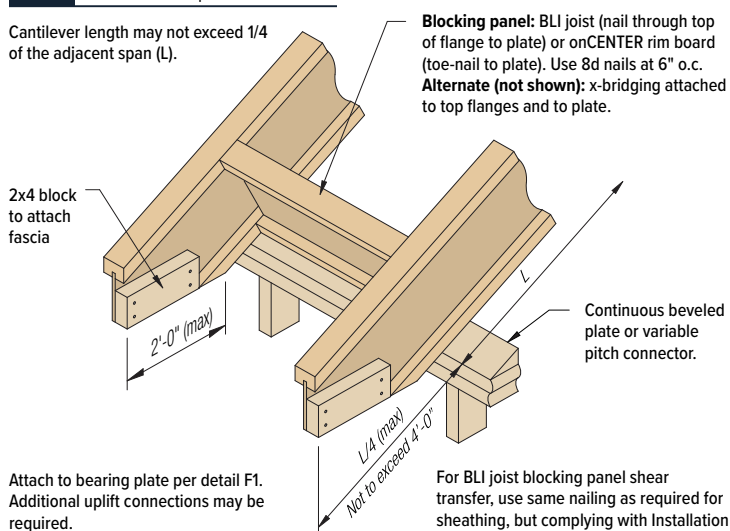
Attach to bearing plate per detail F1. Additional uplift connections may be required.

R5

## JOISTS ON BEVELED PLATE

12/12 maximum slope

Cantilever length may not exceed 1/4 of the adjacent span (L).



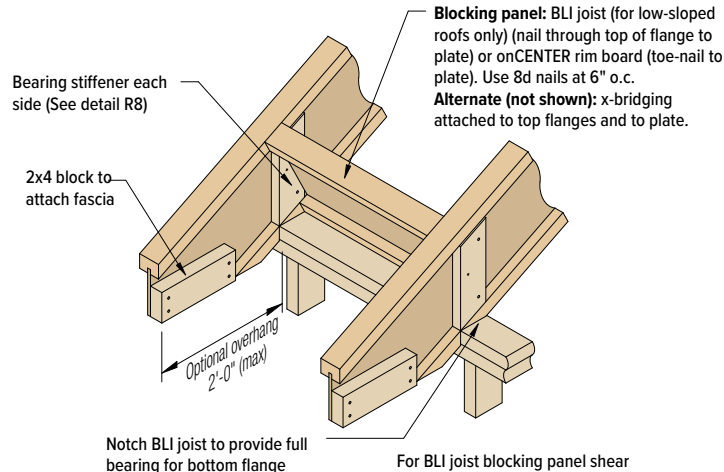
Attach to bearing plate per detail F1. Additional uplift connections may be required.

For BLI joist blocking panel shear transfer, use same nailing as required for sheathing, but complying with Installation Note 5, page 31. For rim board shear transfer, see APA EWS Y250.

## BIRDSMOUTH CUT

Low end of joist only. 12/12 maximum slope

R6



Attach to bearing plate per detail F1. Additional uplift connections may be required.

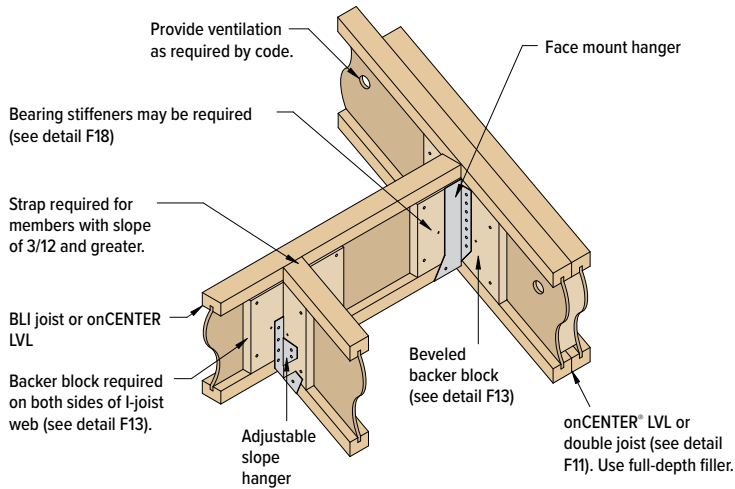
For BLI joist blocking panel shear transfer, use same nailing as required for sheathing, but complying with Installation Note 5, page 31. For rim board shear transfer, see APA EWS Y250.



R7

**ROOF OPENING, FACE MOUNT HANGERS**

12/12 maximum slope

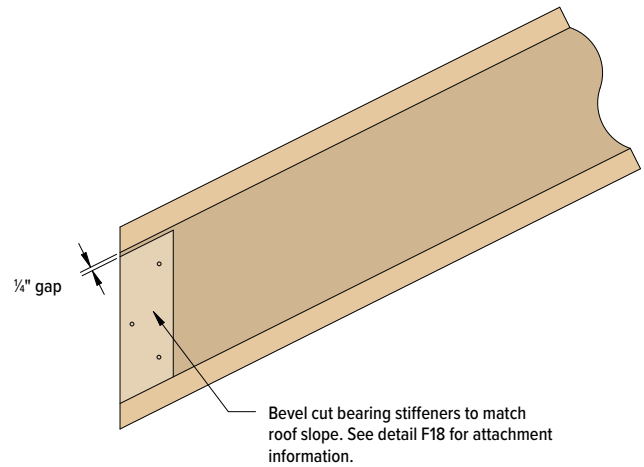


Additional uplift connections may be required.

**BEVELED BEARING STIFFENERS**

12/12 maximum slope

R8

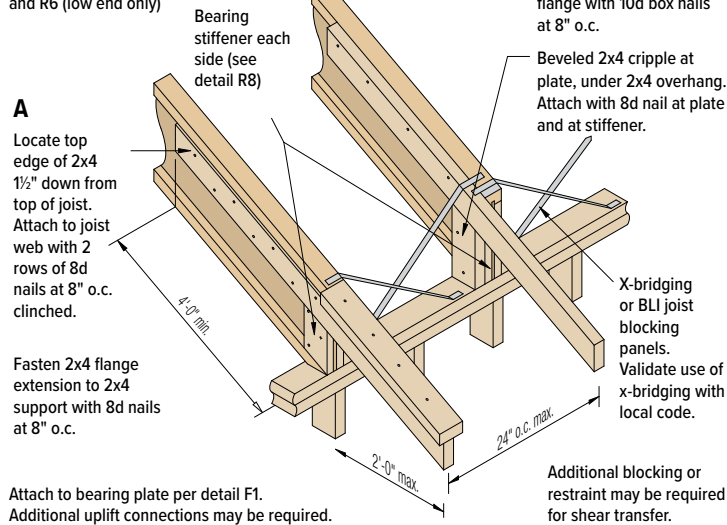


R9

**OPTIONAL OVERHANG EXTENSIONS**

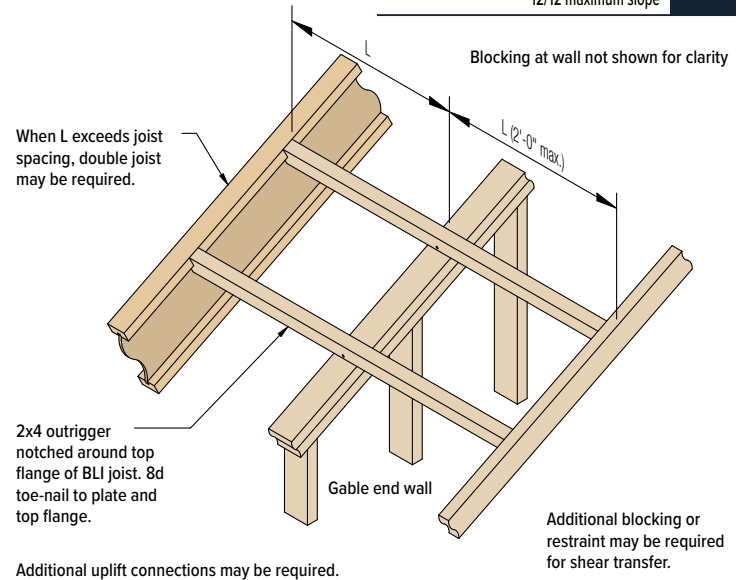
12/12 maximum slope

May be used with detail R5 and R6 (low end only)

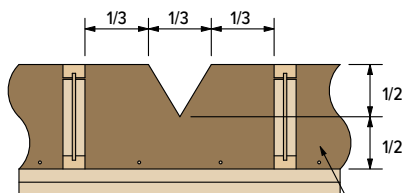
**OVERHANG PARALLEL TO JOIST**

12/12 maximum slope

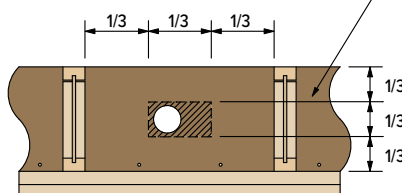
R10



R11

**ROOF BLOCKING WITH PERMITTED VENTILATION**

Maximum allowable V-cut



Maximum allowable hole zone

onCENTER rim board

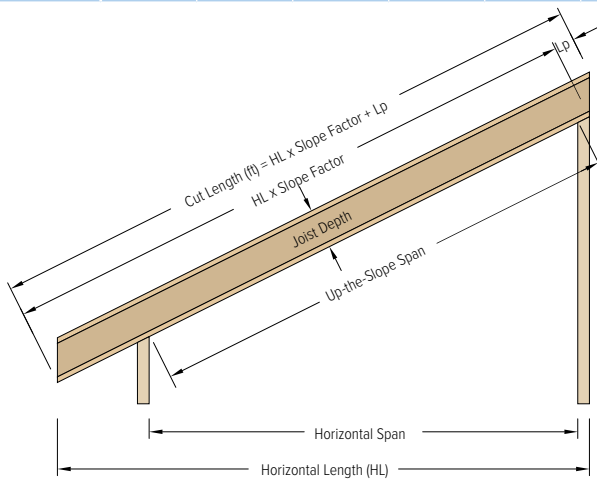
Square cut blocking to match joist depth where positioned on wall.

Taper cut is optional but may be required for higher shear transfer.

Taper to match beveled plate on wall.

## ROOF SLOPE FACTORS & PLUMB CUT INCREASES

Joist Depth	Slope (12) & Slope Factor												
	2½	3	3½	4	4½	5	6	7	8	9	10	11	12
	1.021	1.031	1.042	1.054	1.068	1.083	1.118	1.158	1.202	1.250	1.302	1.357	1.414
Amount to Increase Length for Plumb Cut (Lp in feet)													
9½"	0.165	0.198	0.231	0.264	0.297	0.330	0.396	0.462	0.528	0.594	0.660	0.726	0.792
11½"	0.206	0.247	0.289	0.330	0.371	0.412	0.495	0.577	0.660	0.742	0.825	0.907	0.990
14"	0.243	0.292	0.340	0.389	0.438	0.486	0.583	0.681	0.778	0.875	0.972	1.069	1.167
16"	0.278	0.333	0.389	0.444	0.500	0.556	0.667	0.778	0.889	1.000	1.111	1.222	1.333
18"	0.313	0.375	0.438	0.500	0.563	0.625	0.750	0.875	1.000	1.125	1.250	1.375	1.500



### EXAMPLE:

11½" BLI joists, 6/12 slope, 15' 8½" Horizontal Span, 2' overhang (horizontal) and 3½" walls.

Up-the-slope span (for use with Roof Load Table, page 26)

Horizontal span = 15' 8½" = 15.708'

15.708' x 1.118 (Slope Factor from chart) = 17.562', round up to 18'

Cut-length

$HL = 2' + 3½" + 15' 8½" + 3½" = 18' 3½" = 18.292'$

$18.292' \times 1.118$  (Slope Factor from chart) = 20.45'

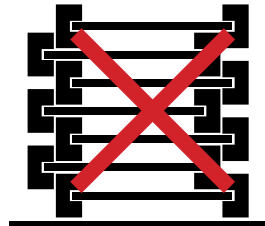
$20.45' + 0.495'$  (Lp from chart) = 20.945'

Cut Length = 20' 11½"

## STORAGE & HANDLING



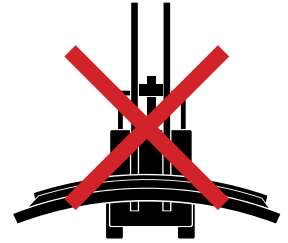
Protect from moisture and weather. Keep covered with factory wrap until time of use. Store on dry level ground using stacked support blocks 10' on-center to keep bundles at least 6" off the ground to allow air circulation.



**DO NOT** store BLI joists flat. (onCENTER® LVL and rim board should be stacked flatwise).

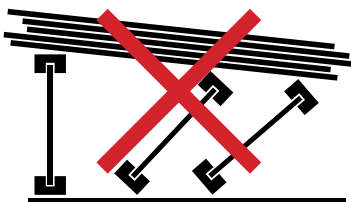


**DO NOT** lift BLI joists by top flange with forklift.



**DO NOT** lift BLI joists flatwise.

## SAFETY PRECAUTIONS



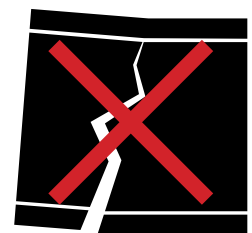
**DO NOT** stack building materials on unsheathed joists. Stack only over bearing walls or main beams.



**DO NOT** walk on onCENTER engineered lumber that is lying flat.



Use safety glasses, gloves, hard hats, and other personal protective equipment when handling and installing onCENTER engineered lumber. Contact BlueLinx for SDS information.



**DO NOT** use damaged products.



**DO NOT** allow workers or loads on engineered lumber joists until properly installed and braced.

1. Joists are unstable until properly attached and braced laterally. Failure to provide stability can result in serious accidents.
2. Restrain joists and beams from rotation at the end supports by use of blocking panels, x-bridging, or continuous closure (rim board, rim joist or structural panel).
3. Install all fasteners in each joist, beam, hanger, blocking panel, x-bridging, or continuous closure as it is set.
4. Lateral restraint, such as a braced end wall or existing deck, must be established parallel to the first joist in a run. This can also be accomplished by a temporary or permanent deck (sheathing) fastened to the full length of the first 4' of joists in the run.
5. Rows of temporary bracing running at right angles to the joists and spaced not more than 10' on center must extend to the established lateral restraint. Bracing should be a minimum of 1x4, at least 8' long, attached to the top face of each joist with a minimum of two 8d nails (10d if bracing is 2x4). Ends of bracing should overlap at least two joists.
6. Ends of cantilevers require temporary bracing on both the top and bottom flanges.
7. Sheathing must be completely attached to each BLI joist before additional loads can be placed on the system.
8. Joist flanges must remain straight within 1/2" of true alignment.

## INSTALLATION NOTES

1. BlueLinX onCENTER® products must be protected from weather and used only in covered, dry-use conditions (moisture content of solid sawn lumber must be less than 16%).
2. Engineered lumber must not be installed in direct contact with masonry or concrete.
3. BLI joists must be supported by the bottom flange on walls or beams or in hangers. They must not be supported by the top flange, by a non-structural ridge board, or by toe-nailing into a beam or ledger.
4. For BLI joists, minimum end bearing length is 1 1/4"; minimum intermediate bearing length is 3 1/2".
5. When nailing to the wide face of BLI joist flanges, maintain spacing within the following ranges:

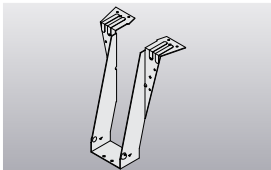
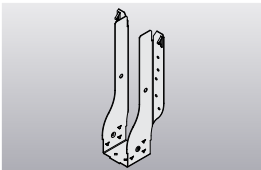
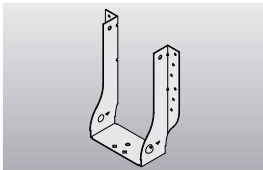
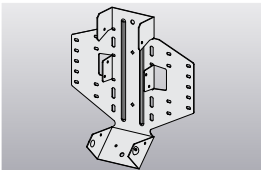
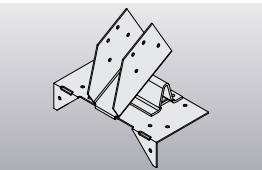
Flange Nail Spacing				
Nail Size	BLI 700, 900		BLI 40, 60, 65, 80, 90	
	Min.	Max.	Min.	Max.
8d Box, 8d Common, 10d Box, 12d Box	2"	24"	4"	24"
10d Common, 12d Common	3"	24"	4"	24"
6. BLI joists are manufactured with no camber, and may be installed with web markings reading right side up or upside down.
7. Except when cutting to length or for birdsmouth cuts, BLI joist flanges should not be cut, tapered, notched, or drilled.
8. Concentrated loads should be supported by the top surface of the top flange, not hung from the bottom flange (Exceptions: lighting fixtures, ceiling fans, etc.).
9. When nail type is not specified in this guide, common, box or sinkers may be used.
10. Certain applications of staple-up radiant heating may increase deflection in I-joists with solid-sawn flanges due to unequal drying within the floor cavity. See APA publication TT-113 for more information.
11. With preservative treated wood, use only stainless steel or hot-dipped galvanized connectors, fasteners and other metal hardware as required by code. As a minimum requirement, hot-dipped galvanized coated fasteners should conform to ASTM Standard A 153 and hot-dipped galvanized coated connectors should conform to ASTM Standard A 653 (Class G-185). In highly corrosive environments, stainless steel connectors and fasteners should be used.

### NOTES:

1. When more than one row of nails is required, rows must be offset at least 1/2" (3/4" for BLI 700 joists) and staggered.
2. 14 gauge staples may be substituted for 8d nails if penetration into the joist flange is at least 1".
3. Do not use nails larger than those shown above when attaching sheathing to BLI joists.

# FRAMING CONNECTORS FOR BLI JOISTS

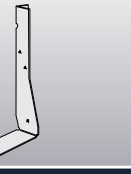
## USP Structural Connectors<sup>®1,2,3</sup>

Joist Series	Joist Depth	Top Mount <sup>4,5</sup>					Face Mount <sup>6</sup>				Double Face Mount <sup>6,7</sup>				Slopeable / Skewable <sup>8,9</sup>				Variable Pitch <sup>10,11</sup>			
		Connector Model	Floor 100% (lbs)	Fasteners <sup>12</sup>		Connector Model	Floor 100% (lbs)	Fasteners <sup>12</sup>		Connector Model	Floor 100% (lbs)	Fasteners <sup>12</sup>		Connector Model	Roof 115% (lbs)	Fasteners <sup>12</sup>		Connector Model	Roof 115% (lbs)	Fasteners <sup>12</sup>		
				Header	Joist			Header	Joist			Header	Joist			Header	Joist			Header	Joist	Header
BLI 40	9½"	TFL2595	1071	10d x 1½"	10d x 1½"	THF12595	960	10d	--	IHF25925-2	1250	10d	10d x 1½"	LSSH25	1610	16d	10d x 1½"	TMP25	1970	10d	10d x 1½"	
BLI 40 BLI 60	11½"	TFL25118	1071	10d x 1½"	10d x 1½"	THF125118	1200	10d	--	IHF25112-2	1250	10d	10d x 1½"	LSSH25	1610	16d	10d x 1½"	TMP25	1970	10d	10d x 1½"	
	14"	TFL2514	1071	10d x 1½"	10d x 1½"	THF12514	1440	10d	--	THF25140-2	2660	10d	10d	LSSH25	1610	16d	10d x 1½"	TMP25	1970	10d	10d x 1½"	
	16"	TFL2516	1071	10d x 1½"	10d x 1½"	IHFL2516	1680	10d	--	THF25160-2	3190	10d	10d	N/A	--	--	--	TMP25	1970	10d	10d x 1½"	
BLI 65 BLI 80 BLI 90	11½"	THO35118	1763	10d x 1½"	10d x 1½"	IHFL35112	1040	10d	--	HD7120	2165	16d	16d	LSSH35	1610	16d	10d x 1½"	TMP4	1970	10d	10d x 1½"	
	14"	THO35140	2335	10d x 1½"	10d x 1½"	IHFL3514	1245	10d	--	HD7140	2710	16d	16d	LSSH35	1610	16d	10d x 1½"	TMP4	1970	10d	10d x 1½"	
	16"	THO35160	2335	10d x 1½"	10d x 1½"	IHFL3516	1455	10d	--	HD7140	2710	16d	16d	N/A	--	--	--	TMP4	1970	10d	10d x 1½"	
	18"	TF1418 <sup>13</sup>	2560	16d	10d x 1½"	IHF3518	1540	10d	10d x 1½"	HD7140	2710	16d	16d	N/A	--	--	--	TMP4	1970	10d	10d x 1½"	
BLI 700	11½"	TFL23118	1245	10d x 1½"	10d x 1½"	IHFL23112	1200	10d	--	THF23118-2	1890	10d	10d	LSSH23	1200	10d	10d x 1½"	TMP23	1970	10d	10d x 1½"	
	14"	TFL2314	1245	10d x 1½"	10d x 1½"	IHFL2314	1440	10d	--	THF23140-2	2660	10d	10d	LSSH23	1200	10d	10d x 1½"	TMP23	1970	10d	10d x 1½"	
	16"	TFL2316	1245	10d x 1½"	10d x 1½"	IHFL2316	1680	10d	--	THF23160-2	3190	10d	10d	N/A	--	--	--	TMP23	1970	10d	10d x 1½"	
BLI 900	11½"	THO35118	2050	10d x 1½"	10d x 1½"	IHFL35112	1040	10d	--	HD7120	2165	16d	16d	LSSH35	1610	16d	10d x 1½"	TMP4	1970	10d	10d x 1½"	
	14"	THO35140	2715	10d x 1½"	10d x 1½"	IHFL3514	1245	10d	--	HD7140	2710	16d	16d	LSSH35	1610	16d	10d x 1½"	TMP4	1970	10d	10d x 1½"	
	16"	THO35160	2715	10d x 1½"	10d x 1½"	IHFL3516	1455	10d	--	HD7140	2710	16d	16d	N/A	--	--	--	TMP4	1970	10d	10d x 1½"	

## Simpson Strong-Tie<sup>®</sup> Connectors<sup>1,2,3</sup>







Joist Series	Joist Depth	Top Mount <sup>4,5</sup>					Face Mount <sup>6</sup>				Double Face Mount <sup>6,7</sup>				Slopeable / Skewable <sup>8,9</sup>				Variable Pitch <sup>10</sup>			
		Connector Model	Floor 100% (lbs)	Fasteners <sup>12</sup>		Connector Model	Floor 100% (lbs)	Fasteners <sup>12</sup>		Connector Model	Floor 100% (lbs)	Fasteners <sup>12</sup>		Connector Model	Roof 115% (lbs)	Fasteners <sup>12</sup>		Connector Model	Roof 115% (lbs)	Fasteners <sup>12</sup>		
				Header	Joist			Header	Joist			Header	Joist			Header	Joist			Header	Joist	Header
BLI 40	9½"	ITS2.56/9.5	933	10d x 1½"	--	IUS2.56/9.5	950	10d	--	MIU5.12/9	1936	10d	10d x 1½"	LSSR2.56Z	1205	10d x 2½"	10d x 1½"	VPA3	1020	10d	10d x 1½"	
BLI 40 BLI 60	11½"	ITS2.56/11.88	933	10d x 1½"	--	IUS2.56/11.88	1185	10d	--	MIU5.12/11	2419	10d	10d x 1½"	LSSR2.56Z	1205	10d x 2½"	10d x 1½"	VPA3	1020	10d	10d x 1½"	
	14"	ITS2.56/14	933	10d x 1½"	--	IUS2.56/14	1660	10d	--	MIU5.12/14	2663	10d	10d x 1½"	LSSR2.56Z	1205	10d x 2½"	10d x 1½"	VPA3	1020	10d	10d x 1½"	
	16"	ITS2.56/16	933	10d x 1½"	--	IUS2.56/16	1895	10d	--	MIU5.12/16	2902	10d	10d x 1½"	LSSR2.56Z	1205	10d x 2½"	10d x 1½"	VPA3	1020	10d	10d x 1½"	
BLI 65 BLI 80 BLI 90	11½"	ITS3.56/11.88	933	10d x 1½"	--	IUS3.56/11.88	1220	10d	--	HU412-2	2050	16d	16d	LSSR410Z	1810	16d x 2½"	16d x 2½"	VPA4	1020	10d	10d x 1½"	
	14"	ITS3.56/14	933	10d x 1½"	--	IUS3.56/14	1425	10d	--	HU414-2	2565	16d	16d	LSSR410Z	1810	16d x 2½"	16d x 2½"	VPA4	1020	10d	10d x 1½"	
	16"	ITS3.56/16	933	10d x 1½"	--	IUS3.56/16	1485	10d	--	HU414-2	2565	16d	16d	LSSR410Z	1810	16d x 2½"	16d x 2½"	VPA4	1020	10d	10d x 1½"	
	18"	MIT418	886	10d x 1½"	10d x 1½"	MIU3.56/18	2705	10d	10d x 1½"	HU414-2	2565	16d	16d	LSSR410Z	1810	16d x 2½"	16d x 2½"	VPA4	1020	10d	10d x 1½"	
BLI 700	11½"	ITS2.37/11.88	1085	10d x 1½"	--	IUS2.37/11.88	1185	10d	--	MIU4.75/11	2419	10d	10d x 1½"	LSSR2.37Z	1205	10d x 2½"	10d x 1½"	VPA35	1020	10d	10d x 1½"	
	14"	ITS2.37/14	1085	10d x 1½"	--	IUS2.37/14	1660	10d	--	MIU4.75/14	2663	10d	10d x 1½"	LSSR2.37Z	1205	10d x 2½"	10d x 1½"	VPA35	1020	10d	10d x 1½"	
	16"	ITS2.37/16	1085	10d x 1½"	--	IUS2.37/16	1895	10d	--	MIU4.75/16	2902	10d	10d x 1½"	LSSR2.37Z	1205	10d x 2½"	10d x 1½"	VPA35	1020	10d	10d x 1½"	
BLI 900	11½"	ITS3.56/11.88	1085	10d x 1½"	--	IUS3.56/11.88	1220	10d	--	HU412-2	2050	16d	16d	LSSR410Z	1810	16d x 2½"	16d x 2½"	VPA4	1020	10d	10d x 1½"	
	14"	ITS3.56/14	1085	10d x 1½"	--	IUS3.56/14	1425	10d	--	HU414-2	2565	16d	16d	LSSR410Z	1810	16d x 2½"	16d x 2½"	VPA4	1020	10d	10d x 1½"	
	16"	ITS3.56/16	1085	10d x 1½"	--	IUS3.56/16	1485	10d	--	HU414-2	2565	16d	16d	LSSR410Z	1810	16d x 2½"	16d x 2½"	VPA4	1020	10d	10d x 1½"	

### NOTES:

- Tabulated hanger capacities are based only on the hanger, fasteners, and header to which it is attached. Allowable reaction of the carried joist, based on bearing length provided by the hanger, must also be determined and compared to actual reaction.
- Consult hanger manufacturer's product information for capacities when parameters differ from design assumptions listed below.
- Follow hanger manufacturer's guidelines for installation and nailing. Avoid the practice of toe-nailing joists to beams and adding hangers later. Install hanger first, then the supported I-joist.
- Top mount hanger capacity based on header of either LVL or same series/depth as joist being carried.
- For top mount hangers supported by I-joists, all nails must be 10d x 1½".
- For face mount hangers supported by I-joists, backer block material is assumed to be DF/SP for all joist series except the 65, 80, 90, and 900 joist series, for which the block is assumed to be SPF/HF.
- Bearing stiffeners required for face mount hangers if hanger does not directly support joist top flange.
- For slopeable/skewable hangers: beveled bearing stiffeners required, DF/SP header assumed; if hanger height is less than 60% of joist plumb height, add blocking or clips near top to prevent rotation.
- If not skewed, capacity of LSSH25 hanger is 2095 lbs, of LSSH35 is 2645 lbs.
- Top plate for variable pitch hangers assumed to be SPF/HF.
- USP TMP hangers are for slopes up to and including 6/12. Use TMPH for slopes from 6/12 to 12/12.
- Nail sizes: 10d x 1½" are 0.148" x 1½", 10d x 2½" are 0.148" x 2½", 10d are 0.148" x 3", 16d x 2½" are 0.162" x 2½", and 16d are 0.162" x 3½".
- Tabulated capacities for USP TF1418 hangers are for attachment to LVL (top mount hangers for bearing on 18" I-joist headers are not available from USP).
- For Simpson LSSR hangers, capacities may be multiplied by a factor of 1.30 if not skewed.



# onCENTER® RIM BOARD SE

## Capacities<sup>1</sup>

Thickness	1"	1½"
<b>Vertical Load</b> <sup>2</sup>		
Rim or starter joist (9½" - 16")	3300 plf	4400 plf
Rim or starter joist (18")	2750 plf	3950 plf
<b>Horizontal Load</b> <sup>3</sup>		
Lateral seismic	180 plf	180 plf
Lateral wind <sup>4</sup>	250 plf	250 plf
<b>½" Lag or Through Bolt</b> <sup>5</sup>		
Attaching ledger to rim board (per bolt)	300 lbs	350 lbs
<b>Nails in Wide Face of Rim Board</b>		
SG (Equivalent Specific Gravity) <sup>6</sup>	0.50	0.50

1. For fully supported rim board applications only. Not appropriate for the design of bending members.
2. Vertical Load capacity is based on the normal load duration (10 years) for wood products, and may not be increased for shorter load durations.
3. Horizontal Load transfer capacity is based on the connection requirements shown below and on short-term load duration (10 minutes). Design values may be adjusted for other load durations in accordance with the applicable code. The 150 plf lateral load limit for toe-nailed connections with Seismic Design Categories D, E and F in Section 4.1.7 of SDPWS-2008/2015 does not apply. For increased horizontal load capacity, see APA EWS Y250.
4. Increased 40% per Section 4.1.7 of SDPWS-2008/2015.
5. Lag and Through Bolt capacity is based on normal load duration, and may be adjusted for other durations.
6. For use in NDS lateral load calculations.

## Sizes & Approximate Weights (plf)

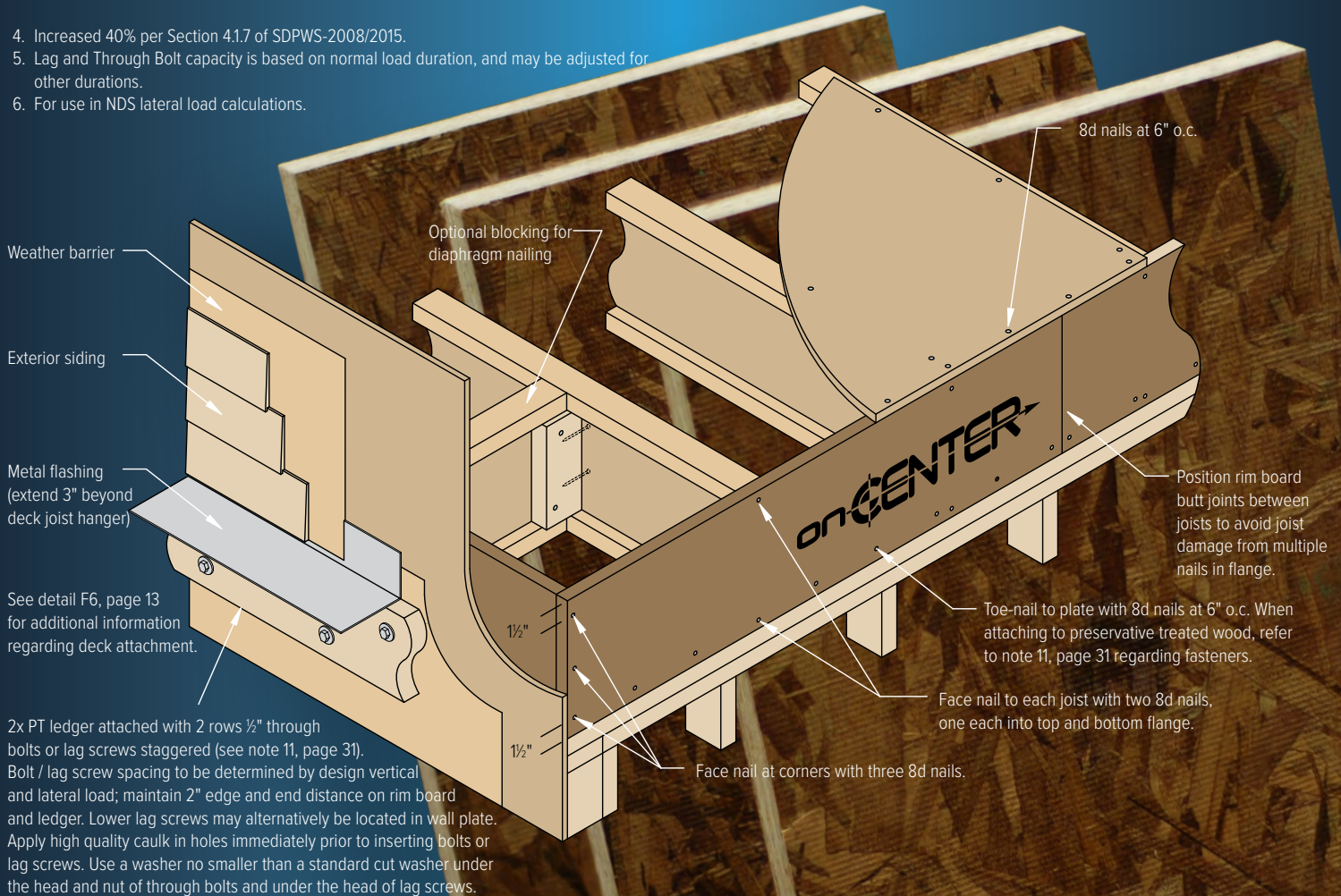
	9½"	11½"	14"	16"	18"
<b>1"</b>	2.5	3.1	3.6	4.1	4.7
<b>1½"</b>	2.8	3.5	4.1	4.7	5.2

Available in 12' lengths (24' available in the western United States).

## Allowable Edgewise Bending Design Stresses <sup>a,b</sup>

<b>E (Modulus of Elasticity)</b>	0.55 x 10 <sup>6</sup> psi
<b>F<sub>b</sub> (Bending) <sup>c</sup></b>	600 psi
<b>F<sub>v</sub> (Horizontal Shear)</b>	270 psi
<b>F<sub>cl</sub> (Compression Perpendicular to Grain)</b>	550 psi

- a. Design values apply to all depths of onCENTER rim board. Span must not exceed 4 feet.
- b. Except for E and F<sub>cl</sub>, all values may be increased for duration of load.
- c. Allowable bending stress includes adjustments for volume effect.



2x PT ledger attached with 2 rows ½" through bolts or lag screws staggered (see note 11, page 31). Bolt / lag screw spacing to be determined by design vertical and lateral load; maintain 2" edge and end distance on rim board and ledger. Lower lag screws may alternatively be located in wall plate. Apply high quality caulk in holes immediately prior to inserting bolts or lag screws. Use a washer no smaller than a standard cut washer under the head and nut of through bolts and under the head of lag screws.

For ½" through bolts, drill a ⅞" to 1" hole.

For ½" lag screws, drill a ⅝" lead hole in the rim board and a ½" hole in the ledger. **Caution:** Do not drill ½" hole in rim board. Insert lag screw in ⅝" lead hole by turning with a wrench, not by driving with a hammer. Avoid over-torquing, which can significantly reduce lateral resistance of screw. Screw length must be sufficient to penetrate beyond rim board a minimum of ½".

## For Use over Short, Lightly Loaded Openings

In addition to its uses as a rim board and starter joist, onCENTER rim board may also be used over lightly loaded door, window, and foundation ventilation openings where the span does not exceed 4 feet and stresses do not exceed those in the Bending Design Stresses table above.



## onCENTER® LVL

onCENTER® LVL is available in a broad range of sizes to meet the varying demands of today's designers, builders, and homeowners. It's the natural choice when you need stable dimensions, consistent performance, and superior strength. With design properties far surpassing those of ordinary dimension lumber, shallower depths, longer clear spans, and fewer intermediate supports are all feasible. Typical applications include door and window headers, floor beams, ridge beams, and hip and valley beams. Quality is monitored by the third-party inspection services of APA-EWS® and backed by a lifetime limited warranty.

- 2.1E grade
- 1¾" width
- Various depths from 7¼" to 24"
- Straighter wood that resists warping and shrinking
- Greater design flexibility than ordinary lumber
- Factory-sealed coating to protect against the elements during construction
- Lifetime limited warranty\*



\* Visit [www.buildonCENTER.com](http://www.buildonCENTER.com) or call 877-914-7770 for terms, conditions, and limitations of limited warranty.

## Edgewise Design Values

Width	Design Property	Depth								
		7¼"	9¼"	9½"	11¼"	11½"	14"	16"	18"	24"
1¾"	Allowable Moment (ft-lbs)	4218	6660	7002	9613	10639	14320	18210	22511	37782
	Allowable Shear (lbs)	2411	3076	3159	3741	3948	4655	5320	5985	7980
	Moment of Inertia (in <sup>4</sup> )	55.6	115	125	208	244	400	597	851	2016
	Weight (plf)	3.3	4.3	4.4	5.2	5.5	6.5	7.4	8.3	11.1

- Design values are limited to conditions in which the moisture content of solid sawn lumber is less than 16%.
- Allowable moment and shear values are for 100% load duration and may be adjusted for other load durations.
- Allowable moment may be increased 4% for repetitive members as defined in the National Design Specification (NDS).
- Compression edge of member must have continuous lateral support and ends at the points of bearing must have lateral support to prevent rotation.
- 1¾" wide onCENTER LVL 16" and deeper must only be used in multiple-ply members, unless lateral stability calculations are performed by a design professional.
- For onCENTER LVL made of southern pine (Mill #1125), increase weight by 10%.
- Not all grades and depths may be available in all locations. Contact BlueLinx or your local provider of BlueLinx products for availability.

## Allowable Edgewise Design Stresses <sup>a,b</sup>

$E_{sf}$ (Shear-Free Modulus of Elasticity) <sup>c</sup>	2.1 x 10 <sup>6</sup> psi
$E_{app}$ (Apparent Modulus of Elasticity) <sup>c</sup>	2.0 x 10 <sup>6</sup> psi
$E_{min}$ (Modulus of Elasticity for Stability) <sup>c</sup>	1.1 x 10 <sup>6</sup> psi
$F_b$ (Flexural Stress) <sup>d,e</sup>	3100 psi
$F_v$ (Horizontal Shear)	285 psi
$F_{c\perp}$ (Compression Perpendicular to Grain) <sup>c</sup>	750 psi
$F_{c\parallel}$ (Compression Parallel to Grain)	2750 psi
$F_t$ (Tension Parallel to Grain) <sup>f</sup>	1700 psi
SG (Equivalent Specific Gravity) <sup>g</sup>	0.50

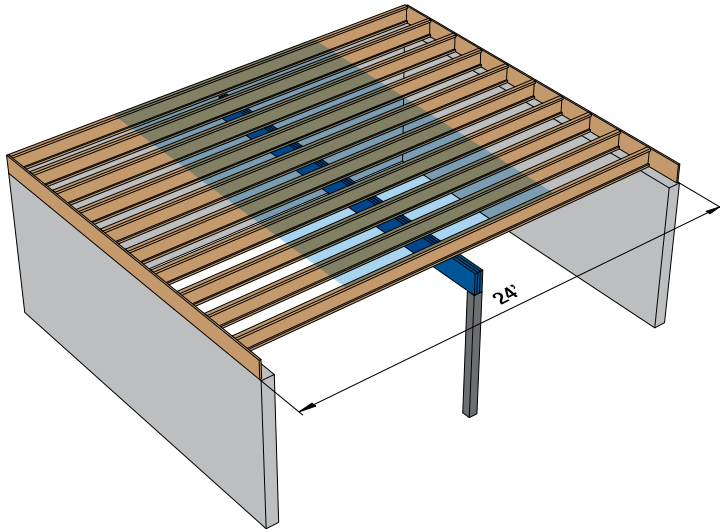
- Allowable design stresses are limited to conditions in which the moisture content of solid sawn lumber is less than 16%.
- Allowable design stresses apply to depths as small as 3½" ripped from any depth of beam.
- No increase is allowed to  $E_{sf}$ ,  $E_{app}$ ,  $E_{min}$ , or  $F_{c\perp}$  for duration of load.
- A factor of 1.04 may be applied for repetitive members as defined in the NDS.
- For depth (d) of 12". For 3.5" ≤ d < 12", multiply  $F_b$  by (12/d)<sup>0.125</sup>. For d > 12", multiply  $F_b$  by (12/d)<sup>0.2</sup>.
- $F_t$  has been adjusted for a length effect suitable for most common applications.
- For calculating lateral load capacity of bolts, lag screws, nails, and wood screws in the wide face.

$$\text{Deflection (inches)} = \frac{270wL^4}{E_{sf}bd^3} + \frac{28.8wL^2}{E_{sf}bd}$$

$$\text{or} = \frac{270wL^4}{E_{app}bd^3}$$

$w$  = uniform load (plf)  
 $L$  = span (feet)  
 $E_{sf}$  = shear-free modulus of elasticity (psi)  
 $b$  = beam width (inches)  
 $d$  = beam depth (inches)  
 $E_{app}$  = apparent modulus of elasticity (psi)

## CALCULATING UNIFORM LOADS



### EXAMPLE 1 - Floor Girder

Floor Loading: 50 psf Total Load (TL), 40 psf Live Load (LL)

*If joists are hanging into a flush beam or broken (joists at left are **not** broken) above a dropped girder:*

$24' / 2 = 12'$  tributary width

$12' \times 50 \text{ psf} = \mathbf{600 \text{ plf TL}}$

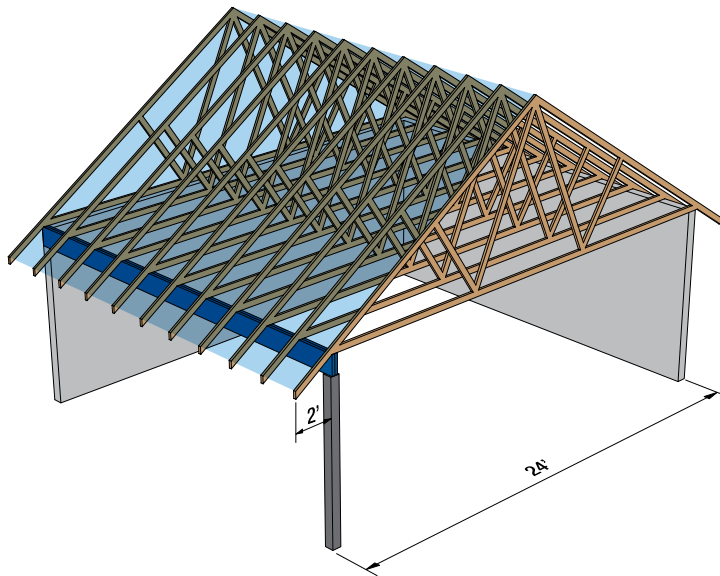
$12' \times 40 \text{ psf} = \mathbf{480 \text{ plf LL}}$

*Multiple span joists (with equal spans) that run continuous (as shown at left) over a wall or dropped beam apply 25% additional load to the intermediate support than two simple span members. If the joists above are continuous:*

$24' / 2 \times 1.25$  (or  $24' \times 5/8$ ) = 15' tributary width

$15' \times 50 \text{ psf} = \mathbf{750 \text{ plf TL}}$

$15' \times 40 \text{ psf} = \mathbf{600 \text{ plf LL}}$



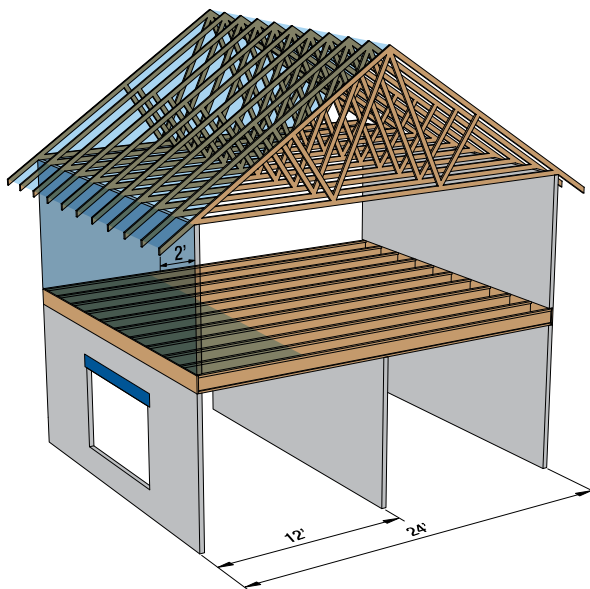
### EXAMPLE 2 - Roof Supporting Beam

Roof Loading: 47 psf Total Load, 30 psf Live Load

$24' / 2 + 2' \text{ overhang} = 14'$  tributary width

$14' \times 47 \text{ psf} = \mathbf{658 \text{ plf TL}}$

$14' \times 30 \text{ psf} = \mathbf{420 \text{ plf LL}}$



### EXAMPLE 3 - Header Supporting Floor and Roof

Roof Loading: 47 psf Total Load, 30 psf Live Load

Floor Loading: 50 psf Total Load, 40 psf Live Load

Exterior wall: 10 psf TL

Roof portion:

$24' / 2 + 2' \text{ overhang} = 14'$  tributary width

$14' \times 47 \text{ psf} = \mathbf{658 \text{ plf TL}}$

$14' \times 30 \text{ psf} = \mathbf{420 \text{ plf LL}}$

Floor portion:

$12' / 2 = 6'$  tributary width

$6' \times 50 \text{ psf} = \mathbf{300 \text{ plf TL}}$

$6' \times 40 \text{ psf} = \mathbf{240 \text{ plf LL}}$

9' Exterior wall:

$9' \times 10 \text{ psf} = \mathbf{90 \text{ plf TL}}$

Totals:

$658 + 300 + 90 = \mathbf{1048 \text{ plf TL}}$

$420 + 240 = \mathbf{660 \text{ plf LL}}$



1. Tabulated allowable uniform loads are for the more restrictive of single or continuous spans (measured center-to-center of bearings) and may be applied in addition to the weight of the beam. For onCENTER LVL® made of southern pine (Mill #1125), subtract 10% of the weight shown on page 35, multiplied by the number of plies, from the tabulated Total Load. Example: for 4-ply 24", subtract 4 x 1.11.
2. For other load conditions or span configurations, or if the length of any continuous span is less than half of the adjacent span, analyze with Doma Sizer™ software or contact your BlueLinX representative.
3. Dry-use conditions are assumed (conditions in which moisture content of solid sawn lumber is less than 16%).
4. To properly select a beam, capacities in the 'Live Load' and 'Total Load' rows must meet or exceed actual live and total loads respectively. When 'Live Load' is blank, 'Total Load' will control, unless a floor live load deflection limit other than L/360 is desired (see note 5).
5. For floor live load deflection limits of L/480 or L/600, multiply the allowable load value in the floor 'Live Load' row (or 'Total Load' when 'Live Load' is blank) by 0.75 or 0.60 respectively.
6. Check deflection limits against local building code requirements.
7. For the Floor and Roof Load tables, 1¾" wide onCENTER LVL 16" and deeper must only be used in multiple-ply members (i.e., 2, 3, or 4 plies).
8. See pages 46 & 47 for multiple member fastening requirements.
9. Provide lateral support at all bearing locations and continuously along the top (or compression) edge of the beam.
10. To select an LVL beam for a span not shown, use values for the next longer span shown (e.g., for a 21' span, select product using values for a 22' span).
11. Bearing must be provided across the full width of the LVL beam.
12. Bearing length may be adjusted if an LVL beam is not fully loaded. For example, if an LVL beam requires 3.5" of bearing to support a maximum TL capacity of 1000 plf but the calculated design load is only 800 plf, the bearing length indicated in the chart can be adjusted. Divide 800 plf by 1000 plf and multiply by 3.5" ( $800/1000 \times 3.5" = 2.8"$ ). Caution: Under no circumstances may end bearing be less than 1½" nor intermediate bearing less than 3".
13. Roof surface slope must be a minimum of 0.25/12 or as required for adequate drainage.

## PRODUCT SELECTION EXAMPLE:

Choose an onCENTER 2.1E LVL beam to support 620 PLF live load + 160 PLF dead load. Loads are calculated from both floor and roof areas. The beam spans 9'-6".

If a beam supports floor and roof loads, use floor tables for product selection as these tables use stiffer deflection criterion. Find the tables titled Floor Load Table (pages 38-39). Total load to be supported is 780 PLF (620 live + 160 dead). Enter the table at the left column and find 10' (next longest length above 9'-6"). The column to the right contains three rows, Live Load L/360, Total Load and End / Int. Bearing (minimum bearing requirements in inches at End and Intermediate supports). Follow the row marked Total Load across the chart until a number larger than 780 is located. A single piece of 1¾" x 14" deep LVL can support 932 PLF total load. Live load capacity must also be verified (if none is indicated, total load governs). Note the minimum bearing lengths of 3.6" (end) and 8.9" (int). To find a shallower beam requiring less bearing, continue moving across the table to the Two 1¾" onCENTER LVL section. Again, find a total load value that meets or exceeds 780 PLF. Two 1¾" x 9¾" LVL can carry 1017 PLF total load and 684 PLF live load. Both numbers exceed the TL and LL values needed (1017 > 780 TL and 684 > 620 LL). The required end bearing is 2.0" and in multiple span conditions, the intermediate bearing requirement is 4.9".

# FLOOR LOAD TABLE (PLF)

# 2.1E LVL 100%

Span	Condition	One 1¾" onCENTER LVL						Two 1¾" onCENTER LVL								
		7¼"	9¼"	9½"	11¼"	11½"	14"	7¼"	9¼"	9½"	11¼"	11½"	14"	16"	18"	24"
6'	Live Load L/360	762						1525								
	Total Load	795	1073	1110	1387	1493	1887	1589	2147	2221	2773	2985	3774	4185	4183	4178
	End / Int. Bearing	1.9 / 4.6	2.5 / 6.2	2.6 / 6.4	3.2 / 8.0	3.5 / 8.6	4.4 / 10.8	1.9 / 4.6	2.5 / 6.2	2.6 / 6.4	3.2 / 8.0	3.5 / 8.6	4.4 / 10.8	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0
8'	Live Load L/360	322	668	724				643	1336	1447						
	Total Load	479	745	769	945	1011	1249	958	1490	1538	1890	2021	2498	2989	3133	3128
	End / Int. Bearing	1.5 / 3.7	2.3 / 5.7	2.4 / 5.9	2.9 / 7.3	3.1 / 7.8	3.9 / 9.6	1.5 / 3.7	2.3 / 5.7	2.4 / 5.9	2.9 / 7.3	3.1 / 7.8	3.9 / 9.6	4.6 / 11.4	4.8 / 12.0	4.8 / 12.0
10'	Live Load L/360	164	342	370	615	724		329	684	741	1230	1447				
	Total Load	244	509	551	716	763	932	487	1017	1103	1432	1527	1865	2206	2503	2498
	End / Int. Bearing	1.5 / 3.0	2.0 / 4.9	2.2 / 5.3	2.8 / 6.9	3.0 / 7.3	3.6 / 8.9	1.5 / 3.0	2.0 / 4.9	2.2 / 5.3	2.8 / 6.9	3.0 / 7.3	3.6 / 8.9	4.3 / 10.6	4.8 / 12.0	4.8 / 12.0
11'	Live Load L/360	123	257	278	462	544		247	514	557	924	1087				
	Total Load	182	381	413	630	680	827	364	762	826	1261	1360	1655	1950	2263	2269
	End / Int. Bearing	1.5 / 3.0	1.7 / 4.1	1.8 / 4.4	2.7 / 6.7	2.9 / 7.2	3.5 / 8.7	1.5 / 3.0	1.7 / 4.1	1.8 / 4.4	2.7 / 6.7	2.9 / 7.2	3.5 / 8.7	4.1 / 10.3	4.8 / 11.9	4.8 / 12.0
12'	Live Load L/360	95	198	214	356	419	686	190	396	429	712	837	1372			
	Total Load	139	293	317	529	586	743	279	585	634	1058	1171	1487	1746	2021	2078
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.4	1.5 / 3.7	2.5 / 6.1	2.7 / 6.8	3.5 / 8.6	1.5 / 3.0	1.5 / 3.4	1.5 / 3.7	2.5 / 6.1	2.7 / 6.8	3.5 / 8.6	4.1 / 10.1	4.7 / 11.6	4.8 / 12.0
13'	Live Load L/360	75	155	168	280	329	540	150	311	337	560	659	1079			
	Total Load	109	229	249	415	489	671	218	458	497	830	977	1343	1581	1825	1916
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.5 / 3.2	2.1 / 5.2	2.5 / 6.1	3.4 / 8.4	1.5 / 3.0	1.5 / 3.0	1.5 / 3.2	2.1 / 5.2	2.5 / 6.1	3.4 / 8.4	4.0 / 9.9	4.6 / 11.4	4.8 / 12.0
14'	Live Load L/360	60	124	135	224	264	432	120	249	270	448	527	864	1290		
	Total Load	86	183	198	331	390	578	173	365	396	662	780	1156	1444	1663	1778
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.8 / 4.5	2.1 / 5.3	3.2 / 7.8	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.8 / 4.5	2.1 / 5.3	3.2 / 7.8	3.9 / 9.7	4.5 / 11.2	4.8 / 12.0
15'	Live Load L/360	48	101	109	182	214	351	97	202	219	365	429	703	1049	1493	
	Total Load	69	148	160	268	316	503	139	295	321	536	632	1005	1280	1528	1658
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.6 / 3.9	1.9 / 4.6	2.9 / 7.3	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.6 / 3.9	1.9 / 4.6	2.9 / 7.3	3.7 / 9.3	4.4 / 11.0	4.8 / 12.0
16'	Live Load L/360	40	83	90	150	176	289	80	167	181	300	353	579	864	1230	
	Total Load	57	121	131	220	259	428	114	242	263	440	519	855	1123	1390	1553
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.5	1.7 / 4.1	2.7 / 6.6	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.5	1.7 / 4.1	2.7 / 6.6	3.5 / 8.7	4.3 / 10.7	4.8 / 12.0
17'	Live Load L/360		69	75	125	147	241	67	139	151	250	294	483	720	1026	
	Total Load		100	108	183	215	356	94	200	217	365	431	711	993	1230	1460
	End / Int. Bearing		1.5 / 3.0	1.5 / 3.0	1.5 / 3.1	1.5 / 3.6	2.4 / 5.9	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.1	1.5 / 3.6	2.4 / 5.9	3.3 / 8.2	4.1 / 10.1	4.8 / 12.0
18'	Live Load L/360		58	63	105	124	203	56	117	127	211	248	407	607	864	
	Total Load		83	91	153	180	298	78	167	182	306	361	597	885	1095	1378
	End / Int. Bearing		1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.2	2.1 / 5.3	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.2	2.1 / 5.3	3.1 / 7.7	3.8 / 9.5	4.8 / 12.0
19'	Live Load L/360		49	54	89	105	173	48	99	108	179	211	346	516	735	
	Total Load		70	76	129	153	253	65	141	153	259	306	506	759	981	1304
	End / Int. Bearing		1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.9 / 4.7	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.9 / 4.7	2.8 / 7.0	3.6 / 9.0	4.8 / 12.0
20'	Live Load L/360		42	46	77	90	148	41	85	92	154	181	296	442	630	
	Total Load		59	65	110	130	216	55	119	130	220	260	432	649	884	1238
	End / Int. Bearing		1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.7 / 4.3	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.7 / 4.3	2.6 / 6.3	3.5 / 8.6	4.8 / 12.0
22'	Live Load L/360				57	68	111		64	69	115	136	223	332	473	1122
	Total Load				81	96	160		87	95	163	193	321	484	693	1123
	End / Int. Bearing				1.5 / 3.0	1.5 / 3.0	1.5 / 3.5		1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.5	2.1 / 5.2	3.0 / 7.5	4.8 / 12.0
24'	Live Load L/360				44	52	85		49	53	89	104	171	256	365	864
	Total Load				61	73	122		65	71	123	146	244	369	530	1027
	End / Int. Bearing				1.5 / 3.0	1.5 / 3.0	1.5 / 3.0		1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.8 / 4.4	2.5 / 6.3	4.8 / 12.0
26'	Live Load L/360					41	67			42	70	82	135	201	287	680
	Total Load					56	94			54	94	112	189	287	414	872
	End / Int. Bearing					1.5 / 3.0	1.5 / 3.0			1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.8	2.2 / 5.3	4.5 / 11.1
28'	Live Load L/360						54				56	66	108	161	229	544
	Total Load						74				73	88	149	227	328	749
	End / Int. Bearing						1.5 / 3.0				1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.3	1.9 / 4.6	4.1 / 10.3

Live Load L/360 = Maximum live load (plf) with deflection limited to L/360

Total Load = Maximum total load (plf) with deflection limited to L/240

End / Int. Bearing = Minimum end and intermediate bearing length (inches) based on bearing stress of 750 psi, as provided by direct bearing on Hem-Fir, Southern Pine, or Douglas Fir-Larch cripples or on a properly specified hanger or steel column plate. For other conditions, see page 45.

Refer to page 37 for additional information regarding use of this table.

# FLOOR LOAD TABLE (PLF)

# 2.1E LVL

# 100%

Span	Condition	Three 1¾" onCENTER LVL								Four 1¾" onCENTER LVL							
		9¼"	9½"	11¼"	11½"	14"	16"	18"	24"	9¼"	9½"	11¼"	11½"	14"	16"	18"	24"
6'	Live Load L/360																
	Total Load	3220	3331	4160	4478	5661	6278	6275	6267	4293	4442	5547	5971	7548	8370	8367	8356
	End / Int. Bearing	2.5 / 6.2	2.6 / 6.4	3.2 / 8.0	3.5 / 8.6	4.4 / 10.8	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0	2.5 / 6.2	2.6 / 6.4	3.2 / 8.0	3.5 / 8.6	4.4 / 10.8	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0
8'	Live Load L/360	2004	2171							2672	2894						
	Total Load	2235	2308	2834	3032	3746	4484	4700	4692	2980	3077	3779	4043	4995	5979	6267	6256
	End / Int. Bearing	2.3 / 5.7	2.4 / 5.9	2.9 / 7.3	3.1 / 7.8	3.9 / 9.6	4.6 / 11.4	4.8 / 12.0	4.8 / 12.0	2.3 / 5.7	2.4 / 5.9	2.9 / 7.3	3.1 / 7.8	3.9 / 9.6	4.6 / 11.4	4.8 / 12.0	4.8 / 12.0
10'	Live Load L/360	1026	1111	1846	2171					1368	1482	2461	2894				
	Total Load	1526	1654	2148	2290	2797	3309	3755	3747	2035	2205	2864	3054	3729	4411	5007	4996
	End / Int. Bearing	2.0 / 4.9	2.2 / 5.3	2.8 / 6.9	3.0 / 7.3	3.6 / 8.9	4.3 / 10.6	4.8 / 12.0	4.8 / 12.0	2.0 / 4.9	2.2 / 5.3	2.8 / 6.9	3.0 / 7.3	3.6 / 8.9	4.3 / 10.6	4.8 / 12.0	4.8 / 12.0
11'	Live Load L/360	771	835	1387	1631					1028	1113	1849	2175				
	Total Load	1143	1239	1915	2040	2482	2924	3395	3403	1525	1652	2553	2720	3309	3899	4527	4537
	End / Int. Bearing	1.7 / 4.1	1.8 / 4.4	2.7 / 6.8	2.9 / 7.2	3.5 / 8.7	4.1 / 10.3	4.8 / 11.9	4.8 / 12.0	1.7 / 4.1	1.8 / 4.4	2.7 / 6.8	2.9 / 7.2	3.5 / 8.7	4.1 / 10.3	4.8 / 11.9	4.8 / 12.0
12'	Live Load L/360	594	643	1068	1256	2058				792	858	1424	1675	2745			
	Total Load	878	952	1587	1828	2230	2619	3031	3117	1170	1269	2115	2437	2973	3493	4042	4156
	End / Int. Bearing	1.5 / 3.4	1.5 / 3.7	2.5 / 6.1	2.8 / 7.0	3.5 / 8.6	4.1 / 10.1	4.7 / 11.6	4.8 / 12.0	1.5 / 3.4	1.5 / 3.7	2.5 / 6.1	2.8 / 7.0	3.5 / 8.6	4.1 / 10.1	4.7 / 11.6	4.8 / 12.0
13'	Live Load L/360	467	506	840	988	1619				623	675	1120	1317	2159			
	Total Load	688	746	1245	1466	2024	2372	2737	2874	917	994	1659	1954	2699	3162	3650	3833
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.2	2.1 / 5.2	2.5 / 6.1	3.4 / 8.4	4.0 / 9.9	4.6 / 11.4	4.8 / 12.0	1.5 / 3.0	1.5 / 3.2	2.1 / 5.2	2.5 / 6.1	3.4 / 8.4	4.0 / 9.9	4.6 / 11.4	4.8 / 12.0
14'	Live Load L/360	374	405	673	791	1296	1935			499	540	897	1055	1728	2580		
	Total Load	548	594	993	1170	1804	2167	2495	2667	731	793	1324	1560	2406	2889	3327	3556
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.8 / 4.5	2.1 / 5.3	3.3 / 8.1	3.9 / 9.7	4.5 / 11.2	4.8 / 12.0	1.5 / 3.0	1.5 / 3.0	1.8 / 4.5	2.1 / 5.3	3.3 / 8.1	3.9 / 9.7	4.5 / 11.2	4.8 / 12.0
15'	Live Load L/360	304	329	547	643	1054	1573	2240		405	439	729	858	1405	2098	2987	
	Total Load	443	481	805	948	1562	1994	2292	2487	591	641	1073	1264	2082	2658	3056	3316
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.6 / 3.9	1.9 / 4.6	3.0 / 7.5	3.9 / 9.6	4.4 / 11.0	4.8 / 12.0	1.5 / 3.0	1.5 / 3.0	1.6 / 3.9	1.9 / 4.6	3.0 / 7.5	3.9 / 9.6	4.4 / 11.0	4.8 / 12.0
16'	Live Load L/360	250	271	451	530	868	1296	1846		334	362	601	707	1158	1728	2461	
	Total Load	363	394	660	778	1283	1753	2119	2329	484	525	880	1038	1711	2338	2825	3106
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.5 / 3.5	1.7 / 4.1	2.7 / 6.6	3.6 / 9.0	4.4 / 10.9	4.8 / 12.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.5	1.7 / 4.1	2.7 / 6.6	3.6 / 9.0	4.4 / 10.9	4.8 / 12.0
17'	Live Load L/360	209	226	376	442	724	1081	1539		278	302	501	589	965	1441	2052	
	Total Load	300	326	548	646	1067	1551	1919	2190	401	435	731	862	1422	2067	2559	2920
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.5 / 3.1	1.5 / 3.6	2.4 / 5.9	3.4 / 8.5	4.2 / 10.5	4.8 / 12.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.1	1.5 / 3.6	2.4 / 5.9	3.4 / 8.5	4.2 / 10.5	4.8 / 12.0
18'	Live Load L/360	176	190	316	372	610	910	1296		234	254	422	496	813	1214	1728	
	Total Load	251	273	459	542	895	1343	1709	2067	335	364	612	722	1194	1791	2279	2756
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.2	2.1 / 5.3	3.2 / 7.8	4.0 / 9.9	4.8 / 12.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.2	2.1 / 5.3	3.2 / 7.8	4.0 / 9.9	4.8 / 12.0
19'	Live Load L/360	149	162	269	316	519	774	1102		199	216	359	422	691	1032	1470	
	Total Load	211	230	388	458	758	1139	1531	1956	282	307	517	611	1011	1519	2042	2608
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.9 / 4.7	2.8 / 7.0	3.8 / 9.4	4.8 / 12.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.9 / 4.7	2.8 / 7.0	3.8 / 9.4	4.8 / 12.0
20'	Live Load L/360	128	139	231	271	445	664	945		171	185	308	362	593	885	1260	
	Total Load	179	195	330	391	648	973	1380	1857	239	260	441	521	863	1298	1840	2476
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.7 / 4.3	2.6 / 6.3	3.6 / 8.9	4.8 / 12.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.7 / 4.3	2.6 / 6.3	3.6 / 8.9	4.8 / 12.0
22'	Live Load L/360	96	104	173	204	334	499	710	1683	128	139	231	272	445	665	947	2244
	Total Load	131	143	244	289	482	726	1040	1685	175	191	326	386	642	968	1387	2247
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.5	2.1 / 5.2	3.0 / 7.5	4.8 / 12.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.5	2.1 / 5.2	3.0 / 7.5	4.8 / 12.0
24'	Live Load L/360	74	80	133	157	257	384	547	1296	99	107	178	209	343	512	729	1728
	Total Load	98	107	185	219	367	554	795	1542	131	143	246	292	489	739	1060	2056
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.8 / 4.4	2.5 / 6.3	4.8 / 12.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.8 / 4.4	2.5 / 6.3	4.8 / 12.0
26'	Live Load L/360	58	63	105	123	202	302	430	1020	77	84	140	164	270	403	574	1359
	Total Load	74	81	142	169	284	431	620	1362	99	109	189	225	379	575	827	1816
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.8	2.2 / 5.3	4.6 / 11.5	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.8	2.2 / 5.3	4.6 / 11.5
28'	Live Load L/360	46	50	84	99	162	242	344	816	62	67	112	132	216	322	459	1088
	Total Load	57	62	110	132	224	341	492	1170	76	83	147	176	298	454	656	1559
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.3	1.9 / 4.6	4.3 / 10.7	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.3	1.9 / 4.6	4.3 / 10.7

Live Load L/360 = Maximum live load (plf) with deflection limited to L/360

Total Load = Maximum total load (plf) with deflection limited to L/240

End / Int. Bearing = Minimum end and intermediate bearing length (inches) based on bearing stress of 750 psi, as provided by direct bearing on Hem-Fir, Southern Pine, or Douglas Fir-Larch cripples or on a properly specified hanger or steel column plate. For other conditions, see page 45.

Refer to page 37 for additional information regarding use of this table.

# ROOF LOAD TABLE (PLF)

## 2.1E LVL

## 115%

Span	Condition	One 1¾" onCENTER LVL						Two 1¾" onCENTER LVL								
		7¼"	9¼"	9½"	11¼"	11⅝"	14"	7¼"	9¼"	9½"	11¼"	11⅝"	14"	16"	18"	24"
6'	Live Load L/240															
	Total Load	914	1235	1278	1595	1717	2094	1829	2470	2555	3191	3435	4187	4185	4183	4178
	End / Int. Bearing	2.1 / 5.3	2.9 / 7.1	3.0 / 7.3	3.7 / 9.2	4.0 / 9.8	4.8 / 12.0	2.1 / 5.3	2.9 / 7.1	3.0 / 7.3	3.7 / 9.2	4.0 / 9.8	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0
8'	Live Load L/240	482						965								
	Total Load	603	858	885	1087	1163	1437	1206	1715	1770	2175	2326	2874	3135	3133	3128
	End / Int. Bearing	1.9 / 4.6	2.7 / 6.6	2.7 / 6.8	3.4 / 8.3	3.6 / 8.9	4.4 / 11.0	1.9 / 4.6	2.7 / 6.6	2.7 / 6.8	3.4 / 8.3	3.6 / 8.9	4.4 / 11.0	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0
10'	Live Load L/240	247	513	556				494	1026	1111						
	Total Load	326	608	640	824	879	1073	652	1217	1280	1648	1757	2146	2505	2503	2498
	End / Int. Bearing	1.5 / 3.2	2.4 / 5.9	2.5 / 6.2	3.2 / 7.9	3.4 / 8.4	4.1 / 10.3	1.5 / 3.2	2.4 / 5.9	2.5 / 6.2	3.2 / 7.9	3.4 / 8.4	4.1 / 10.3	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0
11'	Live Load L/240	185	385	418	693			371	771	835	1387					
	Total Load	244	502	528	726	783	952	488	1004	1056	1451	1566	1905	2244	2274	2269
	End / Int. Bearing	1.5 / 3.0	2.2 / 5.3	2.3 / 5.6	3.1 / 7.7	3.3 / 8.3	4.0 / 10.0	1.5 / 3.0	2.2 / 5.3	2.3 / 5.6	3.1 / 7.7	3.3 / 8.3	4.0 / 10.0	4.8 / 11.8	4.8 / 12.0	4.8 / 12.0
12'	Live Load L/240	143	297	322	534	628		286	594	643	1068	1256				
	Total Load	187	392	424	609	674	856	374	783	849	1218	1348	1712	2010	2083	2078
	End / Int. Bearing	1.5 / 3.0	1.9 / 4.6	2.0 / 4.9	2.8 / 7.0	3.1 / 7.8	4.0 / 9.9	1.5 / 3.0	1.9 / 4.6	2.0 / 4.9	2.8 / 7.0	3.1 / 7.8	4.0 / 9.9	4.7 / 11.6	4.8 / 12.0	4.8 / 12.0
13'	Live Load L/240	112	233	253	420	494		225	467	506	840	988				
	Total Load	146	307	333	518	574	773	293	614	666	1036	1147	1546	1821	1922	1916
	End / Int. Bearing	1.5 / 3.0	1.6 / 3.9	1.7 / 4.2	2.6 / 6.5	2.9 / 7.2	3.9 / 9.7	1.5 / 3.0	1.6 / 3.9	1.7 / 4.2	2.6 / 6.5	2.9 / 7.2	3.9 / 9.7	4.6 / 11.4	4.8 / 12.0	4.8 / 12.0
14'	Live Load L/240	90	187	202	336	396	648	180	374	405	673	791	1296			
	Total Load	116	245	266	443	494	666	233	490	531	886	988	1331	1663	1783	1778
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.4	1.5 / 3.6	2.4 / 6.0	2.7 / 6.7	3.6 / 9.0	1.5 / 3.0	1.5 / 3.4	1.5 / 3.6	2.4 / 6.0	2.7 / 6.7	3.6 / 9.0	4.5 / 11.2	4.8 / 12.0	4.8 / 12.0
15'	Live Load L/240	73	152	164	273	322	527	146	304	329	547	643	1054			
	Total Load	94	198	215	359	423	579	188	397	430	719	847	1158	1474	1663	1658
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.5 / 3.2	2.1 / 5.2	2.5 / 6.1	3.4 / 8.4	1.5 / 3.0	1.5 / 3.0	1.5 / 3.2	2.1 / 5.2	2.5 / 6.1	3.4 / 8.4	4.3 / 10.6	4.8 / 12.0	4.8 / 12.0
16'	Live Load L/240	60	125	135	225	265	434	120	250	271	451	530	868			
	Total Load	77	163	176	295	348	508	154	325	353	590	696	1016	1294	1558	1553
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.9 / 4.6	2.2 / 5.4	3.2 / 7.9	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.9 / 4.6	2.2 / 5.4	3.2 / 7.9	4.0 / 10.0	4.8 / 12.0	4.8 / 12.0
17'	Live Load L/240	50	104	113	188	221	362	100	209	226	376	442	724	1081		
	Total Load	63	135	146	245	289	449	127	270	293	491	578	899	1145	1417	1460
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.7 / 4.1	1.9 / 4.8	3.0 / 7.4	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.7 / 4.1	1.9 / 4.8	3.0 / 7.4	3.8 / 9.4	4.7 / 11.6	4.8 / 12.0
18'	Live Load L/240	42	88	95	158	186	305	84	176	190	316	372	610	910		
	Total Load	53	113	123	206	243	400	106	226	245	412	485	800	1019	1262	1378
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.6	1.7 / 4.3	2.8 / 7.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.6	1.7 / 4.3	2.8 / 7.0	3.6 / 8.9	4.4 / 11.0	4.8 / 12.0
19'	Live Load L/240		74	81	134	158	259	72	149	162	269	316	519	774	1102	
	Total Load		95	103	174	206	339	89	191	207	348	411	679	913	1131	1304
	End / Int. Bearing		1.5 / 3.0	1.5 / 3.0	1.5 / 3.3	1.6 / 3.8	2.5 / 6.3	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.3	1.6 / 3.8	2.5 / 6.3	3.4 / 8.4	4.2 / 10.4	4.8 / 12.0
20'	Live Load L/240		64	69	115	135	222	61	128	139	231	271	445	664	945	
	Total Load		81	88	149	175	290	75	162	176	297	351	580	823	1019	1238
	End / Int. Bearing		1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.5	2.3 / 5.7	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.5	2.3 / 5.7	3.2 / 8.0	4.0 / 9.9	4.8 / 12.0
22'	Live Load L/240		48	52	86	102	167	46	96	104	173	204	334	499	710	
	Total Load		60	65	110	130	216	55	120	130	221	261	432	650	839	1123
	End / Int. Bearing		1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.9 / 4.7	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.9 / 4.7	2.8 / 7.0	3.6 / 9.0	4.8 / 12.0
24'	Live Load L/240		37	40	66	78	128		74	80	133	157	257	384	547	
	Total Load		45	49	84	99	165		90	98	168	198	330	497	702	1028
	End / Int. Bearing		1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.6 / 4.0		1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.6 / 4.0	2.4 / 5.9	3.3 / 8.2	4.8 / 12.0
26'	Live Load L/240				52	61	101		58	63	105	123	202	302	430	
	Total Load				64	77	128		69	75	129	154	257	388	557	947
	End / Int. Bearing				1.5 / 3.0	1.5 / 3.0	1.5 / 3.4		1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.4	2.0 / 5.0	2.9 / 7.1	4.8 / 12.0
28'	Live Load L/240				42	49	81		46	50	84	99	162	242	344	816
	Total Load				50	60	101		53	58	101	121	203	308	443	865
	End / Int. Bearing				1.5 / 3.0	1.5 / 3.0	1.5 / 3.0		1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.8 / 4.3	2.5 / 6.1	4.8 / 11.8

Live Load L/240 = Maximum live load (plf) with deflection limited to L/240

Total Load = Maximum total load (plf) with deflection limited to L/180

End / Int. Bearing = Minimum end and intermediate bearing length (inches) based on bearing stress of 750 psi, as provided by direct bearing on Hem-Fir, Southern Pine, or Douglas Fir-Larch cripples or on a properly specified hanger or steel column plate. For other conditions, see page 45.

Refer to page 37 for additional information regarding use of this table.



# ROOF LOAD TABLE (PLF)

# 2.1E LVL

# 115%

Span	Condition	Three 1¾" onCENTER LVL								Four 1¾" onCENTER LVL							
		9¼"	9½"	11¼"	11½"	14"	16"	18"	24"	9¼"	9½"	11¼"	11½"	14"	16"	18"	24"
6'	Live Load L/240																
	Total Load	3705	3833	4786	5152	6281	6278	6275	6267	4940	5111	6382	6870	8374	8370	8367	8356
	End / Int. Bearing	2.9 / 7.1	3.0 / 7.3	3.7 / 9.2	4.0 / 9.8	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0	2.9 / 7.1	3.0 / 7.3	3.7 / 9.2	4.0 / 9.8	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0
8'	Live Load L/240																
	Total Load	2573	2656	3262	3490	4311	4703	4700	4692	3430	3541	4349	4653	5748	6270	6267	6256
	End / Int. Bearing	2.7 / 6.6	2.7 / 6.8	3.4 / 8.3	3.6 / 8.9	4.4 / 11.0	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0	2.7 / 6.6	2.7 / 6.8	3.4 / 8.3	3.6 / 8.9	4.4 / 11.0	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0
10'	Live Load L/240	1539	1667							2052	2223						
	Total Load	1899	1997	2472	2636	3220	3758	3755	3747	2532	2662	3296	3515	4293	5010	5007	4996
	End / Int. Bearing	2.5 / 6.1	2.6 / 6.4	3.2 / 7.9	3.4 / 8.4	4.1 / 10.3	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0	2.5 / 6.1	2.6 / 6.4	3.2 / 7.9	3.4 / 8.4	4.1 / 10.3	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0
11'	Live Load L/240	1156	1253	2080						1542	1670	2773					
	Total Load	1529	1648	2205	2348	2857	3366	3411	3403	2038	2197	2940	3131	3809	4488	4549	4537
	End / Int. Bearing	2.2 / 5.4	2.4 / 5.8	3.1 / 7.8	3.3 / 8.3	4.0 / 10.0	4.8 / 11.8	4.8 / 12.0	4.8 / 12.0	2.2 / 5.4	2.4 / 5.8	3.1 / 7.8	3.3 / 8.3	4.0 / 10.0	4.8 / 11.8	4.8 / 12.0	4.8 / 12.0
12'	Live Load L/240	891	965	1602	1884					1187	1286	2136	2512				
	Total Load	1175	1273	1901	2104	2567	3016	3125	3117	1566	1698	2534	2806	3423	4021	4167	4156
	End / Int. Bearing	1.9 / 4.6	2.0 / 4.9	3.0 / 7.3	3.3 / 8.1	4.0 / 9.9	4.7 / 11.6	4.8 / 12.0	4.8 / 12.0	1.9 / 4.6	2.0 / 4.9	3.0 / 7.3	3.3 / 8.1	4.0 / 9.9	4.7 / 11.6	4.8 / 12.0	4.8 / 12.0
13'	Live Load L/240	700	759	1260	1482					934	1012	1680	1976				
	Total Load	921	999	1617	1791	2331	2731	2883	2874	1228	1331	2156	2387	3108	3641	3844	3833
	End / Int. Bearing	1.6 / 3.9	1.7 / 4.2	2.7 / 6.8	3.0 / 7.5	3.9 / 9.7	4.6 / 11.4	4.8 / 12.0	4.8 / 12.0	1.6 / 3.9	1.7 / 4.2	2.7 / 6.8	3.0 / 7.5	3.9 / 9.7	4.6 / 11.4	4.8 / 12.0	4.8 / 12.0
14'	Live Load L/240	561	608	1009	1187	1944				748	810	1345	1582	2593			
	Total Load	735	797	1330	1542	2078	2495	2675	2667	980	1063	1773	2056	2770	3327	3567	3556
	End / Int. Bearing	1.5 / 3.4	1.5 / 3.6	2.4 / 6.0	2.8 / 6.9	3.8 / 9.3	4.5 / 11.2	4.8 / 12.0	4.8 / 12.0	1.5 / 3.4	1.5 / 3.6	2.4 / 6.0	2.8 / 6.9	3.8 / 9.3	4.5 / 11.2	4.8 / 12.0	4.8 / 12.0
15'	Live Load L/240	456	494	820	965	1581				608	659	1094	1286	2108			
	Total Load	595	645	1078	1270	1807	2296	2495	2487	794	861	1438	1693	2410	3062	3327	3316
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.2	2.1 / 5.2	2.5 / 6.1	3.5 / 8.7	4.4 / 11.0	4.8 / 12.0	4.8 / 12.0	1.5 / 3.0	1.5 / 3.2	2.1 / 5.2	2.5 / 6.1	3.5 / 8.7	4.4 / 11.0	4.8 / 12.0	4.8 / 12.0
16'	Live Load L/240	376	407	676	795	1303	1944			501	543	901	1060	1737	2593		
	Total Load	488	530	886	1043	1586	2020	2338	2329	651	706	1181	1391	2115	2693	3117	3106
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.9 / 4.6	2.2 / 5.4	3.3 / 8.2	4.2 / 10.4	4.8 / 12.0	4.8 / 12.0	1.5 / 3.0	1.5 / 3.0	1.9 / 4.6	2.2 / 5.4	3.3 / 8.2	4.2 / 10.4	4.8 / 12.0	4.8 / 12.0
17'	Live Load L/240	313	339	564	663	1086	1621			418	452	751	884	1448	2161		
	Total Load	405	439	736	867	1403	1787	2199	2190	540	586	981	1156	1870	2382	2931	2920
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.7 / 4.1	1.9 / 4.8	3.1 / 7.7	3.9 / 9.8	4.8 / 12.0	4.8 / 12.0	1.5 / 3.0	1.5 / 3.0	1.7 / 4.1	1.9 / 4.8	3.1 / 7.7	3.9 / 9.8	4.8 / 12.0	4.8 / 12.0
18'	Live Load L/240	264	286	475	558	915	1366	1944		352	381	633	744	1220	1821	2593	
	Total Load	339	368	617	728	1200	1591	1969	2067	452	491	823	971	1601	2122	2626	2756
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.5 / 3.6	1.7 / 4.3	2.8 / 7.0	3.7 / 9.2	4.6 / 11.4	4.8 / 12.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.6	1.7 / 4.3	2.8 / 7.0	3.7 / 9.2	4.6 / 11.4	4.8 / 12.0
19'	Live Load L/240	224	243	404	475	778	1161	1653		299	324	538	633	1037	1548	2204	
	Total Load	286	311	523	617	1018	1426	1765	1956	382	415	697	822	1357	1901	2353	2608
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.5 / 3.3	1.6 / 3.8	2.5 / 6.3	3.5 / 8.7	4.3 / 10.8	4.8 / 12.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.3	1.6 / 3.8	2.5 / 6.3	3.5 / 8.7	4.3 / 10.8	4.8 / 12.0
20'	Live Load L/240	192	208	346	407	667	996	1417		256	278	461	543	889	1327	1890	
	Total Load	244	265	446	526	870	1285	1590	1857	325	353	594	702	1160	1713	2121	2476
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.5	2.3 / 5.7	3.4 / 8.3	4.1 / 10.3	4.8 / 12.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.5	2.3 / 5.7	3.4 / 8.3	4.1 / 10.3	4.8 / 12.0
22'	Live Load L/240	144	156	260	306	501	748	1065		193	209	347	408	668	997	1420	
	Total Load	180	196	331	391	649	975	1310	1685	240	261	441	522	865	1300	1747	2247
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.9 / 4.7	2.8 / 7.0	3.8 / 9.3	4.8 / 12.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.9 / 4.7	2.8 / 7.0	3.8 / 9.3	4.8 / 12.0
24'	Live Load L/240	111	120	200	236	386	576	820		148	161	267	314	515	768	1094	
	Total Load	135	148	251	298	495	746	1069	1542	181	197	335	397	660	995	1425	2056
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.6 / 4.0	2.4 / 5.9	3.4 / 8.3	4.8 / 12.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.6 / 4.0	2.4 / 5.9	3.4 / 8.3	4.8 / 12.0
26'	Live Load L/240	87	95	157	185	304	453	645		116	126	210	247	405	604	860	
	Total Load	104	113	194	231	385	582	835	1421	138	151	259	307	514	776	1114	1894
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.4	2.0 / 5.0	2.9 / 7.1	4.8 / 12.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.4	2.0 / 5.0	2.9 / 7.1	4.8 / 12.0
28'	Live Load L/240	70	76	126	148	243	363	517	1224	93	101	168	198	324	484	689	1633
	Total Load	80	88	152	181	305	462	664	1317	107	117	203	242	406	615	885	1756
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.8 / 4.3	2.5 / 6.1	4.8 / 12.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.8 / 4.3	2.5 / 6.1	4.8 / 12.0

**Live Load L/240** = Maximum live load (plf) with deflection limited to L/240

**Total Load** = Maximum total load (plf) with deflection limited to L/180

**End / Int. Bearing** = Minimum end and intermediate bearing length (inches) based on bearing stress of 750 psi, as provided by direct bearing on Hem-Fir, Southern Pine, or Douglas Fir-Larch cripples or on a properly specified hanger or steel column plate. For other conditions, see page 45.

Refer to page 37 for additional information regarding use of this table.

# ROOF LOAD TABLE (PLF)

## 2.1E LVL

## 125%

Span	Condition	One 1¾" onCENTER LVL						Two 1¾" onCENTER LVL								
		7¼"	9¼"	9½"	11¼"	11⅝"	14"	7¼"	9¼"	9½"	11¼"	11⅝"	14"	16"	18"	24"
6'	Live Load L/240															
	Total Load	994	1343	1389	1735	1867	2094	1988	2685	2778	3469	3735	4187	4185	4183	4178
	End / Int. Bearing	2.3 / 5.7	3.1 / 7.7	3.2 / 8.0	4.0 / 9.9	4.3 / 10.7	4.8 / 12.0	2.3 / 5.7	3.1 / 7.7	3.2 / 8.0	4.0 / 9.9	4.3 / 10.7	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0
8'	Live Load L/240	482						965								
	Total Load	640	932	963	1182	1265	1563	1280	1865	1925	2365	2530	3125	3135	3133	3128
	End / Int. Bearing	2.0 / 4.9	2.9 / 7.2	3.0 / 7.4	3.7 / 9.1	3.9 / 9.7	4.8 / 12.0	2.0 / 4.9	2.9 / 7.2	3.0 / 7.4	3.7 / 9.1	3.9 / 9.7	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0
10'	Live Load L/240	247	513	556				494	1026	1111						
	Total Load	326	662	696	896	956	1167	652	1323	1392	1792	1911	2334	2505	2503	2498
	End / Int. Bearing	1.5 / 3.2	2.6 / 6.4	2.7 / 6.7	3.5 / 8.6	3.7 / 9.2	4.5 / 11.2	1.5 / 3.2	2.6 / 6.4	2.7 / 6.7	3.5 / 8.6	3.7 / 9.2	4.5 / 11.2	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0
11'	Live Load L/240	185	385	418	693	815		371	771	835	1387	1631				
	Total Load	244	510	552	789	851	1036	488	1019	1105	1579	1703	2071	2276	2274	2269
	End / Int. Bearing	1.5 / 3.0	2.2 / 5.4	2.4 / 5.9	3.4 / 8.3	3.6 / 9.0	4.4 / 10.9	1.5 / 3.0	2.2 / 5.4	2.4 / 5.9	3.4 / 8.3	3.6 / 9.0	4.4 / 10.9	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0
12'	Live Load L/240	143	297	322	534	628		286	594	643	1068	1256				
	Total Load	187	392	424	662	733	931	374	783	849	1325	1467	1862	2085	2083	2078
	End / Int. Bearing	1.5 / 3.0	1.9 / 4.6	2.0 / 4.9	3.1 / 7.6	3.4 / 8.5	4.3 / 10.7	1.5 / 3.0	1.9 / 4.6	2.0 / 4.9	3.1 / 7.6	3.4 / 8.5	4.3 / 10.7	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0
13'	Live Load L/240	112	233	253	420	494	810	225	467	506	840	988	1619			
	Total Load	146	307	333	555	624	841	293	614	666	1110	1248	1682	1924	1922	1916
	End / Int. Bearing	1.5 / 3.0	1.6 / 3.9	1.7 / 4.2	2.8 / 6.9	3.2 / 7.8	4.2 / 10.5	1.5 / 3.0	1.6 / 3.9	1.7 / 4.2	2.8 / 6.9	3.2 / 7.8	4.2 / 10.5	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0
14'	Live Load L/240	90	187	202	336	396	648	180	374	405	673	791	1296			
	Total Load	116	245	266	443	522	724	233	490	531	886	1044	1448	1785	1783	1778
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.4	1.5 / 3.6	2.4 / 6.0	2.8 / 7.0	3.9 / 9.7	1.5 / 3.0	1.5 / 3.4	1.5 / 3.6	2.4 / 6.0	2.8 / 7.0	3.9 / 9.7	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0
15'	Live Load L/240	73	152	164	273	322	527	146	304	329	547	643	1054	1573		
	Total Load	94	198	215	359	423	630	188	397	430	719	847	1260	1604	1663	1658
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.5 / 3.2	2.1 / 5.2	2.5 / 6.1	3.7 / 9.1	1.5 / 3.0	1.5 / 3.0	1.5 / 3.2	2.1 / 5.2	2.5 / 6.1	3.7 / 9.1	4.7 / 11.6	4.8 / 12.0	4.8 / 12.0
16'	Live Load L/240	60	125	135	225	265	434	120	250	271	451	530	868	1296		
	Total Load	77	163	176	295	348	553	154	325	353	590	696	1106	1408	1558	1553
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.9 / 4.6	2.2 / 5.4	3.4 / 8.5	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.9 / 4.6	2.2 / 5.4	3.4 / 8.5	4.4 / 10.8	4.8 / 12.0	4.8 / 12.0
17'	Live Load L/240	50	104	113	188	221	362	100	209	226	376	442	724	1081		
	Total Load	63	135	146	245	289	476	127	270	293	491	578	952	1245	1466	1460
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.7 / 4.1	1.9 / 4.8	3.2 / 7.8	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.7 / 4.1	1.9 / 4.8	3.2 / 7.8	4.1 / 10.2	4.8 / 12.0	4.8 / 12.0
18'	Live Load L/240	42	88	95	158	186	305	84	176	190	316	372	610	910	1296	
	Total Load	53	113	123	206	243	400	106	226	245	412	485	800	1109	1373	1378
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.6	1.7 / 4.3	2.8 / 7.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.6	1.7 / 4.3	2.8 / 7.0	3.9 / 9.6	4.8 / 11.9	4.8 / 12.0
19'	Live Load L/240		74	81	134	158	259	72	149	162	269	316	519	774	1102	
	Total Load		95	103	174	206	339	89	191	207	348	411	679	994	1231	1304
	End / Int. Bearing		1.5 / 3.0	1.5 / 3.0	1.5 / 3.3	1.6 / 3.8	2.5 / 6.3	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.3	1.6 / 3.8	2.5 / 6.3	3.7 / 9.1	4.5 / 11.3	4.8 / 12.0
20'	Live Load L/240		64	69	115	135	222	61	128	139	231	271	445	664	945	
	Total Load		81	88	149	175	290	75	162	176	297	351	580	870	1109	1238
	End / Int. Bearing		1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.5	2.3 / 5.7	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.5	2.3 / 5.7	3.4 / 8.4	4.3 / 10.7	4.8 / 12.0
22'	Live Load L/240		48	52	86	102	167	46	96	104	173	204	334	499	710	
	Total Load		60	65	110	130	216	55	120	130	221	261	432	650	914	1123
	End / Int. Bearing		1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.9 / 4.7	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.9 / 4.7	2.8 / 7.0	3.9 / 9.7	4.8 / 12.0
24'	Live Load L/240		37	40	66	78	128		74	80	133	157	257	384	547	
	Total Load		45	49	84	99	165		90	98	168	198	330	497	713	1028
	End / Int. Bearing		1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.6 / 4.0		1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.6 / 4.0	2.4 / 5.9	3.4 / 8.3	4.8 / 12.0
26'	Live Load L/240				52	61	101		58	63	105	123	202	302	430	
	Total Load				64	77	128		69	75	129	154	257	388	557	947
	End / Int. Bearing				1.5 / 3.0	1.5 / 3.0	1.5 / 3.4		1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.4	2.0 / 5.0	2.9 / 7.1	4.8 / 12.0
28'	Live Load L/240				42	49	81		46	50	84	99	162	242	344	816
	Total Load				50	60	101		53	58	101	121	203	308	443	878
	End / Int. Bearing				1.5 / 3.0	1.5 / 3.0	1.5 / 3.0		1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.8 / 4.3	2.5 / 6.1	4.8 / 12.0

Live Load L/240 = Maximum live load (plf) with deflection limited to L/240

Total Load = Maximum total load (plf) with deflection limited to L/180

End / Int. Bearing = Minimum end and intermediate bearing length (inches) based on bearing stress of 750 psi, as provided by direct bearing on Hem-Fir, Southern Pine, or Douglas Fir-Larch cripples or on a properly specified hanger or steel column plate. For other conditions, see page 45.

Refer to page 37 for additional information regarding use of this table.

# ROOF LOAD TABLE (PLF)

# 2.1E LVL

# 125%

Span	Condition	Three 1¾" onCENTER LVL								Four 1¾" onCENTER LVL							
		9¼"	9½"	11¼"	11½"	14"	16"	18"	24"	9¼"	9½"	11¼"	11½"	14"	16"	18"	24"
6'	Live Load L/240																
	Total Load	4028	4168	5204	5602	6281	6278	6275	6267	5371	5557	6939	7469	8374	8370	8367	8356
	End / Int. Bearing	3.1 / 7.7	3.2 / 8.0	4.0 / 9.9	4.3 / 10.7	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0	3.1 / 7.7	3.2 / 8.0	4.0 / 9.9	4.3 / 10.7	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0
8'	Live Load L/240																
	Total Load	2797	2888	3547	3794	4688	4703	4700	4692	3730	3850	4729	5059	6251	6270	6267	6256
	End / Int. Bearing	2.9 / 7.2	3.0 / 7.4	3.7 / 9.1	3.9 / 9.7	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0	2.9 / 7.2	3.0 / 7.4	3.7 / 9.1	3.9 / 9.7	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0
10'	Live Load L/240	1539	1667							2052	2223						
	Total Load	2039	2171	2688	2867	3501	3758	3755	3747	2719	2895	3585	3822	4668	5010	5007	4996
	End / Int. Bearing	2.6 / 6.5	2.8 / 7.0	3.5 / 8.6	3.7 / 9.2	4.5 / 11.2	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0	2.6 / 6.5	2.8 / 7.0	3.5 / 8.6	3.7 / 9.2	4.5 / 11.2	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0
11'	Live Load L/240	1156	1253	2080	2446					1542	1670	2773	3262				
	Total Load	1529	1657	2398	2554	3107	3414	3411	3403	2038	2209	3197	3405	4143	4552	4549	4537
	End / Int. Bearing	2.2 / 5.4	2.4 / 5.9	3.4 / 8.4	3.6 / 9.0	4.4 / 10.9	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0	2.2 / 5.4	2.4 / 5.9	3.4 / 8.4	3.6 / 9.0	4.4 / 10.9	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0
12'	Live Load L/240	891	965	1602	1884					1187	1286	2136	2512				
	Total Load	1175	1273	2067	2289	2792	3128	3125	3117	1566	1698	2756	3052	3723	4170	4167	4156
	End / Int. Bearing	1.9 / 4.6	2.0 / 4.9	3.2 / 7.9	3.5 / 8.8	4.3 / 10.7	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0	1.9 / 4.6	2.0 / 4.9	3.2 / 7.9	3.5 / 8.8	4.3 / 10.7	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0
13'	Live Load L/240	700	759	1260	1482	2429				934	1012	1680	1976	3238			
	Total Load	921	999	1665	1948	2535	2886	2883	2874	1228	1331	2219	2597	3380	3847	3844	3833
	End / Int. Bearing	1.6 / 3.9	1.7 / 4.2	2.8 / 6.9	3.3 / 8.1	4.2 / 10.5	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0	1.6 / 3.9	1.7 / 4.2	2.8 / 6.9	3.3 / 8.1	4.2 / 10.5	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0
14'	Live Load L/240	561	608	1009	1187	1944				748	810	1345	1582	2593			
	Total Load	735	797	1330	1566	2260	2678	2675	2667	980	1063	1773	2088	3013	3570	3567	3556
	End / Int. Bearing	1.5 / 3.4	1.5 / 3.6	2.4 / 6.0	2.8 / 7.0	4.1 / 10.1	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0	1.5 / 3.4	1.5 / 3.6	2.4 / 6.0	2.8 / 7.0	4.1 / 10.1	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0
15'	Live Load L/240	456	494	820	965	1581	2360			608	659	1094	1286	2108	3146		
	Total Load	595	645	1078	1270	1966	2498	2495	2487	794	861	1438	1693	2622	3330	3327	3316
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.2	2.1 / 5.2	2.5 / 6.1	3.8 / 9.5	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0	1.5 / 3.0	1.5 / 3.2	2.1 / 5.2	2.5 / 6.1	3.8 / 9.5	4.8 / 12.0	4.8 / 12.0	4.8 / 12.0
16'	Live Load L/240	376	407	676	795	1303	1944			501	543	901	1060	1737	2593		
	Total Load	488	530	886	1043	1717	2197	2338	2329	651	706	1181	1391	2290	2930	3117	3106
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.9 / 4.6	2.2 / 5.4	3.6 / 8.8	4.5 / 11.3	4.8 / 12.0	4.8 / 12.0	1.5 / 3.0	1.5 / 3.0	1.9 / 4.6	2.2 / 5.4	3.6 / 8.8	4.5 / 11.3	4.8 / 12.0	4.8 / 12.0
17'	Live Load L/240	313	339	564	663	1086	1621			418	452	751	884	1448	2161		
	Total Load	405	439	736	867	1429	1944	2199	2190	540	586	981	1156	1905	2592	2931	2920
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.7 / 4.1	1.9 / 4.8	3.2 / 7.8	4.3 / 10.6	4.8 / 12.0	4.8 / 12.0	1.5 / 3.0	1.5 / 3.0	1.7 / 4.1	1.9 / 4.8	3.2 / 7.8	4.3 / 10.6	4.8 / 12.0	4.8 / 12.0
18'	Live Load L/240	264	286	475	558	915	1366	1944		352	381	633	744	1220	1821	2593	
	Total Load	339	368	617	728	1200	1731	2075	2067	452	491	823	971	1601	2309	2767	2756
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.5 / 3.6	1.7 / 4.3	2.8 / 7.0	4.0 / 10.0	4.8 / 12.0	4.8 / 12.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.6	1.7 / 4.3	2.8 / 7.0	4.0 / 10.0	4.8 / 12.0	4.8 / 12.0
19'	Live Load L/240	224	243	404	475	778	1161	1653		299	324	538	633	1037	1548	2204	
	Total Load	286	311	523	617	1018	1526	1921	1956	382	415	697	822	1357	2035	2561	2608
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.5 / 3.3	1.6 / 3.8	2.5 / 6.3	3.8 / 9.3	4.7 / 11.7	4.8 / 12.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.3	1.6 / 3.8	2.5 / 6.3	3.8 / 9.3	4.7 / 11.7	4.8 / 12.0
20'	Live Load L/240	192	208	346	407	667	996	1417		256	278	461	543	889	1327	1890	
	Total Load	244	265	446	526	870	1305	1731	1857	325	353	594	702	1160	1740	2308	2476
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.5	2.3 / 5.7	3.4 / 8.4	4.5 / 11.1	4.8 / 12.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.5	2.3 / 5.7	3.4 / 8.4	4.5 / 11.1	4.8 / 12.0
22'	Live Load L/240	144	156	260	306	501	748	1065		193	209	347	408	668	997	1420	
	Total Load	180	196	331	391	649	975	1395	1685	240	261	441	522	865	1300	1860	2247
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.9 / 4.7	2.8 / 7.0	4.0 / 9.9	4.8 / 12.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.9 / 4.7	2.8 / 7.0	4.0 / 9.9	4.8 / 12.0
24'	Live Load L/240	111	120	200	236	386	576	820		148	161	267	314	515	768	1094	
	Total Load	135	148	251	298	495	746	1069	1542	181	197	335	397	660	995	1425	2056
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.6 / 4.0	2.4 / 5.9	3.4 / 8.3	4.8 / 12.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.6 / 4.0	2.4 / 5.9	3.4 / 8.3	4.8 / 12.0
26'	Live Load L/240	87	95	157	185	304	453	645		116	126	210	247	405	604	860	
	Total Load	104	113	194	231	385	582	835	1421	138	151	259	307	514	776	1114	1894
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.4	2.0 / 5.0	2.9 / 7.1	4.8 / 12.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.4	2.0 / 5.0	2.9 / 7.1	4.8 / 12.0
28'	Live Load L/240	70	76	126	148	243	363	517	1224	93	101	168	198	324	484	689	1633
	Total Load	80	88	152	181	305	462	664	1317	107	117	203	242	406	615	885	1756
	End / Int. Bearing	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.8 / 4.3	2.5 / 6.1	4.8 / 12.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.5 / 3.0	1.8 / 4.3	2.5 / 6.1	4.8 / 12.0

Live Load L/240 = Maximum live load (plf) with deflection limited to L/240

Total Load = Maximum total load (plf) with deflection limited to L/180

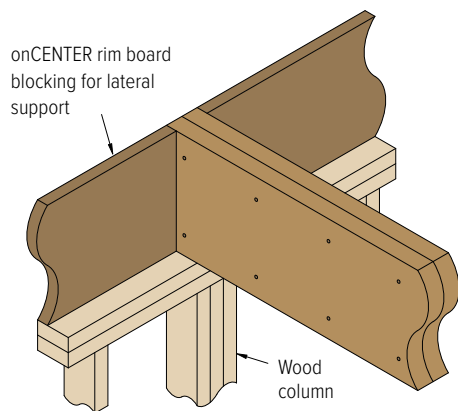
End / Int. Bearing = Minimum end and intermediate bearing length (inches) based on bearing stress of 750 psi, as provided by direct bearing on Hem-Fir, Southern Pine, or Douglas Fir-Larch cripples or on a properly specified hanger or steel column plate. For other conditions, see page 45.

Refer to page 37 for additional information regarding use of this table.

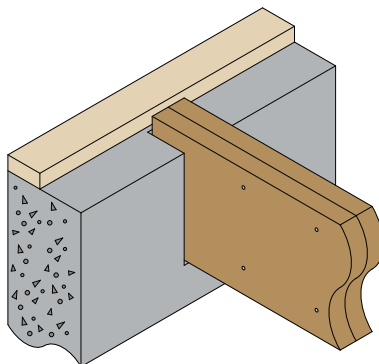
# onCENTER® LVL BEARING DETAILS

- Required bearing length depends on applied loads, but may not be less than 1½" for end and 3" for intermediate bearings (see Bearing Length Requirements, page 45)
- Verify adequacy of supporting material to carry applied loads

## B1 BEARING ON WALL

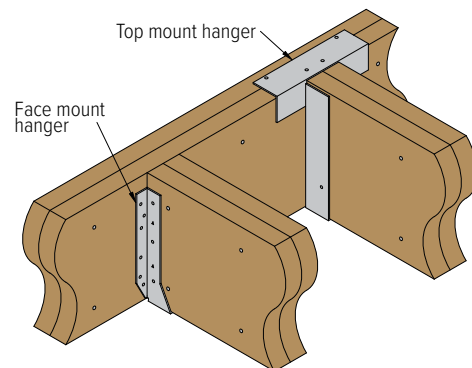


## B2 BEARING ON CONCRETE WALL



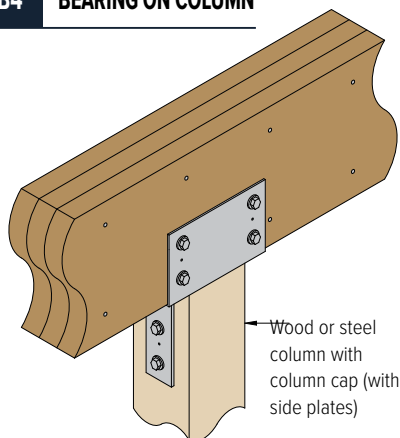
Protect onCENTER LVL from direct contact with concrete. Refer to local building code for requirements.

## B3 BEAM-TO-BEAM CONNECTION



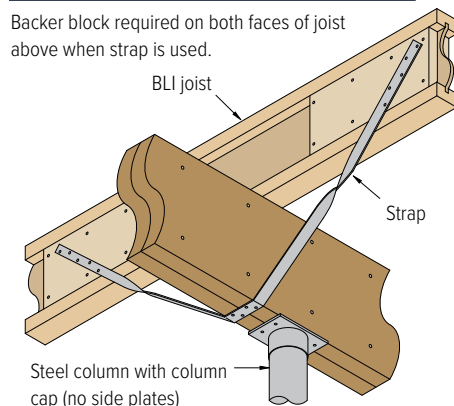
Install hangers per hanger manufacturer's instructions.

## B4 BEARING ON COLUMN



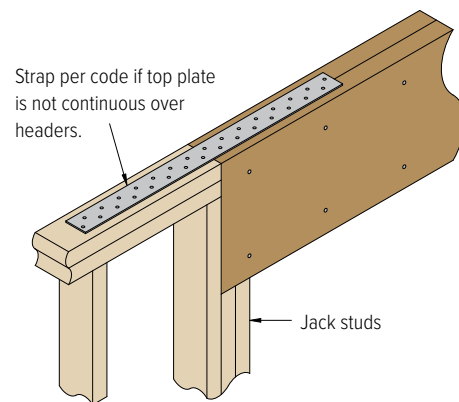
Column caps with side plates provide lateral restraint and load transfer. See pages 48-49.

## B5 BEAM-TO-COLUMN LATERAL BRACE

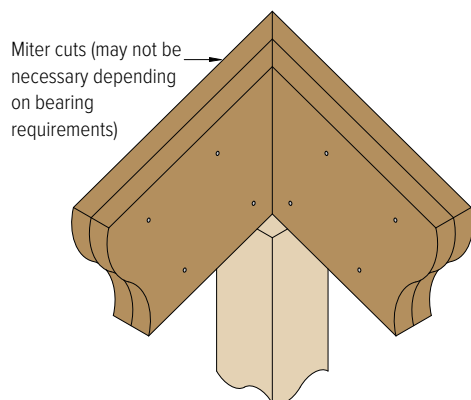


Strap not required if cap has side plates or if beam is connected to cap with four ¾" x 2½" lag screws.

## B6 BEARING FOR DOOR OR WINDOW HEADER

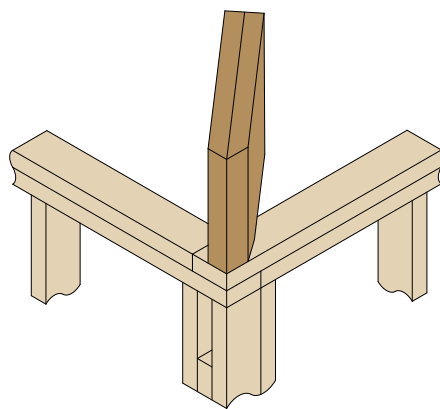


## B7 HIGH END HIP BEARING



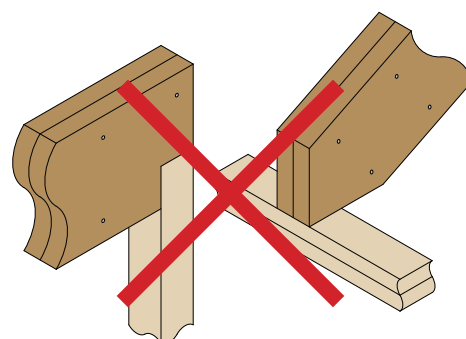
Hip beams must bear on post or in properly designed connector.

## B8 LOW END HIP BEARING



Wall plate or post must fully support hip beam. Seat cut must not extend beyond inside face of bearing.

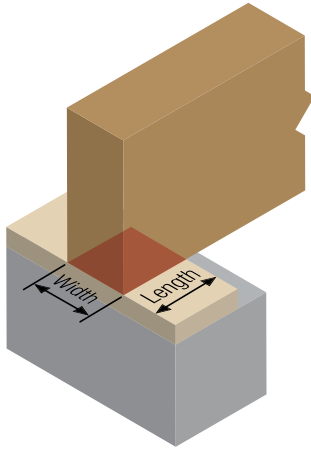
## B9 NOTCHING / SEAT CUT



**DO NOT** notch beam at bearing. Seat cut must not extend beyond inside face of bearing.



# onCENTER® LVL BEARING LENGTH REQUIREMENTS



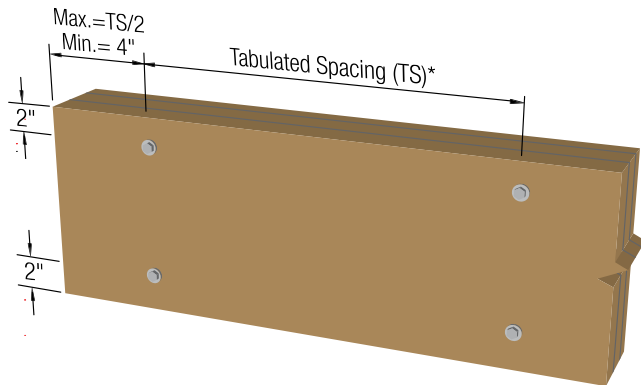
## NOTES:

1. Minimum bearing length is 1½" at beam ends, and 3" at intermediate and cantilever supports.
2. Bearing must support entire width of beam.
3. Structural adequacy of supporting member to be determined by a design professional.
4. Provide restraint at supports and ends of beams to prevent lateral rotation.
5. If onCENTER LVL beam bears directly on cripples (HF, SP, or DFL) or is supported by a hanger or steel column plate, use tabulated bearing lengths for onCENTER LVL beam. If onCENTER LVL beam bears directly on SPF cripples, use tabulated bearing lengths for Southern Pine.
6. Load duration adjustments to bearing lengths are not permitted.

Reaction (lbs)	Support Material															
	Hem-Fir Plate (405 psi)				SPF or Non-Dense S. Pine Plate (425 psi)				Southern Pine Plate (565 psi)				onCENTER LVL Beam (750 psi)			
	Beam Width															
	1¾"	3½"	5¼"	7"	1¾"	3½"	5¼"	7"	1¾"	3½"	5¼"	7"	1¾"	3½"	5¼"	7"
1,000	1½"	1½"	1½"	1½"	1½"	1½"	1½"	1½"	1½"	1½"	1½"	1½"	1½"	1½"	1½"	1½"
2,000	3"	1½"	1½"	1½"	2¾"	1½"	1½"	1½"	2¼"	1½"	1½"	1½"	1¾"	1½"	1½"	1½"
3,000	4¼"	2¼"	1½"	1½"	4¼"	2¼"	1½"	1½"	3¼"	1¾"	1½"	1½"	2½"	1½"	1½"	1½"
4,000	5¾"	3"	2"	1½"	5½"	2¾"	2"	1½"	4¼"	2¼"	1½"	1½"	3¼"	1¾"	1½"	1½"
5,000	7¼"	3¾"	2½"	2"	6¾"	3½"	2¼"	1¾"	5¼"	2¾"	1¾"	1½"	4"	2"	1½"	1½"
6,000	8½"	4¼"	3"	2¼"	8¼"	4¼"	2¾"	2¼"	6¼"	3¼"	2¼"	1¾"	4¾"	2½"	1¾"	1½"
7,000	10"	5"	3½"	2½"	9½"	4¾"	3¼"	2½"	7¼"	3¾"	2½"	2"	5½"	2¾"	2"	1½"
8,000	11½"	5¾"	4"	3"	11"	5½"	3¾"	2¾"	8¼"	4¼"	2¾"	2¼"	6¼"	3¼"	2¼"	1¾"
9,000		6½"	4¼"	3¾"		6¼"	4¼"	3¾"	9¼"	4¾"	3¼"	2½"	7"	3½"	2½"	1¾"
10,000		7¼"	4¾"	3¾"		6¾"	4½"	3½"	10¼"	5¼"	3½"	2¾"	7¾"	4"	2¾"	2"
11,000		8"	5¼"	4"		7½"	5"	3¾"	11¼"	5¾"	3¾"	3"	8½"	4¼"	3"	2¼"
12,000		8½"	5¾"	4¼"		8¼"	5½"	4¼"		6¼"	4¼"	3¼"	9¼"	4¾"	3¼"	2½"
13,000		9¼"	6¼"	4¾"		8¾"	6"	4½"		6¾"	4½"	3½"	10"	5"	3½"	2½"
14,000		10"	6¾"	5"		9½"	6½"	4¾"		7¼"	4¾"	3¾"	10¾"	5½"	3¾"	2¾"
15,000		10¾"	7¼"	5½"		10¼"	6¾"	5¼"		7¾"	5¼"	4"	11½"	5¾"	4"	3"
16,000		11½"	7¾"	5¾"		11"	7¼"	5½"		8¼"	5½"	4¼"		6¼"	4¼"	3¼"
17,000		12"	8"	6"		11½"	7¾"	5¾"		8¾"	5¾"	4½"		6½"	4½"	3¼"
18,000			8½"	6½"			8¼"	6¼"		9¼"	6¼"	4¾"		7"	4¾"	3½"
19,000			9"	6¾"			8¾"	6½"		9¾"	6½"	5"		7¼"	5"	3¾"
20,000			9½"	7¼"			9"	6¾"		10¼"	6¾"	5¼"		7¾"	5¼"	4"
21,000			10"	7½"			9½"	7¼"		10¾"	7¼"	5½"		8"	5½"	4"
22,000			10½"	8"			10"	7½"		11¼"	7½"	5¾"		8½"	5¾"	4¼"
23,000			11"	8¼"			10½"	7¾"		11¾"	8"	6"		9"	6"	4½"
24,000			11½"	8½"			11"	8¼"			8¼"	6¼"		9¼"	6¼"	4¾"
25,000			12"	9"			11¼"	8½"			8½"	6½"		9¾"	6½"	5"

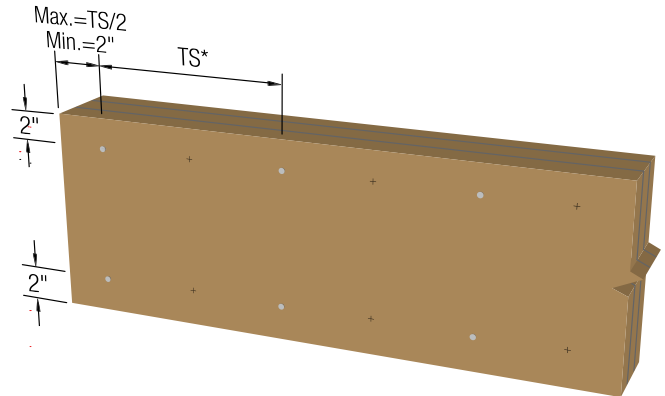
# MULTIPLE-PLY LVL FASTENING GENERAL NOTES

## Bolts & Screws



\* See Multiple-Ply LVL Fastening, page 47.

## 16d Nails



(Graphic above shows 2 rows of nails applied to both faces)

1. Table on page 47 shows required fastener spacings and number of rows. End and edge distances must comply with the above diagram. For offset fastening patterns, maximum end distance applies to all rows.
2. Tabulated values are capacities of fasteners only. Beam must also be designed to support design loads.
3. If beam supports side loads from both faces, use the greater side load to determine proper fastening.
4. Bolded and italicized uniform load values require that fasteners be applied to both faces. On the back face, offset half the spacing from the front face.
5. Fastening for depths less than 7¼" requires special consideration by BlueLinX.
6. Fasteners must have full embedment of the shank, but must not be over-driven, over-tightened, or countersunk.
7. Bolt hole diameter must be ½" to ⅝" larger than bolt diameter. Bolts are to meet ASTM A307 or SAE J429 grades. Bolts must extend through full thickness of member and at least ½" beyond. Use a washer under head and nut.
8. Carriage bolts (½" diameter) may be used for through bolts. Carriage bolt heads may be drawn into the face of the LVL such that the top of the heads are even with the exterior face of the outer ply.
9. Load capacity can be doubled if fastener spacing is halved for a particular application.
10. For through bolts or screws spaced 19.2" o.c., use the average of the tabulated values for 24" and 16" o.c. spacing.
11. Special consideration must be given for supporting large concentrated loads, such as from a beam, onto the side face of an LVL beam.
12. Beams that are 7" wide must be top-loaded or side-loaded from both faces to minimize rotation.
13. Multiple-ply beams greater than 7" wide are not permitted.
14. Uniform loads shown are based on 100% LDF. Capacities can be increased for roof LDF of 115% and 125% if allowed by local building code.
15. WS & WSWH structural screws are produced by MiTek USA, Inc. SDS and SDW structural screws are produced by Simpson Strong-Tie® Company, Inc. TrussLOK® and FlatLOK® structural screws are produced by FastenMaster-OMG, Inc. Install screws per manufacturers' guidelines.

## TOP-LOADED MULTIPLE-PLY LVL FASTENING

When all loads are evenly applied to the top surface of all plies, use minimum fastening requirements for each combination of fastener type, member plies, and member depth within the table on page 47. Tabulated uniform load values can be ignored as they are only applicable for side-loaded multiple-ply members.

### EXAMPLE 1 - 3 plies of 14" LVL (5¼" wide)

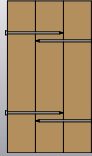
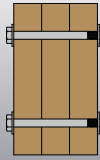
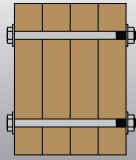




16d pneumatic nails: 3 rows of fasteners at 12" o.c. on both faces  
½" through bolts: 2 rows of bolts at 24" o.c.  
TrussLOK screws: 2 rows of 5" screws at 24" o.c.

### EXAMPLE 2 - 4 plies of 24" LVL (7" wide)

16d common nails: Not applicable  
½" through bolts: 3 rows of bolts at 24" o.c.  
SDW22 screws: 3 rows of 6¾" screws at 24" o.c.

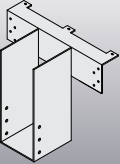
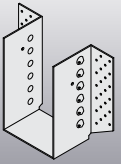
# SIDE-LOADED MULTIPLE-PLY LVL FASTENING

## Maximum Uniform Load (PLF) Applied to Either or Both Outside Plies

Fastener Type	Fastener Rows	Fastener Spacing	3½" Wide (2-ply 1¼")			5¼" Wide (3-ply 1¼")			7" Wide (4-ply 1¼")	
			7¼"-11½"	14"-18"	24"	7¼"-11½"	14"-18"	24"	7¼"-18"	24"
										
16d Pneumatic Nails (0.131" x 3.5")	2 (shown)	12"	388			291				
	3	12"	583	583		437	437			
	4	12"	777	777	777	583	583	583		
16d Common Nails (0.162" x 3.5")	2 (shown)	12"	564			423				
	3	12"	845	845		634	634			
	4	12"	1127	1127	1127	845	845	845		
										
½" Through Bolts	2 (shown)	24"	507	507		381	381		338	
		16"	761	761		571	571		507	
	3	24"	761	761	761	571	571	571	507	507
		16"	1142	1142	1142	856	856	856	761	761
										
			3½" Screw Length			3½" Screw Length			6" Screw Length	
WS Screws	2 (shown)	24"	487	487		365	365		324	
		16"	730	730		547	547		487	
	3	24"	730	730	730	547	547	547	487	487
		16"	1095	1095	1095	821	821	821	730	730
SDS Screws	2 (shown)	24"	680	680		510	510		453	
		16"	1020	1020		765	765		680	
	3	24"	1020	1020	1020	765	765	765	680	680
		16"	1530	1530	1530	1148	1148	1148	1020	1020
										
			3⅝"-3½" Screw Length			5" Screw Length			6¾" Screw Length	
SDW22 Screws	2	24"	800	800		450	450		400	
		16"	1200	1200		675	675		600	
	3 (shown)	24"	1200	1200	1200	675	675	675	600	600
		16"	1800	1800	1800	1013	1013	1013	900	900
WSWH, TrussLOK, or FlatLOK Screws	2	24"	580	580		450	450		413	
		16"	870	870		675	675		620	
	3 (shown)	24"	870	870	870	675	675	675	620	620
		16"	1305	1305	1305	1012	1012	1012	930	930

See General Notes, page 46.

# USP STRUCTURAL CONNECTORS™ FOR LVL

					
Supported LVL Member		USP Top Mount		USP Face Mount	
Width	Depth	Model Name	Capacity 100% (lbs)	Model Name	Capacity 100% (lbs)
1¾"	7¼"	PHXU17725	4350	HD1770	2465
	9¼"	BPH17925	2970	HD17925	3695
	9½"	BPH1795	2970	HD17925	3695
	11¼"	BPH17112	2970	HD17112	4320
	11⅝"	BPH17118	2970	HD17112	4320
	14"	BPH1714	2970	HD1714	4580
3½"	7¼"	PHXU35725	5910	THD48	4310
	9¼"	HBPH35925	6310	THDH410	9020
	9½"	HBPH3595	6310	THDH410	9020
	11¼"	HBPH35112	6310	THDH412	9710
	11⅝"	HBPH35118	6310	THDH412	9710
	14"	HBPH3514	6310	THDH412	9710
	16"	HBPH3516	6310	THDH414	11325
	18"	HBPH3518	6310	THDH414	11325
5¼"	24"	HBPH3524	6310	HD418	4310
	7¼"	HBPH55725	6185	HD68	2155
	9¼"	HBPH55925	6185	THDH610	9020
	9½"	HBPH5595	6185	THDH610	9020
	11¼"	HBPH55112	6185	THDH612	9530
	11⅝"	HBPH55118	6185	THDH612	9530
	14"	HBPH5514	6185	THDH614	11325
	16"	HBPH5516	6185	THDH614	11325
7"	18"	HBPH5518	6185	THDH614	11325
	24"	XHLBH5524	10045	THDH614	11325
	9¼"	HLBH71925	10045	THDH7210	9020
	9½"	HLBH7195	10045	THDH7210	9020
	11¼"	HLBH71112	10045	THDH7210	9020
	11⅝"	HLBH71118	10045	THDH7210	9020
	14"	HLBH7114	10045	THDH7214	11325
	16"	HLBH7116	10045	THDH7214	11325
	18"	HLBH7118	10045	THDH7214	11325
	24"	HLBH7124	10045	THDH7214	11325

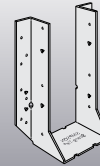
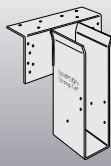
USP Beam-to-Column Caps						
Model Name	Capacity 100% (lbs)	Beam Saddle			Column Saddle	
		Width	Length	Height	Width	Column
KCCQ44	24065	3⅝"	11"	6½"	3⅝"	4x wood
KCCQ46	24065	3⅝"	11"	6½"	5½"	6x wood
KCCQ48	24065	3⅝"	11"	6½"	7½"	8x wood
KCCQ64	37815	5½"	11"	6½"	3⅝"	4x wood
KCCQ66	37815	5½"	11"	6½"	5½"	6x wood
KCCQ68	37815	5½"	11"	6½"	7½"	8x wood
KCCQ84	51565	7½"	11"	6½"	3⅝"	4x wood
KCCQ86	51565	7½"	11"	6½"	5½"	6x wood
KCCQ88	51565	7½"	11"	6½"	7½"	8x wood
KLCC35-4	21000	3⅝"	11½"	4"	--	4" dia. steel
KLCC525-4	21000	5⅝"	11½"	4"	--	4" dia. steel
KLCC7-4	21000	7⅝"	11½"	4"	--	4" dia. steel

## NOTES:

- Hanger capacity based on load duration factor of 100% (floor), hanger manufacturer's recommended nailing, minimum supporting beam (onCENTER LVL) width of 3½" for top mount hangers and 1¾" for face mount hangers. Before selecting hangers, please refer to hanger manufacturer's literature for expanded design information.
- Capacity of beam-to-column connectors is the maximum capacity of the cap itself. Column adequacy to be verified by a design professional.



# SIMPSON STRONG-TIE® CONNECTORS FOR LVL



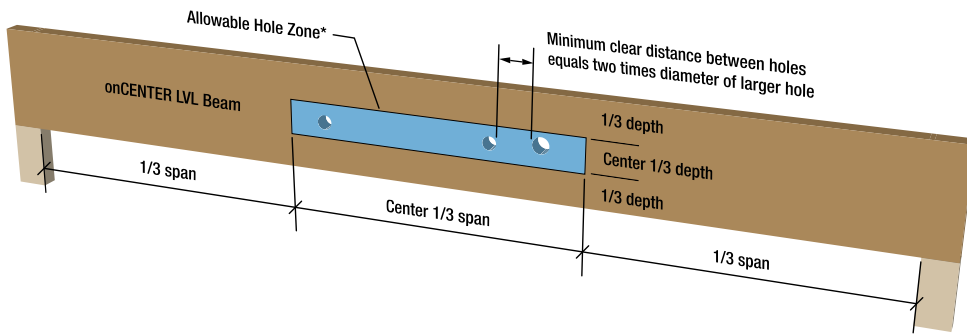
Supported LVL Member		Simpson Top Flange		Simpson Face Mount	
Width	Depth	Model Name	Capacity 100% (lbs)	Model Name	Capacity 100% (lbs)
1¾"	7¼"	BA1.81/7.25	4720	HU7	2380
	9¼"	BA1.81/9.25	4720	HUS1.81/10	5135
	9½"	BA1.81/9.5	4720	HUS1.81/10	5135
	11¼"	BA1.81/11.25	4720	HUS1.81/10	5135
	11⅝"	BA1.81/11.88	4720	HUS1.81/10	5135
	14"	BA1.81/14	4720	HUS1.81/10	5135
3½"	7¼"	BA3.56/7.25	4720	HGUS48	7460
	9¼"	BA3.56/9.25	4720	HGUS410	9100
	9½"	BA3.56/9.5	4720	HGUS410	9100
	11¼"	BA3.56/11.25	4720	HGUS410	9100
	11⅝"	BA3.56/11.88	4720	HGUS410	9100
	14"	BA3.56/14	4720	HGUS414	9695
	16"	BA3.56/16	4720	HGUS414	9695
	18"	BA3.56/18	4720	HGUS414	9695
5¼"	24"	BA3.56/24	4720	MGU3.63-SDS H=16	9450
	7¼"	WPU5.50/7.25	4700	HGUS5.50/8	7460
	9¼"	HWP5.37/9.25	6595	HGUS5.50/10	9100
	9½"	HWP5.37/9.5	6595	HGUS5.50/10	9100
	11¼"	HWP5.37/11.25	6595	HGUS5.50/12	9400
	11⅝"	HWP5.37/11.88	6595	HGUS5.50/12	9400
	14"	HWP5.37/14	6595	HGUS5.50/14	9695
	16"	HWP5.37/16	6595	HGUS5.50/14	9695
	18"	HWP5.37/18	6595	HGUS5.50/14	9695
	24"	HWP5.37/24	6595	MGU5.50-SDS H=16	9450
7"	9¼"	HWP5.37/9.25	6595	HGUS7.25/10	9100
	9½"	HWP5.37/9.5	7500	HGUS7.25/10	9100
	11¼"	HGLTV7/11.25	10585	HGUS7.25/12	9400
	11⅝"	HGLTV7/11.88	10585	HGUS7.25/12	9400
	14"	HGLTV7/14	10585	HGUS7.25/14	9695
	16"	HGLTV7/16	10585	HGUS7.25/14	9695
	18"	HGLTV7/18	10585	HGUS7.25/14	9695
	24"	HGLTV7/24	10585	HGU7.25-SDS H=16	13160

Simpson Beam-to-Column Caps						
Model Name	Capacity 100% (lbs)	Beam Saddle			Column Saddle	
		Width	Length	Height	Width	Column
CC44	15310	3½"	7"	4"	3½"	4x wood
CC46	24060	3½"	11"	6½"	5½"	6x wood
CC48	24060	3½"	11"	6½"	7½"	8x wood
CC64	28586	5½"	11"	6½"	3½"	4x wood
CC66	30250	5½"	11"	6½"	5½"	6x wood
CC68	37810	5½"	11"	6½"	7½"	8x wood
CC86	41250	7½"	13"	8"	5½"	6x wood
CC88	54600	7½"	13"	8"	7½"	8x wood
LCC3.5-4	20670	3½"	11½"	4"	--	4" dia. steel
LCC5.25-4	20670	5½"	11½"	4"	--	4" dia. steel
LCC7-4	20670	7½"	11½"	4"	--	4" dia. steel

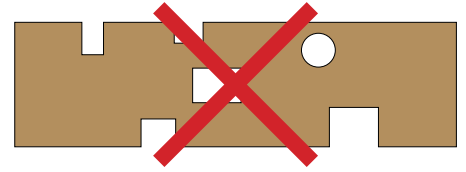
## NOTES:

- Hanger capacity based on load duration factor of 100% (floor), hanger manufacturer's recommended nailing, minimum supporting beam (onCENTER LVL) width of 3½" for top mount hangers and 1¾" for face mount hangers. Before selecting hangers, please refer to hanger manufacturer's literature for expanded design information.
- Capacity of beam-to-column connectors is the maximum capacity of the cap itself. Column adequacy to be verified by a design professional.

## HOLES IN onCENTER® LVL



\* See table for maximum hole sizes



**DO NOT** cut, notch, or drill onCENTER® LVL except as shown in this guide.

### Allowable Hole Sizes

Beam Depth	Maximum Round Hole Diameter
7¼"	1½"
9¼" - 24"	2"

#### NOTES:

- Hole(s) must be located entirely in the Allowable Hole Zone.
- Rectangular holes not allowed.
- No more than 3 holes allowed per span.
- Table applies to single and multiple span uniformly loaded beams only. Table not valid for cantilevers.
- To avoid problems with rigid pipes, consider hole location, clearance, and effects of beam deflection.
- Larger holes and/or locations outside of the Allowable Hole Zone may be possible. Use isDesign™ software to check a specific span and loading conditions.

## LVL STORAGE, HANDLING, AND INSTALLATION

- Do not store onCENTER® LVL in direct contact with the ground. Air circulation is required around material stacks and beneath covering.
- Keep bundles covered with factory wrap until time of use.
- onCENTER® LVL must be handled and stacked flat wise.
- Goggles, gloves, and other personal protective equipment should be used when handling or installing onCENTER® engineered lumber.
- SDS information is available from BlueLinX.
- onCENTER® framing members must be installed per code. Permanent installation must not be in direct contact with masonry or concrete.
- onCENTER® LVL must be protected from weather and installed in dry-use conditions (in which moisture content of solid sawn lumber is less than 16%).
- onCENTER® LVL has no camber, so either narrow face can be at top.
- Bearings must be sized based on applied loads, but in no case shall end bearing be less than 1½" and intermediate bearing less than 3".
- onCENTER® LVL must be restrained from rotation at ends and each support. The top (or compression) edge must have continuous lateral support, such as properly installed sheathing directly attached to the compression edge.
- Do not stagger-splice onCENTER® LVL beams as is commonly done with dimension lumber. If the multiple span length exceeds the available length of LVL, LVL ends must butt over a common bearing.
- Use common, box, or sinker type nails when nail type is not otherwise specified in this guide.

#### Minimum Spacing and Distance for Nails Installed into onCENTER® LVL<sup>a</sup>

Surface	Nail	Min. End Distance	Minimum Nail Spacing		Max. Nail Penetration
			Single Row	Double Row	
Narrow Face	8d (0.131") & smaller	2½"	3"	4"	2¼"
	10d & 12d (0.148")	3½" <sup>b</sup>	4"	5"	2½"
	16d (0.162")	3½"	6"	6"	2"
Wide Face <sup>c</sup>	12d (0.148") & smaller	1½"	3"	3"	-
	16d	1½"	5"	5"	-

a. Edge distance shall be sufficient to prevent splitting.

b. Minimum end distance for single row nailing is 3".

c. Applies to nails installed in rows parallel to the grain (length) of the LVL.

- See pages 46 & 47 for multiple-ply fastening requirements.
- In code-prescribed light-frame wood construction, it may be possible to substitute onCENTER® LVL for dimension lumber roof members as its design properties exceed those of typical framing lumber. However, design of conventional construction is beyond the scope of this guide and of BlueLinX Engineered Lumber Technical Services.
- With fire-retardant or preservative treated wood, use only stainless steel or hot-dipped galvanized connectors, fasteners, and hardware as required by code. Hot-dipped galvanized fasteners should conform to ASTM Standard A 153 and hot-dipped connectors should conform to ASTM Standard A 653 (Class G-185) to meet minimum requirements. Stainless steel connectors and fasteners should be used in demanding applications or in highly corrosive environments. Check local building codes as they may mandate their usage.

## National Green Building Standard (ICC 700-2015)

Section	Section Intent	Possible Points	Conditions of Use to Qualify for Points
601.2	<b>Material usage:</b> Structural systems are designed or construction techniques are implemented that reduce and optimize material usage.	3 each 6 max.	1) Minimize structural members necessary for strength and stiffness in accordance with advanced framing techniques. 2) Higher-grade materials are used than commonly specified with component sizes reduced accordingly.
601.4	<b>Framing and structural plans:</b> Detailed framing or structural plans, material quantity lists and on-site cut lists for framing, structural materials, and sheathing materials are provided.	4	Framing layouts, material quantity lists, and on-site cut lists must be generated for use on the job site.
606.1	<b>Biobased products:</b> Two types of biobased materials are used, each for more than 1 percent of the project's projected building material cost.	6	To earn 6 points this product must be more than 1% of the construction material cost AND another bio-based product, also more than 1% of material cost, must be used. Lesser points are available at the 0.5% level.
606.2 (2)	<b>Wood based products:</b> Wood or wood-based products are certified to the requirements of specified recognized product programs (e.g., FSC).	4	To earn 4 points two certified wood products must be used as major building elements (e.g., walls, floors, roof).
608.1	<b>Resource-efficient materials:</b> Products containing fewer materials are used to achieve the same end-use requirements as conventional products.	3	Engineered wood products are used in the building.
609.1	<b>Regional materials:</b> Regional materials are used for major elements of the building.	2 each 10 max.	Materials used must originate, be produced, grow naturally, or occur naturally in a region within: (1) 500 miles of the construction site if transported by truck or (2) 1500 miles of the construction site if transported for not less than 80% of the total transport distance by rail. A minimum of 75% of all products in each component category must be sourced regionally.
901.4 (6)	<b>Wood materials:</b> Non-emitting products	4	A minimum of 85 percent of engineered lumber product in the building must be onCENTER® products.

## USGBC LEED® v4 for Homes Design and Construction

Section	Section Intent	Possible Points	Conditions of Use to Qualify for Points
MRc2	<b>Material-efficient framing:</b> To conserve resources by reducing the use of unnecessary framing materials.	0.5 each 2 max.	To earn 0.5 point each for floor joists, roof rafters, wall framing, and headers, advanced framing methods must be for at least 90% of each component.
MRc3	<b>Environmentally preferable products:</b> Local production	0.5	Option 1: To earn 0.5 point, a minimum of 50% of framing (by weight or volume) must have been extracted, processed, and manufactured locally within 100 miles of the project site.
EQc7	<b>Low-emitting products:</b> To reduce occupants' exposure to airborne chemical contaminants through product selection	1	To earn 1 point, use wood composite products containing no added urea formaldehyde resins

## USGBC LEED v4 for Building Design and Construction (BD+C)

Section	Section Intent	Possible Points	Conditions of Use to Qualify for Points
MRc2	<b>Environmental product declarations (EPD)</b>	1	Option 1: Earn 1 point for using at least 20 permanently installed products sourced from 5 or more manufacturers that meet one of the listed disclosure criteria.

## onCENTER® ADVANCED FRAMING LUMBER (AFL)



onCENTER® AFL is the latest addition to the onCENTER® Engineered Wood Products family. Similar to solid sawn lumber but with higher design values, AFL offers all of the positive attributes of wood but improves upon them. The first thing you'll notice is its wane-free appearance on all four edges and that significant defects have been removed during manufacturing. This is accomplished through a unique patented process in which dense 2×4 and 2×6 Black Spruce lumber is analyzed with both an optical scanner and optimization software to remove natural flaws. Edges are profiled with individual pieces laminated together into panels that are cut to widths ranging from 3½" to 16". Finger-jointing the ends allows for long lengths up to 32'. Structural applications include wall studs, roof rafters, floor joists, and truss chord stock.

onCENTER® AFL in depths of 9¼" and greater can also be used in floor assemblies that would otherwise require a protective membrane or sprinkler system per the 2012 IRC (R501.3) and 2015/2018 IRC (R302.13). Visit [www.buildoncenter.com](http://www.buildoncenter.com) to learn more about the design possibilities of AFL.

### AFL vs. *Dimension Lumber*

- **100% Usability** - Wane free edges, significant defects removed
- **Dimensionally Stable** - Less shrinking, cracking, and warping
- **Straighter** - Easier installation and attachment of wall finishes and cabinets
- **Longer Lengths** - Up to 32', fewer members to handle
- **Longer Spans** - Offers greater design flexibility
- **Lifetime Limited Warranty** - Provides peace of mind

### AFL vs. *Composite Lumber*

- **Easier to Cut & Nail** - Quicker installation, less tool wear, fewer bent nails
- **Lighter** - Easier to handle

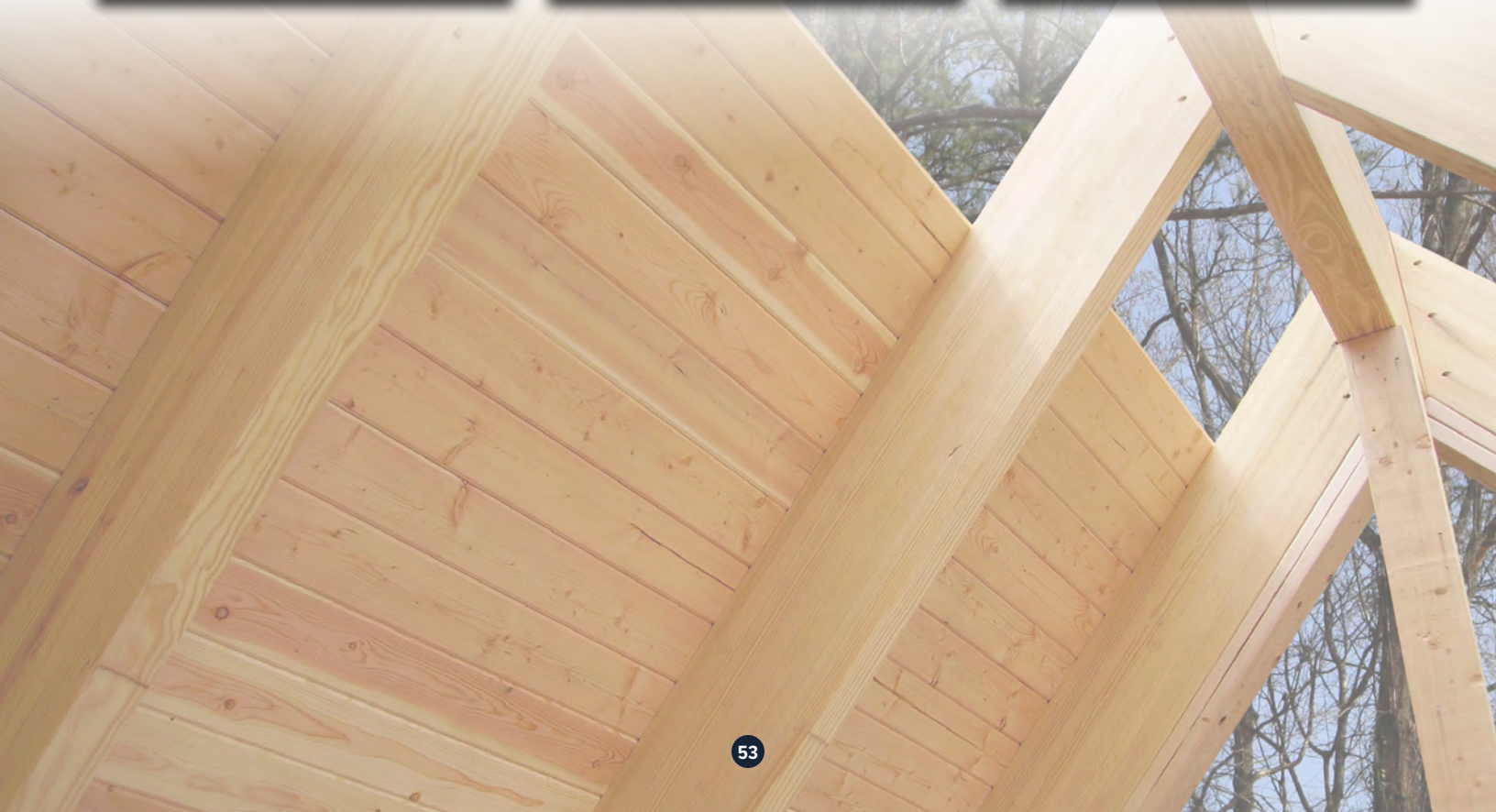






In addition to the onCENTER® family of products, BlueLinx also stocks glued-laminated beams and columns in many of our warehouse locations. Often used as a one piece alternative to multiple plies of LVL, glulams are available in a wide range of grades, widths, and depths to fit just about any engineered lumber need.

- **Industrial Appearance** - Economical choice for typical structural needs
- **Architectural Appearance** - Special order glulams when exposed beams are desired
- **Pressure Treated** - For wet applications like exposed decks and porches
- **I-Joist Compatible Depths** - Maintain flush applications with a BLI joist floor system
- **Multiple Grades** - 1.6E to 2.1E, balanced / unbalanced, cambered / uncambered
- **Columns** - When design loads require an engineered product



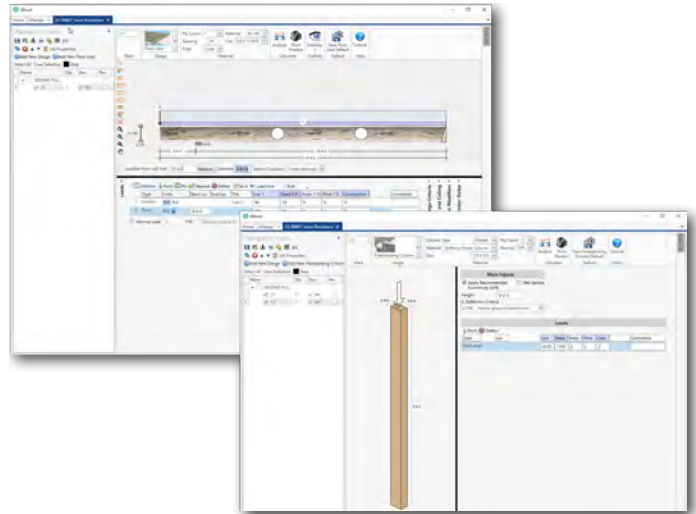
## SOFTWARE

BlueLinX offers a wide and powerful selection of software to help you perform engineering analysis, draw and design in 3D, and optimize product usage. Perform structural analysis on floor joists, beams, columns, and roof rafters beyond the scope of the onCENTER® Specifier's Guides. Confidently draw and design with easy-to-use interfaces.

### isDesign®

*This user-friendly software allows designers to quickly and easily size floor and roof joists, beams, and columns.*

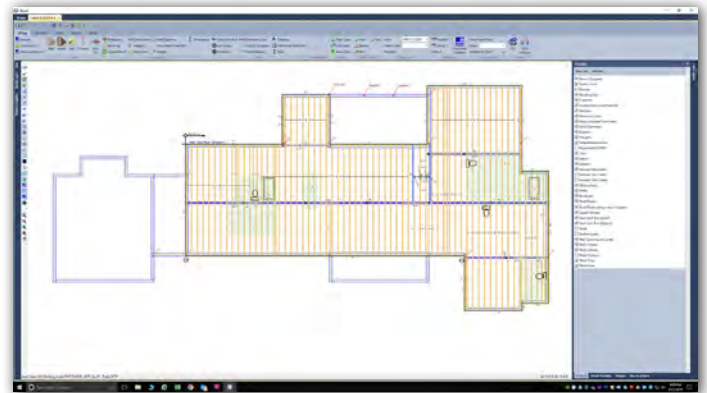
- With the graphical interface, the mouse can be used to change depth, length, add or change supports, and even add holes
- Manually add uniform, concentrated, and moving loads; link reactions from other beams
- Fasteners can be designed for multi-ply AFL & LVL, including concentrated side loads
- Design for different hole shapes in joists and beams. Check notches and sloped end-cuts in beams.
- Print a concise calc sheet, entire shear and moment diagrams, or results from all load cases. Applied loads are graphically depicted.
- Generate material quotes with pricing right from the project.



### isPlan® (available to qualified stocking dealers)

*Allows users to quickly model an entire structure with 2D and 3D views. Develops and transfers gravity loads through the structure and designs the structural members, generating layouts, material quotes, and pricing.*

- A robust importing tool makes it easy to trace walls from PDF's
- Includes full library of onCENTER framing details and commonly used symbols and notes
- Choose what materials you want included in lists and even add non-designed items like sheathing and sub-floor adhesive
- Layout templates, customized to specific customer needs, can be saved for reuse, saving time on future projects
- Drawings can be combined into a single project to create combined material lists, project pricing and submittal packages
- Revisions are quick and easy. Edits to the model, such as label adjustments, notes, and dimensions, don't need to be moved again when revisions are done.



### isWall® (available to qualified stocking dealers)

*Allows users to model a tall wall and run gravity and wind analysis for all the components of the wall. Generates design results, material lists, layout drawings and cutting sheets.*

### isOptimize® (available to qualified stocking dealers)

*Allows users to create optimized cutting lists. Users can optimize against manual or imported inventories to get the best material utilization and least amount of waste. Cutting can be sent to reports for manual cut yards or exported to saw files for automated processing.*

#### INFO Corner

Contact the BlueLinX Engineered Lumber Software Fulfillment Center for more information.

phone 770-953-7000

email [el\\_sftwr@bluelinxco.com](mailto:el_sftwr@bluelinxco.com)





## Lifetime Limited **PRODUCT WARRANTY**

BlueLinX Corporation provides a limited warranty for onCENTER® AFL for the expected life of the structure. Product design information, installation instructions and the full text of the limited warranty (including terms, conditions, limitations and exclusions) are available at [www.buildonCENTER.com](http://www.buildonCENTER.com), from your BlueLinX representative, or by calling 1-877-914-7770.

**BLUELINX**  
DELIVERING WHAT MATTERS

### General:

The sale of BlueLinX® Engineered Lumber Products shall be subject to BlueLinX® standard terms of sale located at [www.bluelinxco.com/terms/salestermsandconditions.doc](http://www.bluelinxco.com/terms/salestermsandconditions.doc). BlueLinX reserves the right to revise the information located in BlueLinX® standard terms of sale or in this document without notice.

### Installation:

Purchaser is responsible for proper installation of BlueLinX engineered lumber products. BlueLinX® engineered lumber products must be installed in conformance with this installation guide and in compliance with all applicable laws, ordinances, building code requirements, and regulations. BlueLinX does not warrant and is not responsible for the design or construction of any finished structure into which BlueLinX® engineered lumber products are incorporated. Finally, BlueLinX is not responsible for any other building components used with BlueLinX® engineered lumber products.

### Limitation of Liability:

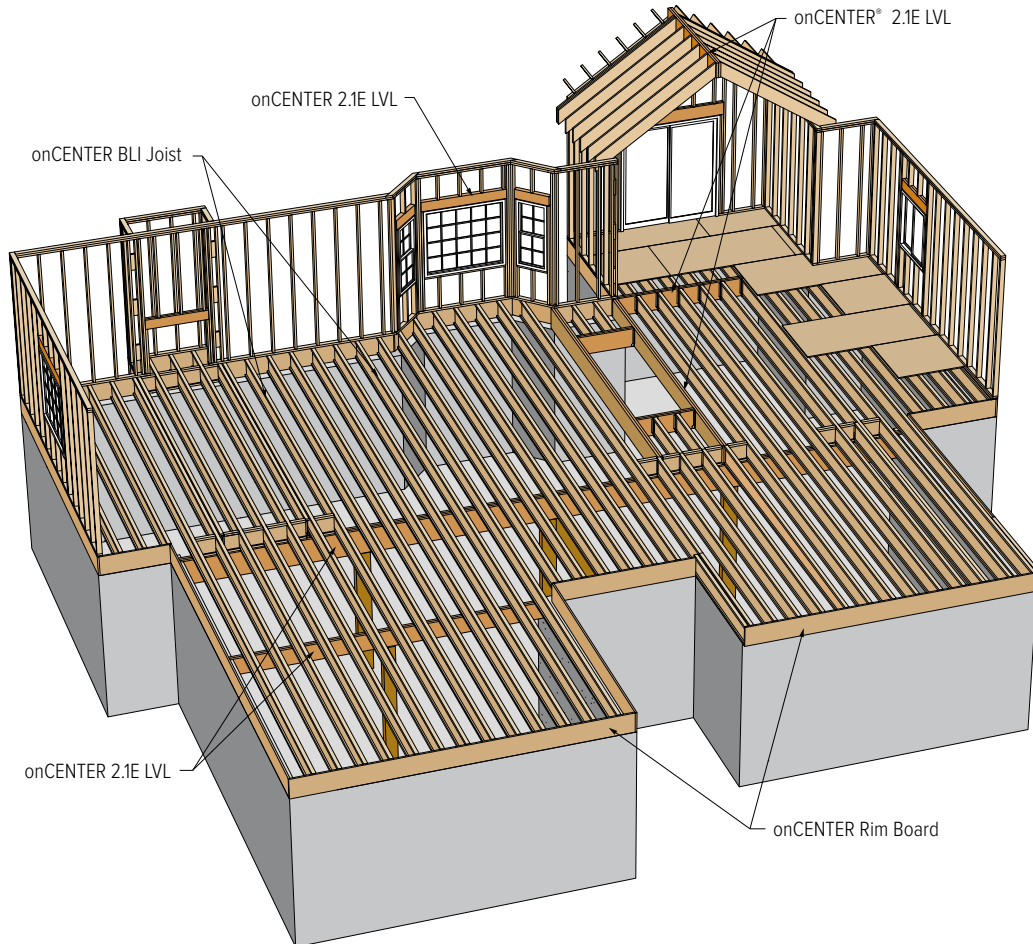
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BlueLinX Engineered Products

## ENGINEERED LUMBER



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DELIVERING WHAT MATTERS™

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