

TJI[®] 110 · TJI[®] 210 · TJI[®] 230 TJI[®] 360 · TJI[®] 560 Joists

This literature is for legacy Trus Joist[®] products only and is not intended for use in current specification. Visit www.woodbywy.com for the most current Trus Joist[®] product offering and specification information.



Featuring Silent Floor[®] Joists for Residential Applications

- ▶ Environmentally Responsible
- ▶ Uniform and Predictable
- ▶ Resists Bowing, Twisting, and Shrinking
- ▶ Lightweight for Fast Installation
- ▶ Significantly Reduces Callbacks
- ▶ Available in Long Lengths
- ▶ Product Warranty



Why choose the Silent Floor® joist? Here's why so many specifiers and builders do:



EASY INSTALLATION— no surprises on the job or later on.

The same precision engineering that keeps a floor strong and quiet also makes it easier to install. The natural defects found in sawn lumber are engineered out, and dimensional stability is manufactured in.

And, at about half the weight of ordinary lumber joists, TJI® joists can be installed in a fraction of the time.

PRODUCT AVAILABILITY— our nation-wide distribution system ensures on-time delivery.

With seven TJI® joist manufacturing plants and over 70 distribution centers located strategically across North America, we make specifying, purchasing, and installing Silent Floor® joists a hassle-free experience.

DESIGN FLEXIBILITY— longer lengths for endless design options.

Silent Floor® joists are not limited by the dimensions or inconsistencies of ordinary sawn lumber. Longer uninterrupted spans with joists that won't bow, twist, or shrink means you have more design freedom than ever before.

INTEGRITY— guaranteed for the lifetime of the structure.

Builders appreciate our lifetime guarantee as much as home-owners do. After 30 years and more than three million homes, we at Trus Joist have so much confidence in our Silent Floor® joists that we guarantee them for the life of the home.

The residential products in this guide are intended for use in single-family dwellings and are readily available through our nation-wide network of distributors and dealers. For information on using these products in multi-family dwellings, refer to *TJI® Joists for Multi-Family Applications* (Reorder 2040).

For commercial applications such as retail stores, office buildings, schools, restaurants, hotels, nursing homes, etc., please refer to the **COMMERCIAL PRODUCT MANUAL** or our **STRUCTURAL PRODUCTS DESIGN MANUAL**. Commercial products are typically designed, manufactured, and sold by Trus Joist for each specific job.

For more information on any Trus Joist product, please call **1-800-628-3997**.

**Code Evaluations: ICC-ES Legacy Report ER-4979
and ICC ESR-XXXX (pending)**



HOMEBUYER'S GUARANTEE

We guarantee that the Trus Joist products used in your home have been manufactured to precise tolerances and are free from defects in materials and workmanship. In the unlikely event that your Silent Floor® joist develops squeaks or any other problem caused by such defects, and provided that your floor joists have been properly installed, we will promptly remedy that problem at no cost to you.

In addition, if you call us with a problem that you believe may be caused by our products, our representative will contact you within one business day to evaluate the problem and help solve it. Guaranteed.

This guarantee is effective for the life of your home.

1-800-628-3997



Understanding and Preventing Floor Noise

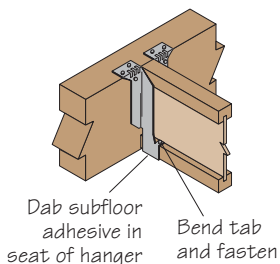
A specifier or builder who uses the Silent Floor® joist is making a significant effort to eliminate annoying floor squeaks. Here's why:

The most common cause of floor noise (squeaks) comes from using ordinary sawn lumber joists. Even when kiln dried, these joists can warp, twist, and shrink, leaving gaps around nails between the joist and floor panel—causing a squeak with every step.

Silent Floor® joists are structurally uniform, dimensionally stable, and have a consistent moisture content. They resist shrinking and twisting, which means no gaps—and no squeaks.

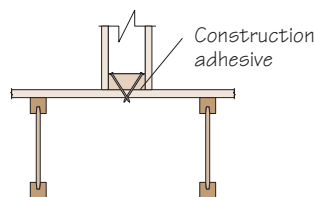
Using Silent Floor® joists can ensure a quieter floor, but only if the system is properly installed. This is because other components—like hangers, connectors, nails, etc.—can also cause floor noise. To help you get the best possible performance from your Silent Floor® joists, we recommend the following installation tips:

Properly seat each joist in hanger



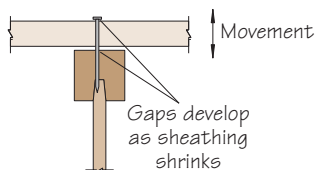
- *Seat the joist tight to the bottom of the hanger. When using hangers with tabs, bend the flange tabs over and nail to the TJI® joist bottom flange.*
- *Placing a dab of subfloor adhesive in the seat of the hanger prior to installing the joist can reduce squeaks.*

Use adhesive and special nailing when needed



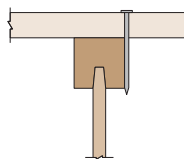
- *Nail interior partitions to the joists when possible. If the wall can only be nailed to the floor panel, run a bead of adhesive under the wall and either cross nail, nail through and clinch tight, or screw into the wall from below.*

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"



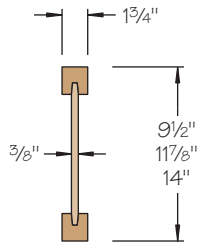
- *Exercise care when nailing. Nails that barely hit the joists (shiners) do not hold the panel tight to the joist and should be removed. If left in, the nails will rub against the side of the joist when the panel deflects.*

For more information and tips on how to prevent floor noise, refer to *The Silent Floor® Field Guide for Prevention and Repair of Squeaks* (Reorder 2065).

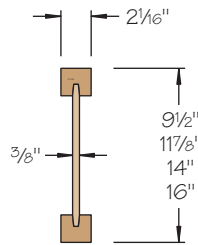
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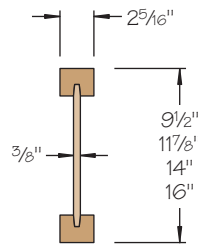
Not all products are available in all markets. Contact your Trus Joist representative for information.



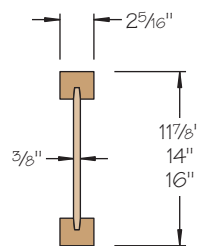
TJI® 110 joists



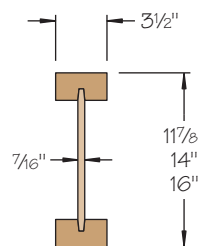
TJI® 210 joists



TJI® 230 joists



TJI® 360 joists



TJI® 560 joists

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. |
| 9 1/2" | 110 | 16'-5" | 15'-0" | 14'-2" | 13'-2" | 16'-5" | 15'-0" | 13'-11" | 12'-5" |
| | 210 | 17'-3" | 15'-9" | 14'-10" | 13'-10" | 17'-3" | 15'-9" | 14'-10" | 13'-8" |
| | 230 | 17'-8" | 16'-2" | 15'-3" | 14'-2" | 17'-8" | 16'-2" | 15'-3" | 14'-2" |
| 11 7/8" | 110 | 19'-6" | 17'-10" | 16'-10" | 15'-5" ⁽¹⁾ | 19'-6" | 17'-3" | 15'-8" | 14'-0" ⁽¹⁾ |
| | 210 | 20'-6" | 18'-8" | 17'-8" | 16'-5" | 20'-6" | 18'-8" | 17'-3" | 15'-5" ⁽¹⁾ |
| | 230 | 21'-0" | 19'-2" | 18'-1" | 16'-10" | 21'-0" | 19'-2" | 18'-1" | 16'-3" ⁽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'-2" | 20'-3" | 18'-9" | 16'-9" ⁽¹⁾ | 21'-8" | 18'-9" | 17'-1" ⁽¹⁾ | 14'-7" ⁽¹⁾ |
| | 210 | 23'-3" | 21'-3" | 20'-0" | 18'-4" ⁽¹⁾ | 23'-3" | 20'-7" | 18'-9" ⁽¹⁾ | 16'-2" ⁽¹⁾ |
| | 230 | 23'-10" | 21'-9" | 20'-6" | 19'-1" | 23'-10" | 21'-8" | 19'-9" | 17'-1" ⁽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" | 210 | 25'-9" | 23'-6" | 22'-0" ⁽¹⁾ | 19'-5" ⁽¹⁾ | 25'-5" | 22'-0" ⁽¹⁾ | 20'-1" ⁽¹⁾ | 16'-2" ⁽¹⁾ |
| | 230 | 26'-5" | 24'-1" | 22'-9" | 20'-7" ⁽¹⁾ | 26'-5" | 23'-2" | 21'-2" ⁽¹⁾ | 17'-1" ⁽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. |
| 9 1/2" | 110 | 18'-2" | 16'-7" | 15'-3" | 13'-8" | 17'-8" | 15'-3" | 13'-11" | 12'-5" |
| | 210 | 19'-1" | 17'-5" | 16'-6" | 15'-0" | 19'-1" | 16'-9" | 15'-4" | 13'-8" |
| | 230 | 19'-7" | 17'-11" | 16'-11" | 15'-9" | 19'-7" | 17'-8" | 16'-1" | 14'-5" |
| 11 7/8" | 110 | 21'-7" | 18'-11" | 17'-3" | 15'-5" ⁽¹⁾ | 19'-11" | 17'-3" | 15'-8" | 14'-0" ⁽¹⁾ |
| | 210 | 22'-8" | 20'-8" | 18'-11" | 16'-10" | 21'-10" | 18'-11" | 17'-3" | 15'-5" ⁽¹⁾ |
| | 230 | 23'-3" | 21'-3" | 19'-11" | 17'-9" | 23'-0" | 19'-11" | 18'-2" | 16'-3" ⁽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" | 26'-3" | 24'-9" | 20'-11" ⁽¹⁾ |
| 14" | 110 | 23'-9" | 20'-6" | 18'-9" | 16'-9" ⁽¹⁾ | 21'-8" | 18'-9" | 17'-1" ⁽¹⁾ | 14'-7" ⁽¹⁾ |
| | 210 | 25'-8" | 22'-6" | 20'-7" | 18'-4" ⁽¹⁾ | 23'-9" | 20'-7" | 18'-9" ⁽¹⁾ | 16'-2" ⁽¹⁾ |
| | 230 | 26'-4" | 23'-9" | 21'-8" | 19'-4" ⁽¹⁾ | 25'-0" | 21'-8" | 19'-9" | 17'-1" ⁽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" | 210 | 27'-10" | 24'-1" | 22'-0" ⁽¹⁾ | 19'-5" ⁽¹⁾ | 25'-5" | 22'-0" ⁽¹⁾ | 20'-1" ⁽¹⁾ | 16'-2" ⁽¹⁾ |
| | 230 | 29'-2" | 25'-5" | 23'-2" | 20'-7" ⁽¹⁾ | 26'-9" | 23'-2" | 21'-2" ⁽¹⁾ | 17'-1" ⁽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⁾ |

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".

(1) Web stiffeners are required at intermediate supports of continuous span joists when the intermediate bearing length is less than 5/4" 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 | N.A. | N.A. | N.A. | 15'-4" | N.A. | N.A. | 16'-0" | 12'-9" |
| 210 | N.A. | N.A. | 21'-4" | 17'-0" | N.A. | 21'-4" | 17'-9" | 14'-2" |
| 230 | N.A. | N.A. | N.A. | 19'-2" | N.A. | N.A. | 19'-11" | 15'-11" |
| 360 | N.A. | N.A. | 24'-5" | 19'-6" | N.A. | 24'-5" | 20'-4" | 16'-3" |
| 560 | N.A. | N.A. | 29'-10" | 23'-10" | N.A. | 29'-10" | 24'-10" | 19'-10" |

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.

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™ Rating system.

General Notes

- Tables are based on:
 - Uniform loads.
 - More restrictive of simple or continuous span.
 - Clear distance between supports (1 3/4" minimum end bearing).
- Assumed composite action with a single layer of 24" on-center span-rated, glue-nailed floor panels for deflection only. **Spans shall be reduced 6" when floor panels are nailed only.**
- Spans generated from Trus Joist software may exceed the spans shown in these tables because software reflects actual design conditions.
- For loading conditions not shown, refer to software or to load tables on page 15.

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" Intermediate Reaction (lbs) | |
| | | | | | | No Web Stiffeners | With Web Stiffeners | |
| 9½" | 110 | 2.3 | 2,380 | 140 | 1,220 | 885 | 1,935 | N.A. |
| | 210 | 2.6 | 2,860 | 167 | 1,330 | 980 | 2,145 | N.A. |
| | 230 | 2.7 | 3,175 | 183 | 1,330 | 1,035 | 2,410 | N.A. |
| 11½" | 110 | 2.5 | 3,015 | 238 | 1,560 | 885 | 1,935 | 2,295 |
| | 210 | 2.8 | 3,620 | 283 | 1,655 | 980 | 2,145 | 2,505 |
| | 230 | 3.0 | 4,015 | 310 | 1,655 | 1,035 | 2,410 | 2,765 |
| | 360 | 3.0 | 6,180 | 419 | 1,705 | 1,080 | 2,460 | 2,815 |
| 14" | 560 | 4.0 | 9,500 | 636 | 2,050 | 1,265 | 3,000 | 3,475 |
| | 110 | 2.8 | 3,565 | 351 | 1,860 | 885 | 1,935 | 2,295 |
| | 210 | 3.1 | 4,280 | 415 | 1,945 | 980 | 2,145 | 2,505 |
| | 230 | 3.3 | 4,755 | 454 | 1,945 | 1,035 | 2,410 | 2,765 |
| 16" | 360 | 3.3 | 7,335 | 612 | 1,955 | 1,080 | 2,460 | 2,815 |
| | 560 | 4.2 | 11,275 | 926 | 2,390 | 1,265 | 3,000 | 3,475 |
| | 210 | 3.3 | 4,895 | 566 | 2,190 | 980 | 2,145 | 2,505 |
| | 230 | 3.5 | 5,440 | 618 | 2,190 | 1,035 | 2,410 | 2,765 |
| 16" | 360 | 3.5 | 8,405 | 830 | 2,190 | 1,080 | 2,460 | 2,815 |
| | 560 | 4.5 | 12,925 | 1,252 | 2,710 | 1,265 | 3,000 | 3,475 |

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

General Notes

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

| | |
|---|---|
| <p>For TJI® 110, 210, 230, and 360 Joists</p> $\Delta = \frac{22.5 wL^4}{EI} + \frac{2.67 wL^2}{d \times 10^5}$ | <p>For TJI® 560 Joists</p> $\Delta = \frac{22.5 wL^4}{EI} + \frac{2.29 wL^2}{d \times 10^5}$ |
| <p>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</p> | |

TJI® joists are intended for dry-use applications

Legacy Literature
See Note on Front Cover

Material Weights

(Include TJI® weights in dead load calculations—see Design Properties table at left for joist weights)

Floor Panels

Southern Pine

| | |
|-------------|---------|
| ½" plywood | 1.7 psf |
| ⅝" plywood | 2.0 psf |
| ¾" plywood | 2.5 psf |
| 1½" plywood | 3.8 psf |
| ½" OSB | 1.8 psf |
| ⅝" OSB | 2.2 psf |
| ¾" OSB | 2.7 psf |
| 1½" 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 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:

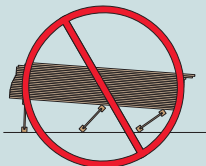
| | |
|----------------------|-----------------|
| Regular (1") | 12.0 psf |
| Lightweight (1") | 8.0 to 10.0 psf |
| Gypsum concrete (¾") | 6.5 psf |

Ceilings

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



DO NOT allow workers to walk on joists until braced. **INJURY MAY RESULT.**



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

WARNING

Joists are unstable until braced laterally

Bracing Includes:

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

WARNING NOTES: Lack of concern for proper bracing during construction can result in serious accidents. Under normal conditions if the following guidelines are observed, accidents will be avoided.

1. All blocking, hangers, rim boards, and rim joists at the end supports of the TJI® joists must be completely installed and properly nailed.
2. 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.
3. Safety bracing lines 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—like a worker or one layer of unnailed sheathing.
4. Sheathing must be totally attached to each TJI® joist before additional loads can be placed on the system.
5. Ends of cantilevers require safety bracing on both the top and bottom flanges.
6. The flanges must remain straight within a tolerance of ½" from true alignment.

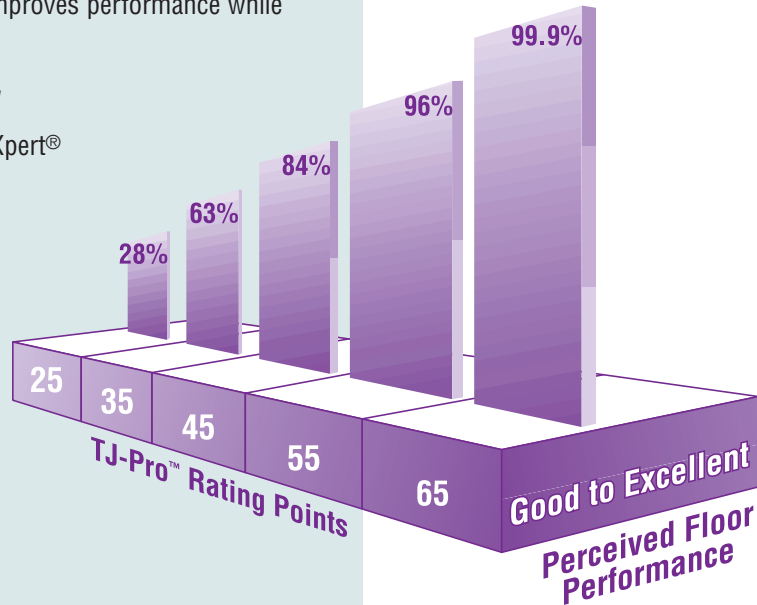
IT'S ABOUT CHOICE—

The TJ-Pro™ Rating System is a sophisticated computer model for predicting floor performance and evaluating the relationship between the cost and the “feel” of any given floor system. Its methodology is based on extensive laboratory research, more than one million installations, and the combined expertise of the best engineers in the field. TJ-Pro™ Rating goes beyond deflection criteria to consider job-specific needs and expectations. In many cases, TJ-Pro™ Rating will offer a system that improves performance while actually reducing costs!

TJ-PRO™ RATING SYSTEM FEATURES:

- Works as part of Trus Joist’s TJ-Beam® and TJ-Xpert® software.
- Provides a new method for accurately predicting floor performance.
- Takes perceptions of the homeowner into account.
- Provides cost comparison.

How do most people perceive a floor assembly with a TJ-Pro™ Rating of 45 points? 84% find it good to excellent and 16% find it marginal to unacceptable.



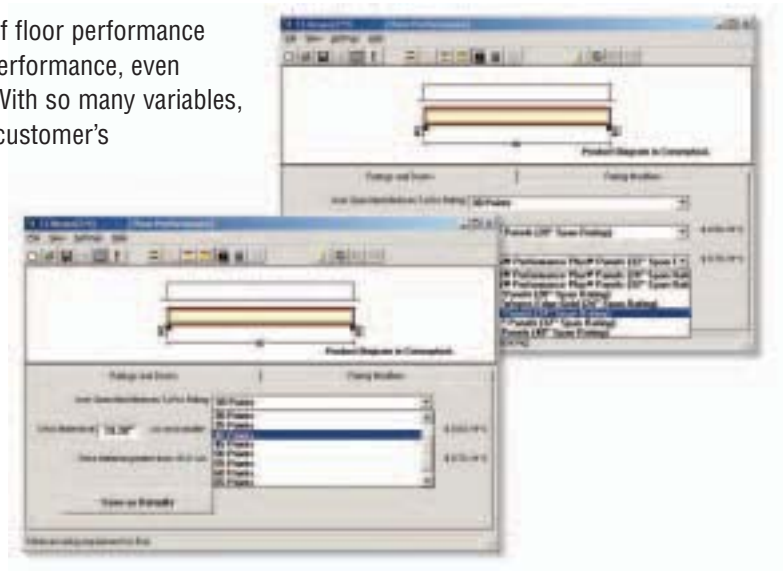
DESIGN SMARTER—DON'T OVER-SPECIFY

The traditional way to specify a floor system is to use live load deflection criteria, but deflection only explains part of how a floor performs. Depending on factors unique to the structure and its use, the code minimum of L/360 (or even the more restrictive limits of L/480) may disappoint many customers.

The TJ-Pro™ Rating System is a much better predictor of floor performance because it considers the many factors that affect floor performance, even taking into account the perceptions of the homeowner. With so many variables, you can deliver an economical solution tailored to your customer's expectations.

Factors that affect floor performance:

- TJI® joist series, depth, and spacing
- Deck thickness and quality
- Directly applied ceilings
- Location of partitions on floor
- Use of blocking
- Bearing conditions for the TJI® joists



GET THE SUPPORT YOU NEED—

We're here to help you make the most of the TJ-Pro™ Rating System, whether it's help with setup, tips and tricks, or selecting the best rating for your project. Call your Trus Joist representative today.

Legacy Literature
See Note on Front Cover

THE FRAMEWORKS[®] FLOOR SYSTEM

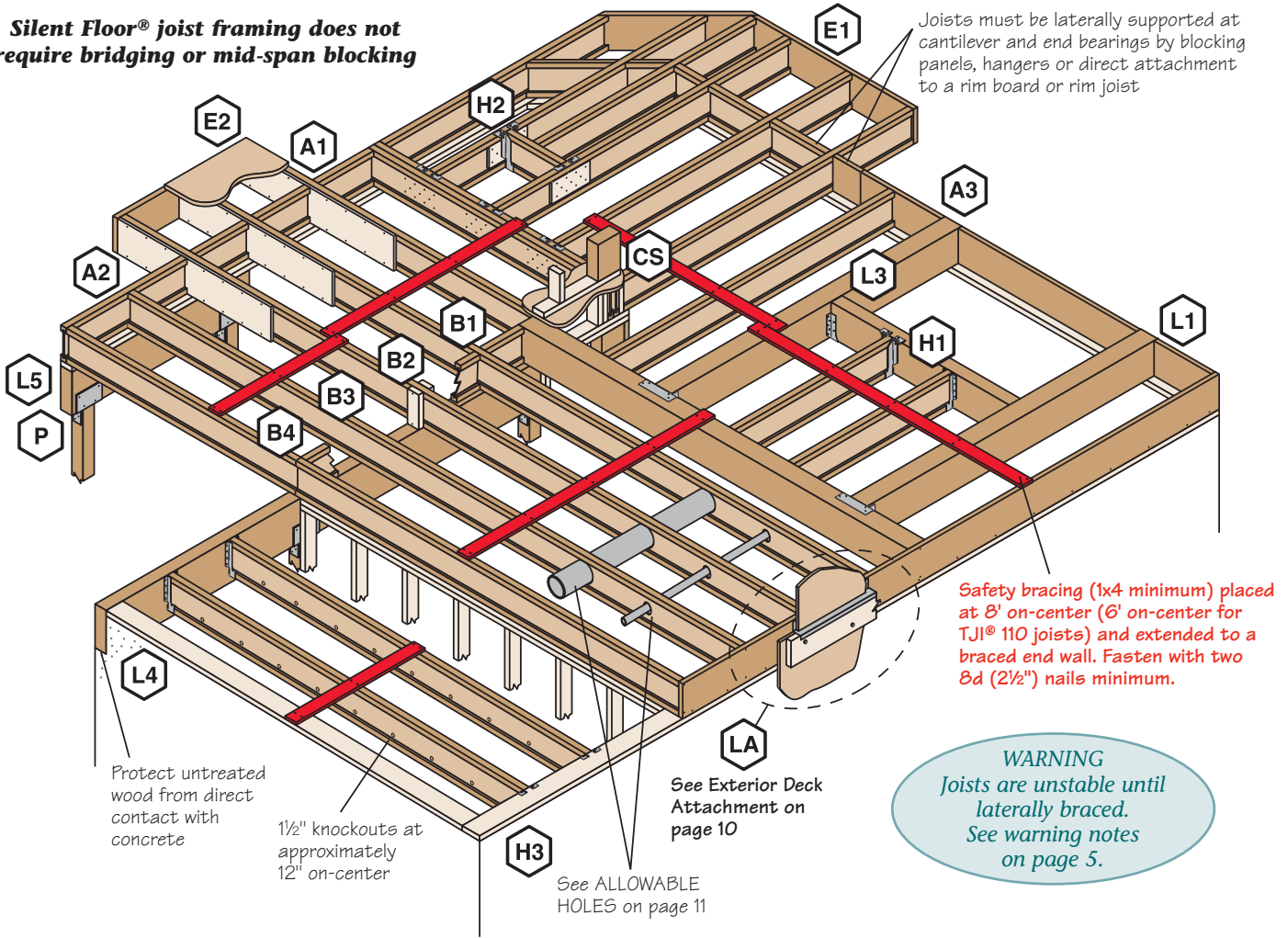
We're taking the Silent Floor[®] to the next level

- A true system of products engineered to work together, including TJI[®] Joists, TJ[®]-Performance Plus[®] Panels, Trus Joist rim board and installation guidelines
- Reliable, predictable structural performance
- Software output with TJ-Pro[™] Ratings that accurately reflect the improved system performance



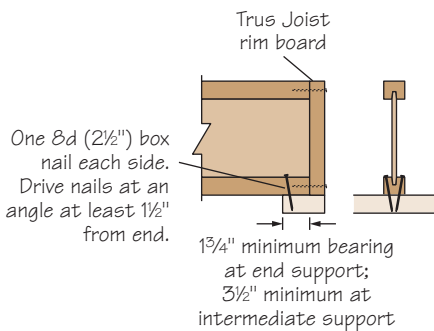
*The Frameworks[®] Floor System...
Coming together at the
2004 International Builders Show
in Las Vegas*

Silent Floor® joist framing does not require bridging or mid-span blocking

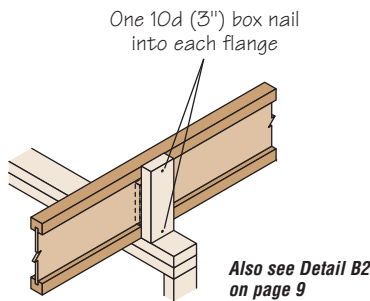


TJI® Joist Nailing Requirements at Bearing

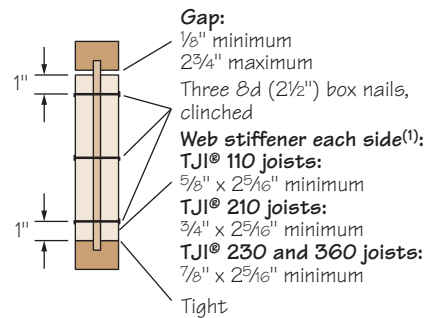
TJI® Joist to Bearing Plate



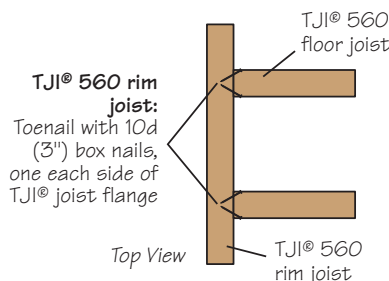
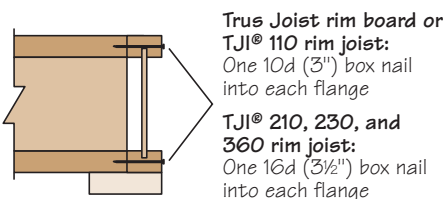
Squash Blocks to TJI® Joist (Load bearing wall above)



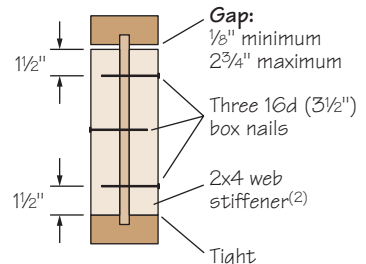
Web Stiffener Attachment



Rim to TJI® Joist



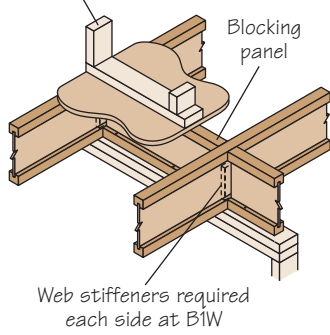
TJI® 560 joists only



W

(1) Web stiffener material shall be PS1-95 or PS2-92 sheathing, face grain vertical
(2) 2x4 construction grade or better

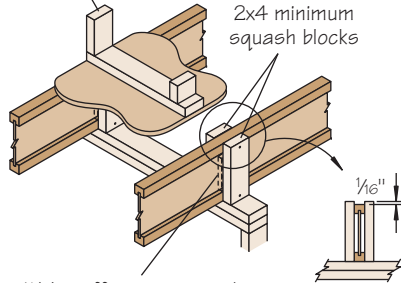
Load bearing or shear wall above
(must stack over wall below)



Web stiffeners required
each side at B1W

B1 **B1**
W

Load bearing wall above
(must stack over wall below)

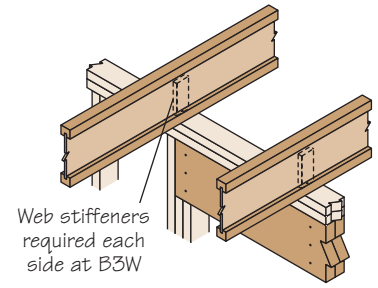


Web stiffeners required
each side at B2W

B2 **B2**
W

Blocking panels may be required
with shear walls above or below—
see detail B1

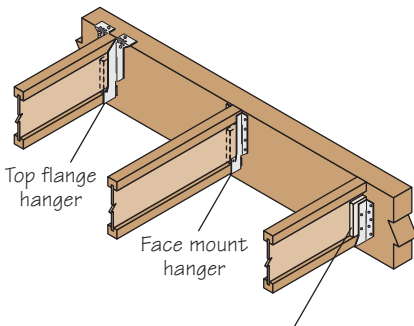
**Intermediate Bearing –
No Load Bearing Wall Above**



Web stiffeners
required each
side at B3W

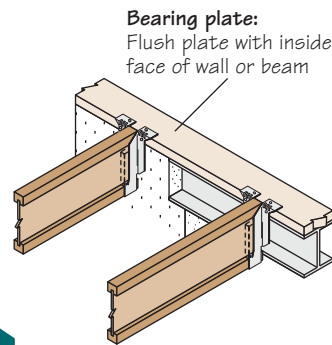
B3 **B3**
W

Blocking panels may be required
with shear walls above or below—
see detail B1



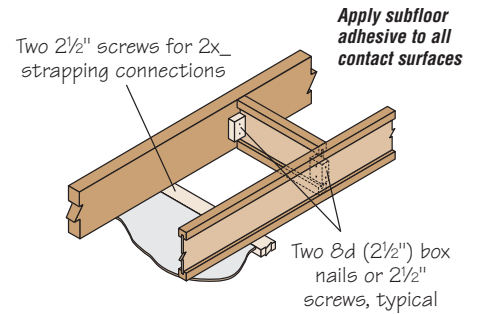
Web stiffeners required if sides of
hanger do not laterally support at
least 3/8" of TJI® joist top flange

H1



Bearing plate:
Flush plate with inside
face of wall or beam

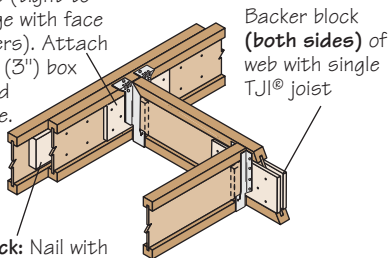
H3



Applications shown in this guide do not require
blocking, strapping, or a directly applied ceiling;
however, backspan bracing of cantilever applica-
tions is required when specified by software

PB1

Backer block: Install tight
to top flange (tight to
bottom flange with face
mount hangers). Attach
with ten 10d (3") box
nails, clinched
when possible.



Filler block: Nail with
ten 10d (3") box nails, clinched. Use ten 16d (3 1/2")
box nails from each side with TJI® 560 joists.

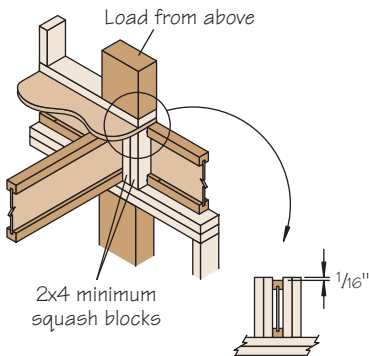
H2

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

Filler and Backer Block Sizes

| TJI® | 110 | | 210 | | 230 or 360 | | 560 | |
|--|-------------------|--------------------|------------------------------------|-------------------------------------|------------------------------------|-------------------------------------|----------------|------------|
| Depth | 9 1/2" or 11 7/8" | 14" | 9 1/2" or 11 7/8" | 14" or 16" | 9 1/2" or 11 7/8" | 14" or 16" | 11 7/8" | 14" or 16" |
| Filler Block* (Detail H2) | 2x6 | 2x8 | 2x6 + 3/8" sheathing | 2x8 + 3/8" sheathing | 2x6 + 1/2" sheathing | 2x8 + 1/2" sheathing | Two 2x6 | Two 2x8 |
| Cantilever Filler (Detail E4) | 2x6 4'-0" long | 2x10 6'-0" long | 2x6 + 3/8" sheathing 4'-0" long | 2x10 + 3/8" sheathing 6'-0" long | 2x6 + 1/2" sheathing 4'-0" long | 2x10 + 1/2" sheathing 6'-0" long | Not applicable | |
| Backer Block* (Detail F1 or H2) | 5/8" or 3/4" | | 3/4" or 7/8" | | 1" net | | 2x6 | 2x8 |

* If necessary, increase filler and backer block height for face mount hangers. Maintain 1/8" gap at top of joist; see detail W. Filler and backer block dimensions should accommodate required nailing without splitting.



2x4 minimum
squash blocks

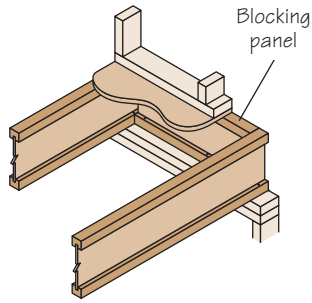
CS

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

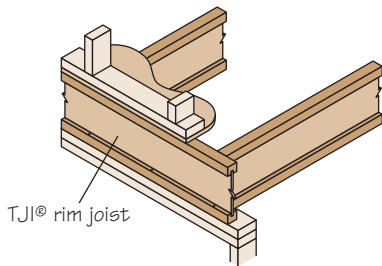
**Fastening of Floor Panels to TJI® Joist
Flanges and Trus Joist Rim Board**

| Nail Size | Closest On-Center Spacing per Row | | | |
|-------------------------------|-----------------------------------|----------------------|-----|--------|
| | TJI® | Trus Joist Rim Board | | |
| | 110, 210 | 230, 360, and 560 | 1" | 1 1/4" |
| 8d (2 1/2") box | 2 1/2" | 2" | 6" | 4" |
| 8d (2 1/2") common | 3 1/2" | 2" | 6" | 4" |
| 10d (3"), 12d (3 1/4") box | 3" | 2" | 6" | 4" |
| 10d (3"), 12d (3 1/4") common | 4 1/2" | 3" | 6" | 4" |
| 16d (3 1/2") common | N.A. | 4" | 16" | 6"(1) |

(1) Can be reduced to 4" on-center with maximum nail penetration of 1 3/8" into the narrow edge.

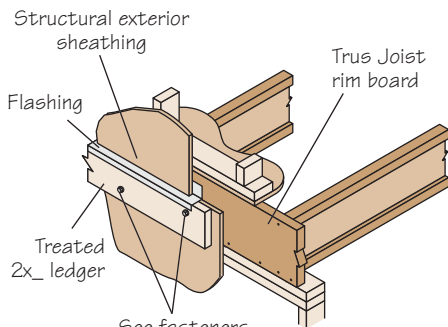


A1



A2

Exterior Deck Attachment



See fasteners below. Maintain 2" distance (minimum) from edge of ledger to fastener.

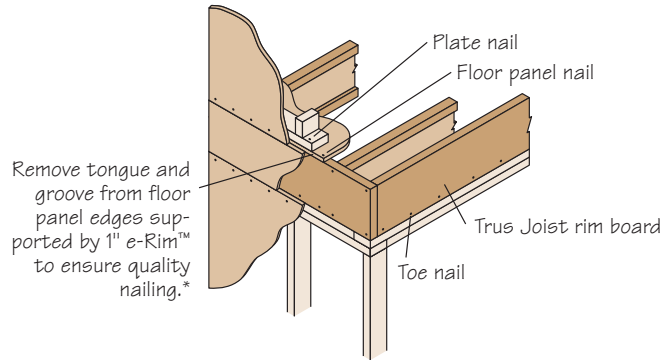
LA

| Fastener | Allowable Load (lbs) ⁽¹⁾ | |
|---------------|-------------------------------------|-----------|
| | 1 1/4" Rim Board | 1" e-Rim™ |
| 3/8" lag bolt | 400 | N.A. |
| 1/2" lag bolt | 475 | 325 |

(1) Allowable load determined in accordance with AC 124.

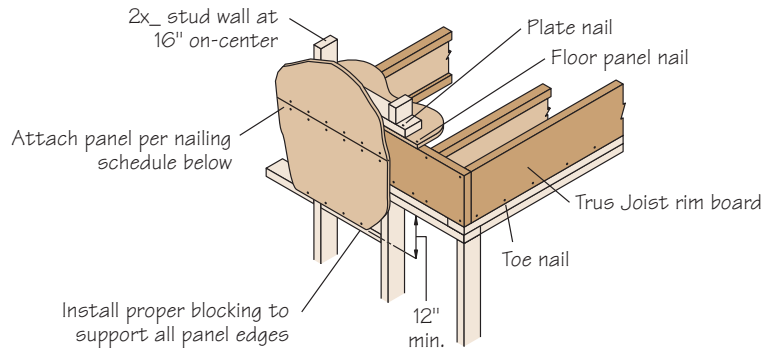
• Corrosion-resistant fasteners required for wet-service applications.

Rim board is often the critical structural link in the ability of a home to resist lateral wind loads. It also transfers vertical load around the TJI® joists. Rim board Detail A3 (shown below) satisfies conventional construction requirements. But if your project requires a designed solution, see our Trus Joist **Rim Board Selection and Installation Guide for Lateral Wind Loads**. This easy to use design guide for specifiers and code officials goes beyond conventional construction guidelines—which were based on the smaller, simpler homes of the past—and provides design information that considers today's larger, more complex homes.



A3 A3.1 A3.2 A3.3

*According to ICBO Evaluation Services, Inc., it is necessary to trim the panel edges when using 1 1/8" or thinner rim board.



A3.4

Rim Board Installation

| Specifications | A3 Conventional Construction, Code Minimum | A3.1, A3.2, A3.3, A3.4 Designed Solution |
|-------------------------------------|--|--|
| Rim Board Thickness | 1" or 1 1/4" | See the <i>Trus Joist Rim Board Selection and Installation Guide for Lateral Wind Loads</i> (Reorder 2109) |
| Plate Nail—16d (3 1/2") box | 16" o.c. | |
| Floor Panel Nail—8d (2 1/2") common | 6" o.c. | |
| Toe Nail—10d (3") box | 6" o.c. | |
| Sill Plate Anchor Bolt | 1/2" dia. at 6' o.c. | |

Vertical Load Transfer at Bearing

| Allowable Uniform Vertical Loads (PLF) | |
|--|------|
| TJI® rim joist or blocking | 2100 |
| Trus Joist rim board or blocking | 4250 |

• Loads may not be increased for duration of load.

Also see nailing requirements on page 8

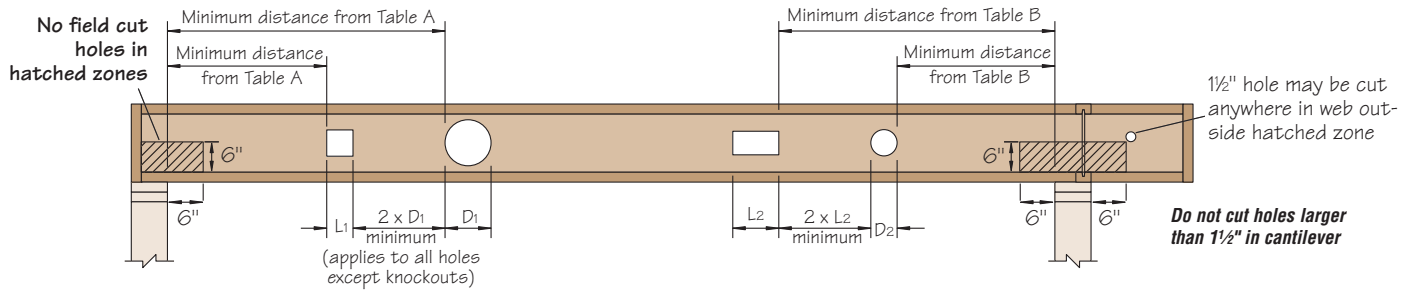


Table A—End Support
Minimum distance from edge of hole to inside face of nearest end support

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

Rectangular holes based on measurement of longest side.

How to Use These Tables

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

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.
- 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 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 TJ-Beam® software or contact your Trus Joist representative.

DO NOT cut or notch flange

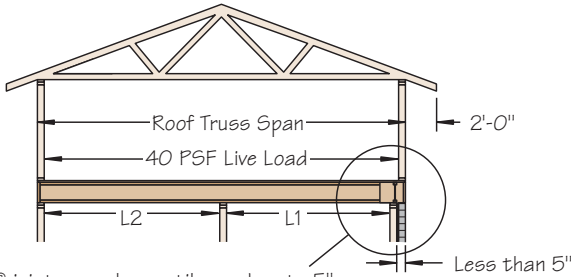


DO NOT cut holes in reinforcement



Cantilevers less than 5" (Brick Ledge)

(See Section A of Cantilever Table on page 13)

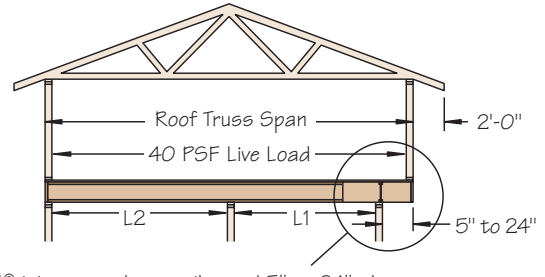


TJI® joists may be cantilevered up to 5" when supporting roof load, assuming:

- simple or continuous span
- $L1 \leq L2$

Cantilevers 5" to 24"

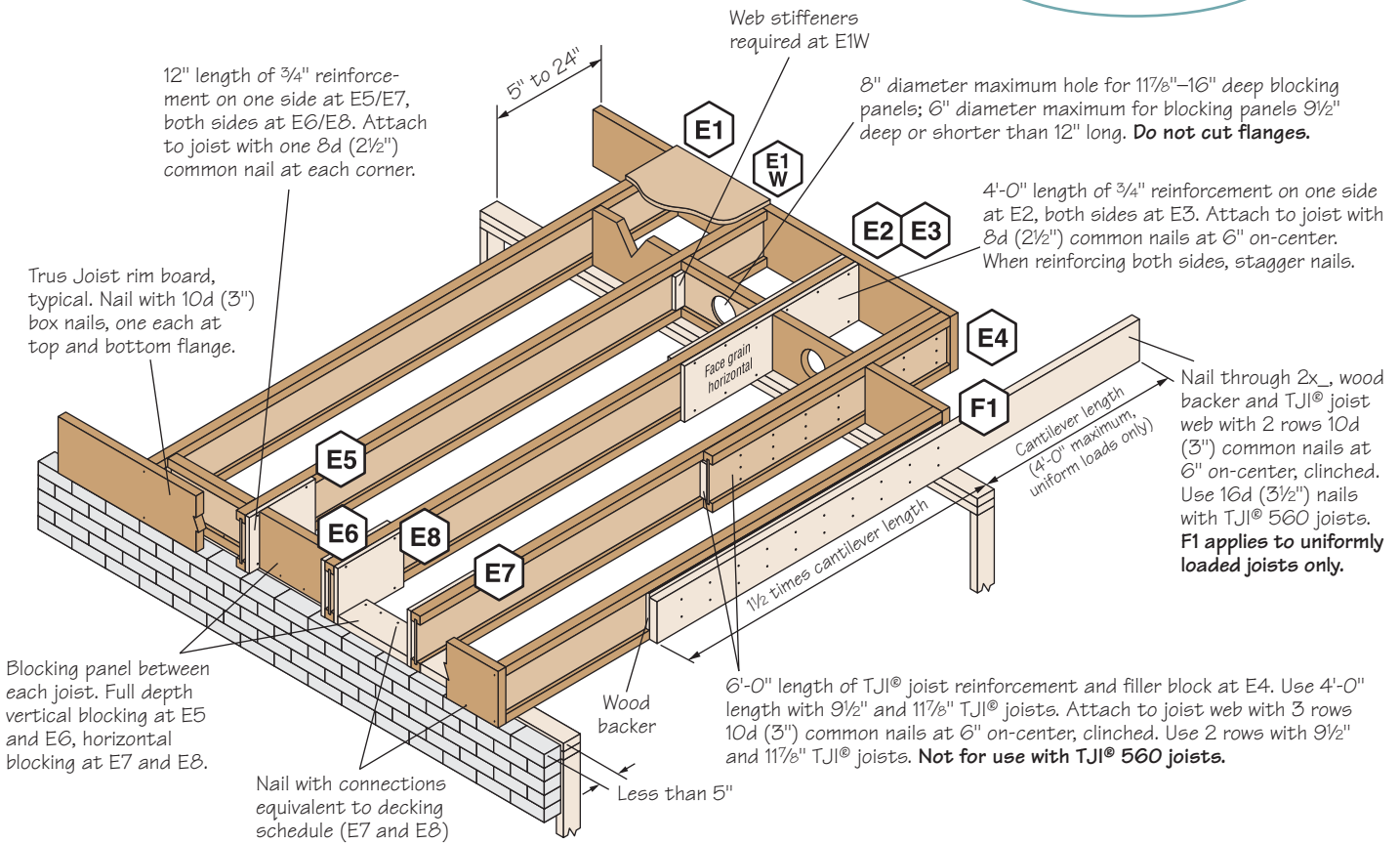
(See Section B of Cantilever Table on page 13)



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

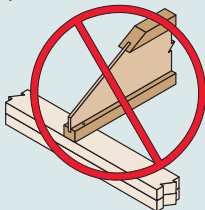
- simple or continuous span
- $L1 \leq L2$

TJI® joists are intended for dry-use applications



These Conditions Are NOT Permitted

DO NOT bevel cut joist beyond inside face of wall

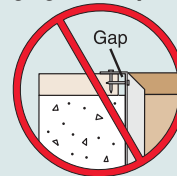


DO NOT use sawn lumber for rim board or blocking



Sawn lumber may shrink after installation

DO NOT install hanger overhanging face of plate or beam



Flush bearing plate with inside face of wall or beam

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" | 110 | 20' | | | E5 | | | E5 | E5 | | | | | | | | | | | X | | | X | | | |
| | | 22' | | | E5 | | | E5 | E5 | E5 | E5 | E5 | | | | | | | | | X | | X | X | | |
| | | 24' | | | E5 | E5 | E5 | E5 | E5 | E5 | E5 | E5 | | | | | | | | | X | | X | X | | |
| | | 26' | | | E5 | E5 | E5 | E5 | E5 | E5 | E5 | E5 | | | | | | | | | X | E2 | X | X | X | |
| | | 28' | | | E5 | X | E5 | E5 | X | E5 | E5 | X | | | | | | | | | | E2 | X | X | X | |
| | | 30' | E5 | E5 | X | E5 | E5 | X | E5 | E5 | X | | | | | | | | | | | E3 | X | X | X | |
| | | 32' | E5 | X | X | E5 | X | X | E5 | X | X | | | | | | | | | | | E2 | X | X | X | |
| 9½" 11⅞" 14" 16" | 210 | 20' | | | E5 | | | E5 | | | | | | | | | | | | | | | | X | | |
| | | 22' | | | E5 | | | E5 | E5 | | | | | | | | | | | | | | | E2 | X | |
| | | 24' | | | E5 | | | E5 | E5 | E5 | E5 | E5 | | | | | | | | | | | | E2 | X | |
| | | 26' | | | E5 | E5 | | | E5 | E5 | E5 | E5 | | | | | | | | | | | | X | E2 | X |
| | | 28' | | | E5 | E5 | E5 | E5 | E5 | E5 | E5 | E5 | | | | | | | | | | | E2 | X | X | X |
| | | 30' | | | E5 | E5 | E5 | E5 | E5 | E5 | E5 | E5 | | | | | | | | | | | E2 | E3 | X | X |
| | | 32' | E5 | E5 | X | E5 | E5 | X | E5 | E5 | X | | | | | | | | | | | | E2 | X | X | X |
| 9½" 11⅞" 14" 16" | 230 | 24' | | | E5 | | | E5 | E5 | E5 | E5 | | | | | | | | | | | | | E2 | X | |
| | | 26' | | | E5 | E5 | | | E5 | E5 | E5 | E5 | | | | | | | | | | | | E2 | X | |
| | | 28' | | | E5 | E5 | E5 | E5 | E5 | E5 | E5 | E5 | | | | | | | | | | | | E2 | E3 | X |
| | | 30' | | | E5 | E5 | E5 | E5 | E5 | E5 | E5 | E5 | | | | | | | | | | | | E2 | X | X |
| | | 32' | E5 | E5 | X | E5 | E5 | X | E5 | E5 | X | | | | | | | | | | | | E2 | E3 | X | X |
| | | 34' | E5 | E5 | X | E5 | E5 | X | E5 | E5 | X | | | | | | | | | | | | E2 | E3 | X | X |
| | | 11⅞" 14" 16" | 360 | 28' | | | E5 | | | E5 | E5 | E5 | E5 | | | | | | | | | | | | | |
| 30' | | | | | E5 | E5 | | | E5 | E5 | E5 | E5 | | | | | | | | | | | | E1W | E2 | |
| 32' | | | | | E5 | E5 | E5 | E5 | E5 | E5 | E5 | E5 | | | | | | | | | | | | E2 | E2 | |
| 34' | | | | | E5 | E5 | E5 | E5 | E5 | E5 | E5 | E5 | | | | | | | | | | | | E2 | E1W | E3 |
| 36' | | | | | E5 | E5 | E5 | E5 | E5 | E5 | E5 | E5 | | | | | | | | | | | | E1W | E2 | E3 |
| 38' | E5 | | | E5 | E5 | E5 | E5 | E5 | E5 | E5 | E5 | E5 | | | | | | | | | | | | E1W | E2 | E3 |
| 40' | E5 | | | E5 | E5 | E5 | E5 | E5 | E5 | E5 | E5 | E5 | | | | | | | | | | | | E1W | E2 | E3 |
| 11⅞" 14" 16" | 560 | 30' | | | E5 | | | E5 | E5 | | | | | | | | | | | | | | | | | |
| | | 32' | | | E5 | | | E5 | E5 | E5 | E5 | | | | | | | | | | | | | | | |
| | | 34' | | | E5 | | | E5 | E5 | E5 | E5 | | | | | | | | | | | | | | E2 | |
| | | 36' | | | E5 | E5 | | | E5 | E5 | E5 | E5 | | | | | | | | | | | | | E2 | |
| | | 38' | | | E5 | E5 | E5 | E5 | E5 | E5 | E5 | E5 | | | | | | | | | | | | | E2 | |
| | | 40' | | | E5 | E5 | E5 | E5 | E5 | E5 | E5 | E5 | | | | | | | | | | | | | E1W | E2 |

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 12:
 - Blank cells indicate no reinforcement is required
 - E4 may be used in place of E2 or E3 except when using TJI® 560 joists
 - X indicates cantilever will not work. Use TJ-Beam® or TJ-Xpert® software or reduce spacing of joists and recheck table.

General Notes

- Tables are 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.
 - 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, use our TJ-Beam® or TJ-Xpert® software.

Fire-safe construction and life safety are major concerns for everyone in the building materials and construction industry. The 2000 statistics on residential fire in the U.S. alone include 3,445 fire fatalities and \$5.7 billion in property damage. These numbers underscore the seriousness of the issue and the need for fire-safe construction.

Over the past 30 years, prefabricated wood I-joists 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-endurance ratings per the building codes. The following information is intended to help you specify and install Trus Joist products with fire safety in mind.

Active Fire Suppression

Trus Joist supports the position that homeowners, firefighters, insurers and the community at large benefit from the use of properly installed fire sprinkler systems. Automatic residential fire sprinkler systems have an excellent record of performance and offer the best available protection to occupants and their property. Today's modern systems are inconspicuous and efficient and can be installed for less cost than the typical homeowner will spend to carpet their floors. This type of fire suppression system will:

- Provide early and unsupervised fire suppression
- Reduce smoke development
- Enhance life safety
- Reduce potential for significant property damage

Smoke Detectors

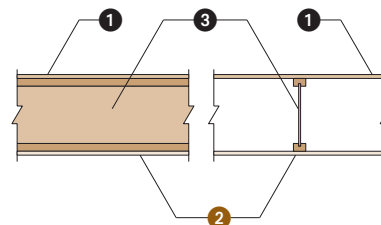
Smoke detectors are universally recognized as the most cost-effective life-saving devices. While smoke detectors do not provide protection to the structure or to the contents in a home, they do alert occupants to potential fire hazards and allow them time to escape.

Passive Fire Protection

Independent tests have proven that unprotected, lightweight framing systems—whether combustible or non-combustible—suffer serious and rapid structural degradation when exposed to heat and fire. All floor framing materials—sawn lumber, wood I-joists, trusses, and light gauge steel—succumb quickly to fire if not protected. In fire scenarios, a protective membrane such as gypsum ceiling board will provide additional protection to the structural framing members. Passive fire-suppression methods will:

- Delay fire growth
- Reduce potential for significant property damage
- Enhance the market value of the home

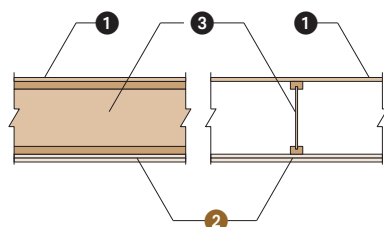
Suggested Minimum Membrane Construction



Trus Joist supports the idea that all floor/ceiling and roof/ceiling assemblies in habitable areas be protected by a minimum membrane protection consisting of 1/2" gypsum board (or equivalent)

- ① 48/24 tongue-and-groove, span-rated floor panels (Exposure 1)
- ② Single layer of 1/2" thick gypsum board
- ③ TJI® joists

One-Hour Rated Assembly



- ① 48/24 tongue-and-groove, span-rated floor panels (Exposure 1)
- ② Two layers of 1/2" thick Type X gypsum board
- ③ TJI® joists

Note:

- Resilient channels (not shown) may be installed between the joists and gypsum board if improved STC and IIC sound ratings are desired.
- Resilient channels are required when optional 3 1/2" thick glass fiber batt insulation is being installed.

Reference: Pending ICC ESR-XXXX

For more information on fire assemblies and fire-safe construction, please refer to Trus Joist's Fire Facts Guide (Reorder 5003) or visit www.trusjoist.com and www.i-joist.com

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 | 127 | 152 | 77 | 127 | 50 | 95 | | | | | | | | | | |
| | 210 | * | 210 | 147 | 169 | 90 | 141 | 59 | 114 | 40 | 81 | | | | | | | | |
| | 230 | * | 236 | 159 | 190 | 98 | 158 | 64 | 126 | 44 | 88 | | | | | | | | |
| 11½" | 110 | * | 190 | * | 152 | * | 127 | 83 | 109 | 57 | 92 | | | | | | | | |
| | 210 | * | 210 | * | 169 | * | 141 | 97 | 121 | 67 | 106 | 48 | 87 | | | | | | |
| | 230 | * | 236 | * | 190 | * | 158 | 105 | 136 | 73 | 119 | 52 | 97 | 39 | 78 | | | | |
| | 360 | * | 241 | * | 193 | * | 162 | 136 | 139 | 95 | 121 | 69 | 108 | 51 | 97 | 39 | 78 | | |
| 14" | 560 | * | 294 | * | 236 | * | 197 | * | 169 | 138 | 148 | 101 | 132 | 76 | 119 | 58 | 108 | 45 | 91 |
| | 110 | * | 190 | * | 152 | * | 127 | * | 109 | 83 | 95 | 59 | 85 | | | | | | |
| | 210 | * | 210 | * | 169 | * | 141 | * | 121 | 96 | 106 | 69 | 94 | 51 | 84 | | | | |
| | 230 | * | 236 | * | 190 | * | 158 | * | 136 | 104 | 119 | 75 | 106 | 56 | 93 | 43 | 77 | | |
| | 360 | * | 241 | * | 193 | * | 162 | * | 139 | * | 121 | 98 | 108 | 73 | 97 | 56 | 88 | 44 | 81 |
| 16" | 560 | * | 294 | * | 236 | * | 197 | * | 169 | * | 148 | * | 132 | 107 | 119 | 83 | 108 | 65 | 99 |
| | 210 | * | 210 | * | 169 | * | 141 | * | 121 | * | 106 | 93 | 94 | 69 | 85 | 53 | 77 | | |
| | 230 | * | 236 | * | 190 | * | 158 | * | 136 | * | 119 | 100 | 106 | 75 | 95 | 57 | 87 | | |
| | 360 | * | 241 | * | 193 | * | 162 | * | 139 | * | 121 | * | 108 | * | 97 | 75 | 88 | 59 | 81 |
| 16" | 560 | * | 294 | * | 236 | * | 197 | * | 169 | * | 148 | * | 132 | * | 119 | * | 108 | 86 | 99 |

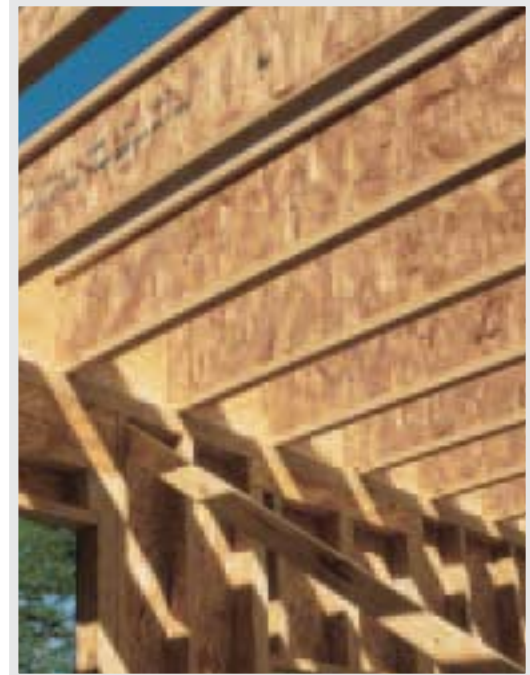
*Indicates TOTAL LOAD value controls.

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.
 - No composite action provided by sheathing.
 - More restrictive of simple or continuous span.
- TOTAL LOAD limits joist deflection to L/240.
- LIVE LOAD is based on joist deflection of L/480.
- If a live load deflection limit of L/360 is desired, multiply value in LIVE LOAD column by 1.33. The resulting live load shall not exceed the TOTAL LOAD shown.



PSF to PLF Conversions

| O.C. Spacing | Load in Pounds Per Square Foot (PSF) | | | | | | | | |
|--------------|--------------------------------------|----|----|----|----|----|-----|-----|-----|
| | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |
| 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 |

Maximum Horizontal Clear Spans—Roof

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

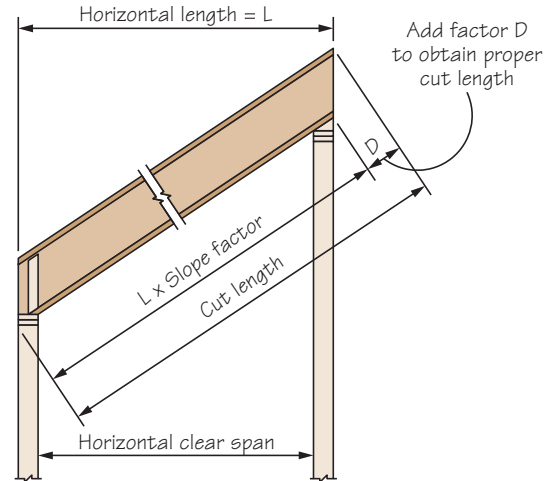
See page 17 for General Notes and information on how to use this table

How to Use Roof Span Table on page 16

1. Determine appropriate live and dead load, and the load duration factor.
2. 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.
3. 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:
 - Uniform loads.
 - More restrictive of simple or continuous span.
 - Minimum roof surface slope of 1/4" in 12".
 - 1¾" minimum end bearing and 3½" minimum intermediate bearing.
- Total load limits joist deflection to L/180.
- Live load is based on joist deflection of L/240.
- A support beam or wall at the high end is required (ridge board applications do not provide adequate support).
- Spans shown assume no web stiffeners at intermediate bearings.



Actual cut length can be approximated by multiplying the horizontal length by the slope factor and adding the D factor.

D Factors

| Depth | Slope | | | | | | | | | | | | |
|-------|----------|---------|----------|---------|----------|---------|---------|---------|---------|---------|----------|----------|----------|
| | 2½ in 12 | 3 in 12 | 3½ in 12 | 4 in 12 | 4½ in 12 | 5 in 12 | 6 in 12 | 7 in 12 | 8 in 12 | 9 in 12 | 10 in 12 | 11 in 12 | 12 in 12 |
| 9½" | 2" | 2¾" | 2⅞" | 3¼" | 3⅝" | 4" | 4¾" | 5⅝" | 6⅝" | 7⅞" | 8" | 8¾" | 9½" |
| 11⅞" | 2½" | 3" | 3½" | 4" | 4½" | 5" | 6" | 7" | 8" | 9" | 10" | 11" | 11⅞" |
| 14" | 3" | 3½" | 4⅛" | 4¾" | 5¼" | 5⅞" | 7" | 8¼" | 9¾" | 10½" | 11¾" | 12⅞" | 14" |
| 16" | 3⅝" | 4" | 4¾" | 5⅝" | 6" | 6¾" | 8" | 9⅝" | 10¾" | 12" | 13⅝" | 14¾" | 16" |

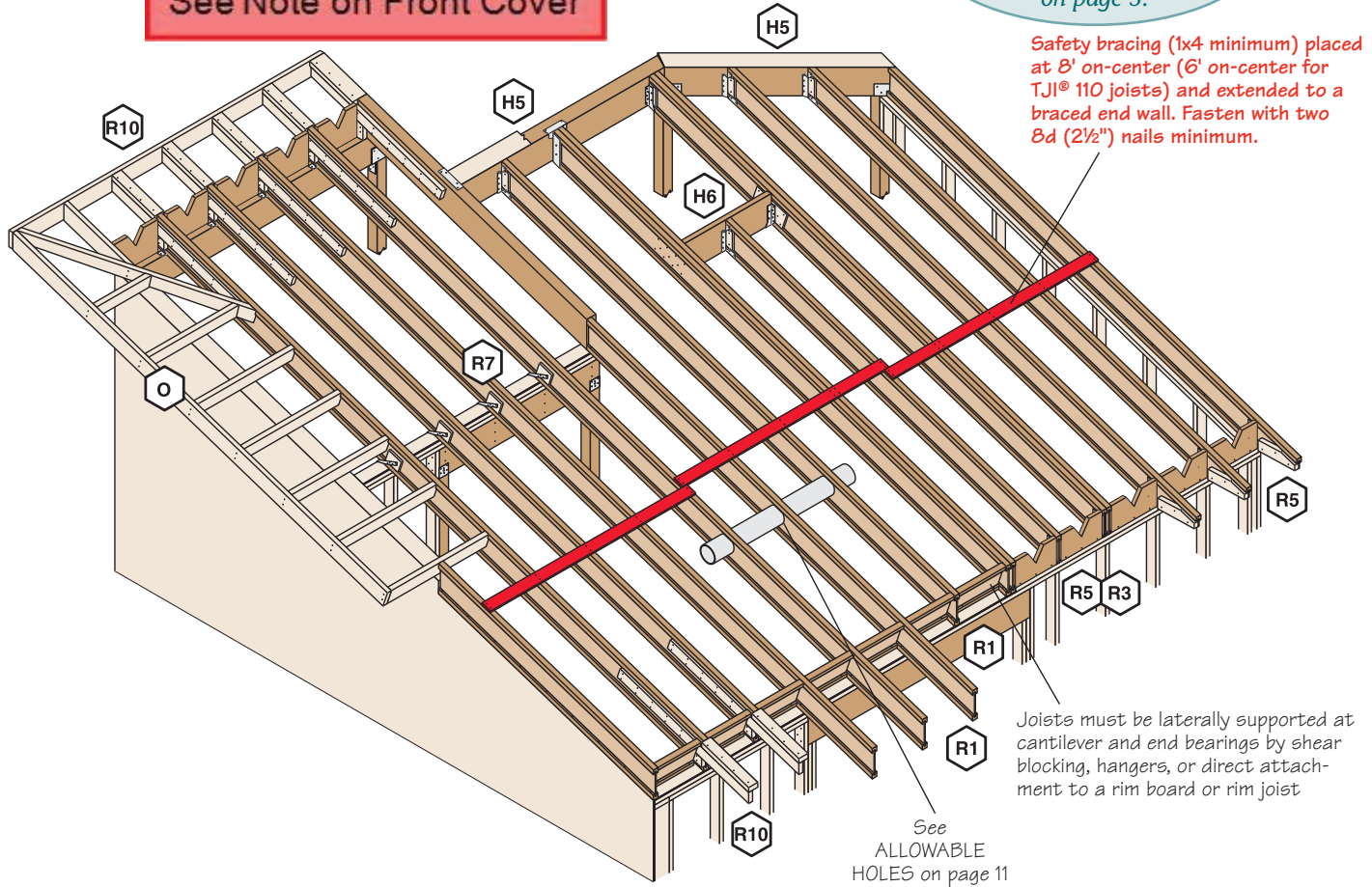
Slope Factors

| Slope Factor | 2½ in 12 | 3 in 12 | 3½ in 12 | 4 in 12 | 4½ in 12 | 5 in 12 | 6 in 12 | 7 in 12 | 8 in 12 | 9 in 12 | 10 in 12 | 11 in 12 | 12 in 12 |
|--------------|----------|---------|----------|---------|----------|---------|---------|---------|---------|---------|----------|----------|----------|
| | 1.021 | 1.031 | 1.042 | 1.054 | 1.068 | 1.083 | 1.118 | 1.158 | 1.202 | 1.250 | 1.302 | 1.357 | 1.414 |



**Legacy Literature
See Note on Front Cover**

WARNING
Joists are unstable until laterally braced. See warning notes on page 5.



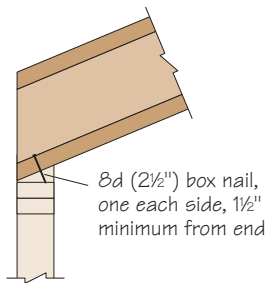
General Notes

- Unless otherwise noted, all details are valid to a maximum slope of 12/12.
- Web stiffeners are required if the sides of the hanger do not laterally support at least 3/8" of the TJI® joist top flange.

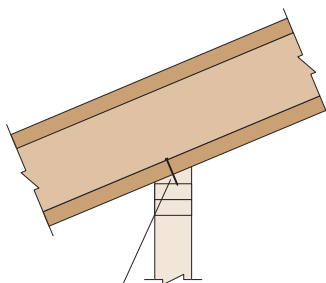
TJI® Joist Nailing Requirements at Bearing

TJI® Joist to Bearing Plate

End Bearing
(1 3/4" minimum bearing required)



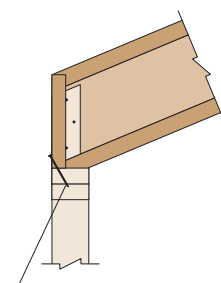
Intermediate Bearing
(3 1/2" minimum bearing required)



Slopes 3/12 or less:
One 8d (2 1/2") box nail each side (see Detail R7)

Slopes greater than 3/12:
Two 8d (2 1/2") box nails each side, plus a twist strap and backer block. See Detail R7S.

Blocking to Bearing Plate

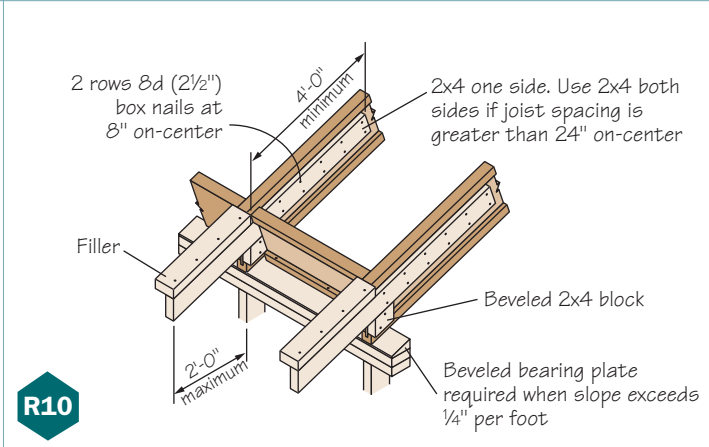
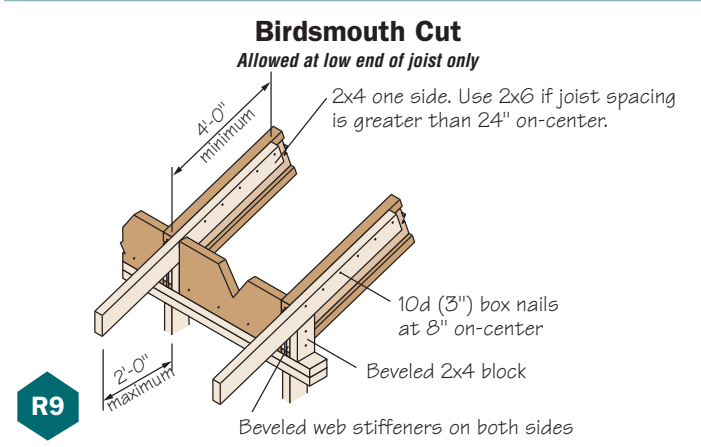
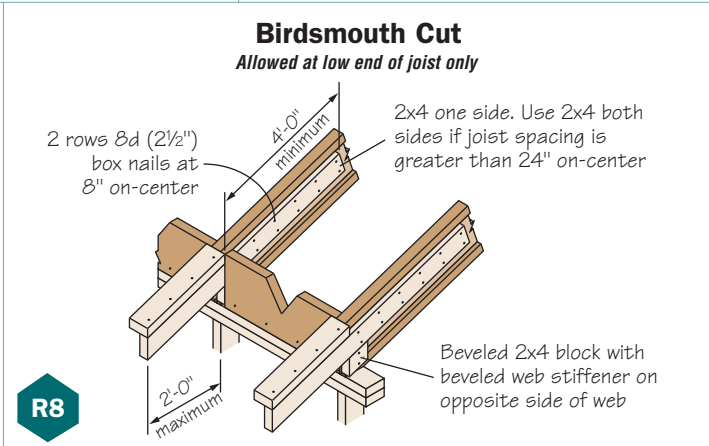
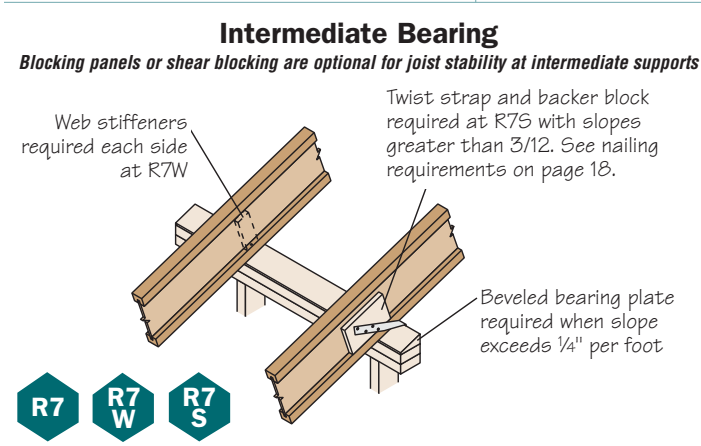
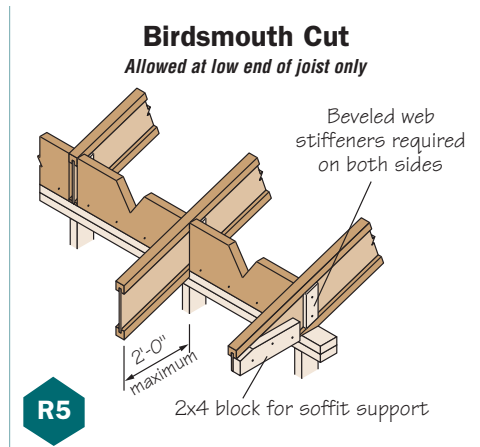
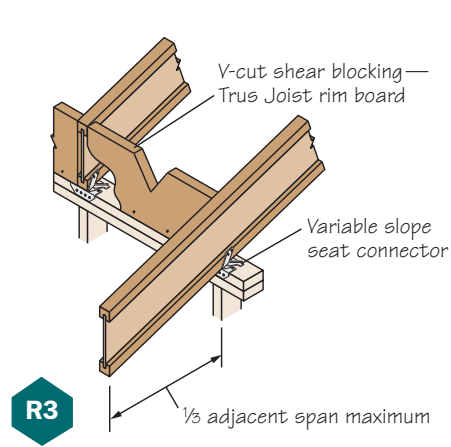
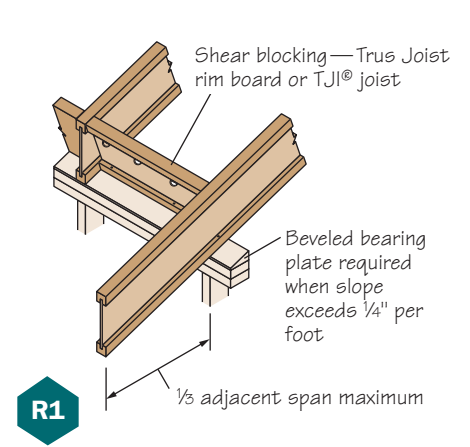


Trus Joist rim board:
Toenail with 10d (3") box nails at 6" on-center or 16d (3 1/2") box nails at 12" on-center

TJI® joist blocking:
10d (3") box nails at 6" on-center

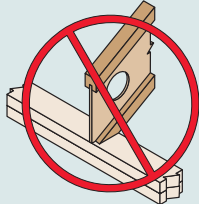
Shear transfer nailing:
Use connections equivalent to sheathing nail schedule

When slope exceeds 1/4" per foot, a beveled bearing plate, variable slope seat connector, or birdsmouth cut (at low end of joist only) is required

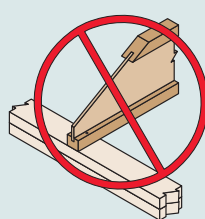


These Conditions Are NOT Permitted

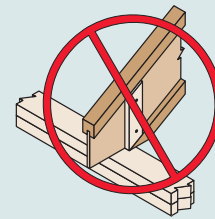
DO NOT cut holes too close to support



DO NOT bevel cut joist beyond inside face of wall



DO NOT overhang birdsmouth cut from inside face of plate



Refer to ALLOWABLE HOLES on page 11 for minimum distance from support

TJI® joist flange must bear fully on the plate. See detail BC on page 20.

LSTA18 (Simpson or USP) strap with twelve 10d x 1½" nails

Additional blocking may be required for shear transfer

Strap nails: Leave 2⅜" minimum end distance

R14 Double beveled bearing plate when slope exceeds ¼" per foot

Double joist may be required when L exceeds joist spacing

End wall

Blocking as required

2x_ overhang. Notch around TJI® joist top flange.

O

Birdsmouth Cut
Allowed at low end of joist only

Beveled web stiffener each side of TJI® joist web

TJI® joist flange must bear fully on plate. Birdsmouth cut must not overhang inside face of plate.

BC

LSTA24 (Simpson or USP) strap with twelve 10d x 1½" nails required at H5S with slopes greater than 3/12

Additional blocking may be required for shear transfer

Strap nails: Leave 2⅜" minimum end distance

Variable slope joist hanger, see pages 22 and 23. Beveled web stiffener required each side.

H5 H5S

Filler block: Attach with ten 10d (3") box nails, clinched. Use ten 16d (3½") box nails from each side with TJI® 560 joists.

Backer block: Install tight to bottom flange (tight to top flange with top flange hangers). Attach with ten 10d (3") box nails, clinched when possible.

LSTA18 strap nails at H6S with slopes greater than 3/12

Strap nails: Leave 2⅜" minimum end distance, typical

Variable slope joist hanger, see pages 22 and 23. Beveled web stiffener required each side.

H6 H6S

Shear Blocking and Ventilation Holes

Field trim to match joist depth at outer edge of wall or locate on wall to match joist depth

Maximum allowable V-cut

Allowed hole zone

SB For TJI® joists with slopes of 10/12 to 12/12, the vertical depth at bearing will require Trus Joist rim board (for shear blocking) that is one size deeper than the TJI® joist

Filler and Backer Block Sizes

| TJI® | 110 | | 210 | | 230 or 360 | | 560 | |
|---------------------------------|-------------|-----|--------------------|--------------------|--------------------|--------------------|---------|------------|
| Depth | 9½" or 11⅞" | 14" | 9½" or 11⅞" | 14" or 16" | 9½" or 11⅞" | 14" or 16" | 11⅞" | 14" or 16" |
| Filler Block (Detail H6) | 2x6 | 2x8 | 2x6 + ⅜" sheathing | 2x8 + ⅜" sheathing | 2x6 + ½" sheathing | 2x8 + ½" sheathing | Two 2x6 | Two 2x8 |
| Backer Block (Detail H6) | ⅝" or ¾" | | ¾" or 7⁄8" | | 1" net | | 2x6 | 2x8 |

If necessary, increase filler and backer block height for face mount hangers and maintain ⅛" gap at top of joist; see Detail W. Filler and backer block dimensions should accommodate required nailing without splitting.

Roof—115% and 125% Load Duration (PLF)

| Depth | TJI® | Roof Joist Horizontal Clear Span | | | | | | | | | | | | | | | | | |
|-------|------|----------------------------------|---------------|-----------|------------|---------------|-----------|------------|---------------|-----------|------------|---------------|-----------|------------|---------------|-----------|------------|---------------|-----------|
| | | 6' | | | 8' | | | 10' | | | 12' | | | 14' | | | 16' | | |
| | | Total Load | Defl. | Live Load | Total Load | Defl. | Live Load | Total Load | Defl. | Live Load | Total Load | Defl. | Live Load | Total Load | Defl. | Live Load | Total Load | Defl. | Live Load |
| | | Snow 115% | Non-Snow 125% | L/240 | Snow 115% | Non-Snow 125% | L/240 | Snow 115% | Non-Snow 125% | L/240 | Snow 115% | Non-Snow 125% | L/240 | Snow 115% | Non-Snow 125% | L/240 | Snow 115% | Non-Snow 125% | L/240 |
| 9½" | 110 | 289 | 314 | * | 218 | 237 | * | 175 | 190 | * | 146 | 159 | 155 | 109 | 118 | 101 | 83 | 91 | 69 |
| | 210 | 321 | 349 | * | 242 | 263 | * | 194 | 211 | * | 162 | 176 | * | 131 | 142 | 118 | 100 | 108 | 81 |
| | 230 | 360 | 392 | * | 272 | 295 | * | 218 | 237 | * | 182 | 198 | 196 | 145 | 158 | 128 | 112 | 118 | 88 |
| 11⅞" | 110 | 289 | 314 | * | 218 | 237 | * | 175 | 190 | * | 146 | 159 | * | 125 | 136 | * | 106 | 115 | * |
| | 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 | 146 |
| | 360 | 368 | 400 | * | 277 | 301 | * | 223 | 242 | * | 186 | 202 | * | 159 | 173 | * | 140 | 152 | * |
| 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 | * |
| 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 | * |
| 16" | 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 | * |

| Depth | TJI® | Roof Joist Horizontal Clear Span | | | | | | | | | | | | | | | | | |
|-------|------|----------------------------------|---------------|-----------|------------|---------------|-----------|------------|---------------|-----------|------------|---------------|-----------|------------|---------------|-----------|------------|---------------|-----------|
| | | 18' | | | 20' | | | 22' | | | 24' | | | 26' | | | 28' | | |
| | | Total Load | Defl. | Live Load | Total Load | Defl. | Live Load | Total Load | Defl. | Live Load | Total Load | Defl. | Live Load | Total Load | Defl. | Live Load | Total Load | Defl. | Live Load |
| | | Snow 115% | Non-Snow 125% | L/240 | Snow 115% | Non-Snow 125% | L/240 | Snow 115% | Non-Snow 125% | L/240 | Snow 115% | Non-Snow 125% | L/240 | Snow 115% | Non-Snow 125% | L/240 | Snow 115% | Non-Snow 125% | L/240 |
| 9½" | 110 | | | | | | | | | | | | | | | | | | |
| | 210 | 77 | 77 | 58 | | | | | | | | | | | | | | | |
| | 230 | 84 | 84 | 63 | | | | | | | | | | | | | | | |
| 11⅞" | 110 | 84 | 91 | 82 | | | | | | | | | | | | | | | |
| | 210 | 101 | 109 | 96 | 82 | 89 | 71 | | | | | | | | | | | | |
| | 230 | 112 | 121 | 105 | 91 | 98 | 78 | 75 | 79 | 59 | | | | | | | | | |
| | 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 | * | 80 | 87 | * | | | | | | | | | | | | |
| | 210 | 108 | 118 | * | 97 | 105 | 103 | 80 | 87 | 79 | | | | | | | | | |
| | 230 | 122 | 132 | * | 107 | 117 | 112 | 89 | 96 | 86 | 75 | 81 | 67 | | | | | | |
| | 360 | 124 | 135 | * | 112 | 122 | * | 102 | 111 | * | 93 | 101 | 88 | 86 | 94 | 70 | 76 | 76 | 57 |
| 16" | 110 | 98 | 106 | * | 80 | 87 | * | | | | | | | | | | | | |
| | 210 | 108 | 118 | * | 97 | 106 | * | 89 | 96 | * | 77 | 83 | * | | | | | | |
| | 230 | 122 | 132 | * | 110 | 119 | * | 100 | 108 | * | 85 | 93 | 90 | | 79 | 72 | | | |
| | 360 | 124 | 135 | * | 112 | 122 | * | 102 | 111 | * | 93 | 101 | * | 86 | 94 | * | 80 | 87 | 76 |
| 16" | 560 | 152 | 165 | * | 137 | 148 | * | 124 | 135 | * | 114 | 124 | * | 105 | 114 | * | 98 | 106 | * |

* Indicates TOTAL LOAD value controls.

Slope Factors

| Slope | 2½ in 12 | 3 in 12 | 3½ in 12 | 4 in 12 | 4½ in 12 | 5 in 12 | 6 in 12 | 7 in 12 | 8 in 12 | 9 in 12 | 10 in 12 | 11 in 12 | 12 in 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

1. Calculate actual total load in pounds per linear foot (plf).
2. Select appropriate ROOF JOIST HORIZONTAL CLEAR SPAN. For slopes greater than 2" per foot, approximate the increased dead load by multiplying the joist horizontal clear span by the SLOPE FACTOR above.
3. Scan down the column to find a TJI® joist that meets or exceeds actual total load. TOTAL LOAD values are limited to deflection of L/180. For stiffer deflection criteria, use the LIVE LOAD L/240 values.

General Notes

- Tables are based on:
 - Uniform loads.
 - No composite action provided by sheathing.
 - More restrictive of simple or continuous span.
 - Minimum roof surface slope of ¼" in 12".
- TOTAL LOAD limits joist deflection to L/180.

| Single Joist—Top Flange | | | | | | Single Joist—Face Mount ⁽¹⁾ | | | | Face Mount Skewed 45° Joist Hanger ⁽¹⁾ | | | |
|-------------------------|---------|--------------|----------------|-----------|------------|--|----------------|---------|------------------------------|---|----------------|-----------|-----------|
| | | | | | | | | | | | | | |
| Depth | TJI® | Hanger | Capacity (lbs) | Nailing | | Hanger | Capacity (lbs) | Nailing | | Hanger | Capacity (lbs) | Nailing | |
| | | | | Header | Joist | | | Header | Joist | | | Header | Joist |
| 9½" | 110 | ITT9.5 | 935 | 10d | 10d x 1½" | IUS1.81/9.5 | 935 | 10d | N.A. | <i>SUR/L1.81/9</i> | 935 | 16d | 10d x 1½" |
| | 210 | ITT2.1/9.5 | 1,030 | 10d | 10d x 1½" | IUS2.06/9.5 | 935 | 10d | N.A. | <i>SUR/L2.1/9</i> | 1,030 | 16d | 10d x 1½" |
| | 230 | ITT359.5 | 1,075 | 10d | 10d x 1½" | IUS2.37/9.5 | 935 | 10d | N.A. | <i>SURI/LI3510/12</i> | 1,225 | 16d | 10d x 1½" |
| 11⅞" | 110 | ITT11.88 | 950 | 10d | 10d x 1½" | IUS1.81/11.88 | 950 | 10d | N.A. | <i>SUR/L1.81/11</i> | 950 | 16d | 10d x 1½" |
| | 210 | ITT2.1/11.88 | 1,045 | 10d | 10d x 1½" | IUS2.06/11.88 | 1,045 | 10d | N.A. | <i>SUR/L2.1/11</i> | 1,045 | 16d | 10d x 1½" |
| | 230 | ITT3511.88 | 1,095 | 10d | 10d x 1½" | IUS2.37/11.88 | 1,095 | 10d | N.A. | <i>SURI/LI3510/12</i> | 1,310 | 16d | 10d x 1½" |
| | 360 | ITT3511.88 | 1,140 | 10d | 10d x 1½" | IUS2.37/11.88 | 1,140 | 10d | N.A. | <i>SURI/LI3510/12</i> | 1,355 | 16d | 10d x 1½" |
| 14" | 560 | ITT411.88 | 1,300 | 10d | 10d x 1½" | IUS3.56/11.88 | 1,330 | 10d | N.A. | <i>SUR/L410</i> | 1,495 | 16d | 10d x 1½" |
| | 110 | ITT14 | 950 | 10d | 10d x 1½" | IUS1.81/14 | 950 | 10d | N.A. | <i>SUR/L1.81/11</i> | 950 | 16d | 10d x 1½" |
| | 210 | ITT2.1/14 | 1,045 | 10d | 10d x 1½" | IUS2.06/14 | 1,045 | 10d | N.A. | <i>SUR/L2.1/11</i> | 1,045 | 16d | 10d x 1½" |
| | 230 | ITT3514 | 1,095 | 10d | 10d x 1½" | IUS2.37/14 | 1,095 | 10d | N.A. | <i>SUR/LI3514/20</i> | 1,310 | 16d | 10d x 1½" |
| 16" | 360 | ITT3514 | 1,140 | 10d | 10d x 1½" | IUS2.37/14 | 1,140 | 10d | N.A. | <i>SURI/LI3514/20</i> | 1,355 | 16d | 10d x 1½" |
| | 560 | ITT414 | 1,300 | 10d | 10d x 1½" | IUS3.56/14 | 1,330 | 10d | N.A. | <i>SUR/L414</i> | 1,460 | 16d | 10d x 1½" |
| | 210 | ITT2.1/16 | 1,045 | 10d | 10d x 1½" | IUS2.06/16 | 1,045 | 10d | N.A. | <i>SUR/L2.1/11</i> | 1,045 | 16d | 10d x 1½" |
| | 230 | MIT3516 | 1,215 | 10d | 10d x 1½" | IUS2.37/16 | 1,095 | 10d | N.A. | <i>SURI/LI3514/20</i> | 1,310 | 16d | 10d x 1½" |
| 560 | MIT3516 | 1,260 | 10d | 10d x 1½" | IUS2.37/16 | 1,140 | 10d | N.A. | <i>SURI/LI3514/20</i> | 1,355 | 16d | 10d x 1½" | |
| 560 | MIT416 | 1,460 | 10d | 10d x 1½" | IUS3.56/16 | 1,330 | 10d | N.A. | <i>SUR/L414</i> | 1,460 | 16d | 10d x 1½" | |

| Double Joist—Top Flange | | | | | | Double Joist—Face Mount ⁽¹⁾ | | | |
|-------------------------|------------------------|---------------------------|----------------|-----------|-----------------------|--|----------------|-----------|-----------|
| | | | | | | | | | |
| Depth | TJI® | Hanger | Capacity (lbs) | Nailing | | Hanger | Capacity (lbs) | Nailing | |
| | | | | Header | Joist | | | Header | Joist |
| 9½" | 110 | MIT49.5 | 2,000 | 16d | 10d x 1½" | MIU49 | 1,860 | 16d | 10d x 1½" |
| | 210 | MIT4.28/9.5 | 2,000 | 16d | 10d x 1½" | MIU4.28/9 | 1,860 | 16d | 10d x 1½" |
| | 230 | MIT359.5-2 | 2,000 | 16d | 10d x 1½" | MIU4.75/9 | 1,860 | 16d | 10d x 1½" |
| 11⅞" | 110 | MIT411.88 | 2,000 | 16d | 10d x 1½" | MIU411 | 1,860 | 16d | 10d x 1½" |
| | 210 | MIT4.28/11.88 | 2,000 | 16d | 10d x 1½" | MIU4.28/11 | 2,130 | 16d | 10d x 1½" |
| | 230 | MIT3511.88-2 | 2,000 | 16d | 10d x 1½" | MIU4.75/11 | 2,130 | 16d | 10d x 1½" |
| | 360 | MIT3511.88-2 | 2,000 | 16d | 10d x 1½" | MIU4.75/11 | 2,130 | 16d | 10d x 1½" |
| 14" | 560 | <i>WPI411.88-2</i> | 2,925 | 16d | 10d x 1½" | <i>HU412-2</i> | 2,145 | 16d | 10d x 1½" |
| | 110 | MIT414 | 2,000 | 16d | 10d x 1½" | MIU414 | 2,170 | 16d | 10d x 1½" |
| | 210 | MIT4.28/14 | 2,000 | 16d | 10d x 1½" | MIU4.28/14 | 2,350 | 16d | 10d x 1½" |
| | 230 | MIT3514-2 | 2,000 | 16d | 10d x 1½" | MIU4.75/14 | 2,130 | 16d | 10d x 1½" |
| 16" | 360 | MIT3514-2 | 2,000 | 16d | 10d x 1½" | MIU4.75/14 | 2,130 | 16d | 10d x 1½" |
| | 560 | <i>WPI414-2</i> | 2,925 | 16d | 10d x 1½" | <i>HU414-2</i> | 2,680 | 16d | 10d x 1½" |
| | 210 | MIT4.28/16 | 2,000 | 16d | 10d x 1½" | MIU4.28/16 | 2,350 | 16d | 10d x 1½" |
| | 230 | LBV3516-2 | 2,035 | 16d | 10d x 1½" | MIU4.75/16 | 2,435 | 16d | 10d x 1½" |
| 360 | LBV3516-2 | 2,035 | 16d | 10d x 1½" | MIU4.75/16 | 2,525 | 16d | 10d x 1½" | |
| 560 | <i>WPI416-2</i> | 2,925 | 16d | 10d x 1½" | <i>HU414-2</i> | 2,680 | 16d | 10d x 1½" | |

| Variable Slope Seat Connector ⁽²⁾ | | | | | |
|--|--------|----------------|---------|-----------|--|
| | | | | | |
| TJI® | Hanger | Capacity (lbs) | Nailing | | |
| | | | Header | Joist | |
| 110 | VPA25 | 1,050 | 10d | 10d x 1½" | |
| 210 | VPA2.1 | 1,230 | 10d | 10d x 1½" | |
| 230 | VPA35 | 1,230 | 10d | 10d x 1½" | |
| 360 | VPA35 | 1,230 | 10d | 10d x 1½" | |
| 560 | VPA4 | 1,230 | 10d | 10d x 1½" | |

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.

| Variable Slope Seat Joist Hanger ⁽¹⁾⁽³⁾ | | | | | |
|--|------------------------|----------------|-------------------|---------|-----------|
| | | | | | |
| TJI® | Hanger | Capacity (lbs) | | Nailing | |
| | | Sloped Only | Sloped and Skewed | Header | Joist |
| 110 | <i>LSSUI25</i> | 1,110 | 995 | 10d | 10d x 1½" |
| 210 | <i>LSSUI2.1</i> | 1,110 | 995 | 10d | 10d x 1½" |
| 230 | <i>LSSUI35</i> | 1,110 | 995 | 10d | 10d x 1½" |
| 360 | <i>LSSUI35</i> | 1,110 | 995 | 10d | 10d x 1½" |
| 560 | <i>LSSU410</i> | 1,725 | 1,625 | 16d | 10d x 1½" |

General Notes

Bold italic hangers require web stiffeners.

Capacities will vary with different nailing criteria or other support conditions; contact your Trus Joist 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" per foot.
- Leave ⅛" clearance (⅛" maximum) between the end of the supported joist and the header or hanger.

See additional notes on page 23

| Single Joist—Top Flange | | | | | | Single Joist—Face Mount ⁽¹⁾ | | | | Face Mount Skewed 45° Joist Hanger ⁽¹⁾⁽⁴⁾ | | | |
|-------------------------|------|----------|----------------|---------|-----------|--|----------------|---------|-----------|--|----------------|---------|-----------|
| Depth | TJI® | Hanger | Capacity (lbs) | Nailing | | Hanger | Capacity (lbs) | Nailing | | Hanger | Capacity (lbs) | Nailing | |
| | | | | Header | Joist | | | Header | Joist | | | Header | Joist |
| 9½" | 110 | THO17950 | 935 | 10d | 10d x 1½" | THF17925 | 895 | 10d | 10d x 1½" | SKH1720L/R | 910 | 10d | 10d x 1½" |
| | 210 | THO20950 | 1,030 | 10d | 10d x 1½" | THF20925 | 895 | 10d | 10d x 1½" | SKH2020L/R | 1,005 | 10d | 10d x 1½" |
| | 230 | THO23950 | 1,140 | 10d | 10d x 1½" | THF23925 | 1,160 | 10d | 10d x 1½" | SKH2320L/R | 1,055 | 10d | 10d x 1½" |
| 11⅞" | 110 | THO17118 | 950 | 10d | 10d x 1½" | THF17112 | 895 | 10d | 10d x 1½" | SKH1720L/R | 920 | 10d | 10d x 1½" |
| | 210 | THO20118 | 1,030 | 10d | 10d x 1½" | THF20112 | 895 | 10d | 10d x 1½" | SKH2020L/R | 1,015 | 10d | 10d x 1½" |
| | 230 | THO23118 | 1,185 | 10d | 10d x 1½" | THF23118 | 1,215 | 10d | 10d x 1½" | SKH2320L/R | 1,065 | 10d | 10d x 1½" |
| | 360 | THO23118 | 1,230 | 10d | 10d x 1½" | THF23118 | 1,260 | 10d | 10d x 1½" | SKH2320L/R | 1,110 | 10d | 10d x 1½" |
| 14" | 560 | THO35118 | 1,430 | 10d | 10d x 1½" | THF17112-2 | 1,460 | 10d | 10d | SKH410L/R1 | 1,460 | 16d | 16d |
| | 110 | THO17140 | 1,215 | 10d | 10d x 1½" | THF17140 | 950 | 10d | 10d x 1½" | SKH1720L/R | 920 | 10d | 10d x 1½" |
| | 210 | THO20140 | 1,080 | 10d | 10d x 1½" | THF20140 | 1,045 | 10d | 10d x 1½" | SKH2020L/R | 1,015 | 10d | 10d x 1½" |
| | 230 | THO23140 | 1,185 | 10d | 10d x 1½" | THF23140 | 1,215 | 10d | 10d x 1½" | SKH2324L/R | 1,065 | 10d | 10d x 1½" |
| | 360 | THO23140 | 1,230 | 10d | 10d x 1½" | THF23140 | 1,260 | 10d | 10d x 1½" | SKH2324L/R | 1,110 | 10d | 10d x 1½" |
| 16" | 560 | THO35140 | 1,430 | 10d | 10d x 1½" | THF17140-2 | 1,460 | 10d | 10d | SKH414L/R1 | 1,460 | 16d | 16d |
| | 210 | THO20160 | 1,080 | 10d | 10d x 1½" | THF20157 | 1,045 | 10d | 10d x 1½" | SKH2024L/R | 1,015 | 10d | 10d x 1½" |
| | 230 | THO23160 | 1,185 | 10d | 10d x 1½" | THF23160 | 1,215 | 10d | 10d x 1½" | SKH2324L/R | 1,065 | 10d | 10d x 1½" |
| | 360 | THO23160 | 1,230 | 10d | 10d x 1½" | THF23160 | 1,260 | 10d | 10d x 1½" | SKH2324L/R | 1,110 | 10d | 10d x 1½" |
| | 560 | THO35160 | 1,430 | 10d | 10d x 1½" | THF17157-2 | 1,460 | 10d | 10d | SKH414L/R1 | 1,460 | 16d | 16d |

| Double Joist—Top Flange | | | | | | Double Joist—Face Mount ⁽¹⁾ | | | |
|-------------------------|------|------------|----------------|---------|-----------|--|----------------|---------|-------|
| Depth | TJI® | Hanger | Capacity (lbs) | Nailing | | Hanger | Capacity (lbs) | Nailing | |
| | | | | Header | Joist | | | Header | Joist |
| 9½" | 110 | THO35950 | 2,010 | 10d | 10d x 1½" | THF17925-2 | 1,350 | 10d | 10d |
| | 210 | THO20950-2 | 2,330 | 16d | 10d | THF20925-2 | 1,350 | 10d | 10d |
| | 230 | THO23950-2 | 2,490 | 16d | 10d | THF23925-2 | 1,575 | 10d | 10d |
| 11⅞" | 110 | THO35118 | 2,050 | 10d | 10d x 1½" | THF17112-2 | 1,575 | 10d | 10d |
| | 210 | THO20118-2 | 2,610 | 16d | 10d | THF20112-2 | 1,575 | 10d | 10d |
| | 230 | THO23118-2 | 2,675 | 16d | 10d | THF23118-2 | 1,800 | 10d | 10d |
| | 360 | THO23118-2 | 2,765 | 16d | 10d | THF23118-2 | 1,800 | 10d | 10d |
| | 560 | BPH71118 | 3,185 | 16d | 10d | HD7120 | 2,175 | 16d | 10d |
| | 110 | THO35140 | 2,100 | 10d | 10d x 1½" | THF17140-2 | 2,170 | 10d | 10d |
| 14" | 210 | THO20140-2 | 2,330 | 16d | 10d | THF20140-2 | 2,250 | 10d | 10d |
| | 230 | THO23140-2 | 2,675 | 16d | 10d | THF23140-2 | 2,370 | 10d | 10d |
| | 360 | THO23140-2 | 2,765 | 16d | 10d | THF23140-2 | 2,370 | 10d | 10d |
| | 560 | BPH7114 | 3,185 | 16d | 10d | HD7140 | 2,720 | 16d | 10d |
| | 210 | THO20160-2 | 2,330 | 16d | 10d | — | — | — | — |
| 16" | 230 | THO23160-2 | 2,675 | 16d | 10d | THF23160-2 | 2,430 | 10d | 10d |
| | 360 | THO23160-2 | 2,765 | 16d | 10d | THF23160-2 | 2,520 | 10d | 10d |
| | 560 | BPH7116 | 3,185 | 16d | 10d | HD7160 | 2,925 | 16d | 10d |

| Variable Slope Seat Connector ⁽⁵⁾ | | | | | |
|--|---------|----------------|---------|-----------|--|
| TJI® | Hanger | Capacity (lbs) | Nailing | | |
| | | | Header | Joist | |
| 110 | TMP175 | 1,150 | 10d | 10d x 1½" | |
| | TMPH175 | 1,945 | 10d | 10d x 1½" | |
| 210 | — | — | — | — | |
| 230 | TMP23 | 1,785 | 10d | 10d x 1½" | |
| | TMPH23 | 1,945 | 10d | 10d x 1½" | |
| 360 | TMP23 | 1,785 | 10d | 10d x 1½" | |
| | TMPH23 | 1,945 | 10d | 10d x 1½" | |
| 560 | TMP4 | 1,970 | 10d | 10d x 1½" | |
| | TMPH4 | 1,945 | 10d | 10d x 1½" | |

Support Requirements

- Support material assumed to be Trus Joist structural composite 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 ITT hangers).
- Minimum support width for face mount hangers with 10d and 16d nails is 1¾" and 2", respectively.

Footnotes:

1. Face mount hanger capacities may be increased up to 15% for snow roofs or 25% for non-snow roofs. Maximum increase for LSSU, LSSUI, and LSSH hangers is 15%.
2. VPA connectors are allowed on slopes of 3/12 through 12/12 only.
3. LSSU, LSSUI 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.

| Variable Slope Seat Joist Hanger ⁽¹⁾⁽³⁾ | | | | | |
|--|---------|----------------|-------------------|---------|-----------|
| TJI® | Hanger | Capacity (lbs) | | Nailing | |
| | | Sloped Only | Sloped and Skewed | Header | Joist |
| 110 | LSSH179 | 1,120 | 1,120 | 10d | 10d x 1½" |
| 210 | LSSH20 | 1,120 | 1,120 | 10d | 10d x 1½" |
| 230 | LSSH23 | 1,120 | 1,120 | 10d | 10d x 1½" |
| 360 | LSSH23 | 1,120 | 1,120 | 10d | 10d x 1½" |
| 560 | LSSH35 | 1,595 | 1,595 | 16d | 10d x 1½" |

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Rim Board,
Headers, Columns, and
Wall Framing



Beams and
Columns



Headers and
Beams

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Legacy Literature
See Note on Front Cover

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200 E. Mallard Drive • Boise, Idaho 83706
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Tom Dettig, President

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