



TJI® 110, TJI® 210, TJI® 230, TJI® 360, TJI® 560 AND TJI® 560D JOISTS

Featuring Trus Joist® TJI® Joists for
Floor and Roof Applications

- Uniform and Predictable
- Lightweight for Fast Installation
- Resource Efficient
- Resists Bowing, Twisting, and Shrinking
- Significantly Reduces Callbacks
- Available in Long Lengths
- Limited Product Warranty



**New! 24" wide
holes in TJI® joists.
See page 10.**



The products in this guide are readily available through our nationwide network of distributors and dealers. For more information on other applications or other Trus Joist® products, contact your Weyerhaeuser representative.

Code Evaluations:
ICC-ES ESR-1153; ESR-1387

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Why Choose Trus Joist® TJI® Joists?

- Engineered for strength and consistency
- Efficient installation saves time and labor
- Longer lengths allow more versatile floor plans
- Less jobsite waste
- Fewer red tags and callbacks



Now more than ever builders need solutions that really deliver. That's why Trus Joist® TJI® joists are designed to give you more—longer lengths, easier installation, higher span values, better strength-to-weight ratios, and faster cycle times.

TJI® joists are also available in deeper depths that are suitable for heavier-duty loads, such as those in multi-family structures and light commercial buildings.

This guide features TJI® joists in the following sizes:

Depths: 9½", 11⅞", 14", 16", 18", 20", 22", and 24"

Flange Widths: 1¾", 2¼", 2⅝", and 3½"

Flange height and thickness vary by series; see the appropriate sections of this guide for specific sizes and relevant technical information:

9½"-16" JOISTS **Section 1:**
Design information for 9½"-16" TJI® joists

18"-24" JOISTS **Section 2:**
Design information for 18"-24" TJI® joists

ALL JOIST DEPTHS **Section 3:**
Framing details and design information for all joist depths in this guide

Some products may not be available in your region.

Contact your Weyerhaeuser representative at our [Specification Center](#) or visit "[Where to Buy](#)".

PRODUCT STORAGE

Protect product from sun and water



CAUTION:
Wrap is slippery when wet or icy

Align stickers (2x3 or larger)
directly over support blocks

Use support blocks (6x6 or larger)
at 10' on-center to keep bundles
out of mud and water



WARNING: This product can expose you to chemicals including wood dust which are known to the State of California to cause cancer, and methanol, which are known to the State of California to cause birth defects or other reproductive harm. Drilling, sawing, sanding or machining wood products can expose you to wood dust. Avoid inhaling wood dust or use a dust mask or other safeguards for personal protection. For more information go to www.P65Warnings.ca.gov and www.P65Warnings.ca.gov/wood.

Safety data sheets for all Weyerhaeuser wood products can be found on our website at: weyerhaeuser.com/sustainability/environment/product-stewardship/safety-data-sheets.



FIRE-SAFE CONSTRUCTION

Fire-safe construction and life safety are major concerns for everyone in the building materials and construction industry. The 2015 U.S. Fire Administration statistics (usfa.fema.gov/data/statistics/) on residential and commercial fires in the U.S. alone include 3,280 fire fatalities and an estimated \$14.3 billion in property damage. These numbers underscore the seriousness of the issue and the need for fire-safe construction.

For over 40 years, prefabricated wood I-joists and other Weyerhaeuser building products have established a record of safe and reliable performance in millions of structures. Many of these structures, such as one- or two-family residential dwellings, do not require specific fire-resistance ratings per building codes but may require unrated membrane protection. The information below is intended to help you specify and install Trus Joist® products with fire safety in mind.

Passive Fire Protection

Independent tests show that when compared to protected systems, unprotected framing systems (whether combustible or non-combustible) suffer increased structural degradation when exposed to fire. All floor framing materials—sawn lumber, wood I-joists, trusses, and light-gauge steel—succumb quickly to fire if not protected. Applying a protective membrane, such as gypsum ceiling board, to all types of floor framing within the structure will provide uniform protection to the structural framing members. Passive fire protection can do the following:

- Delay fire growth involving structural elements
- Reduce the potential for significant property damage to structural elements

Smoke Detectors

Smoke detectors are universally recognized as the most cost-effective life-saving devices. Although smoke detectors do not provide protection to the structure or to the contents in a home, they do alert occupants to potential fire hazards and allow them time to escape. Similarly, carbon monoxide detectors can also alert occupants to faulty heating appliances or air contamination in the early stages of a fire.

Active Fire Suppression

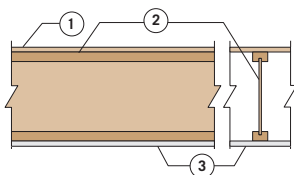
Automatic fire sprinkler systems are commonly required by building codes in schools, office buildings, factories, and other commercial buildings. Buildings designed with sprinkler systems are allowed larger areas and greater heights than buildings designed without sprinkler systems.

Fire service agencies such as the U.S. Fire Administration promote the use of residential sprinkler systems, citing benefits such as lower overall cost of construction for the homeowner, plus a safer environment and lower insurance rates for the homeowner. Using automatic fire sprinkler systems provides the following benefits:

- Early and unsupervised suppression
- Reduced fire and smoke development
- Potentially enhanced life safety for the occupant(s)

Floor Assembly Compliant with 2012 IRC R501.3, 2015 (and newer) IRC R302.13

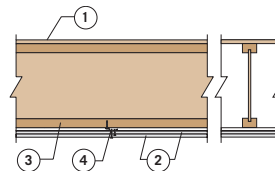
Single Layer



1. Appropriate span-rated sheathing (Exposure 1)
2. TJI® joist
3. Single-layer of ½" gypsum wall board

One-Hour Assembly for Rated Construction

Double Layer



1. 48/24 tongue-and-groove, span-rated sheathing (Exposure 1), glued with a subfloor adhesive and nailed
2. Two layers of 5/8" Type X gypsum board
3. TJI® joist
4. Resilient channels (optional)*

Optional: Minimum 3½"-thick glass fiber insulation or non-combustible insulation, rated R-30 or less.*

***Resilient channels are required when insulation is used.**

*See ESR-1153 for other insulation options.

For more information on fire assemblies and fire-safe construction, please refer to the Weyerhaeuser Fire-Rated Assemblies and Sprinkler Systems Guide, [TJ-1500](#), or visit our website at weyerhaeuser.com/woodproducts.

VISUAL LITERATURE GUIDE



Roof Framing

Roof System Design Guide:
[TJ-9005](#)

Truss Chords:
[9008](#)

TimberStrand® LSL Rim Board

Rim Board Guide:
[TJ-8000](#)

Deck Ledger Attachment:
[TB-304](#)

Floor/Ceiling Assemblies

Fire Assemblies and Sprinklers:
[TJ-1500](#)

CVPC piping to TJI web:
[TJ-1500](#)

Sound Ratings:
[TJ-4035](#)

Energy Codes

Allowable Holes for
Trus Joist Products:
[TJ-9015](#)

Floor Framing

TJI® Joist Specifier's Guide:
[TJ-4000](#)

TimberStrand® LSL Guide:
[TJ-8014](#)

Exterior Decks

Parallam® Plus PSL:
[TJ-7102](#)

Preservative Wood Treatments
of Weyerhaeuser Engineered
Wood Products:
[TB-315](#)

Trus Joist® Coastal
Construction:
[TB-217](#)

TimberStrand® LSL Headers & Wall Framing

U.S. Wall Guide:
[TJ-9003](#)

Wall Guide: CA, NV, AZ:
[TJ-9004](#)

Installation Guides

Pocket Framer's Guide:
[TJ-9001](#)

Building Code Evaluations

ICC-ES Evaluation Report:
[ESR-1153](#)

ICC-ES Evaluation Report:
[ESR-1387](#)

Trus Joist® Engineered Wood Beams & Columns

Beams, Headers,
& Columns:
[TJ-9000](#)

Beams, Headers,
& Columns:
Pacific Coast & NW
[TJ-9020](#)

Stair Stringers and Treads

Specifier's Guide:
[9010](#)

Edge® / Edge Gold™ / Diamond™ Panels

Edge® and Edge Gold™ Panels:
[OSB-4000](#)

Diamond™ Floor Panels:
[OSB-4051](#)

Floor, Roof, and Wall Panel
Installation:
[TJ-4035](#)

Some products may not be available in your region.

Contact your Weyerhaeuser representative at our [Specification Center](#) or visit "[Where to Buy](#)".

What is Floor Performance and TJ-Pro Rating?

Floor performance is how a floor feels under foot traffic. TJ-Pro Rating is a diagnostic tool developed by Weyerhaeuser to help you assess floor performance based on the floor assembly components you specify. You can access TJ-Pro rating using our [ForteWEB®](#) and [Javelin®](#) software platforms or our span table [web app](#).

How does TJ-Pro Rating Work?

Point values up to 65 are assigned using complex algorithms based on field and laboratory research conducted on over 600 floor system assemblies. It also factors in the variables listed under **Key Factors Affecting Performance** shown to the right. Ranges can then be correlated to customer floor performance expectations.



What do the ratings mean?

The ratings represent the percentage of customers that would be satisfied with the floor performance. At 45 points, customer satisfaction is 84%. At 65 points, it's nearly 100%.

How can you use TJ-Pro Rating?

You know your market and TJ-Pro Ratings let you build what your market needs. For example, once you know that a TJ-Pro Rating of 45 points works for your customers, you can simply target 45 points for your other floors to deliver the performance your market expects.

It's also a great tool to optimize floors for the type of home you build:

Entry Level: Focus on economy and efficiency. Use TJ-Pro Ratings to make sure you're not overbuilding.

Move-Up/Mid-Level: Countless floor plans with upgrades options. Use TJ-Pro Rating to consistently and reliably build across the range of framing solutions.

High-End Luxury: Uncompromised quality and reputation is key. From our experience, homeowners in this group expect a rating of 45 points or greater. Use TJ-Pro Rating to differentiate yourself and deliver the quality your customers demand.

Key Factors Affecting Performance

- **Basic Stiffness** is a combination of joist depths and span.
- **Composite Action**—Careful nailing in conjunction with construction adhesives increases basic stiffness.
- **Continuity**—Continuous joists over several supports generally perform better than simple spans. Care must be taken if the joists continue into another occupancy.
- **Joist Spacing and Deck Stiffness**—Reduced spacing or increased deck thickness generally improves floor performance.
- **Ceilings** directly applied to the bottom edge of the floor members, or equivalent 1x or 2x strapping, is a performance enhancement.
- **Beams**—Floor systems supported by steel or wood beams tend to feel less stiff than those supported by solid bearing walls.
- **Bridging or Blocking** can be a contributor to improved floor performance.
- **Non-bearing Partition Walls** dampen vibration and improve floor performance when installed transverse to the floor joists.
- **Mass** reduces damping in a floor system causing a decrease in floor performance. This impact is more noticeable as span lengths increase.

TJ-Pro Rating is featured in these design software platforms.



Autodesk® Revit® linked to ForteWEB®

Let one of our experienced **Territory Managers** perform a TJ-Pro Rating assessment on your floors to give you insight on how well your floors will perform against your customers expectations. They can also help recommend products which will give you the optimal results you are looking for without overspending.

SECTION 1: 9½"-16" TJI® JOISTS

This section contains design information for 9½"-16" deep Trus Joist® TJI® joists.

These standard-size TJI® joists are readily available through your local Weyerhaeuser dealer or distributor.
Offered with the flange sizes shown below, they come in lengths up to 60' (in 1' increments).

Design Properties (100% Load Duration)

| Depth | TJI® | Basic Properties | | | | Reaction Properties | | | | | |
|-------|------|-----------------------|--|---|------------------------------|------------------------|------------------------|---------------------------------|------------------------------------|---------------------------------|------------------------------------|
| | | Joist Weight (lbs/ft) | Maximum Resistive Moment ⁽¹⁾ (ft-lbs) | Joist Only EI x 10 ⁶ (in. ² -lbs) | Maximum Vertical Shear (lbs) | 1¾" End Reaction (lbs) | 3½" End Reaction (lbs) | 3½" Intermediate Reaction (lbs) | | 5¼" Intermediate Reaction (lbs) | |
| | | | | | | | | No Web Stiffeners | With Web Stiffeners ⁽²⁾ | No Web Stiffeners | With Web Stiffeners ⁽²⁾ |
| 9½" | 110 | 2.3 | 2,500 | 157 | 1,220 | 910 | 1,220 | 1,935 | N.A. | 2,350 | N.A. |
| | 210 | 2.6 | 3,000 | 186 | 1,330 | 1,005 | 1,330 | 2,145 | N.A. | 2,565 | N.A. |
| | 230 | 2.7 | 3,330 | 206 | 1,330 | 1,060 | 1,330 | 2,410 | N.A. | 2,790 | N.A. |
| 11⅞" | 110 | 2.5 | 3,160 | 267 | 1,560 | 910 | 1,375 | 1,935 | 2,295 | 2,350 | 2,705 |
| | 210 | 2.8 | 3,795 | 315 | 1,655 | 1,005 | 1,460 | 2,145 | 2,505 | 2,565 | 2,925 |
| | 230 | 3.0 | 4,215 | 347 | 1,655 | 1,060 | 1,485 | 2,410 | 2,765 | 2,790 | 3,150 |
| | 360 | 3.0 | 6,180 | 419 | 1,705 | 1,080 | 1,505 | 2,460 | 2,815 | 3,000 | 3,360 |
| 14" | 560 | 4.0 | 9,500 | 636 | 2,050 | 1,265 | 1,725 | 3,000 | 3,475 | 3,455 | 3,930 |
| | 110 | 2.8 | 3,740 | 392 | 1,860 | 910 | 1,375 | 1,935 | 2,295 | 2,350 | 2,705 |
| | 210 | 3.1 | 4,490 | 462 | 1,945 | 1,005 | 1,460 | 2,145 | 2,505 | 2,565 | 2,925 |
| | 230 | 3.3 | 4,990 | 509 | 1,945 | 1,060 | 1,485 | 2,410 | 2,765 | 2,790 | 3,150 |
| | 360 | 3.3 | 7,335 | 612 | 1,955 | 1,080 | 1,505 | 2,460 | 2,815 | 3,000 | 3,360 |
| 16" | 560 | 4.2 | 11,275 | 926 | 2,390 | 1,265 | 1,725 | 3,000 | 3,475 | 3,455 | 3,930 |
| | 110 | 3.0 | 4,280 | 535 | 2,145 | 910 | 1,375 | 1,935 | 2,295 | 2,350 | 2,705 |
| | 210 | 3.3 | 5,140 | 629 | 2,190 | 1,005 | 1,460 | 2,145 | 2,505 | 2,565 | 2,925 |
| | 230 | 3.5 | 5,710 | 691 | 2,190 | 1,060 | 1,485 | 2,410 | 2,765 | 2,790 | 3,150 |
| | 360 | 3.5 | 8,405 | 830 | 2,190 | 1,080 | 1,505 | 2,460 | 2,815 | 3,000 | 3,360 |
| 16" | 560 | 4.5 | 12,925 | 1,252 | 2,710 | 1,265 | 1,725 | 3,000 | 3,475 | 3,455 | 3,930 |

- (1) **Caution:** Do not increase joist moment design properties by a repetitive member use factor.
(2) See detail W on page 29 for web stiffener requirements and nailing information.

General Notes

- Design reaction includes all loads on the joist. Design shear is computed at the inside face of supports and includes all loads on the span(s). Allowable shear may sometimes be increased at interior supports in accordance with ICC-ES ESR-1153, and these increases are reflected in span tables.
- The formulas at right approximate the uniform load deflection of Δ (inches).

TJI® joists are intended for dry-use applications

Some TJI® joist series may not be available in your region. Contact your Weyerhaeuser representative for information.

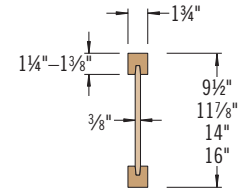
For TJI® 110, 210, 230, and 360 Joists

$$\Delta = \frac{22.5 wL^4}{EI} + \frac{2.67 wL^2}{d \times 10^5}$$

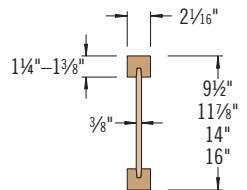
For TJI® 560 Joists

$$\Delta = \frac{22.5 wL^4}{EI} + \frac{2.29 wL^2}{d \times 10^5}$$

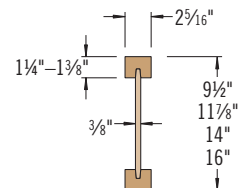
w = uniform load in pounds per linear foot
L = span in feet
d = out-to-out depth of the joist in inches
EI = value from table above



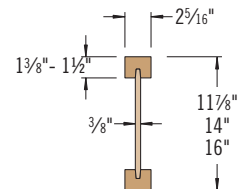
TJI® 110 joists



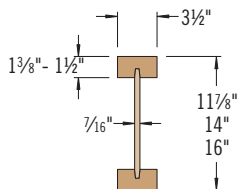
TJI® 210 joists



TJI® 230 joists



TJI® 360 joists



TJI® 560 joists



DO NOT walk on joists until braced. INJURY MAY RESULT.



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



DO NOT walk on joists that are lying flat.

WARNING

Joists are unstable until braced laterally

Bracing Includes:

- Blocking
- Hangers
- Rim Board
- Sheathing
- Rim Joist
- Strut Lines

WARNING NOTES: Lack of proper bracing during construction can result in serious accidents. Observe the following guidelines:

- All blocking, hangers, rim boards, and rim joists at the end supports of the TJI® joists must be completely installed and properly nailed.
- Lateral strength, like a braced end wall or an existing deck, must be established at the ends of the bay. This can also be accomplished by a temporary or permanent deck (sheathing) fastened to the first 4 feet of joists at the end of the bay.
- Safety bracing of 1x4 (minimum) must be nailed to a braced end wall or sheathed area (as in note 2) and to each joist. Without this bracing, buckling sideways or rollover is highly probable under light construction loads—such as a worker or one layer of unnailed sheathing.
- Sheathing must be completely attached to each TJI® joist before additional loads can be placed on the system.
- Ends of cantilevers require safety bracing on both the top and bottom flanges.
- The flanges must remain straight within a tolerance of ½" from true alignment.

L/480 Live Load Deflection

| Depth | TJI® | 40 PSF Live Load / 10 PSF Dead Load | | | | 40 PSF Live Load / 20 PSF Dead Load | | | |
|-------|------|-------------------------------------|----------|-----------------------|------------------------|-------------------------------------|-----------------------|-----------------------|------------------------|
| | | 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" | 110 | 16'-11" | 15'-6" | 14'-7" | 13'-7" | 16'-11" | 15'-6" | 14'-3" | 12'-9" |
| | 210 | 17'-9" | 16'-3" | 15'-4" | 14'-3" | 17'-9" | 16'-3" | 15'-4" | 14'-0" |
| | 230 | 18'-3" | 16'-8" | 15'-9" | 14'-8" | 18'-3" | 16'-8" | 15'-9" | 14'-8" |
| 11⅞" | 110 | 20'-2" | 18'-5" | 17'-4" | 15'-9" ⁽¹⁾ | 20'-2" | 17'-8" | 16'-1" ⁽¹⁾ | 14'-4" ⁽¹⁾ |
| | 210 | 21'-1" | 19'-3" | 18'-2" | 16'-11" | 21'-1" | 19'-3" | 17'-8" | 15'-9" ⁽¹⁾ |
| | 230 | 21'-8" | 19'-10" | 18'-8" | 17'-5" | 21'-8" | 19'-10" | 18'-7" | 16'-7" ⁽¹⁾ |
| | 360 | 22'-11" | 20'-11" | 19'-8" | 18'-4" | 22'-11" | 20'-11" | 19'-8" | 17'-10" ⁽¹⁾ |
| | 560 | 26'-1" | 23'-8" | 22'-4" | 20'-9" | 26'-1" | 23'-8" | 22'-4" | 20'-9" ⁽¹⁾ |
| 14" | 110 | 22'-10" | 20'-11" | 19'-2" | 17'-2" ⁽¹⁾ | 22'-2" | 19'-2" | 17'-6" ⁽¹⁾ | 15'-0" ⁽¹⁾ |
| | 210 | 23'-11" | 21'-10" | 20'-8" | 18'-10" ⁽¹⁾ | 23'-11" | 21'-1" | 19'-2" ⁽¹⁾ | 16'-7" ⁽¹⁾ |
| | 230 | 24'-8" | 22'-6" | 21'-2" | 19'-9" ⁽¹⁾ | 24'-8" | 22'-2" | 20'-3" ⁽¹⁾ | 17'-6" ⁽¹⁾ |
| | 360 | 26'-0" | 23'-8" | 22'-4" | 20'-9" ⁽¹⁾ | 26'-0" | 23'-8" | 22'-4" ⁽¹⁾ | 17'-10" ⁽¹⁾ |
| | 560 | 29'-6" | 26'-10" | 25'-4" | 23'-6" | 29'-6" | 26'-10" | 25'-4" ⁽¹⁾ | 20'-11" ⁽¹⁾ |
| 16" | 110 | 25'-4" | 22'-6" | 20'-7" ⁽¹⁾ | 18'-1" ⁽¹⁾ | 25'-4" | 20'-7" ⁽¹⁾ | 18'-9" ⁽¹⁾ | 15'-0" ⁽¹⁾ |
| | 210 | 26'-6" | 24'-3" | 22'-6" ⁽¹⁾ | 19'-11" ⁽¹⁾ | 26'-0" | 22'-6" ⁽¹⁾ | 20'-7" ⁽¹⁾ | 16'-7" ⁽¹⁾ |
| | 230 | 27'-3" | 24'-10" | 23'-6" | 21'-1" ⁽¹⁾ | 27'-3" | 23'-9" | 21'-8" ⁽¹⁾ | 17'-6" ⁽¹⁾ |
| | 360 | 28'-9" | 26'-3" | 24'-8" ⁽¹⁾ | 21'-5" ⁽¹⁾ | 28'-9" | 26'-3" ⁽¹⁾ | 22'-4" ⁽¹⁾ | 17'-10" ⁽¹⁾ |
| | 560 | 32'-8" | 29'-8" | 28'-0" | 25'-2" ⁽¹⁾ | 32'-8" | 29'-8" | 26'-3" ⁽¹⁾ | 20'-11" ⁽¹⁾ |

L/360 Live Load Deflection (Minimum Criteria per Code)

| Depth | TJI® | 40 PSF Live Load / 10 PSF Dead Load | | | | 40 PSF Live Load / 20 PSF Dead Load | | | |
|-------|------|-------------------------------------|----------|------------------------|------------------------|-------------------------------------|------------------------------|------------------------------|------------------------|
| | | 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" | 110 | 18'-9" | 17'-2" | 15'-8" | 14'-0" | 18'-1" | 15'-8" | 14'-3" | 12'-9" |
| | 210 | 19'-8" | 18'-0" | 17'-0" | 15'-4" | 19'-8" | 17'-2" | 15'-8" | 14'-0" |
| | 230 | 20'-3" | 18'-6" | 17'-5" | 16'-2" | 20'-3" | 18'-1" | 16'-6" | 14'-9" |
| 11⅞" | 110 | 22'-3" | 19'-4" | 17'-8" | 15'-9" ⁽¹⁾ | 20'-5" | 17'-8" | 16'-1" ⁽¹⁾ | 14'-4" ⁽¹⁾ |
| | 210 | 23'-4" | 21'-2" | 19'-4" | 17'-3" ⁽¹⁾ | 22'-4" | 19'-4" | 17'-8" | 15'-9" ⁽¹⁾ |
| | 230 | 24'-0" | 21'-11" | 20'-5" | 18'-3" | 23'-7" | 20'-5" | 18'-7" | 16'-7" ⁽¹⁾ |
| | 360 | 25'-4" | 23'-2" | 21'-10" | 20'-4" ⁽¹⁾ | 25'-4" | 23'-2" | 21'-10"⁽¹⁾ | 17'-10" ⁽¹⁾ |
| | 560 | 28'-10" | 26'-3" | 24'-9" | 23'-0" | 28'-10" | 23'-0" | 21'-9" | 20'-11" ⁽¹⁾ |
| 14" | 110 | 24'-4" | 21'-0" | 19'-2" | 17'-2" ⁽¹⁾ | 22'-2" | 19'-2" | 17'-6" ⁽¹⁾ | 15'-0" ⁽¹⁾ |
| | 210 | 26'-6" | 23'-1" | 21'-1" | 18'-10" ⁽¹⁾ | 24'-4" | 21'-1" | 19'-2" ⁽¹⁾ | 16'-7" ⁽¹⁾ |
| | 230 | 27'-3" | 24'-4" | 22'-2" | 19'-10" ⁽¹⁾ | 25'-8" | 22'-2" | 20'-3" ⁽¹⁾ | 17'-6" ⁽¹⁾ |
| | 360 | 28'-9" | 26'-3" | 24'-9" ⁽¹⁾ | 21'-5" ⁽¹⁾ | 28'-9" | 26'-3"⁽¹⁾ | 22'-4" ⁽¹⁾ | 17'-10" ⁽¹⁾ |
| | 560 | 32'-8" | 29'-9" | 28'-0" | 25'-2" ⁽¹⁾ | 32'-8" | 29'-9" | 26'-3"⁽¹⁾ | 20'-11" ⁽¹⁾ |
| 16" | 110 | 26'-0" | 22'-6" | 20'-7" ⁽¹⁾ | 18'-1" ⁽¹⁾ | 23'-9" | 20'-7" ⁽¹⁾ | 18'-9" ⁽¹⁾ | 15'-0" ⁽¹⁾ |
| | 210 | 28'-6" | 24'-8" | 22'-6" ⁽¹⁾ | 19'-11" ⁽¹⁾ | 26'-0" | 22'-6" ⁽¹⁾ | 20'-7" ⁽¹⁾ | 16'-7" ⁽¹⁾ |
| | 230 | 30'-1" | 26'-0" | 23'-9" | 21'-1" ⁽¹⁾ | 27'-5" | 23'-9" | 21'-8" ⁽¹⁾ | 17'-6" ⁽¹⁾ |
| | 360 | 31'-10" | 29'-0" | 26'-10" ⁽¹⁾ | 21'-5" ⁽¹⁾ | 31'-10" | 26'-10"⁽¹⁾ | 22'-4" ⁽¹⁾ | 17'-10" ⁽¹⁾ |
| | 560 | 36'-1" | 32'-11" | 31'-0" ⁽¹⁾ | 25'-2" ⁽¹⁾ | 36'-1" | 31'-6"⁽¹⁾ | 26'-3" ⁽¹⁾ | 20'-11" ⁽¹⁾ |

(1) Web stiffeners are required at intermediate supports of continuous-span joists when the intermediate bearing length is *less* than 5¼" and the span on either side of the intermediate bearing is greater than the following spans:

| TJI® | 40 PSF Live Load / 10 PSF Dead Load | | | | 40 PSF Live Load / 20 PSF Dead Load | | | |
|------|-------------------------------------|----------|------------|----------|-------------------------------------|----------|------------|----------|
| | 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. |
| 110 | Not Req. | Not Req. | 19'-2" | 15'-4" | Not Req. | 19'-2" | 16'-0" | 12'-9" |
| 210 | | | 21'-4" | 17'-0" | | 21'-4" | 17'-9" | 14'-2" |
| 230 | | | Not Req. | 19'-2" | | Not Req. | 19'-11" | 15'-11" |
| 360 | | | 24'-5" | 19'-6" | | 24'-5" | 20'-4" | 16'-3" |
| 560 | | | 29'-10" | 23'-10" | | 29'-10" | 24'-10" | 19'-10" |

■ Long-term deflection under dead load, which includes the effect of creep, has not been considered. Bold italic spans reflect initial dead load deflection exceeding 0.33".

How to Use These Tables

1. Determine the appropriate live load deflection criteria.
2. Identify the live and dead load condition.
3. Select on-center spacing.
4. Scan down the column until you meet or exceed the span of your application.
5. Select TJI® joist and depth.

General Notes

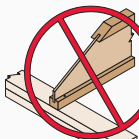
- Tables are based on:
 - Uniform loads.
 - More restrictive of simple or continuous span.
 - Clear distance between supports.
 - Minimum bearing length of 1¾" end (no web stiffeners) and 3½" intermediate.
- Assumed composite action with a single layer of 24" on-center span-rated, glue-nailed floor panels for deflection only. **When subfloor adhesive is not applied, spans shall be reduced 6" for nails and 12" for proprietary fasteners.**
- For continuous spans, ratio of short span to long span should be 0.4 or greater to prevent uplift.
- Spans generated from Weyerhaeuser software may exceed the spans shown in these tables because software reflects actual design conditions.
- For multi-family applications and other loading conditions not shown, refer to Weyerhaeuser software or to the load table on page 8.

Live load deflection is not the only factor that affects how a floor will perform. To more accurately predict floor performance, use TJ Pro™ Ratings included in ForteWEB® and our span table web application.

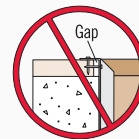
These Conditions Are NOT Permitted:



DO NOT use sawn lumber for rim board or blocking as it may shrink after installation. Use only engineered lumber



DO NOT bevel cut joist beyond inside face of wall.



DO NOT install hanger overhanging face of plate or beam. Flush bearing plate with inside face of wall or beam.

Floor—100% (PLF)

| Depth | TJI® | Joist Clear Span | | | | | | | | | | | | | | | | | |
|-------|------|------------------|------------|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|------------|
| | | 8' | | 10' | | 12' | | 14' | | 16' | | 18' | | 20' | | 22' | | 24' | |
| | | Live Load L/480 | Total Load | Live Load L/480 | Total Load | Live Load L/480 | Total Load | Live Load L/480 | Total Load | Live Load L/480 | Total Load | Live Load L/480 | Total Load | Live Load L/480 | Total Load | Live Load L/480 | Total Load | Live Load L/480 | Total Load |
| 9½" | 110 | * | 190 | 140 | 152 | 85 | 127 | 56 | 99 | 38 | 76 | | | | | | | | |
| | 210 | * | 210 | 161 | 169 | 99 | 141 | 65 | 119 | 45 | 90 | | | | | | | | |
| | 230 | * | 236 | 175 | 190 | 108 | 158 | 71 | 133 | 49 | 99 | | | | | | | | |
| 11⅞" | 110 | * | 190 | * | 152 | * | 127 | 92 | 109 | 63 | 95 | 45 | 76 | | | | | | |
| | 210 | * | 210 | * | 169 | * | 141 | 106 | 121 | 74 | 106 | 53 | 92 | | | | | | |
| | 230 | * | 236 | * | 190 | * | 158 | 116 | 136 | 80 | 119 | 58 | 102 | 43 | 83 | | | | |
| | 360 | * | 241 | * | 193 | * | 162 | 136 | 139 | 95 | 121 | 69 | 108 | 51 | 97 | 39 | 78 | | |
| | 560 | * | 294 | * | 236 | * | 197 | * | 169 | 138 | 148 | 101 | 132 | 76 | 119 | 58 | 108 | 45 | 91 |
| 14" | 110 | * | 190 | * | 152 | * | 127 | * | 109 | 91 | 95 | 66 | 85 | | | | | | |
| | 210 | * | 210 | * | 169 | * | 141 | * | 121 | * | 106 | 76 | 94 | 57 | 85 | | | | |
| | 230 | * | 236 | * | 190 | * | 158 | * | 136 | 115 | 119 | 83 | 106 | 62 | 95 | 47 | 81 | | |
| | 360 | * | 241 | * | 193 | * | 162 | * | 139 | * | 121 | 98 | 108 | 73 | 97 | 56 | 88 | 44 | 81 |
| | 560 | * | 294 | * | 236 | * | 197 | * | 169 | * | 148 | * | 132 | 107 | 119 | 83 | 108 | 65 | 99 |
| 16" | 110 | * | 190 | * | 152 | * | 127 | * | 109 | * | 95 | * | 85 | 66 | 76 | | | | |
| | 210 | * | 210 | * | 169 | * | 141 | * | 121 | * | 106 | * | 94 | 76 | 85 | 58 | 77 | | |
| | 230 | * | 236 | * | 190 | * | 158 | * | 136 | * | 119 | * | 106 | 83 | 95 | 64 | 87 | 50 | 78 |
| | 360 | * | 241 | * | 193 | * | 162 | * | 139 | * | 121 | * | 108 | * | 97 | 75 | 88 | 59 | 81 |
| | 560 | * | 294 | * | 236 | * | 197 | * | 169 | * | 148 | * | 132 | * | 119 | * | 108 | 86 | 99 |

* Indicates **Total Load** value controls.

How to Use This Table

- Calculate actual total and live load in pounds per linear foot (plf).
- Select appropriate **Joist Clear Span**.
- Scan down the column to find a TJI® joist that meets or exceeds actual total and live loads.

Refer to PSF to PLF Conversion table on page 33

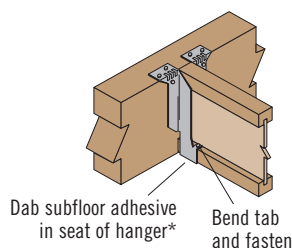
General Notes

- Table is based on:
 - Uniform loads.
 - More restrictive of simple or continuous span.
 - Deflection criteria of L/240 total load and L/480 live load.
 - Minimum bearing length of 1¾" end and 3½" intermediate, without web stiffeners.
- Composite action is not considered.
- For a live load deflection limit of L/360, multiply **Live Load L/480** values by 1.33. The resulting live load must not exceed the **Total Load** shown.
- For continuous spans, ratio of short span to long span should be 0.4 or greater to prevent uplift.
- Table does not account for concentrated loads. Use Weyerhaeuser software when this condition applies.

TIPS FOR PREVENTING FLOOR NOISE

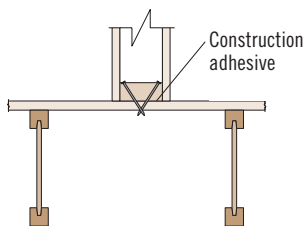
Trus Joist® TJI® joists are structurally uniform and dimensionally stable, and they resist shrinking and twisting. This helps prevent gaps from forming around the nails between the joist and the floor panels—gaps that can potentially cause squeaks or other floor noise. Using TJI® joists can help you build a quieter floor, but only if the entire floor system is installed properly. This is because other components of the floor system, such as hangers, connectors, and nails can be a source of floor noise.

Properly Seat Each Joist in Hanger



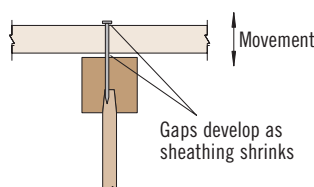
Seat the joist tight to the bottom of the hanger. When using hangers with tabs, bend the flange tabs over and nail to the TJI® joist bottom flange. Placing a dab of subfloor adhesive* in the seat of the hanger prior to installing the joist can reduce squeaks.

Use Adhesive and Special Nailing When Needed



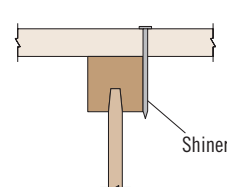
Nail interior partitions to the joists when possible. If the wall can be nailed only to the floor panel, run a bead of adhesive* under the wall and either cross nail, nail through and clinch tight, or screw tightly into the wall from below.

Prevent Shrinkage



Keep building materials dry, and properly glue floor panels to the joists. Panels that become excessively wet during construction shrink as they dry. This shrinkage may leave gaps that allow the panel to move when stepped on.

Avoid "Shiners"



Exercise care when nailing. Nails that barely hit the joists (shiners) do not hold the panel tight to the joist and should be removed. If left in, the nails will rub against the side of the joist when the panel deflects.

* Weyerhaeuser recommends using a subfloor adhesive that has been qualified as a Class 1/8 in., Type P/O subfloor adhesive in accordance with ASTM D3498-19.

For more information and tips on how to prevent floor noise, refer to the Weyerhaeuser Prevention and Repair of Floor System Squeaks Technical Resource Sheet, 9009, or contact your Weyerhaeuser representative.

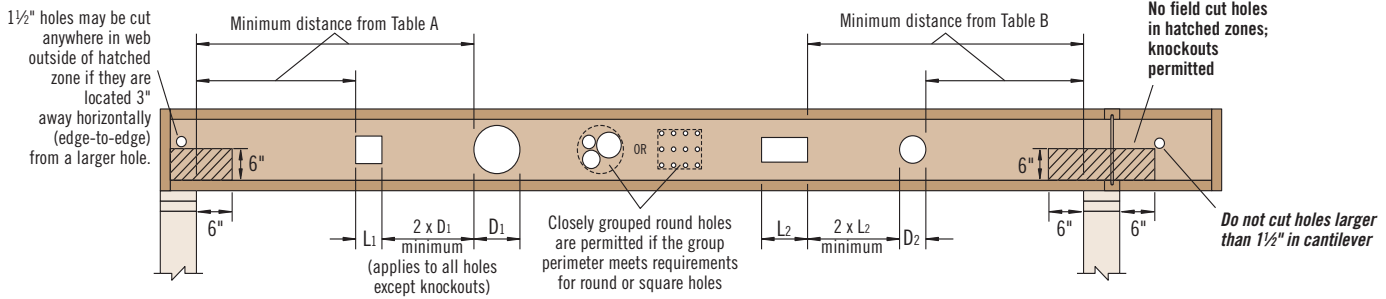


Table A—End Support

Minimum distance from edge of hole to inside face of nearest end support

| Depth | TJI® | ● Round Hole Size | | | | | | | | | ■ Square or Rectangular Hole Size | | | | | | | | |
|-------|------|-------------------|-------|-------|-------|-------|-------|-------|-------|--------|-----------------------------------|-------|-------|-------|-------|-------|--------|--------|--------|
| | | 2" | 3" | 4" | 5" | 6½" | 7" | 8⅞" | 11" | 13" | 2" | 3" | 4" | 5" | 6½" | 7" | 8⅞" | 11" | 13" |
| 9½" | 110 | 1'-0" | 1'-6" | 2'-0" | 3'-0" | 5'-0" | | | | | 1'-0" | 1'-6" | 2'-6" | 3'-6" | 4'-6" | | | | |
| | 210 | 1'-0" | 1'-6" | 2'-6" | 3'-0" | 5'-6" | | | | | 1'-0" | 2'-0" | 2'-6" | 4'-0" | 5'-0" | | | | |
| | 230 | 1'-6" | 2'-0" | 2'-6" | 3'-6" | 5'-6" | | | | | 1'-0" | 2'-0" | 3'-0" | 4'-6" | 5'-0" | | | | |
| 11⅞" | 110 | 1'-0" | 1'-0" | 1'-6" | 2'-0" | 2'-6" | 3'-0" | 5'-6" | | | 1'-0" | 1'-6" | 2'-0" | 2'-6" | 4'-6" | 5'-0" | 6'-0" | | |
| | 210 | 1'-0" | 1'-6" | 2'-0" | 2'-0" | 3'-0" | 3'-6" | 6'-0" | | | 1'-0" | 1'-6" | 2'-6" | 3'-0" | 5'-0" | 5'-6" | 6'-6" | | |
| | 230 | 1'-0" | 1'-6" | 2'-0" | 2'-6" | 3'-0" | 3'-6" | 6'-6" | | | 1'-0" | 2'-0" | 2'-6" | 3'-6" | 5'-6" | 5'-6" | 7'-0" | | |
| | 360 | 1'-6" | 2'-0" | 3'-0" | 3'-6" | 4'-6" | 5'-0" | 7'-0" | | | 1'-6" | 2'-6" | 3'-6" | 4'-6" | 6'-6" | 6'-6" | 7'-6" | | |
| | 560 | 1'-6" | 2'-6" | 3'-0" | 4'-0" | 5'-6" | 6'-0" | 8'-0" | | | 2'-6" | 3'-6" | 4'-6" | 5'-6" | 7'-0" | 7'-6" | 8'-0" | | |
| 14" | 110 | 1'-0" | 1'-0" | 1'-0" | 1'-6" | 2'-0" | 2'-6" | 3'-6" | 6'-0" | | 1'-0" | 1'-0" | 2'-0" | 2'-6" | 4'-0" | 4'-6" | 6'-6" | 8'-0" | |
| | 210 | 1'-0" | 1'-0" | 1'-0" | 1'-6" | 2'-6" | 2'-6" | 4'-0" | 7'-0" | | 1'-0" | 1'-0" | 2'-0" | 3'-0" | 4'-0" | 5'-0" | 7'-0" | 9'-0" | |
| | 230 | 1'-0" | 1'-0" | 1'-6" | 2'-6" | 3'-6" | 4'-0" | 5'-6" | 8'-0" | | 1'-0" | 1'-6" | 2'-6" | 4'-0" | 6'-0" | 6'-6" | 8'-0" | 9'-6" | |
| | 360 | 1'-0" | 1'-0" | 2'-0" | 3'-0" | 4'-6" | 5'-0" | 6'-6" | 9'-0" | | 1'-6" | 3'-0" | 4'-0" | 5'-0" | 7'-0" | 7'-6" | 9'-0" | 10'-0" | |
| | 560 | 1'-0" | 1'-0" | 1'-0" | 1'-0" | 1'-0" | 1'-0" | 3'-0" | 3'-0" | 5'-0" | 1'-0" | 1'-0" | 1'-0" | 1'-6" | 3'-0" | 3'-0" | 5'-6" | 7'-6" | 10'-0" |
| 16" | 110 | 1'-0" | 1'-0" | 1'-0" | 1'-0" | 1'-0" | 1'-6" | 2'-6" | 3'-6" | 6'-0" | 1'-0" | 1'-0" | 1'-0" | 2'-0" | 3'-0" | 3'-6" | 6'-6" | 8'-0" | 11'-0" |
| | 210 | 1'-0" | 1'-0" | 1'-0" | 1'-0" | 1'-6" | 1'-6" | 3'-0" | 4'-0" | 7'-0" | 1'-0" | 1'-0" | 1'-0" | 2'-0" | 3'-6" | 4'-0" | 7'-0" | 9'-0" | 11'-0" |
| | 230 | 1'-0" | 1'-0" | 1'-0" | 1'-0" | 2'-6" | 2'-6" | 4'-6" | 6'-6" | 9'-0" | 1'-0" | 1'-0" | 1'-6" | 3'-0" | 5'-0" | 5'-6" | 9'-0" | 10'-0" | 11'-6" |
| | 360 | 1'-0" | 1'-0" | 1'-0" | 1'-0" | 2'-6" | 2'-6" | 4'-6" | 6'-6" | 9'-0" | 1'-0" | 1'-0" | 1'-6" | 3'-0" | 5'-0" | 5'-6" | 9'-0" | 10'-0" | 11'-6" |
| | 560 | 1'-0" | 1'-0" | 1'-0" | 1'-0" | 2'-6" | 3'-0" | 5'-0" | 7'-6" | 10'-0" | 1'-0" | 2'-0" | 3'-0" | 4'-6" | 6'-6" | 7'-0" | 10'-0" | 11'-0" | 12'-0" |

Table B—Intermediate or Cantilever Support

Minimum distance from edge of hole to inside face of nearest intermediate or cantilever support

| Depth | TJI® | ● Round Hole Size | | | | | | | | | ■ Square or Rectangular Hole Size | | | | | | | | |
|-------|------|-------------------|-------|-------|-------|-------|-------|--------|--------|--------|-----------------------------------|-------|-------|-------|--------|--------|--------|--------|--------|
| | | 2" | 3" | 4" | 5" | 6½" | 7" | 8⅞" | 11" | 13" | 2" | 3" | 4" | 5" | 6½" | 7" | 8⅞" | 11" | 13" |
| 9½" | 110 | 2'-0" | 2'-6" | 3'-6" | 4'-6" | 7'-6" | | | | | 1'-6" | 2'-6" | 3'-6" | 5'-6" | 6'-6" | | | | |
| | 210 | 2'-0" | 2'-6" | 3'-6" | 5'-0" | 8'-0" | | | | | 2'-0" | 3'-0" | 4'-0" | 6'-6" | 7'-6" | | | | |
| | 230 | 2'-6" | 3'-0" | 4'-0" | 5'-6" | 8'-6" | | | | | 2'-0" | 3'-6" | 4'-6" | 6'-6" | 7'-6" | | | | |
| 11⅞" | 110 | 1'-0" | 1'-0" | 1'-6" | 2'-6" | 4'-0" | 4'-6" | 8'-6" | | | 1'-0" | 1'-6" | 2'-6" | 4'-0" | 7'-0" | 7'-0" | 9'-6" | | |
| | 210 | 1'-0" | 1'-0" | 2'-0" | 3'-0" | 4'-6" | 5'-0" | 9'-0" | | | 1'-0" | 2'-0" | 3'-0" | 4'-6" | 8'-0" | 8'-0" | 10'-0" | | |
| | 230 | 1'-0" | 2'-0" | 2'-6" | 3'-6" | 5'-0" | 5'-6" | 10'-0" | | | 1'-0" | 2'-6" | 3'-6" | 5'-0" | 8'-6" | 9'-0" | 10'-6" | | |
| | 360 | 2'-0" | 3'-0" | 4'-0" | 5'-6" | 7'-0" | 7'-6" | 11'-0" | | | 2'-0" | 3'-6" | 5'-0" | 7'-0" | 9'-6" | 9'-6" | 11'-0" | | |
| | 560 | 1'-6" | 3'-0" | 4'-6" | 5'-6" | 8'-0" | 8'-6" | 12'-0" | | | 3'-0" | 4'-6" | 6'-0" | 8'-0" | 10'-6" | 11'-0" | 12'-0" | | |
| 14" | 110 | 1'-0" | 1'-0" | 1'-0" | 1'-0" | 2'-0" | 2'-6" | 4'-6" | 8'-6" | | 1'-0" | 1'-0" | 1'-0" | 2'-6" | 5'-0" | 6'-0" | 9'-0" | 12'-0" | |
| | 210 | 1'-0" | 1'-0" | 1'-0" | 2'-6" | 3'-0" | 3'-0" | 5'-6" | 9'-6" | | 1'-0" | 1'-0" | 2'-0" | 3'-6" | 6'-0" | 7'-0" | 10'-0" | 13'-0" | |
| | 230 | 1'-0" | 1'-0" | 1'-0" | 2'-0" | 3'-6" | 4'-0" | 6'-0" | 10'-6" | | 1'-0" | 1'-0" | 2'-6" | 4'-0" | 6'-6" | 7'-6" | 11'-0" | 13'-6" | |
| | 360 | 1'-0" | 1'-0" | 2'-0" | 3'-6" | 5'-6" | 6'-0" | 8'-6" | 12'-6" | | 1'-0" | 2'-0" | 4'-0" | 5'-6" | 9'-0" | 10'-0" | 12'-0" | 14'-0" | |
| | 560 | 1'-0" | 1'-0" | 1'-6" | 3'-6" | 5'-6" | 6'-6" | 9'-6" | 13'-6" | | 1'-0" | 3'-0" | 5'-0" | 7'-0" | 10'-0" | 11'-0" | 13'-6" | 15'-0" | |
| 16" | 110 | 1'-0" | 1'-0" | 1'-0" | 1'-0" | 1'-0" | 1'-0" | 2'-6" | 5'-0" | 8'-6" | 1'-0" | 1'-0" | 1'-0" | 1'-0" | 3'-6" | 4'-6" | 8'-6" | 11'-6" | 15'-0" |
| | 210 | 1'-0" | 1'-0" | 1'-0" | 1'-0" | 1'-0" | 1'-0" | 3'-6" | 6'-0" | 10'-0" | 1'-0" | 1'-0" | 1'-0" | 1'-6" | 4'-6" | 5'-6" | 10'-0" | 12'-6" | 16'-0" |
| | 230 | 1'-0" | 1'-0" | 1'-0" | 1'-0" | 1'-6" | 2'-0" | 4'-0" | 6'-6" | 11'-0" | 1'-0" | 1'-0" | 1'-0" | 2'-6" | 5'-0" | 6'-0" | 10'-6" | 13'-6" | 16'-6" |
| | 360 | 1'-0" | 1'-0" | 1'-0" | 1'-0" | 3'-0" | 4'-0" | 6'-6" | 10'-0" | 13'-6" | 1'-0" | 1'-0" | 2'-0" | 4'-0" | 7'-6" | 8'-6" | 13'-0" | 14'-6" | 17'-0" |
| | 560 | 1'-0" | 1'-0" | 1'-0" | 1'-0" | 2'-6" | 3'-6" | 7'-0" | 11'-0" | 15'-0" | 1'-0" | 1'-0" | 3'-6" | 5'-6" | 9'-0" | 10'-0" | 14'-6" | 16'-0" | 18'-0" |

■ Rectangular holes based on measurement of longest side.

How to Use These Tables

- Using **Table A**, **Table B**, or both if required, determine the hole shape/size and select the TJI® joist and depth.
- Scan horizontally until you intersect the correct hole size column.
- Measurement shown is minimum distance from edge of hole to support.
- Maintain the required minimum distance from the end **and** the intermediate or cantilever support.

General Notes

- Holes may be located vertically anywhere within the web. Leave ⅛" of web (minimum) at top and bottom of hole.
- Knockouts are located in web at approximately 12" on-center; they do not affect hole placement and may be located in the hatched zone.
- For simple span (5' minimum) uniformly loaded joists meeting the requirements of this guide, one maximum size round hole may be located at the center of the joist span **provided that no other holes occur in the joist**.
- Distances are based on the maximum uniform loads shown in this guide. For other load conditions or hole configurations, use ForteWEB® software or contact your Weyerhaeuser representative.

DO NOT
cut or notch flange.



DO NOT
cut holes in cantilever reinforcement.



Table A—End Support (Rectangular Duct Holes)

Minimum distance from edge of rectangular duct hole to inside face of nearest end support

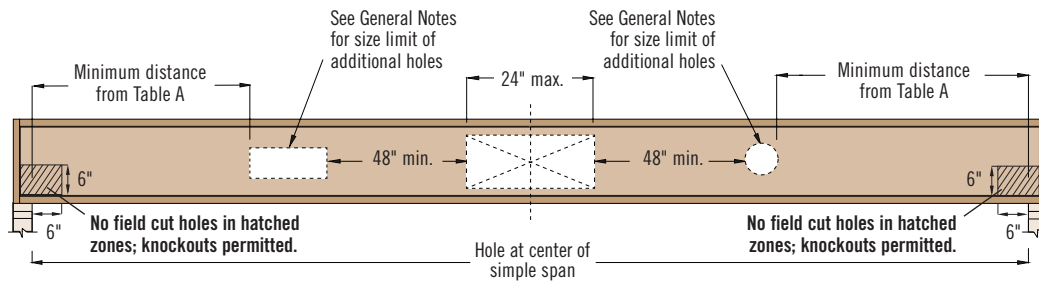
| Depth | TJI® | Rectangular Duct Hole Size (Height x Width) | | | | | | | | | | | | | | | |
|-------|------|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | 6½" x 12" | 6½" x 14" | 6½" x 16" | 6½" x 18" | 8½" x 12" | 8½" x 14" | 8½" x 16" | 8½" x 18" | 11" x 12" | 11" x 14" | 11" x 16" | 11" x 18" | 13" x 12" | 13" x 14" | 13" x 16" | 13" x 18" |
| 9½" | 110 | 5'-6" | 6'-0" | 6'-0" | 6'-6" | | | | | | | | | | | | |
| | 210 | 5'-6" | 6'-0" | 6'-6" | 7'-0" | | | | | | | | | | | | |
| | 230 | 6'-0" | 6'-0" | 6'-6" | 7'-0" | | | | | | | | | | | | |
| 11½" | 110 | 5'-6" | 6'-0" | 6'-6" | 7'-0" | 7'-0" | 7'-6" | 8'-0" | 8'-6" | | | | | | | | |
| | 210 | 6'-0" | 6'-6" | 7'-0" | 7'-6" | 7'-6" | 8'-0" | 8'-6" | 9'-0" | | | | | | | | |
| | 230 | 6'-6" | 7'-0" | 7'-0" | 7'-6" | 7'-6" | 8'-0" | 8'-6" | 9'-0" | | | | | | | | |
| | 360 | 7'-0" | 7'-6" | 7'-6" | 8'-0" | 8'-0" | 8'-6" | 8'-6" | 9'-0" | | | | | | | | |
| | 560 | 7'-6" | 8'-0" | 8'-0" | 8'-6" | 8'-6" | 8'-6" | 9'-0" | 9'-6" | | | | | | | | |
| 14" | 110 | 5'-6" | 5'-6" | 6'-0" | 6'-6" | 6'-6" | 7'-0" | 8'-0" | 8'-6" | 8'-6" | 9'-0" | 10'-0" | 10'-6" | | | | |
| | 210 | 6'-0" | 6'-6" | 7'-0" | 7'-6" | 7'-6" | 8'-0" | 8'-6" | 9'-0" | 9'-0" | 9'-6" | 10'-0" | 11'-0" | | | | |
| | 230 | 6'-6" | 7'-0" | 7'-0" | 7'-6" | 8'-0" | 8'-6" | 9'-0" | 9'-6" | 9'-0" | 10'-0" | 10'-6" | 11'-0" | | | | |
| | 360 | 8'-0" | 8'-0" | 8'-6" | 8'-6" | 9'-0" | 9'-6" | 9'-6" | 9'-6" | 9'-6" | 10'-0" | 10'-6" | 11'-0" | | | | |
| | 560 | 8'-6" | 9'-0" | 9'-0" | 9'-6" | 9'-6" | 9'-6" | 10'-0" | 10'-6" | 10'-6" | 10'-6" | 11'-0" | 11'-6" | | | | |
| 16" | 110 | 5'-0" | 5'-6" | 6'-0" | 6'-0" | 6'-0" | 6'-6" | 7'-0" | 7'-6" | 7'-6" | 8'-6" | 9'-0" | 10'-0" | 9'-6" | 10'-6" | 11'-6" | 12'-6" |
| | 210 | 6'-0" | 6'-0" | 6'-6" | 7'-0" | 7'-0" | 7'-6" | 8'-0" | 8'-6" | 8'-6" | 9'-0" | 10'-0" | 10'-6" | 10'-6" | 11'-0" | 12'-0" | 12'-6" |
| | 230 | 6'-6" | 6'-6" | 7'-0" | 7'-6" | 7'-6" | 8'-0" | 8'-6" | 9'-0" | 9'-0" | 9'-6" | 10'-6" | 11'-0" | 10'-6" | 11'-6" | 12'-0" | 13'-0" |
| | 360 | 8'-6" | 8'-6" | 9'-0" | 9'-6" | 9'-6" | 9'-6" | 10'-0" | 10'-0" | 10'-0" | 10'-6" | 11'-0" | 11'-6" | 11'-6" | 12'-6" | 13'-0" | 13'-0" |
| | 560 | 9'-6" | 10'-0" | 10'-0" | 10'-0" | 10'-6" | 10'-6" | 11'-0" | 11'-0" | 11'-0" | 11'-6" | 11'-6" | 12'-0" | 12'-0" | 12'-6" | 13'-0" | 13'-6" |

Table B—Intermediate or Cantilever Support (Rectangular Duct Holes)

Minimum distance from edge of rectangular duct hole to inside face of nearest intermediate or cantilever support

| Depth | TJI® | Rectangular Duct Hole Size (Height x Width) | | | | | | | | | | | | | | | |
|-------|------|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | 6½" x 12" | 6½" x 14" | 6½" x 16" | 6½" x 18" | 8½" x 12" | 8½" x 14" | 8½" x 16" | 8½" x 18" | 11" x 12" | 11" x 14" | 11" x 16" | 11" x 18" | 13" x 12" | 13" x 14" | 13" x 16" | 13" x 18" |
| 9½" | 110 | 8'-0" | 8'-6" | 9'-0" | 9'-6" | | | | | | | | | | | | |
| | 210 | 8'-6" | 9'-0" | 9'-6" | 10'-0" | | | | | | | | | | | | |
| | 230 | 8'-6" | 9'-0" | 9'-6" | 10'-0" | | | | | | | | | | | | |
| 11½" | 110 | 8'-6" | 9'-0" | 9'-6" | 10'-6" | 10'-6" | 11'-0" | 12'-0" | 13'-0" | | | | | | | | |
| | 210 | 9'-0" | 9'-6" | 10'-6" | 11'-0" | 11'-0" | 11'-6" | 12'-0" | 13'-0" | | | | | | | | |
| | 230 | 9'-6" | 10'-0" | 10'-6" | 11'-0" | 11'-0" | 11'-0" | 12'-0" | 12'-6" | 13'-0" | | | | | | | |
| | 360 | 10'-6" | 10'-6" | 11'-0" | 11'-6" | 11'-6" | 12'-0" | 12'-6" | 13'-6" | | | | | | | | |
| | 560 | 11'-6" | 11'-6" | 12'-0" | 12'-6" | 12'-6" | 13'-0" | 13'-6" | 14'-0" | | | | | | | | |
| 14" | 110 | 8'-0" | 8'-6" | 9'-0" | 10'-0" | 10'-0" | 11'-0" | 12'-0" | 13'-0" | 12'-6" | 13'-6" | 14'-6" | 15'-6" | | | | |
| | 210 | 9'-0" | 9'-6" | 10'-6" | 11'-0" | 11'-0" | 12'-0" | 12'-6" | 13'-6" | 13'-6" | 14'-0" | 15'-0" | 16'-0" | | | | |
| | 230 | 10'-0" | 10'-6" | 11'-0" | 11'-6" | 12'-0" | 12'-6" | 13'-0" | 13'-6" | 13'-6" | 14'-6" | 15'-0" | 16'-0" | | | | |
| | 360 | 11'-6" | 12'-0" | 12'-0" | 12'-6" | 12'-6" | 13'-0" | 13'-6" | 14'-0" | 14'-0" | 14'-6" | 15'-6" | 16'-0" | | | | |
| | 560 | 13'-0" | 13'-0" | 13'-6" | 14'-0" | 14'-0" | 14'-6" | 14'-6" | 15'-0" | 15'-0" | 15'-6" | 16'-0" | 17'-0" | | | | |
| 16" | 110 | 8'-0" | 8'-6" | 9'-0" | 9'-6" | 9'-6" | 10'-0" | 11'-0" | 12'-0" | 11'-6" | 12'-6" | 14'-0" | 15'-0" | 14'-6" | 15'-6" | 17'-0" | 18'-0" |
| | 210 | 9'-0" | 9'-6" | 10'-0" | 10'-6" | 11'-0" | 11'-6" | 12'-6" | 13'-6" | 13'-0" | 14'-0" | 15'-0" | 16'-0" | 15'-6" | 16'-6" | 17'-6" | 18'-6" |
| | 230 | 10'-0" | 10'-6" | 11'-0" | 11'-6" | 11'-6" | 12'-6" | 13'-0" | 13'-6" | 14'-0" | 14'-6" | 15'-6" | 16'-0" | 16'-6" | 17'-6" | 18'-6" | 18'-6" |
| | 360 | 12'-6" | 13'-0" | 13'-0" | 13'-6" | 13'-6" | 14'-0" | 14'-6" | 15'-0" | 15'-0" | 15'-6" | 16'-0" | 16'-6" | 16'-6" | 17'-0" | 18'-0" | 18'-6" |
| | 560 | 14'-0" | 14'-6" | 14'-6" | 15'-0" | 15'-0" | 15'-6" | 16'-0" | 16'-6" | 16'-6" | 17'-0" | 17'-0" | 17'-6" | 17'-6" | 18'-0" | 18'-6" | 19'-0" |

See How to Use These Tables and General Notes on page 9

Maximum Hole at Mid-Span for TJI® 360 and TJI® 560 Joists**Maximum Hole Size**

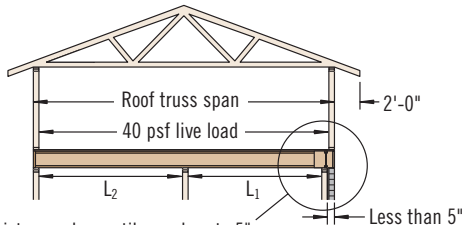
| Depth | TJI® | Maximum Hole Size (Height x Width) |
|-------|------|------------------------------------|
| 11½" | 360 | 6½" x 24" |
| | 560 | 8½" x 24" |
| 14" | 360 | 9" x 24" |
| | 560 | 11" x 24" |
| 16" | 360 | 11" x 24" |
| | 560 | 13" x 24" |

General Notes

- Simple span (8' minimum) uniformly loaded joist only. Not for use in applications that have code mandated concentrated load requirements.
- 24" wide hole (maximum) located at center of span.
- Leave ½" of web (minimum) at top and bottom of hole.
- Two (2) additional holes may be added to the joist provided:
 - Additional holes are a minimum of 48" (edge to edge) from maximum hole.
 - Square or Rectangular: longest dimension is less than or equal to 0.65 x web depth.
 - Round: diameter is less than or equal 0.75 x web depth.
 - Web depth (in.) = joist depth (in.) - 2.75".
 - See Table A for proper hole placement from end bearing for additional holes.

Cantilevers Less than 5" (Brick Ledge)

See Section A of cantilever table on page 12

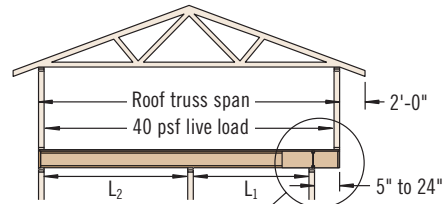


TJI® joists may be cantilevered up to 5" when supporting roof load, assuming:

- simple or continuous span
- $L_1 \leq L_2$
- minimum backspan = 2x cantilever length

Cantilevers 5" to 24"

See Section B of cantilever table on page 12



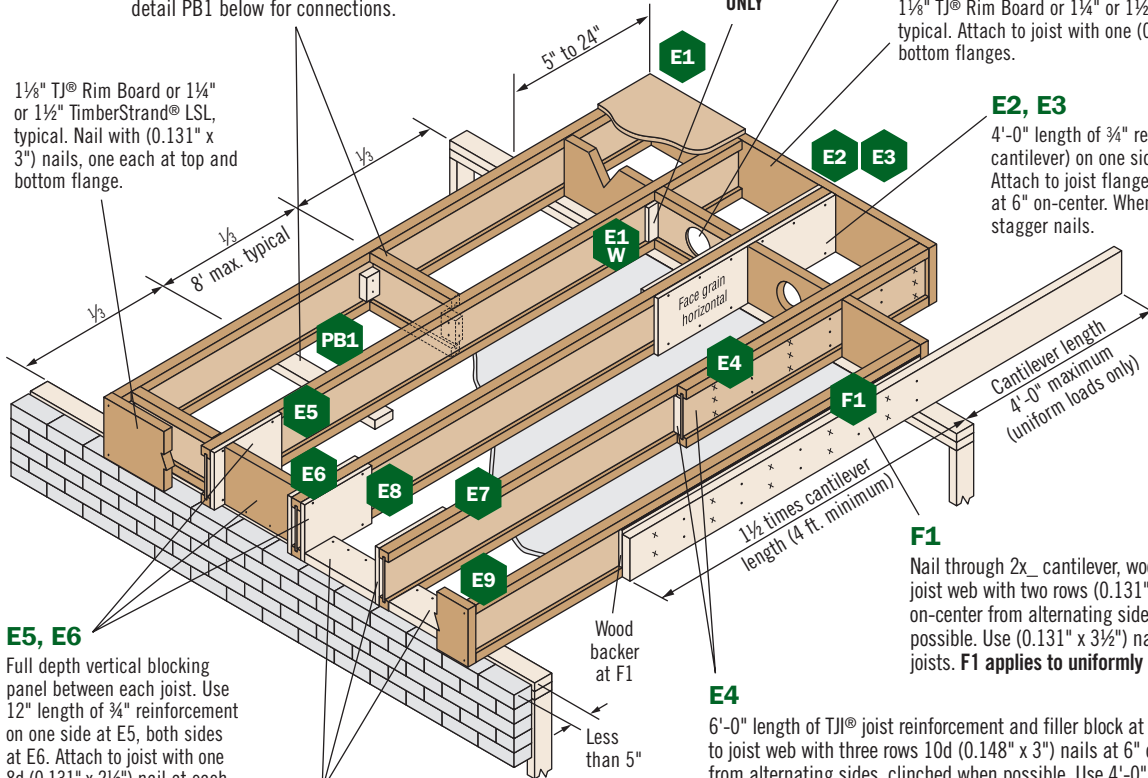
TJI® joists may be cantilevered 5" to 24" when supporting roof load, assuming:

- simple or continuous span
- $L_1 \leq L_2$
- minimum backspan = 2x cantilever length

PB1

Cantilever back span must be permanently braced with either direct-applied ceiling along entire length or permanent bracing at ⅓ points. See detail PB1 below for connections.

1½" TJI® Rim Board or 1¼" or 1½" TimberStrand® LSL, typical. Nail with (0.131" x 3") nails, one each at top and bottom flange.



E5, E6

Full depth vertical blocking panel between each joist. Use 12" length of ¾" reinforcement on one side at E5, both sides at E6. Attach to joist with one 8d (0.131" x 2½") nail at each corner.

E7, E8, E9

Horizontal blocking panel between each joist. 12" length of ¾" reinforcement on one side with E7, both sides with E8. Attach to joist with one 8d (0.131" x 2½") nail at each corner. No reinforcement at E9. Nail rim to blocking panel and blocking panel to plate with connections equivalent to floor panel schedule.

E1, E1W

Web stiffeners required both sides at E1W ONLY

8" diameter maximum hole for 11⅞"-16" deep blocking panels; 6" diameter maximum for blocking panels 9½" deep or shorter than 12" long. **Do not cut flanges.**

1½" TJI® Rim Board or 1¼" or 1½" TimberStrand® LSL closure, typical. Attach to joist with one (0.131" x 3") nail at top and bottom flanges.

E2, E3

4'-0" length of ¾" reinforcement (2'-0" maximum cantilever) on one side at E2, both sides at E3. Attach to joist flange with 8d (0.131" x 2½") nails at 6" on-center. When reinforcing both sides, stagger nails.

F1

Nail through 2x_ cantilever, wood backer, and TJI® joist web with two rows (0.131" x 3") nails at 6" on-center from alternating sides, clinched when possible. Use (0.131" x 3½") nails with TJI® 560 joists. **F1 applies to uniformly loaded joists only.**

E4

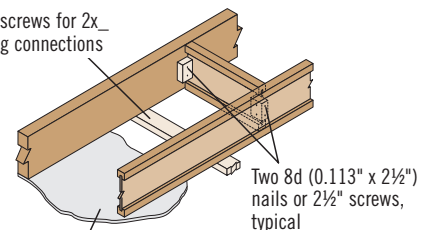
6'-0" length of TJI® joist reinforcement and filler block at E4. Attach to joist web with three rows 10d (0.148" x 3") nails at 6" on-center from alternating sides, clinched when possible. Use 4'-0" length with 9½" and 11⅞" TJI® joists, and attach to joist web with two rows 10d (0.148" x 3") nails at 6" on-center from alternating sides, clinched when possible. **Not for use with TJI® 560 joists.**

TJI® joists are intended for dry-use applications

Details E2–E9 are not for use with joist depths > 16". See pages 22–23 for cantilevers using deeper joists.

For more information on details E1–E9, refer to our cover sheets and AutoCAD details online at weyerhaeuser.com/woodproducts/software-learning.

Apply subfloor adhesive to all contact surfaces



Directly applied ceiling



When specified on the layout, one of the above bracing options is required

Cantilever Reinforcement

| Depth | TJI® | Roof Truss Span | Section A: Cantilevers less than 5" (Brick Ledge) | | | | | | | | | Section B: Cantilevers 5" to 24" | | | | | | | | |
|---------------------------|-------|-----------------|---|-------|-----|--------|-------|-----|--------|-------|-----|----------------------------------|-------|-----|--------|-------|-----|--------|----|---|
| | | | Roof Total Load | | | | | | | | | Roof Total Load | | | | | | | | |
| | | | 35 PSF | | | 45 PSF | | | 55 PSF | | | 35 PSF | | | 45 PSF | | | 55 PSF | | |
| | | | On-Center Joist Spacing | | | | | | | | | On-Center Joist Spacing | | | | | | | | |
| 16" | 19.2" | 24" | 16" | 19.2" | 24" | 16" | 19.2" | 24" | 16" | 19.2" | 24" | 16" | 19.2" | 24" | 16" | 19.2" | 24" | | | |
| 9½" 11⅞" 14" 16" | 110 | 20' | | | | | | E5 | | | E5 | | | | E2 | | | X | | |
| | | 22' | | | E5 | | | E5 | | E5 | E5 | | | | E3 | | E2 | X | | |
| | | 24' | | | E5 | | E5 | E5 | | E5 | E5 | | | E2 | | E2 | X | E2 | E3 | X |
| | | 26' | | | E5 | | E5 | E5 | E5 | E5 | E5 | | | E2 | | E3 | X | E3 | X | X |
| | | 28' | | | E5 | | E5 | E5 | E5 | E5 | E6 | | E2 | E3 | E2 | X | X | X | X | X |
| | | 30' | | E5 | X | E5 | E5 | X | E5 | E5 | X | | E2 | X | E3 | X | X | X | X | X |
| 32' | | X | X | E5 | X | X | E5 | X | X | E2 | E3 | X | X | X | X | X | X | X | | |
| 9½" 11⅞" 14" 16" | 210 | 20' | | | | | | E5 | | | E5 | | | | | | | | E2 | |
| | | 22' | | | | | | E5 | | | E5 | | | | | E2 | | E2 | E3 | |
| | | 24' | | | E5 | | | E5 | | E5 | E5 | | | | | E3 | | E2 | X | |
| | | 26' | | | E5 | | | E5 | | E5 | E5 | | | E2 | | E2 | E3 | E2 | E3 | X |
| | | 28' | | | E5 | | E5 | E5 | | E5 | E5 | | | E2 | | E3 | X | E3 | X | X |
| | | 30' | | | E5 | | E5 | E5 | E5 | E5 | E6 | | | E3 | E2 | E3 | X | X | X | X |
| 32' | | E5 | X | | E5 | X | E5 | E5 | X | | E2 | X | E3 | X | X | X | X | X | | |
| 9½" 11⅞" 14" 16" | 230 | 24' | | | E5 | | | E5 | | E5 | E5 | | | | | E2 | | E2 | X | |
| | | 26' | | | E5 | | | E5 | | E5 | E5 | | | | | E3 | E2 | E3 | X | |
| | | 28' | | | E5 | | E5 | E5 | | E5 | E5 | | | E2 | | E2 | X | E2 | X | X |
| | | 30' | | | E5 | | E5 | E5 | E5 | E5 | E5 | | | E2 | E2 | E3 | X | E3 | X | X |
| | | 32' | | E5 | E5 | | E5 | E5 | E5 | E5 | E6 | | E2 | E3 | E2 | X | X | X | X | X |
| | | 34' | | E5 | X | E5 | E5 | X | E5 | E5 | X | | E2 | X | E3 | X | X | X | X | X |
| 11⅞" 14" 16" | 360 | 28' | | | E5 | | | E5 | | E5 | E5 | | | | | | | | | |
| | | 30' | | | E5 | | | E5 | | E5 | E5 | | | | | | | | E2 | |
| | | 32' | | | E5 | | E5 | E5 | | E5 | E5 | | | | | | | | E2 | |
| | | 34' | | | E5 | | E5 | E5 | E5 | E5 | E6 | | | | | | | | E3 | |
| | | 36' | | | E5 | | E5 | E5 | E5 | E5 | E6 | | | | | E2 | | E2 | X | |
| | | 38' | | E5 | E5 | | E5 | E5 | E5 | E5 | E6 | | | | | E3 | | E3 | X | |
| 40' | | E5 | E5 | E5 | E5 | E5 | E5 | E5 | E6 | | | | E2 | E3 | E2 | E3 | X | | | |
| 11⅞" 14" 16" | 560 | 30' | | | | | | E5 | | | E5 | | | | | | | | | |
| | | 32' | | | | | | E5 | | E5 | E5 | | | | | | | | | |
| | | 34' | | | E5 | | | E5 | | E5 | E5 | | | | | | | | | |
| | | 36' | | | E5 | | | E5 | | E5 | E6 | | | | | | | | E2 | |
| | | 38' | | | E5 | | E5 | E5 | | E5 | E6 | | | | | | | | E2 | |
| | | 40' | | | E5 | | E5 | E5 | E5 | E5 | F6 | | | | | | | | F2 | |

How to Use This Table

1. Identify TJI® joist and depth.
2. Locate the **Roof Truss Span** (horizontal) that meets or exceeds your condition.
3. Identify the cantilever condition (less than 5" or 5" to 24") and locate the **Roof Total Load** and **On-Center Joist Spacing** for your application.
4. Scan down to find the appropriate cantilever detail and refer to drawing on page 11:
 - Blank cells indicate that no reinforcement is required.
 - E4 may be used in place of E2 or E3 except when using TJI® 560 joists.
 - X indicates that cantilever will not work. Use ForteWEB® and Javelin® software, or reduce spacing of joists and recheck table.

General Notes

- Table is based on:
 - 15 psf roof dead load on a horizontal projection.
 - 80 plf exterior wall load with 3'-0" maximum width window or door openings. For larger openings, or multiple 3'-0" width openings spaced less than 6'-0" on-center, additional joists beneath the opening's trimmers may be required.
 - Floor load of 40 psf live load and 10 psf dead load.
 - More restrictive of simple or continuous span.
 - Roof truss with 24" soffits.
- ¾" reinforcement refers to ¾" Exposure 1 plywood or other ¾" Exposure 1, 48/24-rated sheathing that is cut to match the full depth of the TJI® joist. Install with face grain horizontal. Reinforcing member must bear fully on the wall plate.
- Designed for 2x4 and 2x6 plate widths.
- For conditions beyond the scope of this table, including cantilevers longer than 24", use our ForteWEB® and Javelin® software.

See page 11 for cantilever details

ROOF SPAN TABLE

9½" -16" JOISTS

Maximum Horizontal Clear Spans—Roof

| O.C. Spacing | Depth | TJI® | Design Roof Load (PSF) | | | | | | | | | | | |
|-----------------|-------|------|----------------------------------|---------|---------|---------|---------|---------|-------------------------|---------|---------|---------|---------|---------|
| | | | Non-Snow 125% (Roof Live + Dead) | | | | | | Snow 115% (Snow + Dead) | | | | | |
| | | | 20 + 15 | | 20 + 20 | | 25 + 15 | | 30 + 15 | | 40 + 15 | | 50 + 15 | |
| | | | Low | High | Low | High | Low | High | Low | High | Low | High | Low | High |
| 16" | 9½" | 110 | 20'-0" | 17'-10" | 19'-1" | 16'-11" | 19'-2" | 17'-2" | 18'-5" | 16'-7" | 17'-2" | 15'-7" | 15'-11" | 14'-9" |
| | | 210 | 21'-2" | 18'-10" | 20'-2" | 17'-10" | 20'-3" | 18'-2" | 19'-6" | 17'-6" | 18'-2" | 16'-6" | 17'-2" | 15'-7" |
| | | 230 | 21'-11" | 19'-6" | 20'-10" | 18'-6" | 20'-11" | 18'-9" | 20'-2" | 18'-1" | 18'-10" | 17'-0" | 17'-9" | 16'-2" |
| | 11⅞" | 110 | 23'-11" | 21'-4" | 22'-9" | 20'-2" | 22'-8" | 20'-6" | 21'-5" | 19'-10" | 19'-5" | 18'-7" | 17'-11" | 17'-4" |
| | | 210 | 25'-3" | 22'-6" | 24'-1" | 21'-4" | 24'-2" | 21'-8" | 23'-3" | 20'-11" | 21'-4" | 19'-8" | 19'-8" | 18'-8" |
| | | 230 | 26'-1" | 23'-3" | 24'-10" | 22'-0" | 24'-11" | 22'-4" | 24'-0" | 21'-7" | 22'-5" | 20'-4" | 20'-9" | 19'-3" |
| | | 360 | 27'-9" | 24'-9" | 26'-5" | 23'-5" | 26'-7" | 23'-10" | 25'-6" | 23'-0" | 23'-11" | 21'-7" | 22'-7" | 20'-6" |
| | | 560 | 31'-11" | 28'-6" | 30'-5" | 27'-0" | 30'-7" | 27'-5" | 29'-5" | 26'-5" | 27'-6" | 24'-10" | 26'-0" | 23'-7" |
| | 14" | 110 | 27'-2" | 24'-3" | 25'-7" | 23'-0" | 24'-9" | 23'-4" | 23'-4" | 22'-4" | 21'-2" | 20'-5" | 19'-6" | 18'-11" |
| | | 210 | 28'-9" | 25'-7" | 27'-4" | 24'-3" | 27'-1" | 24'-8" | 25'-7" | 23'-9" | 23'-3" | 22'-4" | 21'-5" | 20'-9" |
| | | 230 | 29'-8" | 26'-6" | 28'-3" | 25'-1" | 28'-5" | 25'-5" | 27'-0" | 24'-7" | 24'-6" | 23'-1" | 22'-7" | 21'-10" |
| | | 360 | 31'-6" | 28'-2" | 30'-0" | 26'-8" | 30'-2" | 27'-1" | 29'-0" | 26'-1" | 27'-2" | 24'-7" | 25'-8" | 23'-4" |
| | | 560 | 36'-3" | 32'-4" | 34'-6" | 30'-7" | 34'-8" | 31'-1" | 33'-4" | 30'-0" | 31'-2" | 28'-3" | 29'-6" | 26'-9" |
| | 16" | 110 | 29'-5" | 26'-11" | 27'-5" | 25'-6" | 26'-5" | 25'-2" | 25'-0" | 23'-10" | 22'-8" | 21'-10" | 20'-5" | 20'-3" |
| | | 210 | 31'-10" | 28'-5" | 30'-0" | 26'-11" | 29'-0" | 27'-4" | 27'-5" | 26'-2" | 24'-10" | 23'-11" | 22'-8" | 22'-2" |
| | | 230 | 32'-10" | 29'-4" | 31'-4" | 27'-9" | 30'-7" | 28'-2" | 28'-11" | 27'-3" | 26'-2" | 25'-3" | 24'-2" | 23'-5" |
| | | 360 | 34'-11" | 31'-2" | 33'-3" | 29'-6" | 33'-5" | 30'-0" | 32'-2" | 28'-11" | 30'-1" | 27'-2" | 26'-0" | 25'-10" |
| | | 560 | 40'-1" | 35'-9" | 38'-2" | 33'-11" | 38'-4" | 34'-5" | 36'-11" | 33'-2" | 34'-6" | 31'-3" | 31'-8" | 29'-8" |
| 19.2" | 9½" | 110 | 18'-9" | 16'-9" | 17'-11" | 15'-10" | 18'-0" | 16'-1" | 17'-3" | 15'-7" | 15'-9" | 14'-7" | 14'-6" | 13'-10" |
| | | 210 | 19'-10" | 17'-9" | 18'-11" | 16'-9" | 19'-0" | 17'-0" | 18'-3" | 16'-5" | 17'-1" | 15'-5" | 15'-11" | 14'-8" |
| | | 230 | 20'-7" | 18'-4" | 19'-7" | 17'-4" | 19'-8" | 17'-7" | 18'-11" | 17'-0" | 17'-8" | 16'-0" | 16'-8" | 15'-2" |
| | 11⅞" | 110 | 22'-5" | 20'-0" | 21'-5" | 19'-0" | 20'-9" | 19'-3" | 19'-7" | 18'-7" | 17'-9" | 17'-1" | 16'-4" | 15'-10" |
| | | 210 | 23'-9" | 21'-2" | 22'-7" | 20'-0" | 22'-8" | 20'-4" | 21'-5" | 19'-8" | 19'-6" | 18'-6" | 17'-11" | 17'-4" |
| | | 230 | 24'-6" | 21'-10" | 23'-4" | 20'-8" | 23'-5" | 21'-0" | 22'-6" | 20'-3" | 20'-6" | 19'-1" | 18'-11" | 18'-1" |
| | | 360 | 26'-1" | 23'-3" | 24'-10" | 22'-0" | 24'-11" | 22'-4" | 24'-0" | 21'-7" | 22'-5" | 20'-3" | 21'-2" | 19'-3" |
| | | 560 | 30'-0" | 26'-9" | 28'-7" | 25'-4" | 28'-8" | 25'-9" | 27'-7" | 24'-10" | 25'-9" | 23'-4" | 24'-4" | 22'-2" |
| | 14" | 110 | 25'-1" | 22'-10" | 23'-4" | 21'-7" | 22'-7" | 21'-5" | 21'-4" | 20'-4" | 19'-4" | 18'-7" | 17'-0" | 17'-3" |
| | | 210 | 27'-0" | 24'-1" | 25'-7" | 22'-10" | 24'-9" | 23'-2" | 23'-4" | 22'-4" | 21'-2" | 20'-5" | 18'-10" | 18'-11" |
| | | 230 | 27'-10" | 24'-10" | 26'-6" | 23'-7" | 26'-1" | 23'-11" | 24'-7" | 23'-1" | 22'-4" | 21'-6" | 20'-7" | 19'-11" |
| | | 360 | 29'-7" | 26'-5" | 28'-2" | 25'-0" | 28'-4" | 25'-5" | 27'-3" | 24'-6" | 25'-6" | 23'-1" | 21'-7" | 21'-8" |
| | | 560 | 34'-0" | 30'-4" | 32'-5" | 28'-9" | 32'-7" | 29'-2" | 31'-4" | 28'-2" | 29'-3" | 26'-6" | 26'-5" | 25'-2" |
| | 16" | 110 | 26'-10" | 25'-4" | 25'-0" | 23'-5" | 24'-2" | 22'-11" | 22'-10" | 21'-9" | 20'-1" | 19'-11" | 17'-0" | 18'-3" |
| | | 210 | 29'-5" | 26'-8" | 27'-5" | 25'-4" | 26'-5" | 25'-2" | 25'-0" | 23'-11" | 22'-3" | 21'-10" | 18'-10" | 20'-2" |
| | | 230 | 30'-11" | 27'-7" | 28'-11" | 26'-1" | 27'-11" | 26'-6" | 26'-4" | 25'-2" | 23'-11" | 23'-0" | 21'-2" | 21'-3" |
| | | 360 | 32'-10" | 29'-3" | 31'-3" | 27'-9" | 31'-5" | 28'-2" | 30'-2" | 27'-2" | 25'-7" | 25'-3" | 21'-7" | 21'-8" |
| | | 560 | 37'-8" | 33'-7" | 35'-10" | 31'-10" | 36'-0" | 32'-4" | 34'-8" | 31'-2" | 31'-3" | 29'-4" | 26'-5" | 25'-5" |
| 24" | 9½" | 110 | 17'-5" | 15'-6" | 16'-7" | 14'-8" | 16'-5" | 14'-11" | 15'-6" | 14'-5" | 14'-1" | 13'-6" | 13'-0" | 12'-7" |
| | | 210 | 18'-5" | 16'-5" | 17'-6" | 15'-6" | 17'-7" | 15'-9" | 16'-11" | 15'-3" | 15'-5" | 14'-4" | 14'-3" | 13'-7" |
| | | 230 | 19'-0" | 17'-0" | 18'-1" | 16'-1" | 18'-2" | 16'-4" | 17'-6" | 15'-9" | 16'-3" | 14'-10" | 15'-0" | 14'-0" |
| | 11⅞" | 110 | 20'-7" | 18'-7" | 19'-2" | 17'-7" | 18'-6" | 17'-7" | 17'-6" | 16'-8" | 15'-10" | 15'-3" | 13'-7" | 14'-2" |
| | | 210 | 21'-11" | 19'-7" | 20'-11" | 18'-7" | 20'-4" | 18'-10" | 19'-2" | 18'-2" | 17'-5" | 16'-9" | 15'-0" | 15'-6" |
| | | 230 | 22'-8" | 20'-3" | 21'-7" | 19'-2" | 21'-5" | 19'-5" | 20'-3" | 18'-9" | 18'-4" | 17'-8" | 16'-11" | 16'-4" |
| | | 360 | 24'-1" | 21'-6" | 23'-0" | 20'-5" | 23'-1" | 20'-8" | 22'-2" | 20'-0" | 20'-5" | 18'-9" | 17'-3" | 17'-4" |
| | | 560 | 27'-9" | 24'-9" | 26'-5" | 23'-6" | 26'-7" | 23'-10" | 25'-6" | 23'-0" | 23'-10" | 21'-7" | 21'-1" | 20'-3" |
| | 14" | 110 | 22'-5" | 21'-1" | 20'-10" | 19'-6" | 20'-2" | 19'-2" | 19'-0" | 18'-2" | 16'-0" | 16'-7" | 13'-7" | 14'-7" |
| | | 210 | 24'-7" | 22'-4" | 22'-11" | 21'-1" | 22'-1" | 21'-0" | 20'-10" | 19'-11" | 17'-10" | 18'-3" | 15'-0" | 16'-1" |
| | | 230 | 25'-9" | 23'-0" | 24'-1" | 21'-10" | 23'-4" | 22'-2" | 22'-0" | 21'-0" | 20'-0" | 19'-3" | 16'-11" | 17'-0" |
| | | 360 | 27'-5" | 24'-6" | 26'-1" | 23'-2" | 26'-3" | 23'-6" | 25'-0" | 22'-8" | 20'-5" | 20'-2" | 17'-3" | 17'-4" |
| | | 560 | 31'-6" | 28'-1" | 30'-0" | 26'-8" | 30'-2" | 27'-0" | 29'-0" | 26'-1" | 24'-11" | 23'-7" | 21'-1" | 20'-3" |
| | 16" | 110 | 24'-0" | 22'-8" | 22'-4" | 20'-11" | 21'-7" | 20'-6" | 19'-8" | 19'-6" | 16'-0" | 16'-11" | 13'-7" | 14'-7" |
| | | 210 | 26'-3" | 24'-9" | 24'-6" | 22'-11" | 23'-8" | 22'-6" | 21'-9" | 21'-4" | 17'-10" | 18'-9" | 15'-0" | 16'-1" |
| | | 230 | 27'-9" | 25'-6" | 25'-10" | 24'-2" | 24'-11" | 23'-8" | 23'-7" | 22'-6" | 20'-0" | 19'-9" | 16'-11" | 17'-0" |
| | | 360 | 30'-4" | 27'-1" | 28'-11" | 25'-8" | 28'-2" | 26'-1" | 25'-0" | 24'-1" | 20'-5" | 20'-2" | 17'-3" | 17'-4" |

How to Use This Table

- Determine appropriate roof loads and load duration factor.
- If your slope is 6:12 or less, use the **Low** slope column. If it is between 6:12 and 12:12, use the **High** column.
- Scan down the column until you find a span that meets or exceeds the span of your application.
- Select TJI® joist and on-center spacing.

General Notes

- Table is based on:
 - Minimum roof slope of ¼:12.
 - Uniform loads.
 - More restrictive of simple or continuous span.
 - Deflection criteria of L/180 total load and L/240 live load.
 - Minimum bearing length of 1¼" end and 3½" intermediate, without web stiffeners.
- For continuous spans, ratio of short span to long span should be 0.4 or greater to prevent uplift.
- For 2024 IBC, snow loads are adjusted to 0.7S per ASD load combinations in ASCE 7.
- A support beam or wall at the high end is required. Ridge board applications do not provide adequate support.
- For flat roofs or other loading conditions not shown, refer to Weyerhaeuser software.

ROOF LOAD TABLE

Roof—Snow 115% and Non-Snow 125% (PLF)

| Depth | TJI® | Total Load | | Defl. | Total Load | | Defl. | Total Load | | Defl. | Total Load | | Defl. | Total Load | | Defl. | Total Load | | Defl. |
|-------|------|----------------------------------|---------------|-----------------|------------|---------------|-----------------|------------|---------------|-----------------|------------|---------------|-----------------|------------|---------------|-----------------|------------|---------------|-----------------|
| | | Snow 115% | Non-Snow 125% | Live Load L/240 | Snow 115% | Non-Snow 125% | Live Load L/240 | Snow 115% | Non-Snow 125% | Live Load L/240 | Snow 115% | Non-Snow 125% | Live Load L/240 | Snow 115% | Non-Snow 125% | Live Load L/240 | Snow 115% | Non-Snow 125% | Live Load L/240 |
| | | Roof Joist Horizontal Clear Span | | | | | | | | | | | | | | | | | |
| | | 6' | | | 8' | | | 10' | | | 12' | | | 14' | | | 16' | | |
| 9½" | 110 | 289 | 314 | * | 218 | 237 | * | 175 | 190 | * | 146 | 159 | * | 114 | 124 | 112 | 88 | 95 | 77 |
| | 210 | 321 | 349 | * | 242 | 263 | * | 194 | 211 | * | 162 | 176 | * | 137 | 149 | 130 | 105 | 115 | 90 |
| | 230 | 360 | 392 | * | 272 | 295 | * | 218 | 237 | * | 182 | 198 | * | 153 | 166 | 143 | 117 | 127 | 99 |
| 11⅞" | 110 | 289 | 314 | * | 218 | 237 | * | 175 | 190 | * | 146 | 159 | * | 125 | 136 | * | 110 | 119 | * |
| | 210 | 321 | 349 | * | 242 | 263 | * | 194 | 211 | * | 162 | 176 | * | 139 | 151 | * | 122 | 132 | * |
| | 230 | 360 | 392 | * | 272 | 295 | * | 218 | 237 | * | 182 | 198 | * | 156 | 170 | * | 137 | 149 | * |
| | 360 | 368 | 400 | * | 277 | 301 | * | 223 | 242 | * | 186 | 202 | * | 159 | 173 | * | 140 | 152 | * |
| | 560 | 449 | 488 | * | 338 | 368 | * | 272 | 295 | * | 227 | 246 | * | 195 | 212 | * | 170 | 185 | * |
| 14" | 110 | 289 | 314 | * | 218 | 237 | * | 175 | 190 | * | 146 | 159 | * | 125 | 136 | * | 110 | 119 | * |
| | 210 | 321 | 349 | * | 242 | 263 | * | 194 | 211 | * | 162 | 176 | * | 139 | 151 | * | 122 | 132 | * |
| | 230 | 360 | 392 | * | 272 | 295 | * | 218 | 237 | * | 182 | 198 | * | 156 | 170 | * | 137 | 149 | * |
| | 360 | 368 | 400 | * | 277 | 301 | * | 223 | 242 | * | 186 | 202 | * | 159 | 173 | * | 140 | 152 | * |
| | 560 | 449 | 488 | * | 338 | 368 | * | 272 | 295 | * | 227 | 246 | * | 195 | 212 | * | 170 | 185 | * |
| 16" | 110 | 289 | 314 | * | 218 | 237 | * | 175 | 190 | * | 146 | 159 | * | 125 | 136 | * | 110 | 119 | * |
| | 210 | 321 | 349 | * | 242 | 263 | * | 194 | 211 | * | 162 | 176 | * | 139 | 151 | * | 122 | 132 | * |
| | 230 | 360 | 392 | * | 272 | 295 | * | 218 | 237 | * | 182 | 198 | * | 156 | 170 | * | 137 | 149 | * |
| | 360 | 368 | 400 | * | 277 | 301 | * | 223 | 242 | * | 186 | 202 | * | 159 | 173 | * | 140 | 152 | * |
| | 560 | 449 | 488 | * | 338 | 368 | * | 272 | 295 | * | 227 | 246 | * | 195 | 212 | * | 170 | 185 | * |
| | | 18' | | | 20' | | | 22' | | | 24' | | | 26' | | | 28' | | |
| 9½" | 110 | | | | | | | | | | | | | | | | | | |
| | 210 | 83 | 86 | 64 | | | | | | | | | | | | | | | |
| | 230 | 93 | 94 | 71 | | | | | | | | | | | | | | | |
| 11⅞" | 110 | 88 | 95 | 91 | | 77 | 68 | | | | | | | | | | | | |
| | 210 | 106 | 115 | 106 | 86 | 93 | 79 | | 77 | 60 | | | | | | | | | |
| | 230 | 117 | 128 | 116 | 95 | 103 | 86 | 79 | 85 | 66 | | | | | | | | | |
| | 360 | 124 | 135 | * | 112 | 122 | 103 | 102 | 105 | 78 | 82 | 82 | 61 | | | | | | |
| | 560 | 152 | 165 | * | 137 | 148 | * | 124 | 135 | 117 | 114 | 122 | 91 | 97 | 97 | 73 | 79 | 79 | 59 |
| 14" | 110 | 98 | 106 | * | 84 | 92 | * | | 76 | 75 | | | | | | | | | |
| | 210 | 108 | 118 | * | 97 | 106 | * | 84 | 91 | 87 | | 77 | 68 | | | | | | |
| | 230 | 122 | 132 | * | 110 | 119 | * | 93 | 101 | 95 | 78 | 85 | 74 | | | | | | |
| | 360 | 124 | 135 | * | 112 | 122 | * | 102 | 111 | * | 93 | 101 | 88 | 86 | 94 | 70 | 76 | 76 | 57 |
| | 560 | 152 | 165 | * | 137 | 148 | * | 124 | 135 | * | 114 | 124 | * | 105 | 114 | 104 | 98 | 106 | 85 |
| 16" | 110 | 98 | 106 | * | 88 | 96 | * | 80 | 87 | * | | | | | | | | | |
| | 210 | 108 | 118 | * | 97 | 106 | * | 89 | 96 | * | 81 | 88 | * | | 75 | 73 | | | |
| | 230 | 122 | 132 | * | 110 | 119 | * | 100 | 108 | * | 90 | 97 | * | 76 | 83 | 79 | | | |
| | 360 | 124 | 135 | * | 112 | 122 | * | 102 | 111 | * | 93 | 101 | * | 86 | 94 | * | 80 | 87 | 76 |
| | 560 | 152 | 165 | * | 137 | 148 | * | 124 | 135 | * | 114 | 124 | * | 105 | 114 | * | 98 | 106 | * |

* Indicates **Total Load** value controls.

Slope Factors

| Slope | 2½:12 | 3:12 | 3½:12 | 4:12 | 4½:12 | 5:12 | 6:12 | 7:12 | 8:12 | 9:12 | 10:12 | 11:12 | 12:12 |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Factor | 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 |

How to Use These Tables

- Calculate actual total load in pounds per linear foot (plf).
- Select appropriate **Roof Joist Horizontal Clear Span**. For slopes greater than 2:12, approximate the increased dead load by multiplying the joist horizontal clear span by the **Slope Factor** above.
- Scan down the column to find a TJI® joist that meets or exceeds actual total load.

General Notes

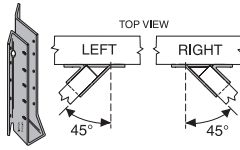
- Tables are based on:
 - Minimum roof slope of ¼:12.
 - Uniform loads.
 - More restrictive of simple or continuous span.
 - Deflection criteria of L/180 total load.
 - Minimum bearing length of 1¾" end and 3½" intermediate, without web stiffeners.
- For stiffer deflection criteria, use **Live Load L/240** values for total load deflection.
- For continuous spans, ratio of short span to long span should be 0.4 or greater to prevent uplift.



Single Joist,
Top Mount



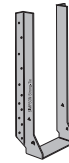
Single Joist,
Face Mount



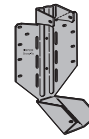
Face Mount Skewed 45°
Joist Hanger



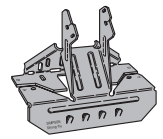
Double Joist,
Top Mount



Double Joist,
Face Mount



Variable Slope Seat
Joist Hanger



Variable Slope
Seat Connector

| Joist Depth | TJI® | Single Joist—Top Mount | | | | Single Joist—Face Mount | | | | Face Mount Skewed 45° Joist Hanger ⁽¹⁾ | | | |
|----------------|------|------------------------------|-------------------|---------|-------|---------------------------------|-------------------|---------|-------|---|-------------------|---------|-----------|
| | | Hanger | Capacity (lbs) | Nailing | | Hanger | Capacity (lbs) | Nailing | | Hanger | Capacity (lbs) | Nailing | |
| | | | | Header | Joist | | | Header | Joist | | | Header | Joist |
| 9½" | 110 | ITS1.81/9.5 | 975 | 10d | N.A. | IUS1.81/9.5 | 950 | 10d | N.A. | <i>SUR/L1.81/9</i> | 1,220 | 16d | 10d x 1½" |
| | 210 | ITS2.06/9.5 | 1,070 | 10d | N.A. | IUS2.06/9.5 | 950 | 10d | N.A. | <i>SUR/L2.1/9</i> | 1,330 | 16d | 10d x 1½" |
| | 230 | ITS2.37/9.5 | 1,120 | 10d | N.A. | IUS2.37/9.5 | 950 | 10d | N.A. | <i>SUR/L2.37/9</i> | 1,330 | 16d | 10d x 1½" |
| 11⅝" | 110 | ITS1.81/11.88 | 975 | 10d | N.A. | IUS1.81/11.88 ⁽¹⁾ | 975 | 10d | N.A. | <i>SUR/L1.81/11</i> | 1,240 | 16d | 10d x 1½" |
| | 210 | ITS2.06/11.88 | 1,070 | 10d | N.A. | IUS2.06/11.88 ⁽¹⁾ | 1,070 | 10d | N.A. | <i>SUR/L2.1/11</i> | 1,380 | 16d | 10d x 1½" |
| | 230 | ITS2.37/11.88 | 1,120 | 10d | N.A. | IUS2.37/11.88 ⁽¹⁾ | 1,120 | 10d | N.A. | <i>SUR/L2.37/11</i> | 1,410 | 16d | 10d x 1½" |
| | 360 | ITS2.37/11.88 | 1,140 | 10d | N.A. | IUS2.37/11.88 ⁽¹⁾ | 1,140 | 10d | N.A. | <i>SUR/L2.37/11</i> | 1,430 | 16d | 10d x 1½" |
| | 560 | ITS3.56/11.88 ⁽⁶⁾ | 1,150 | 10d | N.A. | IUS3.56/11.88 ⁽¹⁾⁽⁶⁾ | 1,150 | 10d | N.A. | <i>SUR/L410</i> | 1,495 | 16d | 16d |
| 14" | 110 | ITS1.81/14 | 975 | 10d | N.A. | IUS1.81/14 ⁽¹⁾ | 975 | 10d | N.A. | <i>SUR/L1.81/14</i> | 1,240 | 16d | 10d x 1½" |
| | 210 | ITS2.06/14 | 1,070 | 10d | N.A. | IUS2.06/14 ⁽¹⁾ | 1,070 | 10d | N.A. | <i>SUR/L2.1/14</i> | 1,380 | 16d | 10d x 1½" |
| | 230 | ITS2.37/14 | 1,120 | 10d | N.A. | IUS2.37/14 ⁽¹⁾ | 1,120 | 10d | N.A. | <i>SUR/L2.37/14</i> | 1,410 | 16d | 10d x 1½" |
| | 360 | ITS2.37/14 | 1,140 | 10d | N.A. | IUS2.37/14 ⁽¹⁾ | 1,140 | 10d | N.A. | <i>SUR/L2.37/14</i> | 1,430 | 16d | 10d x 1½" |
| | 560 | ITS3.56/14 ⁽⁶⁾ | 1,150 | 10d | N.A. | IUS3.56/14 ⁽¹⁾⁽⁶⁾ | 1,150 | 10d | N.A. | <i>SUR/L414</i> | 1,495 | 16d | 16d |
| 16" | 110 | ITS1.81/16 | 975 | 10d | N.A. | IUS1.81/16 ⁽¹⁾ | 975 | 10d | N.A. | <i>SUR/L1.81/14</i> | 1,240 | 16d | 10d x 1½" |
| | 210 | ITS2.06/16 | 1,070 | 10d | N.A. | IUS2.06/16 ⁽¹⁾ | 1,070 | 10d | N.A. | <i>SUR/L2.1/14</i> | 1,380 | 16d | 10d x 1½" |
| | 230 | ITS2.37/16 | 1,120 | 10d | N.A. | IUS2.37/16 ⁽¹⁾ | 1,120 | 10d | N.A. | <i>SUR/L2.37/14</i> | 1,410 | 16d | 10d x 1½" |
| | 360 | ITS2.37/16 | 1,140 | 10d | N.A. | IUS2.37/16 ⁽¹⁾ | 1,140 | 10d | N.A. | <i>SUR/L2.37/14</i> | 1,430 | 16d | 10d x 1½" |
| | 560 | ITS3.56/16 ⁽⁶⁾ | 1,150 | 10d | N.A. | IUS3.56/16 ⁽¹⁾⁽⁶⁾ | 1,150 | 10d | N.A. | <i>SUR/L414</i> | 1,495 | 16d | 16d |

| Joist Depth | TJI® | Double Joist—Top Mount | | | | Double Joist—Face Mount | | | |
|----------------|------|-----------------------------|-------------------|---------|-----------|--|-------------------|---------|-----------|
| | | Hanger | Capacity (lbs) | Nailing | | Hanger | Capacity (lbs) | Nailing | |
| | | | | Header | Joist | | | Header | Joist |
| 9½" | 110 | <i>MIT49.5</i> | 2,115 | 16d | 10d x 1½" | <i>MIU3.56/9⁽¹⁾</i> | 2,215 | 16d | 10d x 1½" |
| | 210 | <i>MIT4.28/9.5</i> | 2,115 | 16d | 10d x 1½" | <i>MIU4.28/9</i> | 2,305 | 16d | 10d x 1½" |
| | 230 | <i>MIT359.5-2</i> | 2,115 | 16d | 10d x 1½" | <i>MIU4.75/9</i> | 2,305 | 16d | 10d x 1½" |
| 11⅝" | 110 | <i>MIT411.88</i> | 2,115 | 16d | 10d x 1½" | <i>MIU3.56/11⁽¹⁾</i> | 2,215 | 16d | 10d x 1½" |
| | 210 | <i>MIT4.28/11.88</i> | 2,115 | 16d | 10d x 1½" | <i>MIU4.28/11⁽¹⁾</i> | 2,395 | 16d | 10d x 1½" |
| | 230 | <i>MIT3511.88-2</i> | 2,115 | 16d | 10d x 1½" | <i>MIU4.75/11⁽¹⁾</i> | 2,490 | 16d | 10d x 1½" |
| | 360 | <i>MIT3511.88-2</i> | 2,115 | 16d | 10d x 1½" | <i>MIU4.75/11</i> | 2,525 | 16d | 10d x 1½" |
| | 560 | <i>HB7.12/11.88</i> | 3,450 | 16d | 16d | <i>HU412-2</i> | 2,380 | 16d | 16d |
| 14" | 110 | <i>MIT414</i> | 2,115 | 16d | 10d x 1½" | <i>MIU3.56/14⁽¹⁾</i> | 2,215 | 16d | 10d x 1½" |
| | 210 | <i>MIT4.28/14</i> | 2,115 | 16d | 10d x 1½" | <i>MIU4.28/14⁽¹⁾</i> | 2,395 | 16d | 10d x 1½" |
| | 230 | <i>MIT3514-2</i> | 2,115 | 16d | 10d x 1½" | <i>MIU4.75/14⁽¹⁾</i> | 2,490 | 16d | 10d x 1½" |
| | 360 | <i>MIT3514-2</i> | 2,115 | 16d | 10d x 1½" | <i>MIU4.75/14⁽¹⁾</i> | 2,525 | 16dhh | 10d x 1½" |
| | 560 | <i>HB7.12/14</i> | 3,450 | 16d | 16d | <i>HU414-2</i> | 2,925 | 16d | 16d |
| 16" | 110 | <i>MIT416</i> | 2,115 | 16d | 10d x 1½" | <i>MIU3.56/16⁽¹⁾</i> | 2,215 | 16d | 10d x 1½" |
| | 210 | <i>BA4.28/16</i> | 2,655 | 16d | 10d x 1½" | <i>MIU4.28/16⁽¹⁾</i> | 2,395 | 16d | 10d x 1½" |
| | 230 | <i>MIT4.75/16</i> | 2,115 | 16d | 10d x 1½" | <i>MIU4.75/16⁽¹⁾</i> | 2,490 | 16d | 10d x 1½" |
| | 360 | <i>MIT4.75/16</i> | 2,115 | 16d | 10d x 1½" | <i>MIU4.75/16⁽¹⁾</i> | 2,525 | 16d | 10d x 1½" |
| | 560 | <i>HB7.12/16</i> | 3,450 | 16d | 16d | <i>HU414-2</i> | 2,925 | 16d | 16d |

| Joist TJI® | Variable Slope Seat Joist Hanger ⁽³⁾ | | | | |
|---------------|---|-------------------------------|-------------------------|---------|-----------|
| | Hanger | Capacity (lbs) | | Nailing | |
| | | Sloped ⁽¹⁾ Only | Sloped and Skewed | Header | Joist |
| 110 | <i>LSSR1.81Z</i> | 945 | 945 | 10d | 10d x 1½" |
| 210 | <i>LSSR2.1Z</i> | 1,035 | 1,035 | 10d | 10d x 1½" |
| 230 | <i>LSSR2.37Z</i> | 1,090 | 1,060 | 10d | 10d x 1½" |
| 360 | <i>LSSR2.37Z</i> | 1,110 | 1,060 | 10d | 10d x 1½" |
| 560 | <i>LSSR410Z</i> | 1,300 | 1,300 | 16d | 16d |

| Joist TJI® | Variable Slope Seat Connector ⁽²⁾ | | | |
|---------------|--|-------------------|---------|-----------|
| | Hanger | Capacity (lbs) | Nailing | |
| | | | Header | Joist |
| 110 | VPA25 | 975 | 10d | 10d x 1½" |
| 210 | VPA2.1 | 1,070 | 10d | 10d x 1½" |
| 230 | VPA35 | 1,120 | 10d | 10d x 1½" |
| 360 | VPA35 | 1,140 | 10d | 10d x 1½" |
| 560 | VPA4 | 1,245 | 10d | 10d x 1½" |

General Notes

Bold italic hangers require web stiffeners.

Capacities will vary with different nailing criteria or other support conditions; contact your Weyerhaeuser representative for assistance.

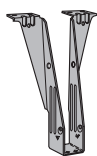
- Hanger capacities shown are either joist bearing capacity or hanger capacity—whichever is less. Joist end reaction must be checked to ensure it does not exceed the capacity shown in the tables.
- All capacities are for downward loads at 100% duration of load.
- Fill all round, dimple, and positive-angle nail holes.
- Use sloped seat hangers and beveled web stiffeners when TJI® joist slope exceeds ¼:12.
- Leave ⅛" clearance (⅛" maximum) between the end of the supported joist and the header or hanger.
- Nails: 16d = 0.162" x 3½", 10d = 0.148" x 3", and 10d x 1½" = 0.148" x 1½".

Support Requirements

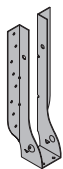
- Support material assumed to be Trus Joist® engineered lumber or sawn lumber (Douglas fir or southern pine species).
- Minimum support width for single- and double-joist top mount hangers is 3" (1½" for ITS hangers).
- Minimum support width for face mount hangers with 10d and 16d nails (clinched) is 1½" and 1¾", respectively.

See table footnotes on page 16

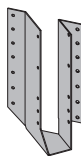
FRAMING CONNECTORS (USP STRUCTURAL CONNECTORS)



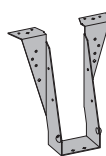
Single Joist,
Top Mount



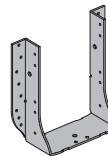
Single Joist,
Face Mount



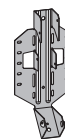
Face Mount Skewed 45°
Joist Hanger



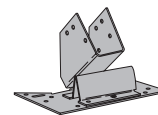
Double Joist,
Top Mount



Double Joist,
Face Mount



Variable Slope Seat
Joist Hanger



Variable Slope
Seat Connector

| Joist Depth | TJI® | Single Joist—Top Mount | | | | Single Joist—Face Mount | | | | Face Mount Skewed 45° Joist Hanger ⁽¹⁾ | | | |
|----------------|------|------------------------|-------------------|---------|-----------|--------------------------|-------------------|---------|-------|---|-------------------|---------|-----------|
| | | Hanger | Capacity (lbs) | Nailing | | Hanger | Capacity (lbs) | Nailing | | Hanger | Capacity (lbs) | Nailing | |
| | | | | Header | Joist | | | Header | Joist | | | Header | Joist |
| 9½" | 110 | TH017950 | 975 | 10d | 10d x 1½" | IHFL17925 | 960 | 10d | N.A. | SKH1720L/R | 945 | 10d | 10d x 1½" |
| | 210 | TFL2095 | 1,070 | 10d | 10d x 1½" | IHFL20925 | 960 | 10d | N.A. | SKH2020L/R | 1,035 | 10d | 10d x 1½" |
| | 230 | TFL2395 | 1,120 | 10d | 10d x 1½" | IHFL23925 | 960 | 10d | N.A. | SKH2320L/R | 1,090 | 10d | 10d x 1½" |
| 11½" | 110 | TH017118 | 975 | 10d | 10d x 1½" | IHFL17112 ⁽¹⁾ | 1,105 | 10d | N.A. | SKH1720L/R | 945 | 10d | 10d x 1½" |
| | 210 | TFL20118 | 1,070 | 10d | 10d x 1½" | IHFL20112 | 1,200 | 10d | N.A. | SKH2020L/R | 1,035 | 10d | 10d x 1½" |
| | 230 | TFL23118 | 1,120 | 10d | 10d x 1½" | IHFL23112 | 1,200 | 10d | N.A. | SKH2320L/R | 1,090 | 10d | 10d x 1½" |
| | 360 | TFL23118 | 1,140 | 10d | 10d x 1½" | IHFL23112 | 1,200 | 10d | N.A. | SKH2320L/R | 1,110 | 10d | 10d x 1½" |
| | 560 | TH035118 | 1,430 | 10d | 10d x 1½" | IHFL35112 | 1,200 | 10d | N.A. | SKH410L/R ⁽⁴⁾ | 1,460 | 16d | 16d |
| 14" | 110 | TFL1714 | 975 | 10d | 10d x 1½" | IHFL1714 ⁽¹⁾ | 1,105 | 10d | N.A. | SKH1720L/R | 945 | 10d | 10d x 1½" |
| | 210 | TFL2014 | 1,070 | 10d | 10d x 1½" | IHFL2014 ⁽¹⁾ | 1,200 | 10d | N.A. | SKH2020L/R | 1,035 | 10d | 10d x 1½" |
| | 230 | TFL2314 | 1,120 | 10d | 10d x 1½" | IHFL2314 ⁽¹⁾ | 1,245 | 10d | N.A. | SKH2324L/R | 1,090 | 10d | 10d x 1½" |
| | 360 | TFL2314 | 1,140 | 10d | 10d x 1½" | IHFL2314 ⁽¹⁾ | 1,265 | 10d | N.A. | SKH2324L/R | 1,110 | 10d | 10d x 1½" |
| | 560 | TH035140 | 1,430 | 10d | 10d x 1½" | IHFL3514 | 1,440 | 10d | N.A. | SKH414L/R ⁽⁴⁾ | 1,460 | 16d | 16d |
| 16" | 110 | TFL1716 | 975 | 10d | 10d x 1½" | IHFL1716 ⁽¹⁾ | 1,105 | 10d | N.A. | SKH1724L/R | 945 | 10d | 10d x 1½" |
| | 210 | TFL2016 | 1,070 | 10d | 10d x 1½" | IHFL2016 ⁽¹⁾ | 1,200 | 10d | N.A. | SKH2024L/R | 1,035 | 10d | 10d x 1½" |
| | 230 | TFL2316 | 1,120 | 10d | 10d x 1½" | IHFL2316 ⁽¹⁾ | 1,245 | 10d | N.A. | SKH2324L/R | 1,090 | 10d | 10d x 1½" |
| | 360 | TFL2316 | 1,140 | 10d | 10d x 1½" | IHFL2316 ⁽¹⁾ | 1,265 | 10d | N.A. | SKH2324L/R | 1,110 | 10d | 10d x 1½" |
| | 560 | TH035160 | 1,430 | 10d | 10d x 1½" | IHFL3516 ⁽¹⁾ | 1,460 | 10d | N.A. | SKH414L/R ⁽⁴⁾ | 1,460 | 16d | 16d |

| Joist Depth | TJI® | Double Joist—Top Mount | | | | Double Joist—Face Mount | | | |
|----------------|------|------------------------|-------------------|---------|-----------|-------------------------|-------------------|---------|-----------|
| | | Hanger | Capacity (lbs) | Nailing | | Hanger | Capacity (lbs) | Nailing | |
| | | | | Header | Joist | | | Header | Joist |
| 9½" | 110 | TH035950 | 2,150 | 10d | 10d x 1½" | IHF35925 | 1,250 | 10d | 10d x 1½" |
| | 210 | TH020950-2 | 2,655 | 16d | 10d | IHF20925-2 | 1,250 | 10d | 10d x 1½" |
| | 230 | TH023950-2 | 2,660 | 16d | 10d | IHF23925-2 | 1,250 | 10d | 10d x 1½" |
| 11½" | 110 | TH035118 | 2,150 | 10d | 10d x 1½" | IHF35112 | 1,250 | 10d | 10d x 1½" |
| | 210 | TH020118-2 | 2,655 | 16d | 10d | IHF20112-2 | 1,250 | 10d | 10d x 1½" |
| | 230 | TH023118-2 | 2,730 | 16d | 10d | THF23118-2 | 1,890 | 10d | 10d |
| | 360 | TH023118-2 | 2,770 | 16d | 10d | THF23118-2 | 1,890 | 10d | 10d |
| | 560 | BPH71118 | 3,075 | 16d | 10d | HD7120 | 2,465 | 16d | 16d |
| 14" | 110 | TH035140 | 2,150 | 10d | 10d x 1½" | IHF3514 | 1,500 | 10d | 10d x 1½" |
| | 210 | TH020140-2 | 2,655 | 16d | 10d | IHF2014-2 | 1,500 | 10d | 10d x 1½" |
| | 230 | TH023140-2 | 2,730 | 16d | 10d | THF23140-2 | 2,490 | 10d | 10d |
| | 360 | TH023140-2 | 2,770 | 16d | 10d | THF23140-2 | 2,525 | 10d | 10d |
| | 560 | BPH7114 | 3,075 | 16d | 10d | HD7140 | 2,925 | 16d | 16d |
| 16" | 110 | TH035160 | 2,150 | 10d | 10d x 1½" | IHF3516 | 1,750 | 10d | 10d x 1½" |
| | 210 | TH020160-2 | 2,655 | 16d | 10d | IHF2014-2 | 1,500 | 10d | 10d x 1½" |
| | 230 | TH023160-2 | 2,730 | 16d | 10d | THF23160-2 | 2,490 | 10d | 10d |
| | 360 | TH023160-2 | 2,770 | 16d | 10d | THF23160-2 | 2,525 | 10d | 10d |
| | 560 | BPH7116 | 3,075 | 16d | 10d | HD7140 | 2,925 | 16d | 16d |

Hanger information on these two pages was provided by either Simpson Strong-Tie® or USP Structural Connectors®. For additional information, please refer to their literature.

Table footnotes for pages 15 and 16:

- (1) Face mount and LSSR hanger capacities may be increased up to 15% for snow roofs or 25% for non-snow roofs.
- (2) VPA connectors are allowed on slopes of 3:12 through 12:12 only.
- (3) LSSR and LSSH hangers can be field adjusted for slopes and skews of up to 45 degrees. Additional lateral restraints are required for 16" deep TJI® joists.
- (4) Miter cut is required at end of joist.
- (5) TMP connectors are allowed on slopes of 1:12 through 6:12 only, and TMPH connectors are allowed on slopes of 6:12 through 12:12 only.
- (6) Capacity may be increased to 1,330 lbs if web stiffeners are used.

See General Notes on page 15

| Joist Depth | TJI® | Variable Slope Seat Joist Hanger ⁽³⁾ | | | |
|----------------|---------|---|-------------|-------------------|--------------|
| | | Capacity (lbs) | | Nailing | |
| | | Hanger | Sloped Only | Sloped and Skewed | Header Joist |
| 110 | LSSH179 | 1,200 | 1,200 | 10d | 10d x 1½" |
| 210 | LSSH20 | 1,200 | 1,200 | 10d | 10d x 1½" |
| 230 | LSSH23 | 1,200 | 1,200 | 10d | 10d x 1½" |
| 360 | LSSH23 | 1,200 | 1,200 | 10d | 10d x 1½" |
| 560 | LSSH35 | 1,595 | 1,595 | 16d | 10d x 1½" |

| Joist Depth | TJI® | Variable Slope Seat Connector ⁽⁵⁾ | | | |
|----------------|---------|--|-------------|-------------------|--------------|
| | | Capacity (lbs) | | Nailing | |
| | | Hanger | Sloped Only | Sloped and Skewed | Header Joist |
| 110 | TMP175 | 1,220 | 10d | 10d x 1½" | |
| | TMHP175 | 1,220 | 10d | 10d x 1½" | |
| 210 | TMP21 | 1,330 | 10d | 10d x 1½" | |
| | TMHP21 | 1,330 | 10d | 10d x 1½" | |
| 230 | TMP23 | 1,330 | 10d | 10d x 1½" | |
| | TMHP23 | 1,330 | 10d | 10d x 1½" | |
| 360 | TMP23 | 1,505 | 10d | 10d x 1½" | |
| | TMHP23 | 1,505 | 10d | 10d x 1½" | |
| 560 | TMP4 | 1,705 | 10d | 10d x 1½" | |
| | TMHP4 | 1,725 | 10d | 10d x 1½" | |

SECTION 2: 18" – 24" TJI® JOISTS

18"-24"
JOISTS

This section contains design information for 18" – 24" deep Trus Joist® TJI® joists used in residential, multi-family, or light-commercial applications.

18" – 20" deep TJI® joists are readily available through your local Weyerhaeuser dealer or distributor. Offered with the flange sizes shown below, they come in lengths up to 60' (in 1' increments). 22" and 24" deep TJI® joists are only available in some regions; for more information, contact your Weyerhaeuser representative.

Design Properties (100% Load Duration)

| Depth | TJI® | Basic Properties | | | | Reaction Properties | | | | | |
|-------|------|-----------------------|--|---|------------------------------|------------------------|------------------------------------|---------------------------------|------------------------------------|---------------------------------|------------------------------------|
| | | Joist Weight (lbs/ft) | Maximum Resistive Moment ⁽¹⁾ (ft-lbs) | Joist Only EI x 10 ⁶ (lbs-in. ²) | Maximum Vertical Shear (lbs) | 1¾" End Reaction (lbs) | | 3½" Intermediate Reaction (lbs) | | 5¼" Intermediate Reaction (lbs) | |
| | | | | | | No Web Stiffeners | With Web Stiffeners ⁽²⁾ | No Web Stiffeners | With Web Stiffeners ⁽²⁾ | No Web Stiffeners | With Web Stiffeners ⁽²⁾ |
| 18" | 360 | 3.7 | 9,465 | 1,085 | 2,425 | 1,080 | 1,440 | 2,460 | 2,815 | 3,000 | 3,360 |
| | 560 | 4.8 | 14,550 | 1,631 | 3,030 | 1,265 | 1,740 | 3,000 | 3,475 | 3,455 | 3,930 |
| | 560D | 5.0 | 14,785 | 1,661 | 3,080 | 1,400 | 2,030 | 3,350 | 3,980 | 3,965 | 4,600 |
| 20" | 360 | 4.0 | 10,515 | 1,376 | 2,660 | 1,080 | 1,440 | 2,460 | 2,815 | 3,000 | 3,360 |
| | 560 | 5.1 | 16,165 | 2,064 | 3,345 | 1,265 | 1,740 | 3,000 | 3,475 | 3,455 | 3,930 |
| | 560D | 5.3 | 16,435 | 2,105 | 3,345 | 1,400 | 2,190 | 3,350 | 4,140 | 3,965 | 4,755 |
| 22" | 560D | 5.6 | 18,075 | 2,606 | 3,615 | NA ⁽³⁾ | 2,345 | NA ⁽³⁾ | 5,090 | NA ⁽³⁾ | 5,705 |
| 24" | 560D | 5.8 | 19,700 | 3,165 | 3,400 | NA ⁽³⁾ | 2,345 | NA ⁽³⁾ | 5,405 | NA ⁽³⁾ | 6,020 |

(1) Caution: Do not increase joist moment design properties by a repetitive-member-use factor.

(2) See detail W on page 29 for web stiffener requirements and nailing information.

(3) Web stiffeners are required at all bearing locations for 22" and 24" TJI® 560D joists.

General Notes

- Design reaction includes all loads on the joist. Design shear is computed at the inside face of supports and includes all loads on the span(s). Allowable shear may sometimes be increased at interior supports in accordance with ICC-ES ESR-1153, and these increases are reflected in span tables.
- The formulas at right approximate the uniform load deflection of Δ (inches).

TJI® joists are intended for dry-use applications

Some TJI® joist series may not be available in your region. Contact your Weyerhaeuser representative for information.

For TJI® 360 Joists

$$\Delta = \frac{22.5 wL^4}{EI} + \frac{2.67 wL^2}{d \times 10^5}$$

For TJI® 560 and 560D Joists

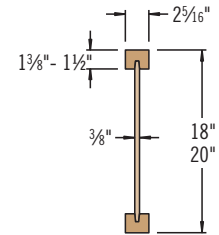
$$\Delta = \frac{22.5 wL^4}{EI} + \frac{2.29 wL^2}{d \times 10^5}$$

w = uniform load in pounds per linear foot

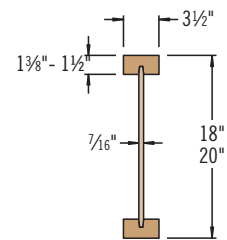
L = span in feet

d = out-to-out depth of the joist in inches

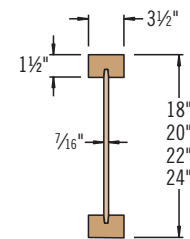
EI = value from table above



TJI® 360 Joist



TJI® 560 Joist



TJI® 560D Joist



DO NOT walk on joists until braced. INJURY MAY RESULT.



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



DO NOT walk on joists that are lying flat.

WARNING

Joists are unstable until braced laterally

Bracing Includes:

- Blocking
- Hangers
- Rim Board
- Sheathing
- Rim Joist
- Strut Lines

WARNING NOTES: Lack of proper bracing during construction can result in serious accidents. Observe the following guidelines:

- All blocking, hangers, rim boards, and rim joists at the end supports of the TJI® joists must be completely installed and properly nailed.
- Lateral strength, like a braced end wall or an existing deck, must be established at the ends of the bay. This can also be accomplished by a temporary or permanent deck (sheathing) fastened to the first 4 feet of joists at the end of the bay.
- Safety bracing of 1x4 (minimum) must be nailed to a braced end wall or sheathed area (as in note 2) and to each joist. Without this bracing, buckling sideways or rollover is highly probable under light construction loads—such as a worker or one layer of unnailed sheathing.
- Sheathing must be completely attached to each TJI® joist before additional loads can be placed on the system.
- Ends of cantilevers require safety bracing on both the top and bottom flanges.
- The flanges must remain straight within a tolerance of ½" from true alignment.

L/480 Live Load Deflection

| Depth | TJI® | 40 PSF Live Load / 10 PSF Dead Load | | | 40 PSF Live Load / 25 PSF Dead Load | | |
|-------|-----------|-------------------------------------|------------------------|-----------------------|-------------------------------------|-----------------------|-----------------------|
| | | 16" o.c. | 19.2" o.c. | 24" o.c. | 16" o.c. | 19.2" o.c. | 24" o.c. |
| 18" | 360 | 28'-8" | 26'-10" ⁽¹⁾ | 21'-5" ⁽¹⁾ | 24'-9" ⁽¹⁾ | 20'-7" ⁽¹⁾ | 16'-6" ⁽¹⁾ |
| | 560, 560D | 32'-5" | 30'-7" ⁽¹⁾ | 25'-2" ⁽¹⁾ | 29'-1"⁽¹⁾ | 24'-2" ⁽¹⁾ | 19'-4" ⁽¹⁾ |
| 20" | 360 | 31'-0" ⁽¹⁾ | 26'-10" ⁽¹⁾ | 21'-5" ⁽¹⁾ | 24'-9" ⁽¹⁾ | 20'-7" ⁽¹⁾ | 16'-6" ⁽¹⁾ |
| | 560, 560D | 35'-1" | 31'-6" ⁽¹⁾ | 25'-2" ⁽¹⁾ | 29'-1" ⁽¹⁾ | 24'-2" ⁽¹⁾ | 19'-4" ⁽¹⁾ |
| 22" | 560D | 37'-11" | 35'-9" | 33'-2" | 37'-11" | 35'-9" | 31'-2" |
| 24" | 560D | 40'-6" | 38'-1" | 35'-5" | 40'-6" | 38'-1" | 33'-1" |

L/360 Live Load Deflection (Minimum Criteria per Code)

| Depth | TJI® | 40 PSF Live Load / 10 PSF Dead Load | | | 40 PSF Live Load / 25 PSF Dead Load | | |
|-------|-----------|-------------------------------------|------------------------|-----------------------|-------------------------------------|-----------------------|-----------------------|
| | | 16" o.c. | 19.2" o.c. | 24" o.c. | 16" o.c. | 19.2" o.c. | 24" o.c. |
| 18" | 360 | 31'-9" ⁽¹⁾ | 26'-10" ⁽¹⁾ | 21'-5" ⁽¹⁾ | 24'-9" ⁽¹⁾ | 20'-7" ⁽¹⁾ | 16'-6" ⁽¹⁾ |
| | 560, 560D | 35'-11" ⁽¹⁾ | 31'-6" ⁽¹⁾ | 25'-2" ⁽¹⁾ | 29'-1"⁽¹⁾ | 24'-2" ⁽¹⁾ | 19'-4" ⁽¹⁾ |
| 20" | 360 | 32'-3" ⁽¹⁾ | 26'-10" ⁽¹⁾ | 21'-5" ⁽¹⁾ | 24'-9" ⁽¹⁾ | 20'-7" ⁽¹⁾ | 16'-6" ⁽¹⁾ |
| | 560, 560D | 37'-10" ⁽¹⁾ | 31'-6" ⁽¹⁾ | 25'-2" ⁽¹⁾ | 29'-1" ⁽¹⁾ | 24'-2" ⁽¹⁾ | 19'-4" ⁽¹⁾ |
| 22" | 560D | 42'-0" | 39'-7" | 36'-10" | 40'-8" | 37'-2" | 31'-2" |
| 24" | 560D | 44'-9" | 42'-3" | 39'-3" | 42'-6" | 38'-9" | 33'-1" |

(1) Web stiffeners are required at intermediate supports of continuous-span joists when the intermediate bearing length is **less** than 5¼" and the span on either side of the intermediate bearing is greater than the following spans:

| Depth | TJI® | 40 PSF Live Load / 10 PSF Dead Load | | | 40 PSF Live Load / 25 PSF Dead Load | | |
|-------------|-----------|-------------------------------------|------------|----------|-------------------------------------|------------|----------|
| | | 16" o.c. | 19.2" o.c. | 24" o.c. | 16" o.c. | 19.2" o.c. | 24" o.c. |
| 18" and 20" | 360 | 29'-4" | 24'-5" | 19'-6" | 22'-7" | 18'-9" | 15'-0" |
| | 560, 560D | 35'-10" | 29'-10" | 23'-10" | 27'-7" | 22'-11" | 18'-4" |

■ Long term deflection under dead load, which includes the effect of creep, has not been considered. ***Bold italic*** spans reflect initial dead load deflection exceeding 0.33".

***Live load deflection is not the only factor that affects how a floor will perform.
To more accurately predict floor performance, use our TJI-Pro™ Ratings.***

How to Use These Tables

1. Determine the appropriate live load deflection criteria.
2. Identify the live and dead load condition.
3. Select on-center spacing and scan down the column until you meet or exceed the span of your application.
5. Select TJI® joist and depth.

General Notes

- Tables are based on:
 - Uniform loads.
 - More restrictive of simple or continuous span.
 - Clear distance between supports
 - **18" and 20" TJI® joists:** Minimum bearing length of 1¾" end (no web stiffeners) and 3½" intermediate.
 - **22" and 24" TJI® joists:** Minimum bearing length of 1¾" end and 3½" intermediate; web stiffeners required at all bearings.
- Assumed composite action with a single layer of 24" on-center span-rated, glue-nailed floor panels for deflection only. **When subfloor adhesive is not applied, spans shall be reduced 6" for nails and 12" for proprietary fasteners.**
- For continuous spans, ratio of short span to long span should be 0.4 or greater to prevent uplift.
- Spans generated from Weyerhaeuser software may exceed the spans shown in these tables because software reflects actual design conditions.
- For multi-family applications and other loading conditions not shown, refer to Weyerhaeuser software or to the load table below.

FLOOR LOAD TABLES

Floor—100% (PLF)

| Depth | TJI® | Joist Clear Span | | | | | | | | | | | |
|-------|-----------|------------------|------------|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|------------|
| | | 8' | | 10' | | 12' | | 14' | | 16' | | 18' | |
| | | Live Load L/480 | Total Load | Live Load L/480 | Total Load | Live Load L/480 | Total Load | Live Load L/480 | Total Load | Live Load L/480 | Total Load | Live Load L/480 | Total Load |
| 18" | 360 | * | 241 | * | 193 | * | 162 | * | 139 | * | 121 | * | 108 |
| | 560, 560D | * | 294 | * | 236 | * | 197 | * | 169 | * | 148 | * | 132 |
| 20" | 360 | * | 241 | * | 193 | * | 162 | * | 139 | * | 121 | * | 108 |
| | 560, 560D | * | 294 | * | 236 | * | 197 | * | 169 | * | 148 | * | 132 |
| 22" | 560D | * | 499 | * | 401 | * | 335 | * | 287 | * | 252 | * | 224 |
| 24" | 560D | * | 530 | * | 426 | * | 356 | * | 305 | * | 267 | * | 238 |
| 18" | 20' | | * | 97 | * | 88 | 76 | 81 | 61 | 75 | | | |
| | 360 | * | 97 | * | 88 | * | 81 | * | 75 | | | | |
| | 560, 560D | * | 119 | * | 108 | * | 99 | 89 | 91 | 72 | 85 | 60 | 79 |
| 20" | 360 | * | 97 | * | 88 | * | 81 | * | 75 | | | | |
| | 560, 560D | * | 119 | * | 108 | * | 99 | * | 91 | * | 85 | 75 | 79 |
| 22" | 560D | * | 202 | * | 183 | * | 168 | 137 | 155 | 112 | 144 | 93 | 135 |
| 24" | 560D | * | 214 | * | 195 | * | 179 | 164 | 165 | 134 | 153 | 111 | 143 |

* Indicates **Total Load** value controls.

How to Use This Table

1. Calculate actual total and live load in pounds per linear foot (plf).
2. Select appropriate **Joist Clear Span**.
3. Scan down the column to find a TJI® joist that meets or exceeds actual total and live loads.

General Notes

- Tables are based on:
 - Uniform loads.
 - More restrictive of simple or continuous span.
 - Deflection criteria of L/240 total load and L/480 live load.
 - **18" and 20" TJI® joists:** Minimum bearing length of 1¾" end and 3½" intermediate (no web stiffeners).
 - **22" and 24" TJI® joists:** Minimum bearing length of 1¾" end and 3½" intermediate; web stiffeners required at all bearings.
- Composite action is not considered.
- For a live load deflection limit of L/360, multiply **Live Load L/480** values by 1.33. The resulting live load must not exceed the **Total Load** shown.
- For continuous spans, ratio of short span to long span should be 0.4 or greater to prevent uplift.
- Table does not account for concentrated loads. Use Weyerhaeuser software when this condition applies.

See PSF to PLF Conversion Table on page 33

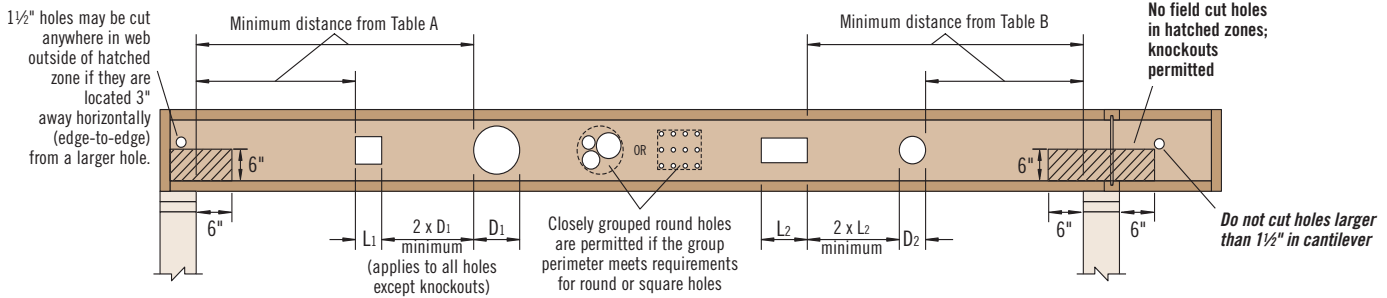


Table A—End Support

Minimum distance from edge of hole to inside face of nearest end support

| Depth | TJI® | ● Round Hole Size | | | | | | | | | | ■ Square or Rectangular Hole Size | | | | | | | | | |
|-------|------|-------------------|-------|-------|-------|-------|-------|---------|---------|---------|--------|-----------------------------------|-------|-------|-------|--------|--------|---------|---------|---------|--------|
| | | 4" | 6" | 7" | 8" | 10" | 12" | 14 3/4" | 16 3/4" | 18 3/4" | 20" | 4" | 6" | 7" | 8" | 10" | 12" | 14 3/4" | 16 3/4" | 18 3/4" | 20" |
| 18" | 360 | 1'-0" | 1'-0" | 1'-0" | 2'-0" | 4'-0" | 5'-6" | 9'-6" | | | | 1'-0" | 3'-0" | 4'-6" | 6'-0" | 10'-0" | 11'-0" | 13'-6" | | | |
| | 560 | 1'-0" | 1'-0" | 1'-0" | 2'-0" | 4'-6" | 7'-0" | 10'-6" | | | | 2'-0" | 5'-0" | 6'-6" | 8'-0" | 11'-0" | 12'-0" | 14'-0" | | | |
| | 560D | 1'-0" | 1'-6" | 2'-6" | 3'-6" | 5'-6" | 7'-6" | 11'-0" | | | | 3'-0" | 5'-6" | 6'-6" | 8'-0" | 10'-6" | 11'-6" | 13'-6" | | | |
| 20" | 360 | 1'-0" | 1'-0" | 1'-0" | 2'-0" | 4'-0" | 7'-0" | 10'-0" | | | | 1'-0" | 1'-6" | 3'-0" | 4'-6" | 8'-0" | 11'-6" | 13'-6" | 15'-6" | | |
| | 560 | 1'-0" | 1'-0" | 1'-0" | 2'-0" | 4'-6" | 8'-6" | 11'-0" | | | | 1'-0" | 3'-6" | 5'-0" | 7'-0" | 10'-6" | 13'-0" | 14'-6" | 15'-6" | | |
| | 560D | 1'-0" | 1'-0" | 1'-6" | 2'-6" | 4'-6" | 6'-0" | 9'-0" | 11'-6" | | | 2'-6" | 5'-0" | 6'-0" | 7'-0" | 10'-0" | 12'-6" | 14'-0" | 15'-0" | | |
| 22" | 560D | 1'-0" | 1'-0" | 1'-0" | 1'-6" | 3'-6" | 5'-0" | 7'-0" | 9'-6" | 12'-6" | | 1'-0" | 3'-6" | 5'-0" | 6'-6" | 14'-6" | 15'-0" | 16'-0" | 16'-6" | 17'-0" | |
| 24" | 560D | 1'-0" | 1'-0" | 1'-6" | 2'-0" | 3'-6" | 5'-0" | 7'-0" | 8'-6" | 11'-0" | 12'-6" | 1'-6" | 4'-0" | 5'-0" | 6'-6" | 9'-6" | 15'-0" | 16'-0" | 16'-6" | 17'-0" | 17'-0" |

Table B—Intermediate or Cantilever Support

Minimum distance from edge of hole to inside face of nearest intermediate or cantilever support

| Depth | TJI® | ● Round Hole Size | | | | | | | | | | ■ Square or Rectangular Hole Size | | | | | | | | | |
|-------|------|-------------------|-------|-------|-------|-------|--------|---------|---------|---------|--------|-----------------------------------|-------|-------|--------|--------|--------|---------|---------|---------|--------|
| | | 4" | 6" | 7" | 8" | 10" | 12" | 14 3/4" | 16 3/4" | 18 3/4" | 20" | 4" | 6" | 7" | 8" | 10" | 12" | 14 3/4" | 16 3/4" | 18 3/4" | 20" |
| 18" | 360 | 1'-0" | 1'-0" | 1'-6" | 3'-0" | 6'-0" | 9'-0" | 14'-6" | | | | 1'-0" | 4'-0" | 6'-6" | 9'-0" | 14'-6" | 16'-6" | 19'-0" | | | |
| | 560 | 1'-0" | 1'-0" | 1'-0" | 2'-0" | 6'-0" | 10'-0" | 15'-6" | | | | 1'-0" | 6'-0" | 8'-6" | 11'-6" | 16'-6" | 18'-0" | 19'-6" | | | |
| | 560D | 1'-0" | 1'-0" | 2'-6" | 4'-6" | 7'-6" | 11'-0" | 16'-6" | | | | 3'-0" | 7'-6" | 9'-6" | 11'-6" | 16'-0" | 17'-0" | 19'-0" | | | |
| 20" | 360 | 1'-0" | 1'-0" | 1'-0" | 3'-0" | 6'-0" | 11'-0" | 15'-0" | | | | 1'-0" | 1'-6" | 4'-0" | 7'-0" | 12'-6" | 16'-6" | 19'-0" | 20'-6" | | |
| | 560 | 1'-0" | 1'-0" | 1'-0" | 1'-6" | 5'-6" | 11'-6" | 15'-6" | | | | 1'-0" | 3'-0" | 6'-0" | 8'-6" | 14'-0" | 17'-6" | 19'-0" | 20'-6" | | |
| | 560D | 1'-0" | 1'-0" | 1'-0" | 4'-6" | 8'-6" | 13'-6" | 17'-0" | | | | 1'-0" | 5'-6" | 8'-0" | 10'-0" | 15'-0" | 18'-0" | 19'-6" | 20'-6" | | |
| 22" | 560D | 1'-0" | 2'-6" | 3'-6" | 4'-6" | 6'-6" | 8'-0" | 11'-0" | 14'-6" | 17'-6" | | 3'-6" | 6'-6" | 8'-6" | 10'-0" | 19'-0" | 20'-0" | 21'-0" | 21'-6" | 22'-0" | |
| 24" | 560D | 2'-6" | 4'-0" | 5'-0" | 5'-6" | 7'-0" | 8'-6" | 11'-0" | 13'-6" | 16'-0" | 17'-6" | 5'-0" | 7'-6" | 9'-0" | 10'-6" | 14'-0" | 20'-0" | 21'-0" | 21'-6" | 22'-0" | 22'-0" |

- Rectangular holes based on measurement of longest side.

How to Use These Tables

1. Using **Table A**, **Table B**, or both if required, determine the hole shape/size and select the TJI® joist and depth.
2. Scan horizontally until you intersect the correct hole size column.
3. Measurement shown is minimum distance from edge of hole to support.
4. Maintain the required minimum distance from the end **and** the intermediate or cantilever support.



DO NOT
cut or notch flange.

General Notes

- Holes may be located vertically anywhere within the web. Leave 1/8" of web (minimum) at top and bottom of hole.
- Knockouts are located in web at approximately 12" on-center; they do not affect hole placement and may be located in the hatched zone.
- For simple span (5' minimum) uniformly loaded joists meeting the requirements of this guide, one maximum size round hole may be located at the center of the joist span **provided that no other holes occur in the joist**.
- Distances are based on the maximum uniform loads shown in this guide. For other load conditions or hole configurations, use ForteWEB® software or contact your Weyerhaeuser representative.

Table A—End Support (Rectangular Duct Holes)

Minimum distance from edge of rectangular duct hole to inside face of nearest end support

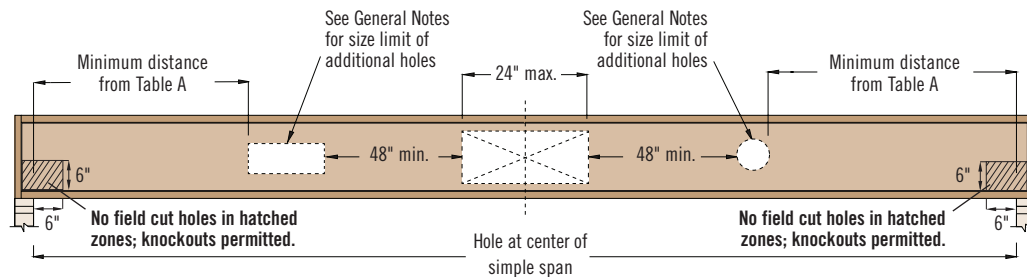
| Depth | TJI® | Rectangular Duct Hole Size (Height x Width) | | | | | | | | | | | | | | | |
|-------|------|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | 11" x 12" | 11" x 14" | 11" x 16" | 11" x 18" | 13" x 12" | 13" x 14" | 13" x 16" | 13" x 18" | 15" x 12" | 15" x 14" | 15" x 16" | 15" x 18" | 17" x 12" | 17" x 14" | 17" x 16" | 17" x 18" |
| 18" | 360 | 10'-6" | 11'-0" | 11'-6" | 12'-0" | 11'-6" | 12'-0" | 12'-6" | 13'-0" | 13'-0" | 13'-6" | 14'-0" | 14'-6" | | | | |
| | 560 | 12'-0" | 12'-0" | 12'-6" | 13'-0" | 12'-6" | 13'-0" | 13'-6" | 14'-0" | 13'-6" | 14'-0" | 14'-6" | 15'-0" | | | | |
| 20" | 360 | 11'-0" | 11'-6" | 12'-0" | 12'-0" | 12'-0" | 12'-6" | 13'-0" | 13'-6" | 13'-0" | 13'-6" | 14'-0" | 14'-6" | 14'-6" | 15'-0" | 15'-6" | 16'-0" |
| | 560 | 12'-6" | 13'-0" | 13'-0" | 13'-6" | 13'-6" | 13'-6" | 14'-0" | 14'-6" | 14'-0" | 14'-6" | 15'-0" | 15'-0" | 15'-0" | 15'-6" | 15'-6" | 16'-0" |

Table B—Intermediate or Cantilever Support (Rectangular Duct Holes)

Minimum distance from edge of rectangular duct hole to inside face of nearest intermediate or cantilever support

| Depth | TJI® | Rectangular Duct Hole Size (Height x Width) | | | | | | | | | | | | | | | |
|-------|------|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | 11" x 12" | 11" x 14" | 11" x 16" | 11" x 18" | 13" x 12" | 13" x 14" | 13" x 16" | 13" x 18" | 15" x 12" | 15" x 14" | 15" x 16" | 15" x 18" | 17" x 12" | 17" x 14" | 17" x 16" | 17" x 18" |
| 18" | 360 | 15'-6" | 16'-0" | 16'-6" | 17'-6" | 17'-0" | 17'-6" | 18'-0" | 18'-6" | 18'-6" | 19'-0" | 19'-6" | 20'-0" | | | | |
| | 560 | 17'-6" | 17'-6" | 18'-0" | 18'-6" | 18'-6" | 18'-6" | 19'-0" | 19'-6" | 19'-6" | 19'-6" | 20'-0" | 20'-6" | | | | |
| 20" | 360 | 16'-0" | 16'-6" | 17'-0" | 17'-6" | 17'-6" | 18'-0" | 18'-0" | 18'-6" | 18'-6" | 19'-0" | 19'-6" | 20'-0" | 19'-6" | 20'-0" | 20'-6" | 21'-0" |
| | 560 | 17'-0" | 17'-6" | 17'-6" | 18'-0" | 18'-0" | 18'-6" | 18'-6" | 19'-0" | 19'-0" | 19'-0" | 19'-6" | 20'-0" | 20'-0" | 20'-0" | 20'-6" | 21'-0" |

See How to Use These Tables and General Notes on page 19

Maximum Hole at Mid-Span for TJI® 360 and TJI® 560 Joists**Maximum Hole Size**

| Depth | TJI® | Maximum Hole Size (Height x Width) |
|-------|------|------------------------------------|
| 18" | 360 | 13" x 24" |
| | 560 | 15" x 24" |
| 20" | 360 | 15" x 24" |
| | 560 | 17" x 24" |

General Notes

- Simple span (8' minimum) uniformly loaded joist only. Not for use in applications that have code mandated concentrated load requirements.
- 24" wide hole (maximum) located at center of span.
- Leave 1/8" of web (minimum) at top and bottom of hole.
- Two (2) additional holes may be added to the joist provided:
 - Additional holes are a minimum of 48" (edge to edge) from maximum hole.
 - Square or Rectangular: longest dimension is less than or equal to 0.65 x web depth.
 - Round: diameter is less than or equal to 0.75 x web depth.
 - Web depth (in.) = joist depth (in.) - 2.75".
 - See **Table A** for proper hole placement from end bearing for additional holes.

Maximum Horizontal Clear Spans—Roof (slopes of 3:12 or less)

| O.C. Spacing | Depth | TJI® | Design Roof Load (PSF) | | | | | | |
|--------------|-------|-----------|-------------------------------------|---------|---------|----------------------------|---------|---------|--|
| | | | Non-Snow 125% (Roof Live + Dead) | | | Snow 115% (Snow + Dead) | | | |
| | | | 20 + 15 | 20 + 20 | 25 + 15 | 30 + 15 | 40 + 15 | 50 + 15 | |
| 16" | 18" | 360 | 39'-8" | 37'-11" | 37'-11" | 36'-5" | 30'-9" | 26'-0" | |
| | | 560, 560D | 45'-6" | 43'-5" | 43'-6" | 41'-9" | 37'-6" | 31'-8" | |
| | 20" | 360 | 43'-0" | 41'-1" | 41'-1" | 37'-7" | 30'-9" | 26'-0" | |
| | | 560, 560D | 49'-3" | 47'-0" | 47'-1" | 45'-3" | 37'-6" | 31'-8" | |
| | 22" | 560D | 53'-3" | 50'-10" | 50'-11" | 48'-11" | 45'-8" | 42'-10" | |
| | 24" | 560D | 56'-10" | 54'-3" | 54'-4" | 52'-2" | 48'-9" | 45'-5" | |
| 19.2" | 18" | 360 | 37'-3" | 35'-7" | 35'-3" | 31'-4" | 25'-7" | 21'-7" | |
| | | 560, 560D | 42'-9" | 40'-9" | 40'-10" | 38'-2" | 31'-3" | 26'-5" | |
| | 20" | 360 | 40'-5" | 38'-4" | 35'-3" | 31'-4" | 25'-7" | 21'-7" | |
| | | 560, 560D | 46'-3" | 44'-2" | 43'-0" | 38'-2" | 31'-3" | 26'-5" | |
| | 22" | 560D | 50'-0" | 47'-9" | 47'-10" | 45'-11" | 42'-10" | 39'-8" | |
| | 24" | 560D | 53'-5" | 51'-0" | 51'-0" | 49'-0" | 45'-1" | 41'-5" | |
| 24" | 18" | 360 | 34'-6" | 30'-7" | 28'-2" | 25'-0" | 20'-5" | 17'-3" | |
| | | 560, 560D | 39'-7" | 37'-4" | 34'-4" | 30'-6" | 24'-11" | 21'-1" | |
| | 20" | 360 | 35'-0" | 30'-7" | 28'-2" | 25'-0" | 20'-5" | 17'-3" | |
| | | 560, 560D | 42'-9" | 37'-4" | 34'-4" | 30'-6" | 24'-11" | 21'-1" | |
| | 22" | 560D | 46'-4" | 44'-2" | 44'-3" | 42'-6" | 38'-7" | 35'-6" | |
| | 24" | 560D | 49'-5" | 47'-2" | 47'-2" | 44'-6" | 40'-3" | 37'-1" | |

How to Use This Table

1. Determine appropriate roof loads and load duration factor.
2. Scan down the column until you find a span that meets or exceeds the span of your application.
4. Select TJI® joist and on-center spacing.

General Notes

- Table is based on:
 - Roof slopes of ¼:12 minimum, 3:12 maximum.
 - Uniform loads.
 - More restrictive of simple or continuous span.
 - Deflection criteria of L/180 total load and L/240 live load.
 - **18" and 20" TJI® joists:** Minimum bearing length of 1¾" end and 3½" intermediate (no web stiffeners).
 - **22" and 24" TJI® joists:** Minimum bearing length of 1¾" end and 3½" intermediate; web stiffeners required at all bearings.
- For continuous spans, ratio of short span to long span should be 0.4 or greater to prevent uplift.
- For 2024 IBC, snow loads are adjusted to 0.7S per ASD load combinations in ASCE 7.
- A support beam or wall at the high end is required. Ridge board applications do not provide adequate support.
- For flat roofs or other loading conditions not shown, refer to Weyerhaeuser software.

ROOF LOAD TABLE

Roof—Snow 115% and Non-Snow 125% (PLF) (slopes of 3:12 or less)

| Depth | TJI® | Total Load | | Defl. | Total Load | | Defl. | Total Load | | Defl. | Total Load | | Defl. | Total Load | | Defl. | Total Load | | Defl. |
|-------|-----------|----------------------------------|---------------|-----------------|------------|---------------|-----------------|------------|---------------|-----------------|------------|---------------|-----------------|------------|---------------|-----------------|------------|---------------|-----------------|
| | | Snow 115% | Non-Snow 125% | Live Load L/240 | Snow 115% | Non-Snow 125% | Live Load L/240 | Snow 115% | Non-Snow 125% | Live Load L/240 | Snow 115% | Non-Snow 125% | Live Load L/240 | Snow 115% | Non-Snow 125% | Live Load L/240 | Snow 115% | Non-Snow 125% | Live Load L/240 |
| | | Roof Joist Horizontal Clear Span | | | | | | | | | | | | | | | | | |
| | | 8' | | | 10' | | | 12' | | | 14' | | | 16' | | | 18' | | |
| 18" | 360 | 277 | 301 | * | 223 | 242 | * | 186 | 202 | * | 159 | 173 | * | 140 | 152 | * | 124 | 135 | * |
| | 560, 560D | 338 | 368 | * | 272 | 295 | * | 227 | 246 | * | 195 | 212 | * | 170 | 185 | * | 152 | 165 | * |
| 20" | 360 | 277 | 301 | * | 223 | 242 | * | 186 | 202 | * | 159 | 173 | * | 140 | 152 | * | 124 | 135 | * |
| | 560, 560D | 338 | 368 | * | 272 | 295 | * | 227 | 246 | * | 195 | 212 | * | 170 | 185 | * | 152 | 165 | * |
| 22" | 560D | 574 | 624 | * | 461 | 501 | * | 385 | 419 | * | 331 | 359 | * | 290 | 315 | * | 258 | 280 | * |
| 24" | 560D | 610 | 663 | * | 490 | 532 | * | 409 | 445 | * | 351 | 382 | * | 307 | 334 | * | 274 | 297 | * |
| | | 20' | | | 22' | | | 24' | | | 26' | | | 28' | | | 30' | | |
| 18" | 360 | 112 | 122 | * | 102 | 111 | * | 93 | 101 | * | 86 | 94 | * | 80 | 87 | * | 75 | 81 | * |
| | 560, 560D | 137 | 148 | * | 124 | 135 | * | 114 | 124 | * | 105 | 114 | * | 98 | 106 | * | 91 | 99 | * |
| 20" | 360 | 112 | 122 | * | 102 | 111 | * | 93 | 101 | * | 86 | 94 | * | 80 | 87 | * | 75 | 81 | * |
| | 560, 560D | 137 | 148 | * | 124 | 135 | * | 114 | 124 | * | 105 | 114 | * | 98 | 106 | * | 91 | 99 | * |
| 22" | 560D | 232 | 252 | * | 211 | 229 | * | 193 | 210 | * | 179 | 194 | * | 166 | 180 | * | 155 | 168 | * |
| 24" | 560D | 246 | 268 | * | 224 | 244 | * | 205 | 223 | * | 190 | 206 | * | 176 | 192 | * | 164 | 179 | * |

* Indicates Total Load value controls.

How to Use These Tables

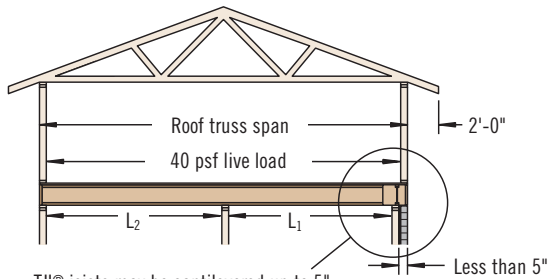
1. Calculate actual total load in pounds per linear foot (plf).
2. Select appropriate **Roof Joist Horizontal Clear Span**. For slopes of 2:12 and 3:12, approximate the increased dead load by multiplying the joist horizontal clear span by a slope factor of 1.014 and 1.031, respectively.
3. Scan down the column to find a TJI® joist that meets or exceeds actual total load.

General Notes

- Table is based on:
 - Roof slope of ¼:12 minimum, 3:12 maximum.
 - Uniform loads.
 - More restrictive of simple or continuous span.
 - Deflection criteria of L/180 total load.
 - **18" and 20" TJI® joists:** Minimum bearing length of 1¾" end and 3½" intermediate (no web stiffeners).
 - **22" and 24" TJI® joists:** Minimum bearing length of 1¾" end and 3½" intermediate; web stiffeners required at all bearings.
- For stiffer deflection criteria, use **Live Load L/240** values for total load deflection.
- For continuous spans, ratio of short span to long span should be 0.4 or greater to prevent uplift.

Cantilevers Less Than 5" (Brick Ledge)

See Section A of cantilever table on page 23

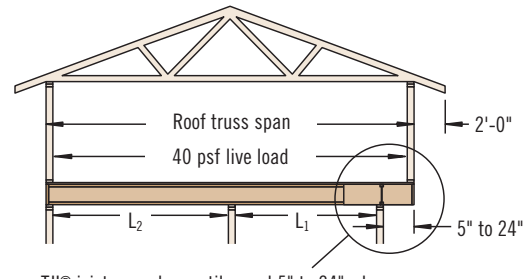


TJI® joists may be cantilevered up to 5" when supporting roof load, assuming:

- simple or continuous span
- $L_1 \leq L_2$
- minimum backspan = 2x cantilever length

Cantilevers 5" to 24"

See Section B of cantilever table on page 23

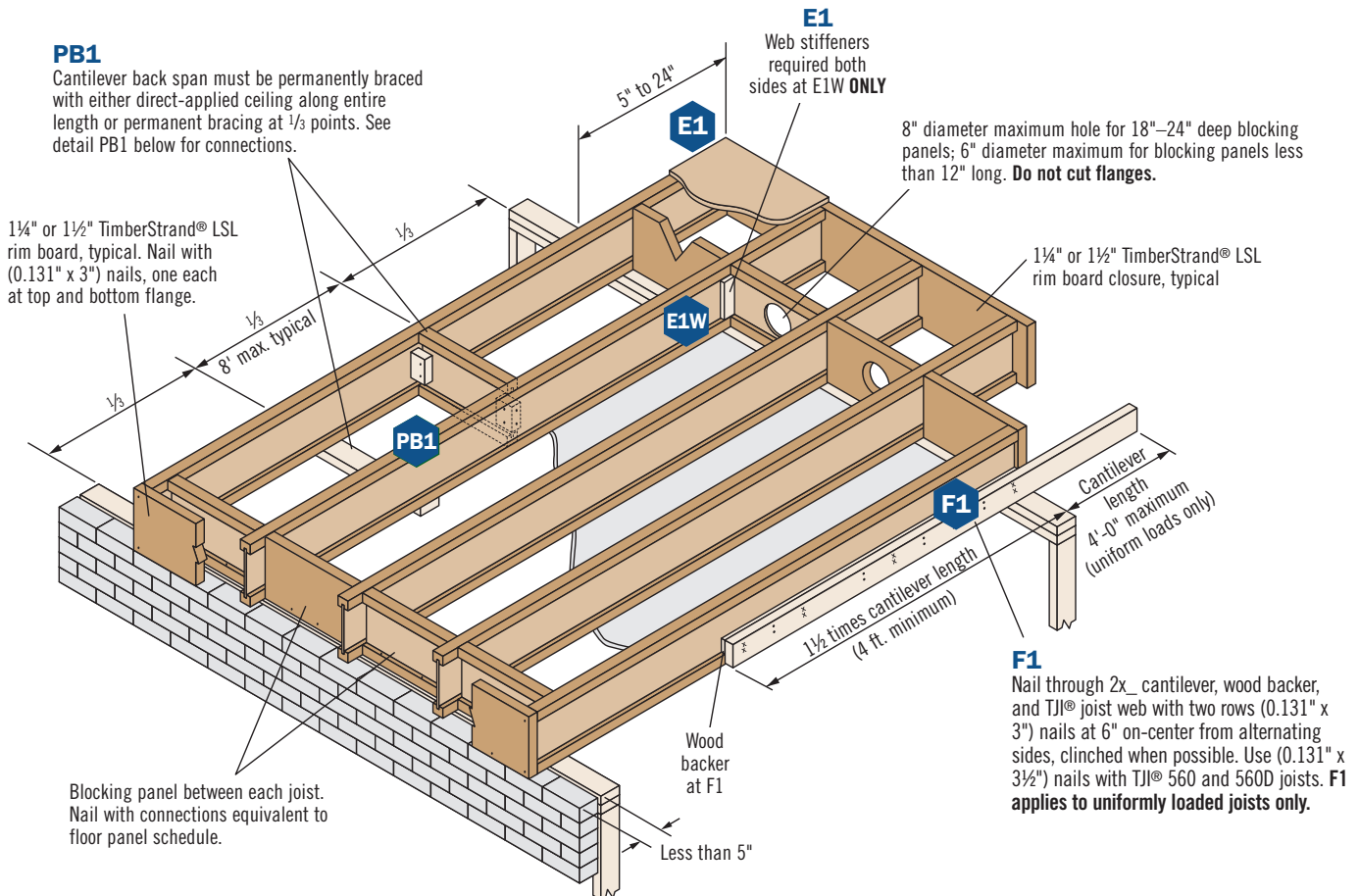


TJI® joists may be cantilevered 5" to 24" when supporting roof load, assuming:

- simple or continuous span
- $L_1 \leq L_2$
- minimum backspan = 2x cantilever length

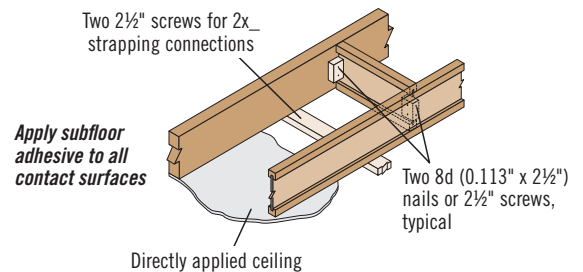
PB1

Cantilever back span must be permanently braced with either direct-applied ceiling along entire length or permanent bracing at $\frac{1}{3}$ points. See detail PB1 below for connections.



TJI® joists are intended for dry-use applications

For more information on details E1 and E1W, refer to our cover sheets and AutoCAD details online at weyerhaeuser.com/woodproducts/software-learning.



PB1 When specified on the layout, one of the above bracing options is required

Cantilever Reinforcement

| Depth | TJI® | Roof Truss Span | Section A: Cantilevers less than 5" (Brick Ledge) | | | | | | | | | Section B: Cantilevers 5" to 24" | | | | | | | | |
|------------|-----------|-----------------|---|-------|-----|--------|-------|-----|--------|-------|-----|----------------------------------|-------|-----|--------|-------|-----|--------|-----|--|
| | | | Roof Total Load | | | | | | | | | Roof Total Load | | | | | | | | |
| | | | 35 PSF | | | 45 PSF | | | 55 PSF | | | 35 PSF | | | 45 PSF | | | 55 PSF | | |
| | | | On-Center Joist Spacing | | | | | | | | | On-Center Joist Spacing | | | | | | | | |
| 16" | 19.2" | 24" | 16" | 19.2" | 24" | 16" | 19.2" | 24" | 16" | 19.2" | 24" | 16" | 19.2" | 24" | 16" | 19.2" | 24" | | | |
| 18" or 20" | 360 | 24' | | | | | | X | | | X | | | | | | | | | |
| | | 26' | | | | | | X | | | X | | | | | | | | | |
| | | 28' | | | X | | | X | | X | X | | | | | | | | | |
| | | 30' | | | X | | | X | | X | X | | | | | | | | | |
| | | 32' | | | X | | X | X | | X | X | | | | | | | | | |
| | | 34' | | | X | | X | X | X | X | X | | | | | | | E1W | | |
| | | 36' | | | X | | X | X | X | X | X | | | | | | | E1W | | |
| | | 38' | | X | X | | X | X | X | X | X | | | | | E1W | | E1W | | |
| | | 40' | | X | X | X | X | X | X | X | X | | | | | E1W | | X | | |
| 18" or 20" | 560, 560D | 24' | | | | | | | | | X | | | | | | | | | |
| | | 26' | | | | | | | | | X | | | | | | | | | |
| | | 28' | | | | | | X | | | X | | | | | | | | | |
| | | 30' | | | | | | X | | | X | | | | | | | | | |
| | | 32' | | | | | | X | | X | X | | | | | | | | | |
| | | 34' | | | X | | | X | | X | X | | | | | | | | | |
| | | 36' | | | X | | | X | | X | X | | | | | | | | | |
| | | 38' | | | X | | X | X | | X | X | | | | | | | | | |
| | | 40' | | | X | | X | X | X | X | X | | | | | | | | | |
| 22" or 24" | 560D | 24' | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | |
| | | 26' | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | |
| | | 28' | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | |
| | | 30' | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | |
| | | 32' | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | |
| | | 34' | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | |
| | | 36' | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | |
| | | 38' | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | |
| 40' | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | E1W | | | |

How to Use This Table

1. Identify TJI® joist and depth.
2. Locate the **Roof Truss Span** (horizontal) that meets or exceeds your condition.
3. Identify the cantilever condition (less than 5" or 5" to 24") and locate the **Roof Total Load** and **On-Center Joist Spacing** for your application.
4. Scan down to find the appropriate cantilever detail and refer to drawing on page 22:
 - Blank cells indicate that no reinforcement is required.
 - X indicates that cantilever will not work. Use ForteWEB® or Javelin® software, or reduce spacing of joists and recheck table.

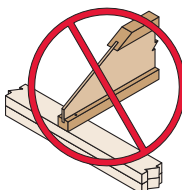
General Notes

- Table is based on:
 - 15 psf roof dead load on a horizontal projection.
 - 80 plf exterior wall load with 3'-0" maximum width window or door openings. For larger openings, or multiple 3'-0" width openings spaced less than 6'-0" on-center, additional joists beneath the opening's trimmers may be required.
 - Floor load of 40 psf live load and 10 psf dead load.
 - More restrictive of simple or continuous span.
 - Roof truss with 24" soffits.
- Designed for 2x4 and 2x6 plate widths.
- For conditions beyond the scope of this table, including cantilevers longer than 24", use our ForteWEB® or Javelin® software.

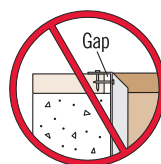
See cantilever details on page 22

These Conditions are **NOT** Permitted:

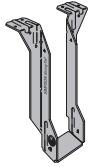
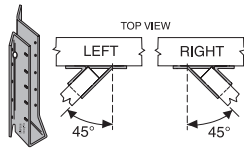
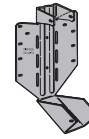
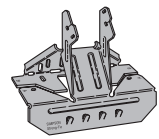
DO NOT use sawn lumber for rim board or blocking as it may shrink after installation. Use only engineered lumber



DO NOT bevel cut joist beyond inside face of wall.



DO NOT install hanger overhanging face of plate or beam. Flush bearing plate with inside face of wall or beam.

Single Joist,
Top MountSingle Joist,
Face MountFace Mount Skewed 45°
Joist HangerDouble Joist,
Top MountDouble Joist,
Face MountVariable Slope Seat
Joist HangerVariable Slope
Seat Connector

| Joist | | Single Joist—Top Mount | | | | Single Joist—Face Mount ⁽¹⁾ | | | | Face Mount Skewed 45° Joist Hanger | | | |
|-------|-----------|------------------------|----------------|---------|-----------|--|----------------|---------|-----------|--------------------------------------|----------------|---------|-----------|
| Depth | TJI® | Hanger | Capacity (lbs) | Nailing | | Hanger | Capacity (lbs) | Nailing | | Hanger | Capacity (lbs) | Nailing | |
| | | | | Header | Joist | | | Header | Joist | | | Header | Joist |
| 18" | 360 | MIT3518 | 1,265 | 16d | 10d x 1½" | MIU2.37/18 | 1,260 | 16d | 10d x 1½" | <i>SUR/L2.37/14</i> | 1,430 | 16d | 10d x 1½" |
| | 560, 560D | MIT418 | 1,460 | 16d | 10d x 1½" | MIU3.56/18 | 1,460 | 16d | 10d x 1½" | <i>SUR/L414</i> | 1,495 | 16d | 16d |
| 20" | 360 | MIT3520 | 1,265 | 16d | 10d x 1½" | MIU2.37/20 | 1,260 | 16d | 10d x 1½" | <i>SUR/L2.37/14</i> | 1,430 | 16d | 10d x 1½" |
| | 560, 560D | MIT420 | 1,460 | 16d | 10d x 1½" | MIU3.56/20 | 1,460 | 16d | 10d x 1½" | <i>SUR/L414</i> | 1,495 | 16d | 16d |
| 22" | 560D | <i>HIT422</i> | 2,220 | 16d | 10d x 1½" | <i>MIU3.56/20</i> | 2,555 | 16d | 10d x 1½" | <i>SUR/L414⁽⁶⁾</i> | 2,400 | 16d | 16d |
| 24" | 560D | <i>HIT424</i> | 2,220 | 16d | 10d x 1½" | <i>MIU3.56/20</i> | 2,555 | 16d | 10d x 1½" | <i>SUR/L414⁽⁶⁾</i> | 2,400 | 16d | 16d |

| Joist | | Double Joist—Top Mount | | | | Double Joist—Face Mount ⁽¹⁾ | | | |
|-------|-----------|-------------------------|----------------|---------|-----------|--|----------------|---------|-----------|
| Depth | TJI® | Hanger | Capacity (lbs) | Nailing | | Hanger | Capacity (lbs) | Nailing | |
| | | | | Header | Joist | | | Header | Joist |
| 18" | 360 | <i>BA4.75/18</i> | 2,765 | 16d | 10d x 1½" | <i>MIU4.75/18</i> | 2,525 | 16d | 10d x 1½" |
| | 560, 560D | <i>HB7.12/18</i> | 3,450 | 16d | 16d | <i>HU414-2</i> | 2,925 | 16d | 16d |
| 20" | 360 | <i>BA4.75/20</i> | 2,765 | 16d | 10d x 1½" | <i>MIU4.75/20</i> | 2,525 | 16d | 10d x 1½" |
| | 560, 560D | <i>HB7.12/20</i> | 3,450 | 16d | 16d | <i>HU414-2</i> | 2,925 | 16d | 16d |
| 22" | 560D | <i>HB7.12/22</i> | 5,395 | 16d | 16d | <i>HU414-2</i> | 2,975 | 16d | 16d |
| 24" | 560D | <i>HB7.12/24</i> | 5,395 | 16d | 16d | <i>HU414-2⁽⁶⁾</i> | 2,975 | 16d | 16d |

Hanger information on this page was provided by either Simpson Strong-Tie® or USP Structural Connectors®. For additional information, please refer to their literature.

| Joist | | Variable Slope Seat Joist Hanger ⁽³⁾⁽⁶⁾ | | | | |
|---------|-----------|--|----------------|-------------------|---------|-----------|
| Depth | TJI® | Hanger | Capacity (lbs) | | Nailing | |
| | | | Sloped Only | Sloped and Skewed | Header | Joist |
| 18"—20" | 360 | <i>LSSR2.37Z</i> | 1,110 | 1,060 | 10d | 10d x 1½" |
| | 560, 560D | <i>LSSR410Z</i> | 1,300 | 1,300 | 16d | 16d |
| 22"—24" | 560D | <i>LSSR410Z</i> | 2,365 | 1,810 | 16d | 16d |

| Joist | | Variable Slope Seat Connector ⁽²⁾ | | | |
|---------|-----------|--|----------------|---------|-----------|
| Depth | TJI® | Hanger | Capacity (lbs) | Nailing | |
| | | | | Header | Joist |
| 18"—20" | 360 | VPA35 | 1,140 | 10d | 10d x 1½" |
| | 560, 560D | VPA4 | 1,245 | 10d | 10d x 1½" |
| 22"—24" | 560D | <i>VPA4</i> | 1,245 | 10d | 10d x 1½" |

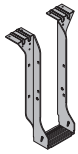
General Notes

Bold italic hangers require web stiffeners.

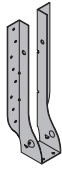
Capacities will vary with different nailing criteria or other support conditions; contact your Weyerhaeuser representative for assistance.

- Hanger capacities shown are either joist bearing capacity or hanger capacity—whichever is less. Joist end reaction must be checked to ensure it does not exceed the capacity shown in the tables.
- All capacities are for downward loads at 100% duration of load.
- Fill all round, dimple, and positive-angle nail holes.
- Use sloped seat hangers and beveled web stiffeners when TJI® joist slope exceeds ¼:12. **Maximum slope for 18"—24" joists is 3:12.**
- Leave ⅛" clearance (⅜" maximum) between the end of the supported joist and the header or hanger.
- Nails: 16d = 0.162" x 3½", 10d = 0.148" x 3", and 10d x 1½" = 0.148" x 1½".

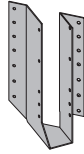
See additional notes on page 25



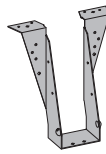
Single Joist,
Top Mount



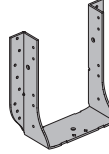
Single Joist,
Face Mount



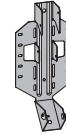
Face Mount Skewed
45° Joist Hanger



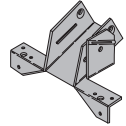
Double Joist,
Top Mount



Double Joist,
Face Mount



Variable Slope Seat
Joist Hanger



Variable Slope
Seat Connector

| Joist | | Single Joist—Top Mount | | | | Single Joist—Face Mount ⁽¹⁾ | | | | Face Mount Skewed 45° Joist Hanger | | | |
|-------|-----------|------------------------|----------------|---------|-----------|--|----------------|---------|-----------|------------------------------------|----------------|---------|-----------|
| Depth | TJI® | Hanger | Capacity (lbs) | Nailing | | Hanger | Capacity (lbs) | Nailing | | Hanger | Capacity (lbs) | Nailing | |
| | | | | Header | Joist | | | Header | Joist | | | Header | Joist |
| 18" | 360 | TFI3518 | 1,260 | 16d | 10d x 1½" | IHF2318 ⁽¹⁾ | 1,260 | 10d | 10d x 1½" | SKH2324L/R | 1,110 | 10d | 10d x 1½" |
| | 560, 560D | TFI418 | 1,460 | 16d | 10d x 1½" | IHF3518 ⁽¹⁾ | 1,460 | 10d | 10d x 1½" | SKH414L/R ⁽⁴⁾ | 1,460 | 16d | 16d |
| 20" | 360 | TFI3520 | 1,260 | 16d | 10d x 1½" | IHF2318 ⁽¹⁾ | 1,260 | 10d | 10d x 1½" | SKH2324L/R ⁽⁶⁾ | 1,110 | 10d | 10d x 1½" |
| | 560, 560D | TFI420 | 1,460 | 16d | 10d x 1½" | IHF3518 ⁽¹⁾ | 1,460 | 10d | 10d x 1½" | SKH414L/R ⁽⁴⁾ | 1,460 | 16d | 16d |
| 22" | 560D | TFI422 | 2,555 | 16d | 10d x 1½" | IHF3518 | 1,750 | 10d | 10d x 1½" | SKH414L/R ⁽⁴⁾⁽⁶⁾ | 2,555 | 16d | 16d |
| 24" | 560D | TFI424 | 2,555 | 16d | 10d x 1½" | IHF3518 | 1,750 | 10d | 10d x 1½" | SKH414L/R ⁽⁴⁾⁽⁶⁾ | 2,555 | 16d | 16d |

| Joist | | Double Joist—Top Mount | | | | Double Joist—Face Mount | | | |
|-------|-----------|------------------------|----------------|---------|-------|---------------------------|----------------|---------|-------|
| Depth | TJI® | Hanger | Capacity (lbs) | Nailing | | Hanger | Capacity (lbs) | Nailing | |
| | | | | Header | Joist | | | Header | Joist |
| 18" | 360 | TH023180-2 | 2,765 | 16d | 10d | THF23160-2 ⁽¹⁾ | 2,525 | 10d | 10d |
| | 560, 560D | BPH7118 | 3,075 | 16d | 10d | HD7160 ⁽¹⁾ | 2,925 | 16d | 10d |
| 20" | 360 | TH023200-2 | 2,765 | 16d | 10d | THF23160-2 ⁽¹⁾ | 2,525 | 10d | 10d |
| | 560, 560D | BPH7120 | 3,075 | 16d | 10d | HD7160 ⁽¹⁾ | 2,925 | 16d | 10d |
| 22" | 560D | BPH7122 | 3,075 | 16d | 10d | HD7160 | 3,695 | 16d | 10d |
| 24" | 560D | BPH7124 | 3,075 | 16d | 10d | HD7160 | 3,695 | 16d | 10d |

| Joist | | Variable Slope Seat Joist Hanger ⁽³⁾⁽⁶⁾ | | | | |
|---------|-----------|--|----------------|-------------------|---------|-----------|
| Depth | TJI® | Hanger | Capacity (lbs) | | Nailing | |
| | | | Sloped Only | Sloped and Skewed | Header | Joist |
| 18"—20" | 360 | LSSH23 | 1,200 | 1,200 | 10d | 10d x 1½" |
| | 560, 560D | LSSH35 | 1,595 | 1,595 | 16d | 10d x 1½" |
| 22"—24" | 560D | LSSH35 | 2,645 | 1,610 | 16d | 10d x 1½" |

| Joist | | Variable Slope Seat Connector ⁽⁵⁾ | | | |
|---------|-----------|--|----------------|---------|-----------|
| Depth | TJI® | Hanger | Capacity (lbs) | Nailing | |
| | | | | Header | Joist |
| 18"—20" | 360 | TMP23 | 1,505 | 10d | 10d x 1½" |
| | 560, 560D | TMP4 | 1,705 | 10d | 10d x 1½" |
| 22"—24" | 560D | TMP4 | 1,705 | 10d | 10d x 1½" |

Table Footnotes:

- (1) Face mount hanger capacities may be increased up to 15% for snow roofs or 25% for non-snow roofs.
- (2) For joist depths 18" and deeper, use only at a 3:12 slope.
- (3) For TJI® joist depths 18" and deeper, use only up to a 3:12 slope; skew up to 45 degrees. Additional lateral restraints are required for 18"—24" deep TJI® joists.
- (4) Miter cut is required at end of joists.
- (5) For joist depths 18" and deeper, use only on slopes 1:12 through 3:12.
- (6) Additional lateral restraints are required.

Support Requirements

- Support material assumed to be Trus Joist® engineered lumber or sawn lumber (Douglas fir or southern pine species).
- Minimum support width for single- and double-joist top mount hangers is 3".
- Minimum support width for face mount hangers with 10d and 16d nails (clinched) is 1½" and 1¾", respectively.

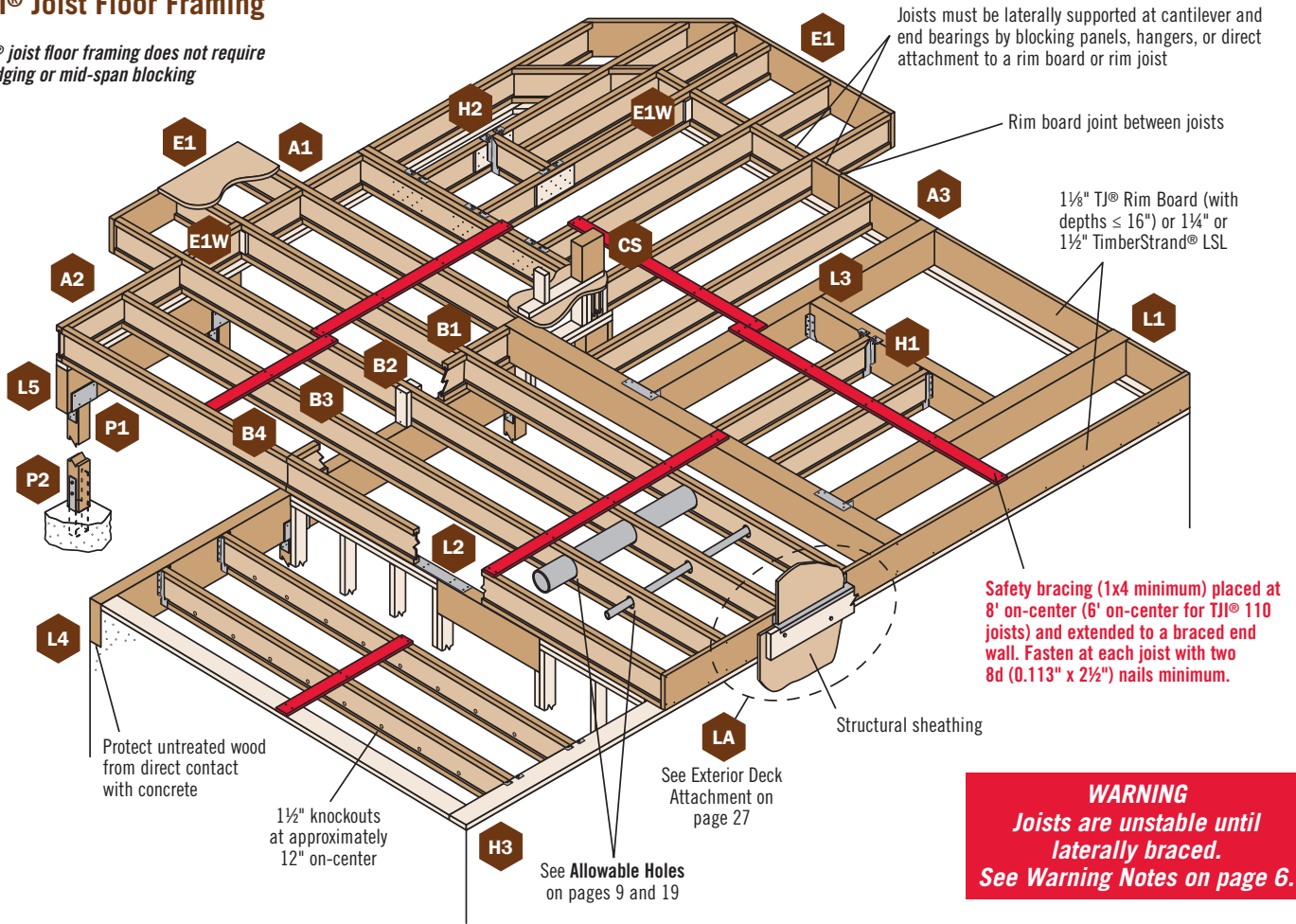
See General Notes on page 24

SECTION 3: DESIGN INFORMATION FOR ALL JOISTS

This section contains framing details and design information applicable to all joist depths shown in this guide.

TJI® Joist Floor Framing

TJI® joist floor framing does not require bridging or mid-span blocking



WARNING
Joists are unstable until laterally braced.
See Warning Notes on page 6.

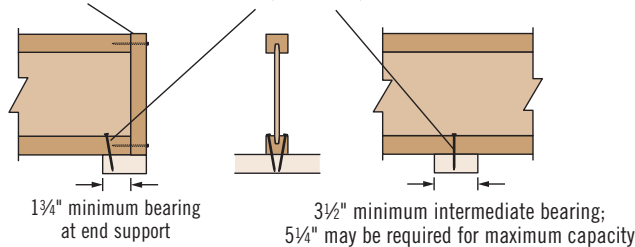
TJI® Joist Nailing Requirements at Bearing

TJI® Joist to Bearing Plate

1½" TJI® Rim Board (with depths ≤ 16"), or 1¼" or 1½" TimberStrand® LSL

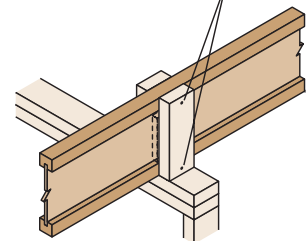
Use one 8d (0.113" x 2½") nail each side. Drive nails at an angle at least 1½" from end. For TJI® 560D, use (0.131" x 3") nails.

Shear transfer nailing:
Use connections equivalent to floor panel nailing schedule



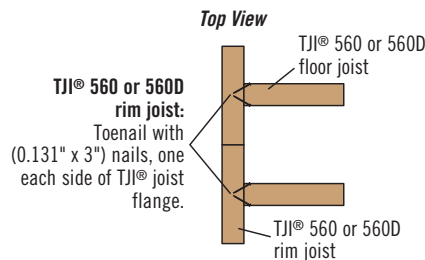
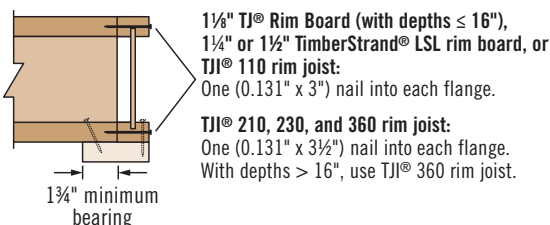
Squash Blocks to TJI® Joist (Load bearing wall above)

One (0.131" x 3") nail into each flange



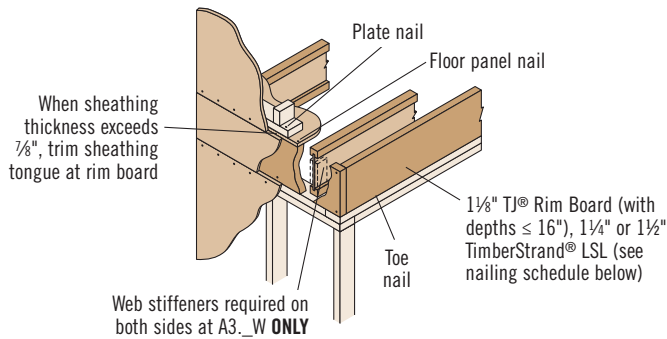
See detail B2 on page 28

Rim to TJI® Joist

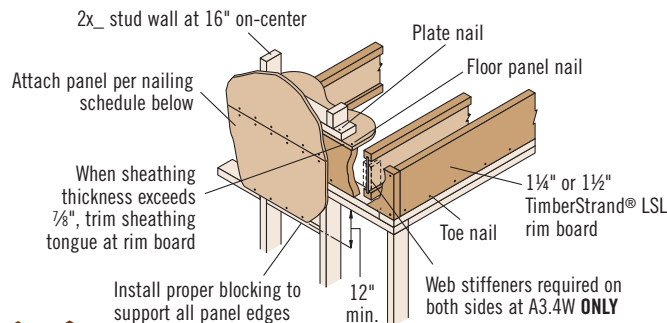


Locate rim board joint between joists

Rim board is often an important structural link in the ability of a home to resist lateral seismic and wind loads. It also transfers vertical load around the TJ® joists. Rim board detail A3 (shown below) satisfies conventional construction requirements. But if your project requires a designed solution, see Weyerhaeuser's *Rim Board Specifier's Guide, TJ-8000*, which features additional information on rim board selection and installation.



A3 A3.1 A3.2 A3.3 A3.W A3.1.W A3.2.W A3.3.W

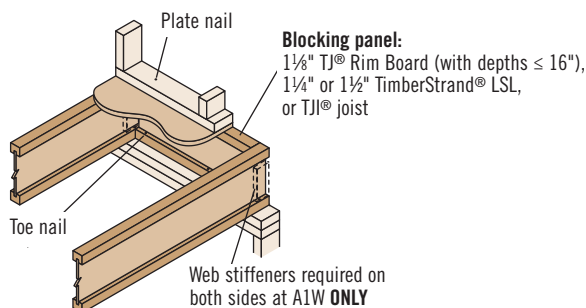


A3.4 A3.4.W

Rim Board Installation

| Specifications | A3, Conventional Construction, Code Minimum | A3.1, A3.2, A3.3, A3.4 Designed Solution |
|--|---|--|
| Rim Board Thickness | 1 1/8" TJ® Rim Board, or 1 1/4" or 1 1/2" TimberStrand® LSL | See Weyerhaeuser's <i>Rim Board Specifier's Guide</i> (Reorder #TJ-8000) |
| Plate Nail: (0.131" x 3") | 12" o.c. ⁽¹⁾ | |
| Floor Panel Nail: 8d (0.131" x 2 1/2") | 6" o.c. | |
| Toe Nail: (0.131" x 3") | 6" o.c. | |
| Wall Sheathing | Per code | |

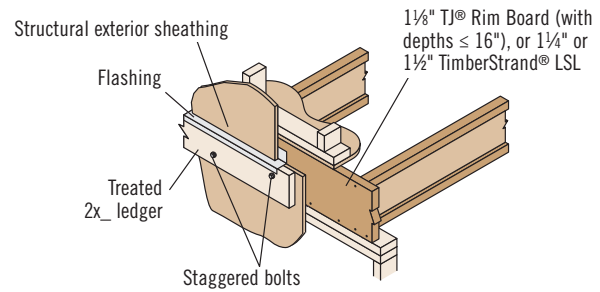
(1) Per code, increase nailing to 4" on center for braced walls.



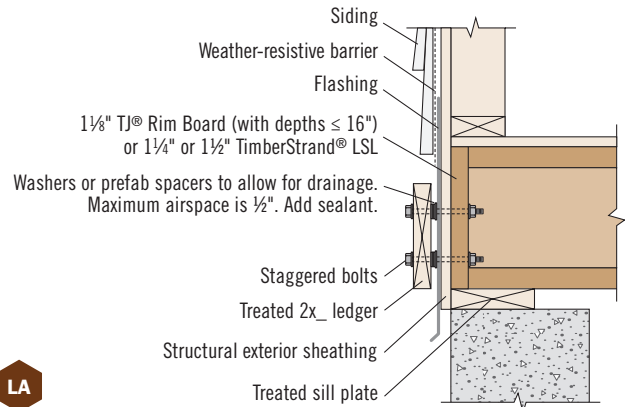
A1 A1.W

Attach blocking per fastening instructions in detail A3.

Exterior Deck Attachment



Shimmed Deck Attachment



LA

Ledger Fastener⁽¹⁾ Capacities

| Rim Board Material | Fastener Allowable Load ⁽²⁾ (lbs/bolt) | | |
|-------------------------------------|---|-------------------|----------------------------------|
| | 1/2" Lag Bolt | 1/2" Through Bolt | 1/2" Through Bolt with Air Space |
| 1 1/8" TJ® Rim Board ⁽³⁾ | 480 | 695 | 615 ⁽⁴⁾ |
| 1 1/4" TimberStrand® LSL | 610 | 725 | |
| 1 1/2" TimberStrand® LSL | 675 | 725 | |

(1) Corrosion-resistant fasteners required in wet-service applications.

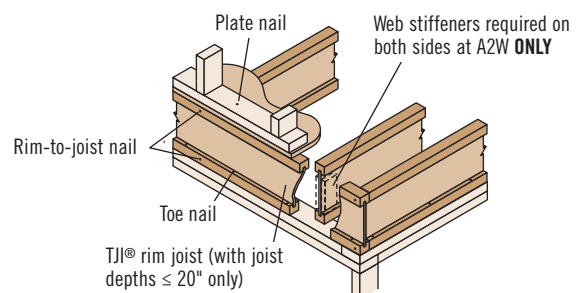
(2) Allowable load determined in accordance with ASTM D7672.

(3) 1 1/8" TJ® Rim Board is allowed with joist depths ≤ 16" only.

(4) Maximum 1/2" shimmed air space.

General Notes

- Maintain 2" distance (minimum) from edge of ledger to fastener. Stagger bolts.
- Local building codes may require through bolts with washers.
- Lateral restraining connections may be required. Refer to IRC R507.9.2 and the WJMA deck connection details.
- See Weyerhaeuser's *Rim Board Specifier's Guide, TJ-8000*, for more information.

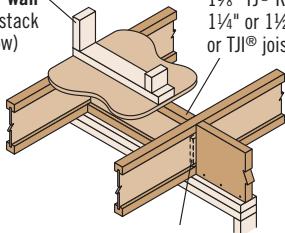


A2 A2.W

Must have 1 1/4" minimum joist bearing at ends. Attach rim joist per fastening instructions in detail A3.

See nailing requirements on page 26

Load bearing or
braced/shear wall
above (must stack
over wall below)



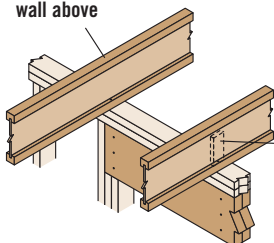
Web stiffeners required on both sides at B1W
ONLY. See footnote (1) under span tables.

B1

B1W

IRC 502.7 requires lateral restraint (blocking) at all intermediate supports in Seismic Design Categories D₀, D₁, and D₂ to strengthen the floor diaphragm

No load bearing
wall above



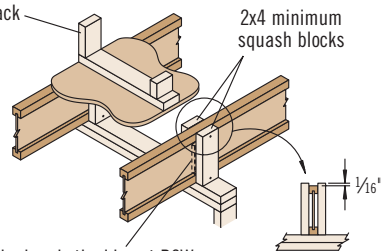
Web stiffeners required on
both sides at B3W **ONLY**.
See footnote (1) under
span tables.

B3

B3W

Blocking panels may be required in Seismic Design Categories D₀, D₁ and D₂ and/or with braced/shear walls above or below—see detail B1

Load bearing wall
above (must stack
over wall below)

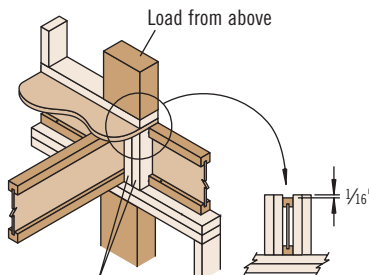


Web stiffeners required on both sides at B2W
ONLY. See footnote (1) under span tables.

B2

B2W

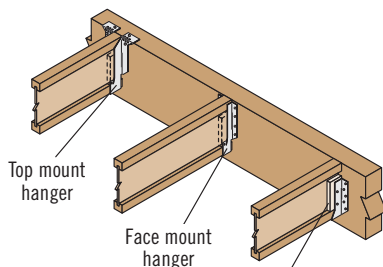
Blocking panels may be required in Seismic Design Categories D₀, D₁, and D₂ and/or with braced/shear walls above or below—see detail B1



2x4 minimum squash blocks;
match bearing area of column above

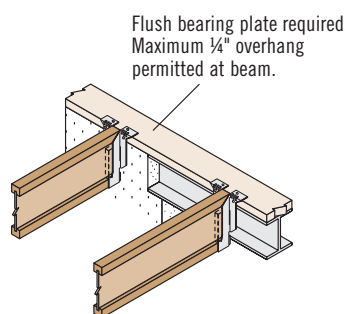
CS

Use 2x4 minimum squash blocks to transfer load around TJI® joist



Web stiffeners required if sides of
hanger do not laterally support at
least 3/8" of TJI® joist top flange

H1



H3

FASTENER SPACING AND DIAPHRAGM DESIGN

| TJI® | Closest On-Center Spacing per Row ⁽¹⁾⁽²⁾ | | | Diaphragm Design Information |
|-------------------|---|---|-----------------------|------------------------------|
| | 8d (0.113" x 2 1/2"), 8d (0.131" x 2 1/2"), 10d (0.128" x 3"), 12d (0.128" x 3 1/4") | 10d (0.148" x 3"), 12d (0.148" x 3 1/4"), 16d (0.135" x 3 1/2") | 16d (0.162" x 3 1/2") | |
| 110, 210, and 230 | 4" | 4" ⁽³⁾ | 6" | See ICC-ES ESR-1153 |
| 360, 560 and 560D | 3" | 4" ⁽³⁾ | 6" | |

(1) Stagger nails when using 4" on-center spacing or less and maintain 3/8" joist and panel edge distance. One row of fasteners is permitted (two at abutting panel edges) for diaphragms. Fastener spacing for TJI® joists in diaphragm applications cannot be less than shown in table. When fastener spacing for blocking is less than above, rectangular blocking must be used in lieu of TJI® joists.

(2) For non-diaphragm applications, multiple rows of fasteners are permitted if the rows are offset at least 1/2" and staggered.

(3) Can be reduced to 3" on-center for light gauge steel straps with 10d (0.148" x 1 1/2") nails.

- Maximum spacing of nails is 18" on-center.
- 14 gauge staples may be substituted for 8d (0.113" x 2 1/2") nails if minimum penetration of 1" is achieved.
- Table also applies to the attachment of TJI® rim joists and blocking panels to the wall plate.

See nailing requirements on page 26

Filler and Backer Block Sizes

| TJI® | | 110 | | 210 | | 230 or 360 | | 360 | 560 | | | 560D |
|--|-----------------------|-------------------|--------------------|-----------------------------------|------------------------------------|-----------------------------------|------------------------------------|---------------------|----------------|---------|----------|-------------------------|
| Depth | | 9½"–11⅞" | 14"–16 | 9½"–11⅞" | 14"–16" | 9½"–11⅞" | 14"–16" | 18"–20" | 11⅞" | 14"–16" | 18"–20" | 22"–24" |
| Filler Block ⁽¹⁾ (Detail H2) | | 2x6 | 2x8 | 2x6 + ⅜" sheathing | 2x8 + ⅜" sheathing | 2x6 + ½" sheathing | 2x8 + ½" sheathing | 2x12 + ½" sheathing | Two 2x6 | Two 2x8 | Two 2x12 | Four ¾" x 15" sheathing |
| Cantilever Filler (Detail E4) | | 2x6 4'-0" long | 2x10 6'-0" long | 2x6 + ⅜" sheathing, 4'-0" long | 2x10 + ⅜" sheathing, 6'-0" long | 2x6 + ½" sheathing, 4'-0" long | 2x10 + ½" sheathing, 6'-0" long | Not applicable | Not applicable | | | |
| Backer Block ⁽¹⁾ (Detail F1 or H2) | | ⅝" or ¾" | | ¾" or ⅞" | | ⅞" or 1" net | | | 2x6 | 2x8 | 2x12 | Two ¾" x 15" sheathing |
| Nail Size | Filler | (0.131" x 3") | | | | | | | (0.131" x 3½") | | | |
| | Backer | | | | | | | | (0.131" x 3") | | | |
| Nail Quantity ⁽²⁾ | Filler ⁽³⁾ | 15 | | | | | | | 32 | | | 50 |
| | Backer | 15 | | | | | | | 15 | | | 15 |

(1) If necessary, increase filler and backer block height for face mount hangers and maintain ⅛" gap at top of joist. See detail W on page 29. Filler and backer block dimensions should accommodate required nailing without splitting. The suggested minimum length is 24" for filler and 12" for backer blocks.

(2) Clinch nails when possible.

(3) For filler block connections, drive nails from alternating sides.

Nails Installed on the Narrow Face

| Nail Size | Closest On-Center Spacing per Row | | |
|--|-----------------------------------|-------------------|-------------------|
| | 1⅞" TJ® Rim Board ⁽¹⁾ | TimberStrand® LSL | |
| | | 1⅞" | 1½" |
| 8d (0.113" or 0.131" x 2½"), 10d (0.128" or 0.148" x 3"), 12d (0.128" x 3¼") | 6" | 4" | 3" |
| 12d (0.148" x 3¼") | 12" ⁽²⁾ | 4" | 3" |
| 16d (0.162" x 3½") | 16" ⁽³⁾ | 6" ⁽⁴⁾ | 6" ⁽⁴⁾ |
| (0.131" x 3"-3½") | 12" ⁽⁴⁾ | 4" | 3" |

(1) 1⅞" TJ® Rim Board is allowed with joist depths ≤ 16" only.

(2) Can be reduced to 5" on-center if nail penetration into the narrow edge is no more than 1¼" (to minimize splitting).

(3) Can be reduced to 8" on-center if nail penetration into the narrow edge is no more than 1¼" (to minimize splitting).

(4) Can be reduced to 4" on-center if nail penetration into the narrow edge is no more than 1¼" (to minimize splitting).

▪ To minimize splitting, maintain edge distance and row spacing of 2½ x nail diameter or ⅜", whichever is greater. Multiple rows must be staggered and equally spaced from the centerline of the narrow face axis.

▪ 14 gauge staples may be substituted for 8d (0.113" x 2½") nails if minimum penetration of 1" is achieved.

Vertical Load Transfer at Bearing

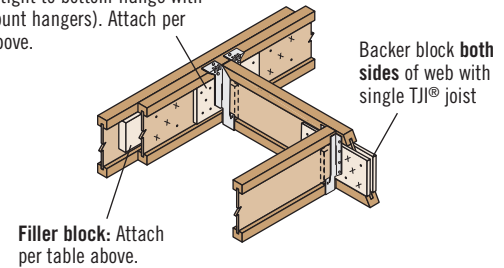
| Rim Board or Blocking Material | Depth | Allowable Uniform Vertical Load (PLF) | Concentrated Load (lbs) |
|--------------------------------|-----------|---------------------------------------|-------------------------|
| TJI® 110, 210, 230, 360, 560 | 9½"–16" | 2,100 | — |
| TJI® 360 | | 1,550 | |
| TJI® 560 | 18"–20" | 1,550 | |
| TJI® 560D | | 2,250 ⁽¹⁾ | |
| TJI® 560D (blocking only) | 22"–24" | 1,700 ⁽¹⁾ | |
| 1⅞" TJ® Rim Board or blocking | 9½", 11⅞" | 4,860 ⁽²⁾ | 4,150 |
| | 14" | | |
| | 16" | | |
| 1¼" TimberStrand® LSL | 9½"–14" | 5,400 ⁽²⁾ | 3,760 |
| | 16" | 5,000 | |
| | 18" | 4,340 | |
| | 20" | 3,700 | |
| | 22" | 3,160 | |
| 1½" TimberStrand® LSL | 24" | 2,710 | 4,520 |
| | 9½"–16" | 6,480 ⁽²⁾ | |
| | 18" | 6,380 | |
| | 20" | 5,740 | |
| | 22" | 5,070 | |
| | 24" | 4,440 | |

(1) Capacity is based on calculation

(2) Capacity is limited to a maximum of 360 psi per ASTM D7672

▪ Loads shall not be increased for duration of load.

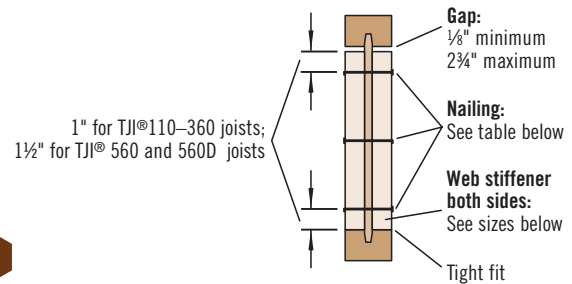
Backer block: Install tight to top flange (tight to bottom flange with face mount hangers). Attach per table above.



Filler block: Attach per table above.

H2 With top mount hangers, backer block required only for downward loads exceeding 250 lbs or for uplift conditions

Web Stiffener Attachment



W

Web Stiffener Requirements

| TJI® | Depth (in.) | Minimum Web Stiffener Size | Nail Type | # of Nails | |
|----------|--------------------|-----------------------------|--------------------|------------|------|
| | | | | End | Int. |
| 110 | All | ⅝" x 2 5/16" ⁽¹⁾ | 8d (0.113" x 2½") | 3 | 3 |
| 210 | All | ¾" x 2 5/16" ⁽¹⁾ | | 3 | 3 |
| 230, 360 | All | ⅞" x 2 5/16" ⁽¹⁾ | | 3 | 3 |
| 560 | All | 2x4 ⁽²⁾ | 16d (0.135" x 3½") | 3 | 3 |
| 560D | 18" | 2x4 ⁽²⁾ | 16d (0.135" x 3½") | 4 | 4 |
| | 20" | | | 5 | 5 |
| | 22" ⁽³⁾ | | | 6 | 11 |
| | 24" ⁽³⁾ | | | 6 | 13 |

(1) PS1 or PS2 sheathing, face grain vertical

(2) Construction grade or better

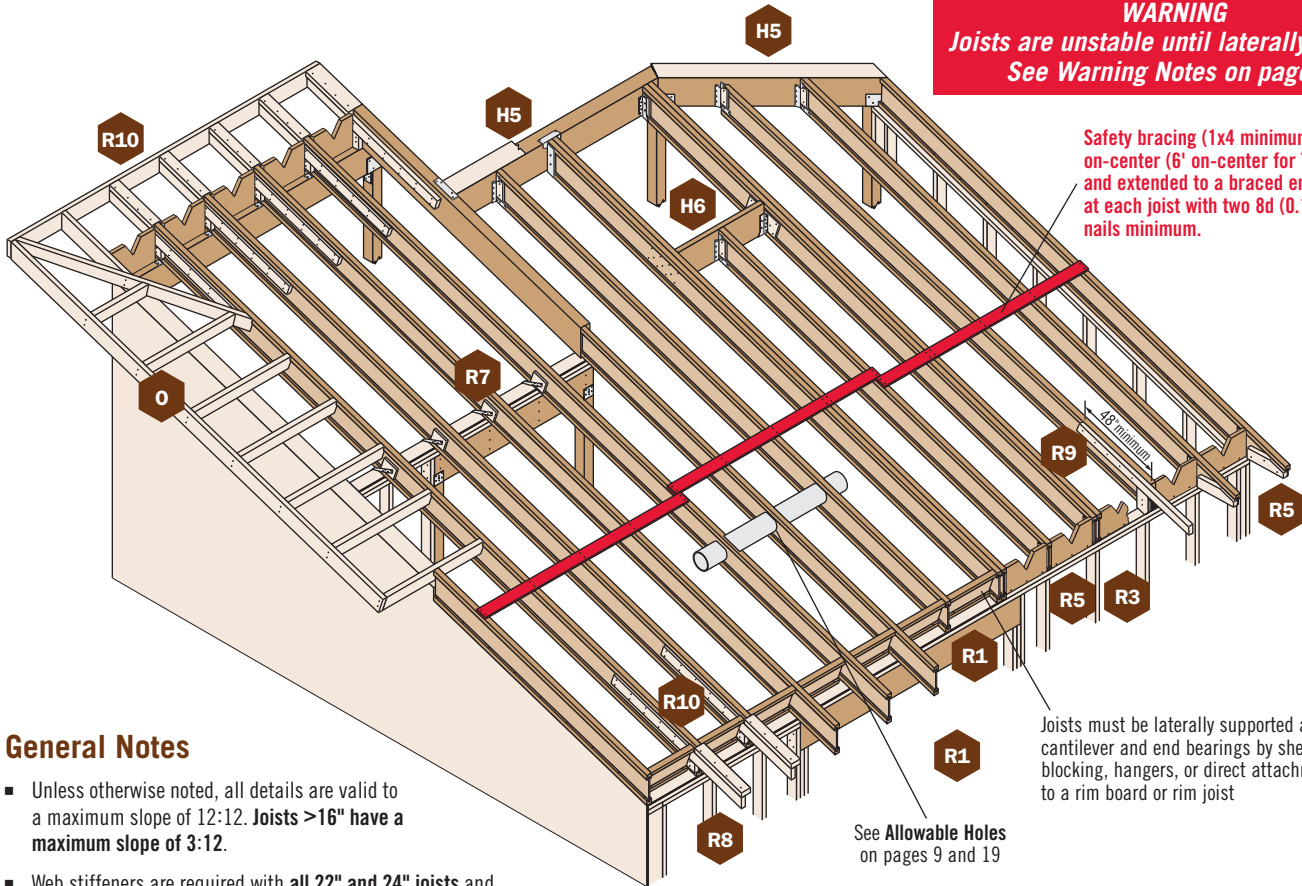
(3) Web stiffeners are always required for 22" and 24" TJI® 560D joists.

See nailing requirements on page 26

WARNING

*Joists are unstable until laterally braced.
See Warning Notes on page 6.*

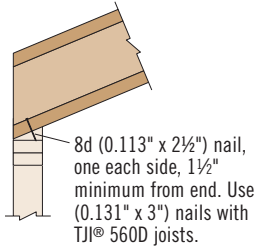
Safety bracing (1x4 minimum) placed at 8' on-center (6' on-center for TJI 110 joists) and extended to a braced end wall. Fasten at each joist with two 8d (0.113" x 2½") nails minimum.

**General Notes**

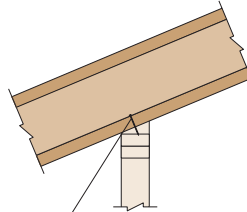
- Unless otherwise noted, all details are valid to a maximum slope of 12:12. Joists >16" have a maximum slope of 3:12.
- Web stiffeners are required with all 22" and 24" joists and when the sides of the hanger do not laterally support at least ⅓" of the TJI® joist top flange. Also see framing plan.

Joists must be laterally supported at cantilever and end bearings by shear blocking, hangers, or direct attachment to a rim board or rim joist

See Allowable Holes on pages 9 and 19

TJI® Joist Nailing Requirements at Bearing (Maximum slope for 18"–24" joists is 3:12)**TJI® Joist to Bearing Plate****End Bearing**
(1¼" minimum bearing required)

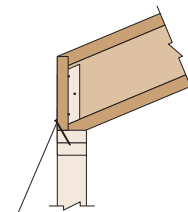
When slope exceeds ¼:12, a beveled bearing plate, variable slope seat connector, or birdsmouth cut (at low end of joist only) is required.

Intermediate Bearing
(3½" minimum bearing required)

Slopes 3:12 or less:
One 8d (0.113" x 2½") nail each side. Use (0.131" x 3") nails with TJI® 560D joists. See detail R7.

Slopes greater than 3:12 (for depths ≤ 16" only):
Two 8d (0.113" x 2½") nails each side, plus a twist strap and backer block. See detail R7S.

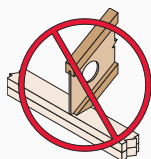
When slope exceeds ¼:12 for a 2x4 wall or ⅛:12 for a 2x6 wall, a beveled bearing plate or variable slope seat connector is required.

Blocking to Bearing Plate

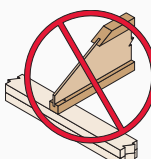
1¼" TJI® Rim Board (with depths ≤ 16"), or 1¼" or 1½" TimberStrand® LSL: Toenail with (0.131" x 3") nails at 6" on-center.

TJI® joist blocking:
(0.131" x 3") nails at 6" on-center

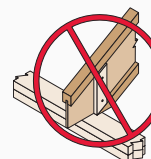
Shear transfer nailing:
Minimum, use connections equivalent to sheathing nail schedule

These Conditions Are NOT Permitted:

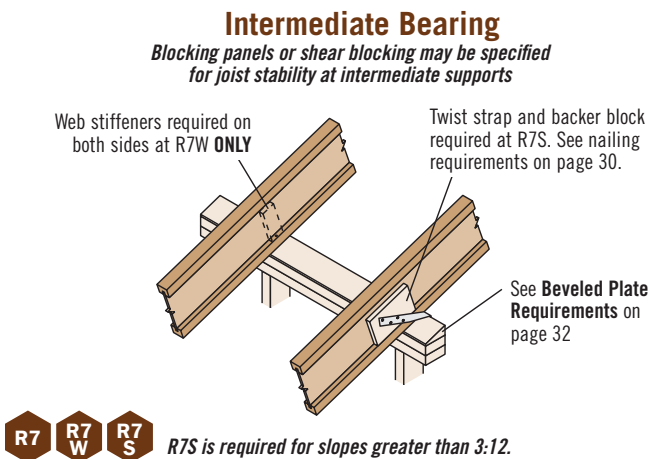
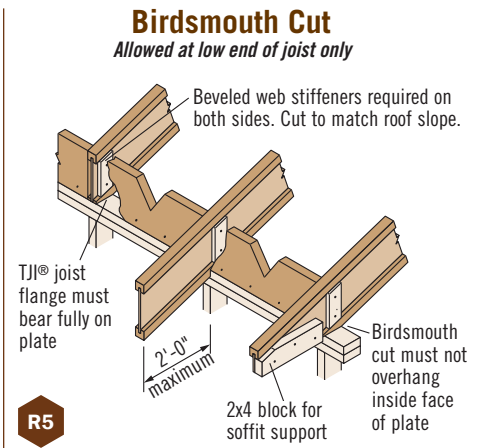
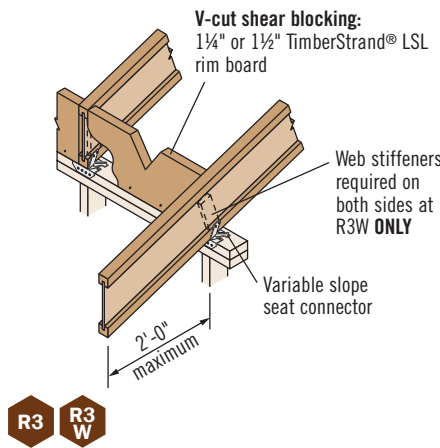
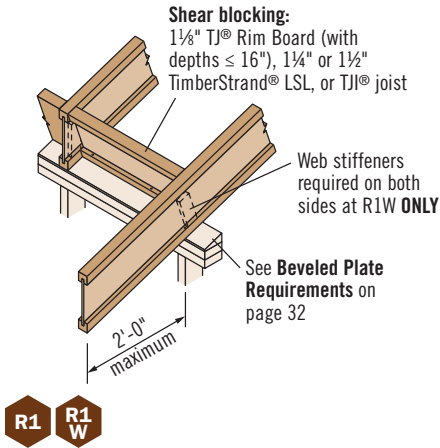
DO NOT cut holes too close to support.
Refer to Allowable Holes on pages 9 and 19 for minimum distance from support.



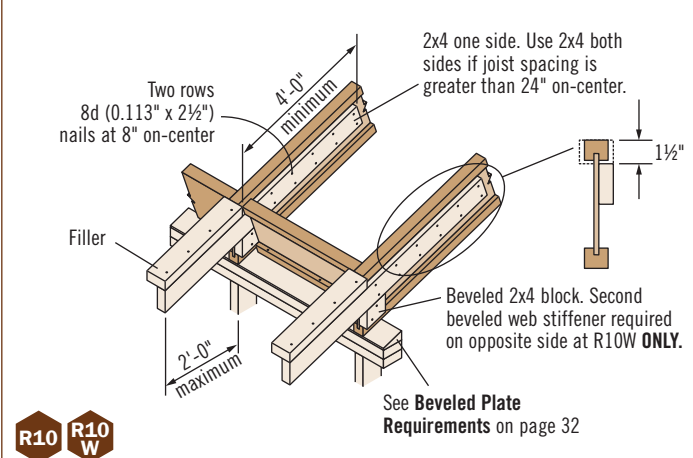
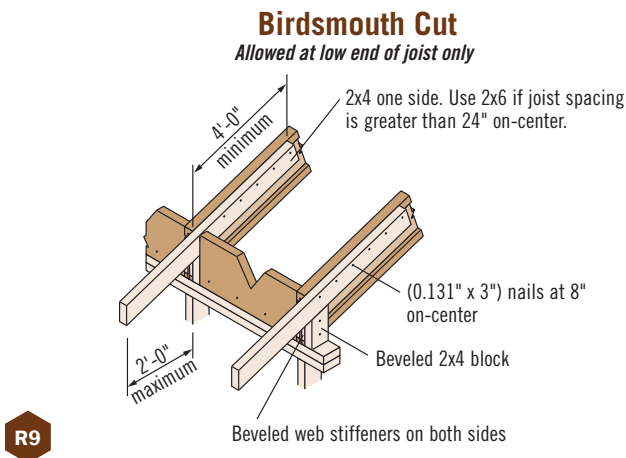
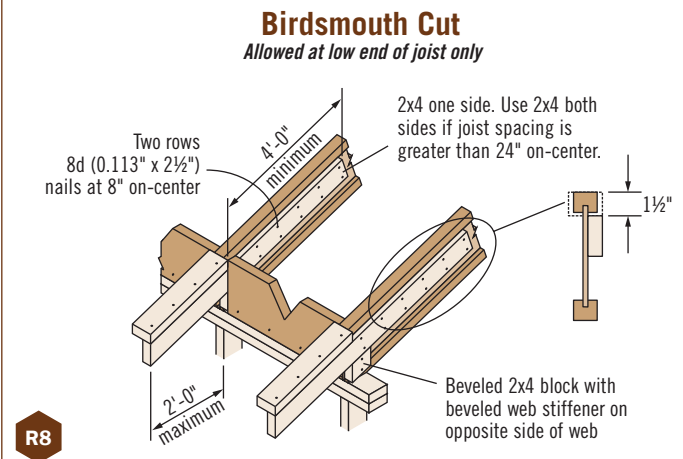
DO NOT bevel cut joist beyond inside face of wall.



DO NOT overhang birdsmouth cut from inside face of plate.
TJI® joist flange must bear fully on the plate. See detail BC on page 32.

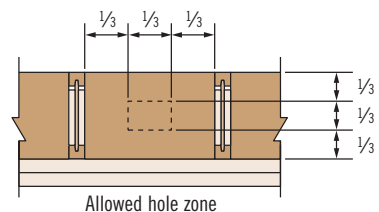
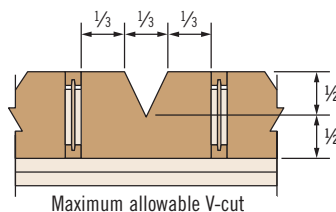
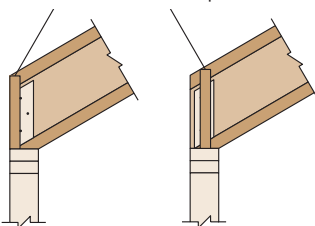


R7S is required for slopes greater than 3:12.

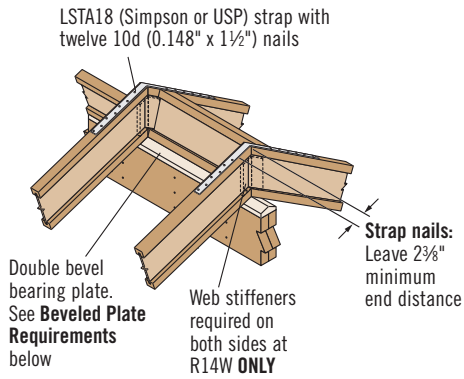


Shear Blocking and Ventilation Holes (Roof Only)

Field trim to match joist depth at outer edge of wall or locate on wall to match joist depth. Use 1½" TJI® Rim Board with depths ≤ 16".

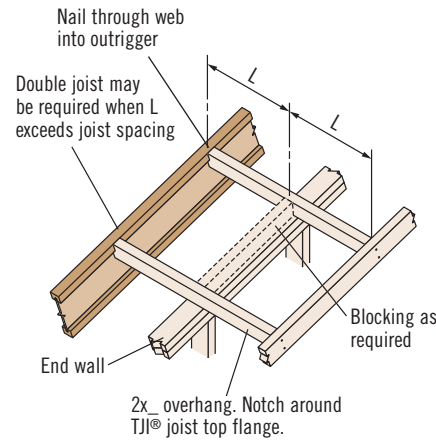


SB For TJI® joists with slopes of 10:12 to 12:12, the vertical depth of the shear blocking at bearing will require 1¼" TJI® Rim Board or 1¼" or 1½" TimberStrand® LSL that is one size deeper than the TJI® joist. DO NOT use 1½" TJI® Rim Board with 18"-24" TJI® joists or in ventilation-hole applications.



R14
R14W

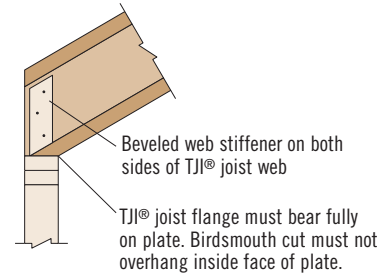
Additional blocking may be required for shear transfer



O

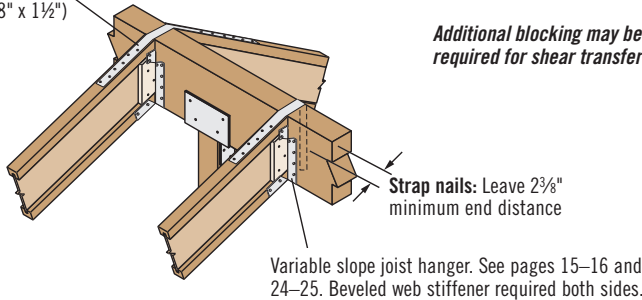
Birdsmouth Cut

Allowed at low end of joist only



BC

LSTA24 (Simpson or USP) strap with twelve 10d (0.148\"/>



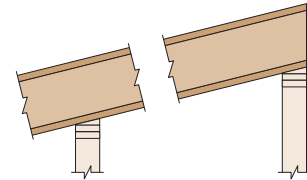
Additional blocking may be required for shear transfer

Variable slope joist hanger. See pages 15–16 and 24–25. Beveled web stiffener required both sides.

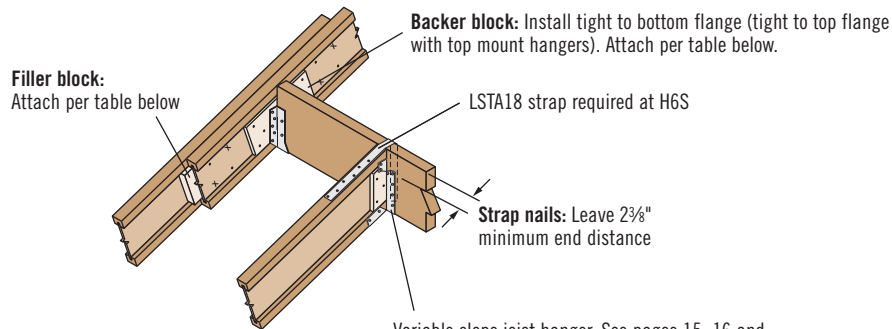
H5
H5S

H5S is required for slopes greater than 3:12.

Beveled Plate Requirements



| Required Bearing Length | Maximum Slope Without Beveled Plate |
|-------------------------|-------------------------------------|
| 1 3/4" | 1/2:12 |
| 3 1/2" | 3/4:12 |
| 5 1/2" | 1 1/8:12 |



H6
H6S

H6S is required for slopes greater than 3:12.

Variable slope joist hanger. See pages 15–16 and 24–25. Beveled web stiffener required both sides.

Filler and Backer Block Sizes

| TJI® | | 110 | | 210 | | 230 or 360 | | 360 | 560 | | 560 or 560D | 560D |
|--|--------|---------------|---------|--------------------|--------------------|--------------------|--------------------|---------------------|----------------|---------|-------------|-------------------------|
| Depth | | 9½"–11⅞" | 14"–16" | 9½"–11⅞" | 14"–16" | 9½"–11⅞" | 14"–16" | 18"–20" | 11⅞" | 14"–16" | 18"–20" | 22"–24" |
| Filler Block ⁽¹⁾ (Detail H6) | | 2x6 | 2x8 | 2x6 + ⅜" sheathing | 2x8 + ⅜" sheathing | 2x6 + ½" sheathing | 2x8 + ½" sheathing | 2x12 + ½" sheathing | Two 2x6 | Two 2x8 | Two 2x12 | Four ¾" x 15" sheathing |
| Backer Block ⁽¹⁾ (Detail H6) | | ⅝" or ¾" | | ¾" or ⅞" | | ⅞" or 1" net | | | 2x6 | 2x8 | 2x12 | Two ¾" x 15" sheathing |
| Nail Size | Filler | (0.131" x 3") | | | | | | | (0.131" x 3½") | | | |
| | Backer | | | | | | | | (0.131" x 3") | | | |
| Nail Quantity ⁽²⁾ | Filler | 15 | | | | | | | 32 | | 50 | |
| | Backer | 15 | | | | | | | 15 | | 15 | |

(1) If necessary, increase filler and backer block height for face mount hangers and maintain 1/8" gap at top of joist. See detail W on page 29. Filler and backer block dimensions should accommodate required nailing without splitting. The suggested minimum length is 24" for filler and 12" for backer blocks.

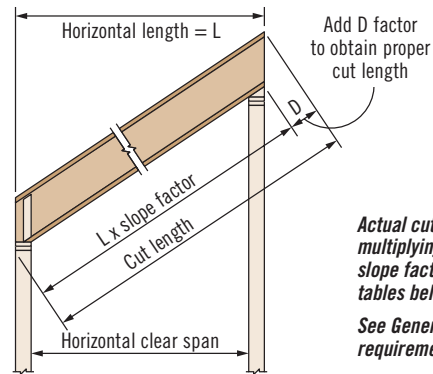
(2) Clinch nails when possible.

(3) For filler block connections, drive nails from alternating sides.

See nailing requirements on page 30

CUT LENGTH CALCULATION

ALL JOIST DEPTHS



D Factors

| Depth | Slope | | | | | | | | | | | | | | | |
|-------|-------|-------|------|-------|------|-------|------|-------|------|------|------|------|------|-------|-------|-------|
| | 1:12 | 1½:12 | 2:12 | 2½:12 | 3:12 | 3½:12 | 4:12 | 4½:12 | 5:12 | 6:12 | 7:12 | 8:12 | 9:12 | 10:12 | 11:12 | 12:12 |
| 9½" | 7⁄8" | 1¼" | 1⅝" | 2" | 2⅜" | 2⅞" | 3¼" | 3⅝" | 4" | 4¾" | 5⅝" | 6⅜" | 7⅞" | 8" | 8¾" | 9½" |
| 11⅞" | 1" | 1½" | 2" | 2½" | 3" | 3½" | 4" | 4½" | 5" | 6" | 7" | 8" | 9" | 10" | 11" | 11⅞" |
| 14" | 1¼" | 1¾" | 2⅜" | 3" | 3½" | 4⅛" | 4¾" | 5¼" | 5⅞" | 7" | 8¼" | 9⅜" | 10½" | 11¾" | 12⅞" | 14" |
| 16" | 1⅝" | 2" | 2¾" | 3⅜" | 4" | 4¾" | 5⅜" | 6" | 6¾" | 8" | 9⅜" | 10¾" | 12" | 13⅜" | 14¾" | 16" |
| 18" | 1½" | 2¼" | 3" | 3¾" | 4½" | N.A. | | | | | | | | | | |
| 20" | 1⅝" | 2½" | 3⅜" | 4⅛" | 5" | | | | | | | | | | | |
| 22" | 1⅞" | 2¾" | 3⅝" | 4⅝" | 5½" | | | | | | | | | | | |
| 24" | 2" | 3" | 4" | 5" | 6" | | | | | | | | | | | |

Slope Factors

| Slope | 2½:12 | 3:12 | 3½:12 | 4:12 | 4½:12 | 5:12 | 6:12 | 7:12 | 8:12 | 9:12 | 10:12 | 11:12 | 12:12 |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Factor | 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 |

MATERIAL WEIGHTS AND CONVERSION TABLE

Material Weights

(Include TJI® weights in dead load calculations—see **Design Properties** tables on pages 6 and 17 for joist weights)

Floor Panels

Southern Pine

| | |
|-------------|---------|
| ½" plywood | 1.7 psf |
| ⅝" plywood | 2.0 psf |
| ¾" plywood | 2.5 psf |
| 1⅛" plywood | 3.8 psf |
| ½" OSB | 1.8 psf |
| ⅝" OSB | 2.2 psf |
| ¾" OSB | 2.7 psf |
| 7⁄8" OSB | 3.1 psf |
| 1⅛" OSB | 4.1 psf |

Based on: Southern pine — 40 pcf for plywood, 44 pcf for OSB

Roofing

| | |
|------------------|-----------------|
| Asphalt shingles | 2.5 psf |
| Wood shingles | 2.0 psf |
| Clay tile | 9.0 to 14.0 psf |
| Slate (⅜" thick) | 15.0 psf |

Roll or Batt Insulation (1" thick):

| | |
|------------|---------|
| Rock wool | 0.2 psf |
| Glass wool | 0.1 psf |

Floor Finishes

| | |
|---------------------------|----------|
| Hardwood (nominal 1") | 4.0 psf |
| Sheet vinyl | 0.5 psf |
| Carpet and pad | 1.0 psf |
| ¾" ceramic or quarry tile | 10.0 psf |

Concrete:

| | |
|----------------------|-----------------|
| Regular (1") | 12.0 psf |
| Lightweight (1") | 8.0 to 10.0 psf |
| Gypsum concrete (¾") | 6.5 psf |

Ceilings

| | |
|-----------------------|---------|
| Acoustical fibre tile | 1.0 psf |
| ½" gypsum board | 2.2 psf |
| ⅝" gypsum board | 2.8 psf |
| Plaster (1" thick) | 8.0 psf |

PSF to PLF

| O.C. Spacing | Load in Pounds Per Square Foot (PSF) | | | | | | | | |
|--------------------------------------|--------------------------------------|----|----|----|----|----|-----|-----|-----|
| | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |
| Load in Pounds Per Linear Foot (PLF) | | | | | | | | | |
| 12" | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |
| 16" | 27 | 34 | 40 | 47 | 54 | 60 | 67 | 74 | 80 |
| 19.2" | 32 | 40 | 48 | 56 | 64 | 72 | 80 | 88 | 96 |
| 24" | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |

NOTES

NOTES

WE CAN HELP YOU BUILD SMARTER

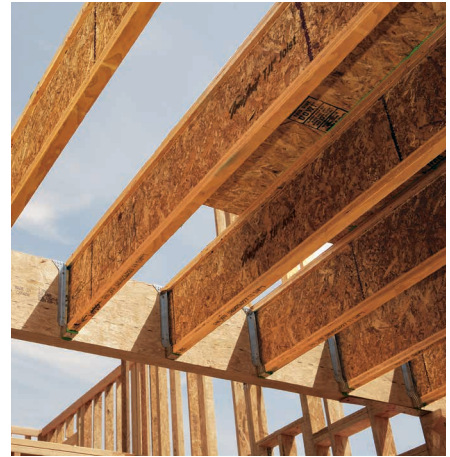
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Floors and Roofs: Start with the best framing components in the industry: our Trus Joist® TJI® joists; TimberStrand® LSL rim board; and TimberStrand® LSL, Microllam® LVL, and Parallam® PSL headers and beams. Pull them all together with our self-gapping and self-draining Weyerhaeuser Edge Gold™ floor panels and durable Weyerhaeuser roof sheathing.

Walls: Get the best value out of your framing package—use TimberStrand® LSL studs for tall walls, kitchens, and bathrooms, and our traditional, solid-sawn lumber everywhere else. Cut down installation time by using TimberStrand® LSL headers for doors and windows, and Weyerhaeuser wall sheathing with its handy two-way nail lines.

Software Solutions: Whether you are a design professional or lumber dealer, Weyerhaeuser offers an array of software packages to help you specify individual framing members, create cut lists, manage inventories—even help you design a complete structural frame. Contact your Weyerhaeuser representative to find out how to get the software you need.

Technical Support: Need technical help? Weyerhaeuser has one of the largest networks of engineers and sales representatives in the business. Call us for help, and a skilled member from our team of experts will answer your questions and work with you to develop solutions that meet all your structural framing needs.



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