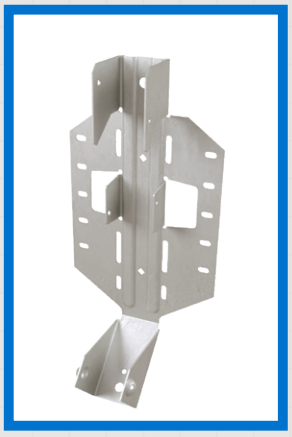
# EWP PRODUCT GUIDE

## For Use With Products Manufactured by

INTERNATIONAL BEAMS

THFI2514



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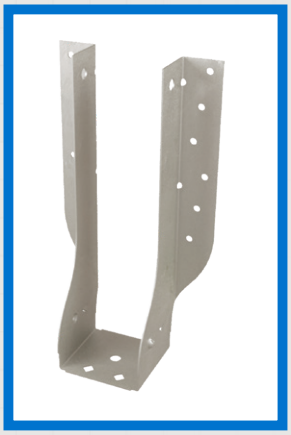

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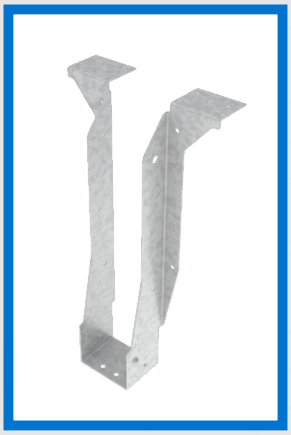

TFL25118

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1-800-328-5934
MiTek-US.com

# General Notes

MiTek®

## Follow these instructions to ensure the proper installation of MiTek products.

- See current MiTek Product Catalog for General Notes, Warranty, and installation information for hanger models, joist sizes, and header situations not shown.
- Loads listed address hanger/header/fastener limitations as well as joist/hanger limitations assuming header material is Douglas Fir-Larch (DF-L), Spruce Pine Fir (S-P-F), or LVL. Joist reaction should be checked by a qualified designer to ensure proper hanger selection.
- Uplift loads have been increased 60% for wind or seismic loads and no further increase shall be permitted. Reduce loads according to code for normal duration loading such as cantilever construction.
- If hanger height is less than 60% of joist height, joist rotation may occur; therefore supplemental lateral restraints are required, see page 3.
- The type and quantity of fasteners used to install MiTek products is critical to connector performance. To achieve the allowable loads shown in this guide, install with the fasteners specified for that particular product. All specified fasteners must be properly installed prior to applying load of any kind to the connection.
- Throughout this guide, dimensions are expressed in inches and loads in pounds, unless specifically noted otherwise.
- Load values for 10d and 16d designations in the fastener schedules throughout this guide refer to common wire nails, unless noted otherwise.
- The allowable loads shown in this guide are based on Allowable Stress Design methodology (U.S. only).
- **Multiple Joist Plies:** Fasten together multiple plies of wood I-Joist's, in accordance with International Beam's installation guidelines, such that the joists act as a single unit.
- **Sloped Joists:** Use hangers with sloped seats and beveled web stiffeners whenever the slope exceeds the following: 1⁄2:12 for seat bearing lengths of 2-1⁄2" or less; 3⁄8:12 for bearing lengths between 2-1⁄2" and 3-1⁄2"; and 1⁄4:12 for bearing lengths in excess of 3-1⁄2".

**Backer Blocks –** Pattern the nails used to install backer blocks or web stiffeners in wood Joist's to avoid splitting the block. The nail pattern should be sufficiently spaced to avoid the same grain line, particularly with solid sawn backer blocks. Backer blocks must be installed on wood Joist's acting as the header, or supporting member. Install in accordance with the I-Joist manufacturer's installation guidelines. The nails used to install hangers mounted to a I-Joist header must penetrate through the web and into the backer block on the opposite side.

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

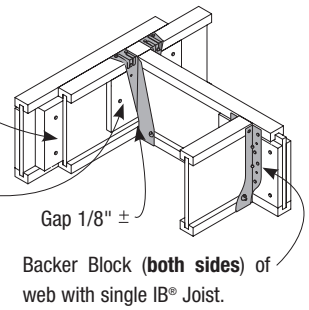
## Filler and Backer Block sizes

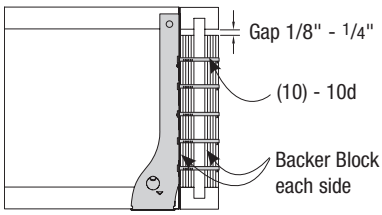
| Flange Width | Joist Series | Depth | Backer Block | | Filler Block Size |
|---|---|---|---|---|---|
| | | | Thickness Required | Minimum[1] Depth | |
| 2-1/2" | IB400 | 9-1/2" | 1" | (note 1) | 2-1/8" x 6" |
| | | 11-7/8" | | | 2-1/8" x 8" |
| | | 14" | | | 2-1/8" x 10" |
| | | 16" | | | 2-1/8" x 12" |
| 2-1/2" | IB600 | 9-1/2" | 1" | (note 1) | 2-1/8" x 6" |
| | | 11-7/8" | | | 2-1/8" x 8" |
| | | 14" | | | 2-1/8" x 10" |
| | | 16" | | | 2-1/8" x 12" |
| | | 18" | | | 2-1/8" x 14" |
| | | 20" | | | 2-1/8" x 16" |
| 3-1/2" | IB800 | 9-1/2" | 1-1/2" | (note 1) | 3-1/8" x 6" |
| | | 11-7/8" | | | 3-1/8" x 8" |
| | | 14" | | | 3-1/8" x 10" |
| | | 16" | | | 3-1/8" x 12" |
| | | 18" | | | 3-1/8" x 14" |
| | | 20" | | | 3-1/8" x 16" |
| 3-1/2" | IB900 | 11-7/8" | 1-1/2" | (note 1) | 3-1/8" x 8" |
| | | 14" | | | 3-1/8" x 10" |
| | | 16" | | | 3-1/8" x 12" |
| | | 18" | | | 3-1/8" x 14" |
| | | 20" | | | 3-1/8" x 16" |

1) For face-mount or top-mount hangers use joist depth minus 4". For example, for 9-1/2" I-joist, use 5-1/2" minimum depth.

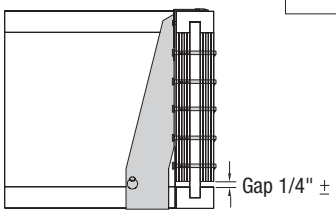
**Filler Block Installation:**
Nail filler blocks per IB® design manual

**Backer Block Installation:**
Install tight to top flange (tight to bottom flange with face mount hangers). Attach with twelve 10d (3") common nails, clinched when possible.



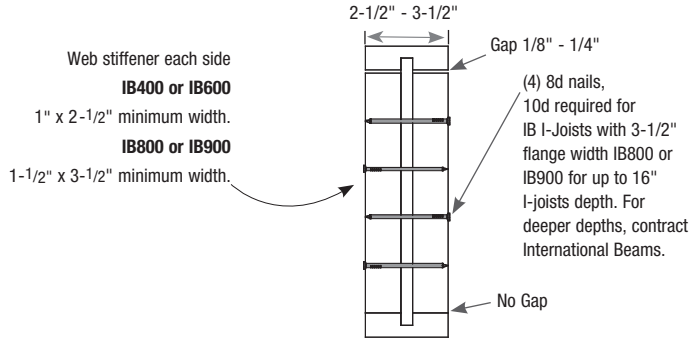




**Typical THF backer block installation**




**Typical THO backer block installation**

### Bearing/Web Stiffener Attachment



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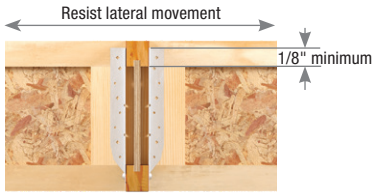
# EWP Installation

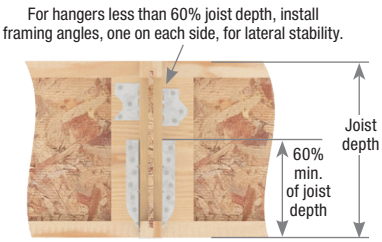
## Support Height & Lateral Stability

Hangers for joists **without web stiffeners** must support the I-Joist's top flange and provide lateral resistance with no less than 1⁄8" contact.

MiTek recommends that hangers for joist **with web stiffeners** should be 60% of the joist height for stability during construction. If this cannot be accomplished, potential joist rotation must be resolved by other means.






(Top flange support requirements can be verified in EWP Top Mount Hangers charts under Web stiffener Reqd. column) of MiTek's Product Catalog.

## Nailer Installations

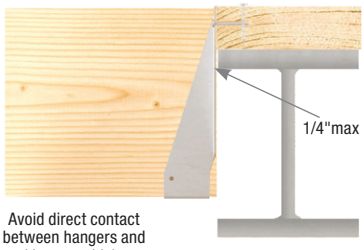
### Correct Hanger Attachment to Nailer

A nailer or sill plate is considered to be any wood member attached to a steel beam, concrete block wall, concrete stem wall, or other type of support unsuitable for nailing which is used as a nailing surface for top mount hangers to hold beams or joists.

### Nailer Sized Correctly

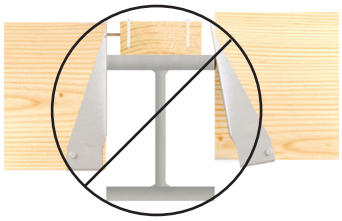
Top flange of hanger is fully supported and recommended nails have full penetration into nailer, resulting in a carried member hanging safely at the proper height.

The nailer must be sized to fit the support width as shown and be of sufficient thickness to satisfy recommended top flange nailing requirements. A design professional must specify nailer attachment to steel beams.



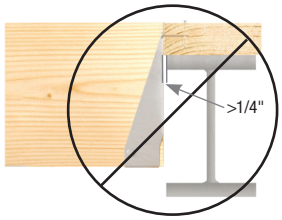

Avoid direct contact between hangers and steel beams which may cause squeaks

### Wrong Nailer Size Causes Component Failure



**Too Narrow**

Top flange not fully supported can cause nail break-out. Or, by fully supporting top flange, hanger is tilted back, causing lifting of carried member which results in uneven surfaces and squeaky floors.




**Too Wide**

Loading can cause cross grain breaking of nailer. The recommended nailer overhang is 1⁄4" maximum per side.

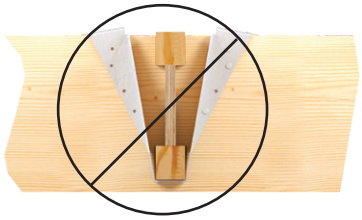
**Too Thin**

Top flange nailing cannot fully penetrate nailer, causing reduced allowable loads. Never use hangers which require multiple face nails since the allowable loads are dependent on all nail holes being used.

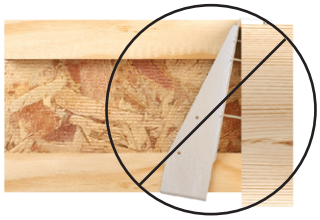
## Top Flange Hangers

The thickness of the hanger metal and nail heads on top mount hangers must be evaluated for the effect on subsequent sheathing. Ensure the top mount hanger is installed so the flanges of the hanger are not over-spread which tends to elevate the supported I-Joist, causing uneven floor surfaces and squeaking. Similarly, ensure the hanger is installed plumb such that the face flanges of the hanger are mounted firmly against the wide-face surface of the header.

**Flush framing**



**Hanger over-spread**



**Hanger not plumb**

# Single International Beam® I-Joists U.S./Allowable Load (Lbs.)

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| Joist Height | Top Mount Hangers[4] | | | | | | | | | | Face Mount Hangers | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MiTek Stock No.[1] | D Dim[6] | Fastener Schedule[5] | | | | DF | | S-P-F | | MiTek Stock No.[1] | D Dim[6] | Fastener Schedule[5] | | | | | DF | | S-P-F | |
| | | | Header | | Joist | | Uplift[3] 100% | Down[2] 100% | Uplift[3] 100% | Down[2] 100% | | | Min/ Max | Header | | Joist | | Uplift[3] 100% | Down[2] 100% | Uplift[3] 100% | Down[2] 100% |
| | | | Qty | Type | Qty | Type | | | | | | | | Qty | Type | Qty | Type | | | | |
| **IB400 or IB600** | **Joist Width = 2-1/2"** | | | | | | | | | | | | | | | | | | | | |
| 9-1/2 | TFL2595 | 2 | 6 | 10d | 2 | 10d x 1-1/2 | 130 | 1585 | 100 | 1215 | THFI2595 | 2-1/2 | -- | 8 | 10d | -- | -- | 125 | 960 | 100 | 845 |
| 11-7/8 | TFL25118 | 2 | 6 | 10d | 2 | 10d x 1-1/2 | 130 | 1585 | 100 | 1215 | THFI25118 | 2-1/2 | -- | 10 | 10d | -- | -- | 125 | 1200 | 100 | 995 |
| 14 | TFL2514 | 2 | 6 | 10d | 2 | 10d x 1-1/2 | 130 | 1585 | 100 | 1215 | THFI2514 | 2-1/2 | Min | 12 | 10d | -- | -- | 125 | 1440 | 100 | 1265 |
| | | | | | | | | | | | | | Max | 14 | 10d | -- | -- | | 1680 | | 1480 |
| 16 | TFL2516 | 2 | 6 | 10d | 2 | 10d x 1-1/2 | 130 | 1585 | 100 | 1215 | IHFL2516 | 2-1/2 | Min | 14 | 10d | -- | -- | 50 | 1680 | 40 | 1455 |
| | | | | | | | | | | | | | Max | 16 | 10d | | | | 1920 | | 1660 |
| 18 | TFI318 | 2-1/2 | 6 | 16d | 2 | 10d x 1-1/2 | 215 | 2715 | 165 | 2080 | IHFL2516 | 2-1/2 | Min | 14 | 10d | -- | -- | 50 | 1680 | 40 | 1455 |
| | | | | | | | | | | | | | Max | 16 | 10d | | | | 1920 | | 1660 |
| 20 | TFI320 | 2-1/2 | 6 | 16d | 2 | 10d x 1-1/2 | 215 | 2715 | 165 | 2080 | IHFL2516 | 2-1/2 | Min | 14 | 10d | -- | -- | 50 | 1680 | 40 | 1455 |
| | | | | | | | | | | | | | Max | 16 | 10d | | | | 1920 | | 1660 |
| **IB800** | **Joist Width = 3-1/2"** | | | | | | | | | | | | | | | | | | | | |
| 9-1/2 | THO35950 | 2-3/8 | 10 | 10d | 2 | 10d x 1-1/2 | 230 | 2370 | 175 | 2370 | IHFL35925 | 2-1/2 | -- | 10 | 10d | -- | -- | 50 | 1200 | 40 | 1040 |
| 11-7/8 | THO35118 | 2-3/8 | 10 | 10d | 2 | 10d x 1-1/2 | 230 | 2525 | 175 | 2265 | IHFL35112 | 2-1/2 | Min | 10 | 10d | -- | -- | 50 | 1200 | 40 | 1040 |
| | | | | | | | | | | | | | Max | 12 | 10d | | | | 1440 | | 1245 |
| 14 | THO35140 | 2-3/8 | 12 | 10d | 2 | 10d x 1-1/2 | 230 | 2400 | 175 | 1835 | IHFL3514 | 2-1/2 | Min | 12 | 10d | -- | -- | 50 | 1440 | 40 | 1245 |
| | | | | | | | | | | | | | Max | 14 | 10d | | | | 1680 | | 1455 |
| 16 | THO35160 | 2-3/8 | 12 | 10d | 2 | 10d x 1-1/2 | 230 | 2400 | 175 | 1835 | IHFL3516 | 2-1/2 | Min | 14 | 10d | -- | -- | 50 | 1680 | 40 | 1455 |
| | | | | | | | | | | | | | Max | 16 | 10d | | | | 1920 | | 1660 |
| 18 | TFI418 | 2-1/2 | 6 | 16d | 2 | 10d x 1-1/2 | 215 | 2715 | 165 | 2075 | IHFL3516 | 2-1/2 | Min | 14 | 10d | -- | -- | 50 | 1680 | 40 | 1455 |
| | | | | | | | | | | | | | Max | 16 | 10d | | | | 1920 | | 1660 |
| 20 | TFI420 | 2-1/2 | 6 | 16d | 2 | 10d x 1-1/2 | 215 | 2715 | 165 | 2075 | IHFL3516 | 2-1/2 | Min | 14 | 10d | -- | -- | 50 | 1680 | 40 | 1455 |
| | | | | | | | | | | | | | Max | 16 | 10d | | | | 1920 | | 1660 |
| **IB900** | **Joist Width = 3-1/2"** | | | | | | | | | | | | | | | | | | | | |
| 11-7/8 | THO35118 | 2-3/8 | 10 | 10d | 2 | 10d x 1-1/2 | 230 | 2525 | 175 | 2265 | IHFL35112 | 2-1/2 | Min | 10 | 10d | -- | -- | 50 | 1200 | 40 | 1040 |
| | | | | | | | | | | | | | Max | 12 | 10d | | | | 1440 | | 1245 |
| 14 | THO35140 | 2-3/8 | 12 | 10d | 2 | 10d x 1-1/2 | 230 | 2400 | 175 | 1835 | IHFL3514 | 2-1/2 | Min | 12 | 10d | -- | -- | 50 | 1440 | 40 | 1245 |
| | | | | | | | | | | | | | Max | 14 | 10d | | | | 1680 | | 1455 |
| 16 | THO35160 | 2-3/8 | 12 | 10d | 2 | 10d x 1-1/2 | 230 | 2400 | 175 | 1835 | IHFL3516 | 2-1/2 | Min | 14 | 10d | -- | -- | 50 | 1680 | 40 | 1455 |
| | | | | | | | | | | | | | Max | 16 | 10d | | | | 1920 | | 1660 |
| 18 | TFI418 | 2-1/2 | 6 | 16d | 2 | 10d x 1-1/2 | 215 | 2715 | 165 | 2075 | IHFL3516 | 2-1/2 | Min | 14 | 10d | -- | -- | 50 | 1680 | 40 | 1455 |
| | | | | | | | | | | | | | Max | 16 | 10d | | | | 1920 | | 1660 |
| 20 | TFI420 | 2-1/2 | 6 | 16d | 2 | 10d x 1-1/2 | 215 | 2715 | 165 | 2075 | IHFL3516 | 2-1/2 | Min | 14 | 10d | -- | -- | 50 | 1680 | 40 | 1455 |
| | | | | | | | | | | | | | Max | 16 | 10d | | | | 1920 | | 1660 |

1) Web stiffeners may be required for hangers by joist manufacturer.
2) Loads listed are based on hanger attachment to a DF or S-P-F species solid sawn or LVL header.
Some loads may be increased for duration of load adjustments. Refer to MiTek Product Catalog for details.
3) Uplift loads have been increased 60% for wind and seismic loading; no further increase shall be permitted.
4) Top Mount Hangers require minimum 3" header width for THO series hangers; 3-1/2" minimum header thickness for all other stock numbers.
5) 10d x 1-1/2 nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, and 16d nails are 0.162" dia. x 3-1/2" long.
16d sinkers are 0.148" dia. x 3-1/4" long and may be used where 10d commons are specified.
6) D Dim is the length of the hanger seat.

THO

TFL

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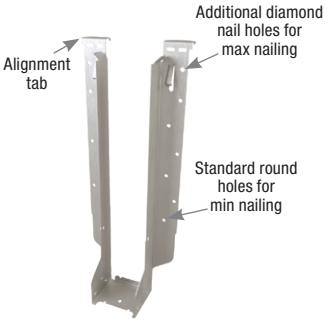


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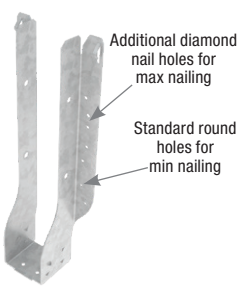


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# Single International Beam® I-Joists U.S./Allowable Load (Lbs.)

MiTek®

| Joist Height | Adjustable Height Hangers | | | | | | | | Skewed 45° Hangers | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MiTek Stock No.[1,5] | D Dim[8] | Fastener Schedule[4] | | | | DF | S-P-F | MiTek Stock No.[1,5] | D Dim[8] | Fastener Schedule[4] | | | | | DF | | S-P-F | |
| | | | Header | | Joist | | Down[2] 100% | Down[2] 100% | | | Min / Max | Header | | Joist | | Uplift[3] 100% | Down[2] 100% | Uplift[3] 100% | Down[2] 100% |
| | | | Qty | Type | Qty | Type | | | | | | Qty | Type | Qty | Type | | | | |
| **IB400 or IB600** | **Joist Width = 2-1/2"** | | | | | | | | | | | | | | | | | | |
| 9-1/2 | MSH322 [9] | 1-3/4 | 6 | 10d | 4 | 10d x 1-1/2 | 2395 | 1895 | SKH2520L/R | 1-7/8 | -- | 14 | 10d | 10 | 10d x 1-1/2 | 1530 | 1650 | 1205 | 1380 |
| 11-7/8 | MSH322 | 1-3/4 | 6 | 10d | 4 | 10d x 1-1/2 | 2395 | 1895 | SKH2520L/R | 1-7/8 | -- | 14 | 10d | 10 | 10d x 1-1/2 | 1530 | 1650 | 1205 | 1380 |
| 14 | MSH322 | 1-3/4 | 6 | 10d | 4 | 10d x 1-1/2 | 2395 | 1895 | SKH2524L/R | 1-7/8 | -- | 16 | 10d | 10 | 10d x 1-1/2 | 1530 | 1890 | 1205 | 1635 |
| 16 | MSH322 | 1-3/4 | 6 | 10d | 4 | 10d x 1-1/2 | 2395 | 1895 | SKH2524L/R | 1-7/8 | -- | 16 | 10d | 10 | 10d x 1-1/2 | 1530 | 1890 | 1205 | 1635 |
| 18 | MSH322 | 1-3/4 | 6 | 10d | 4 | 10d x 1-1/2 | 2395 | 1895 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 20 | MSH322 | 1-3/4 | 6 | 10d | 4 | 10d x 1-1/2 | 2395 | 1895 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **IB800** | **Joist Width = 3-1/2"** | | | | | | | | | | | | | | | | | | |
| 9-1/2 | MSH422 | 1-3/4 | 6 | 10d | 6 | 10d | 2530 | 2005 | HD410_SK45L/R_BV [5,10] | 2-1/2 | Min | 14 | 16d | 6 | 10d | 880 | 2155 | 775 | 1895 |
| | | | | | | | | | | | Max | 20 | | 10 | | 1465 | 3080 | 1285 | 2710 |
| 11-7/8 | MSH422 | 1-3/4 | 6 | 10d | 6 | 10d | 2530 | 2005 | HD410_SK45L/R_BV [5,10] | 2-1/2 | Min | 14 | 16d | 6 | 10d | 880 | 2155 | 775 | 1895 |
| | | | | | | | | | | | Max | 20 | | 10 | | 1465 | 3080 | 1285 | 2710 |
| 14 | MSH422 | 1-3/4 | 6 | 10d | 6 | 10d | 2530 | 2005 | HD414_SK45L/R_BV [5,10] | 2-1/2 | Min | 18 | 16d | 8 | 10d | 1165 | 2770 | 905 | 2440 |
| | | | | | | | | | | | Max | 26 | | 12 | | 1755 | 4005 | 1545 | 3520 |
| 16 | MSH422 | 1-3/4 | 6 | 10d | 6 | 10d | 2530 | 2005 | HD414_SK45L/R_BV [5,10] | 2-1/2 | Min | 18 | 16d | 8 | 10d | 1165 | 2770 | 905 | 2440 |
| | | | | | | | | | | | Max | 26 | | 12 | | 1755 | 4005 | 1545 | 3520 |
| 18 | MSH422 | 1-3/4 | 6 | 10d | 6 | 10d | 2530 | 2005 | HD414_SK45L/R_BV [5,10] | 2-1/2 | Min | 18 | 16d | 8 | 10d | 1165 | 2770 | 905 | 2440 |
| | | | | | | | | | | | Max | 26 | | 12 | | 1755 | 4005 | 1545 | 3520 |
| 20 | MSH422 | 1-3/4 | 6 | 10d | 6 | 10d | 2530 | 2005 | HD414_SK45L/R_BV [5,10] | 2-1/2 | Min | 18 | 16d | 8 | 10d | 1165 | 2770 | 905 | 2440 |
| | | | | | | | | | | | Max | 26 | | 12 | | 1755 | 4005 | 1545 | 3520 |
| **IB900** | **Joist Width = 3-1/2"** | | | | | | | | | | | | | | | | | | |
| 11-7/8 | MSH422 | 1-3/4 | 6 | 10d | 6 | 10d | 2530 | 2005 | HD410_SK45L/R_BV [5,10] | 2-1/2 | Min | 14 | 16d | 6 | 10d | 880 | 2155 | 775 | 1895 |
| | | | | | | | | | | | Max | 20 | | 10 | | 1465 | 3080 | 1285 | 2710 |
| 14 | MSH422 | 1-3/4 | 6 | 10d | 6 | 10d | 2530 | 2005 | HD414_SK45L/R_BV [5,10] | 2-1/2 | Min | 18 | 16d | 8 | 10d | 1165 | 2770 | 905 | 2440 |
| | | | | | | | | | | | Max | 26 | | 12 | | 1755 | 4005 | 1545 | 3520 |
| 16 | MSH422 | 1-3/4 | 6 | 10d | 6 | 10d | 2530 | 2005 | HD414_SK45L/R_BV [5,10] | 2-1/2 | Min | 18 | 16d | 8 | 10d | 1165 | 2770 | 905 | 2440 |
| | | | | | | | | | | | Max | 26 | | 12 | | 1755 | 4005 | 1545 | 3520 |
| 18 | MSH422 | 1-3/4 | 6 | 10d | 6 | 10d | 2530 | 2005 | HD414_SK45L/R_BV [5,10] | 2-1/2 | Min | 18 | 16d | 8 | 10d | 1165 | 2770 | 905 | 2440 |
| | | | | | | | | | | | Max | 26 | | 12 | | 1755 | 4005 | 1545 | 3520 |
| 20 | MSH422 | 1-3/4 | 6 | 10d | 6 | 10d | 2530 | 2005 | HD414_SK45L/R_BV [5,10] | 2-1/2 | Min | 18 | 16d | 8 | 10d | 1165 | 2770 | 905 | 2440 |
| | | | | | | | | | | | Max | 26 | | 12 | | 1755 | 4005 | 1545 | 3520 |

1) Shaded hangers require web stiffeners at joist ends. Web stiffeners may be required for non-shaded hangers by joist manufacturer.
2) Loads listed are based on hanger attachment to a DF or S-P-F species solid sawn or LVL header.
Some loads may be increased for duration of load adjustments. Refer to MiTek Product Catalog for details.
3) Uplift loads have been increased 60% for wind and seismic loading; no further increase shall be permitted.
4) 10d x 1-1/2 nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, and 16d nails are 0.162" dia. x 3-1/2" long.
5) For additional sizes, stock numbers, and modifications not shown, refer to MiTek's Product Catalog.
6) Bevel cut required on end of joist to achieve design loads.
7) MSH allowable loads listed in this table assume Top-Min mounting condition installed with 4 - 10d top nails and 2 - 10d face nails. For MSH Face-Max and Top-Max mounting conditions not included in this table, refer to the current MiTek Product Catalog.
8) D Dim is the length of the hanger seat.
9) Flanges on the bucket of the hanger may extend above the top of the joist.

**MSH**

**SKH_L**
left shown

# Double International Beam® I-Joists U.S./Allowable Load (Lbs.)

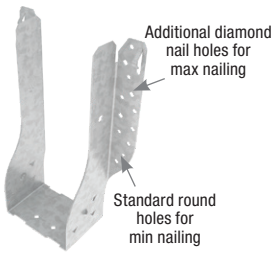
MiTek®

| Joist Height | Top Mount Hangers[4] | | | | | | | | | | Face Mount Hangers | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MiTek Stock No.[1,6] | D Dim[7] | Fastener Schedule[5] | | | | DF | | S-P-F | | MiTek Stock No.[1,6] | D Dim[7] | Fastener Schedule[5] | | | | | DF | | S-P-F | |
| | | | Header | | Joist | | Uplift[3] 100% | Down[2] 100% | Uplift[3] 100% | Down[2] 100% | | | Min/ Max | Header | | Joist | | Uplift[3] 100% | Down[2] 100% | Uplift[3] 100% | Down[2] 100% |
| | | | Qty | Type | Qty | Type | | | | | | | | Qty | Type | Qty | Type | | | | |
| **Double IB400 or IB600** | | | | | | | | | | **Joist Width = 5"** | | | | | | | | | | | |
| 9-1/2 | THO25950-2 | 3 | 10 | 16d | 6 | 10d | 1145 | 3640 | 880 | 2790 | IHF25925-2 | 2-1/2 | Min | 10 | 10d | 2 | 10d x 1-1/2 | 330 | 1250 | 260 | 1100 |
| | | | | | | | | | | | | | Max | 24 | 16d | | | | 3530 | | 3105 |
| 11-7/8 | THO25118-2 | 3 | 10 | 16d | 6 | 10d | 1145 | 3640 | 880 | 2790 | IHF25112-2 | 2-1/2 | Min | 10 | 10d | 2 | 10d x 1-1/2 | 330 | 1250 | 260 | 1100 |
| | | | | | | | | | | | | | Max | 24 | 16d | | | | 3530 | | 3105 |
| 14 | THO25140-2 | 3 | 12 | 16d | 6 | 10d | 1145 | 4420 | 880 | 3390 | THF25140-2 | 2-1/2 | -- | 20 | 10d | 6 | 10d | 1275 | 2660 | 1015 | 2340 |
| 16 | THO25160-2 | 3 | 12 | 16d | 6 | 10d | 1145 | 4420 | 880 | 3390 | THF25160-2 | 2-1/2 | -- | 24 | 10d | 6 | 10d | 1275 | 3190 | 1015 | 2810 |
| 18 | THO25180-2 | 3 | 14 | 16d | 6 | 10d | 1145 | 5000 | 880 | 3720 | THF25160-2 | 2-1/2 | -- | 24 | 10d | 6 | 10d | 1275 | 3190 | 1015 | 2810 |
| 20 | THO25200-2 | 3 | 14 | 16d | 6 | 10d | 1145 | 5000 | 880 | 3720 | THF25160-2 | 2-1/2 | -- | 24 | 10d | 6 | 10d | 1275 | 3190 | 1015 | 2810 |
| **Double IB800** | | | | | | | | | | **Joist Width = 7"** | | | | | | | | | | | |
| 9-1/2 | BPH7195 | 3 | 10 | 16d | 6 | 10d | 1275 | 3100 | 1105 | 2370 | HD7100 | 2-1/2 | Min | 14 | 16d | 6 | 16d | 1305 | 2155 | 1035 | 1895 |
| | | | | | | | | | | | | | Max | 18 | | 8 | | 1845 | 2770 | 1620 | 2440 |
| 11-7/8 | BPH71118 | 3 | 10 | 16d | 6 | 10d | 1275 | 3075 | 1105 | 2350 | HD7120 | 2-1/2 | Min | 16 | 16d | 6 | 16d | 1305 | 2465 | 1035 | 2165 |
| | | | | | | | | | | | | | Max | 22 | | 8 | | 1845 | 3390 | 1620 | 2980 |
| 14 | BPH7114 | 3 | 10 | 16d | 6 | 10d | 1275 | 3075 | 1105 | 2350 | HD7140 | 2-1/2 | Min | 20 | 16d | 8 | 16d | 1845 | 3080 | 1620 | 2710 |
| | | | | | | | | | | | | | Max | 26 | | 12 | | 2765 | 4005 | 2430 | 3520 |
| 16 | BPH7116 | 3 | 10 | 16d | 6 | 10d | 1275 | 3075 | 1105 | 2350 | HD7160 | 2-1/2 | -- | 24 | 16d | 8 | 10d | 1560 | 3695 | 1375 | 3250 |
| 18 | BPH7118 | 3 | 10 | 16d | 6 | 10d | 1275 | 3075 | 1105 | 2350 | HD7160 | 2-1/2 | -- | 24 | 16d | 8 | 10d | 1560 | 3695 | 1375 | 3250 |
| 20 | BPH7120 | 3 | 10 | 16d | 6 | 10d | 1275 | 3075 | 1105 | 2350 | HD7160 | 2-1/2 | -- | 24 | 16d | 8 | 10d | 1560 | 3695 | 1375 | 3250 |
| **Double IB900** | | | | | | | | | | **Joist Width = 7"** | | | | | | | | | | | |
| 11-7/8 | BPH71118 | 3 | 10 | 16d | 6 | 10d | 1275 | 3075 | 1105 | 2350 | HD7120 | 2-1/2 | Min | 16 | 16d | 6 | 16d | 1305 | 2465 | 1035 | 2165 |
| | | | | | | | | | | | | | Max | 22 | | 8 | | 1845 | 3390 | 1620 | 2980 |
| 14 | BPH7114 | 3 | 10 | 16d | 6 | 10d | 1275 | 3075 | 1105 | 2350 | HD7140 | 2-1/2 | Min | 20 | 16d | 8 | 16d | 1845 | 3080 | 1620 | 2710 |
| | | | | | | | | | | | | | Max | 26 | | 12 | | 2765 | 4005 | 2430 | 3520 |
| 16 | BPH7116 | 3 | 10 | 16d | 6 | 10d | 1275 | 3075 | 1105 | 2350 | HD7160 | 2-1/2 | -- | 24 | 16d | 8 | 10d | 1560 | 3695 | 1375 | 3250 |
| 18 | BPH7118 | 3 | 10 | 16d | 6 | 10d | 1275 | 3075 | 1105 | 2350 | HD7160 | 2-1/2 | -- | 24 | 16d | 8 | 10d | 1560 | 3695 | 1375 | 3250 |
| 20 | BPH7120 | 3 | 10 | 16d | 6 | 10d | 1275 | 3075 | 1105 | 2350 | HD7160 | 2-1/2 | -- | 24 | 16d | 8 | 10d | 1560 | 3695 | 1375 | 3250 |

1) Shaded hangers require web stiffeners at joist ends. Web stiffeners may be required for non-shaded hangers by joist manufacturer.
2) Loads listed are based on hanger attachment to a DF or S-P-F species solid sawn or LVL header.
Some loads may be increased for duration of load adjustments. Refer to MiTek Product Catalog for details.
3) Uplift loads have been increased 60% for wind and seismic loading; no further increase shall be permitted.
4) Top Mount Hangers require minimum 3" header width for THO series hangers; 3-1/2" minimum header thickness for all other stock numbers.
5) 10d nails are 0.148" dia. x 3" long, and 16d nails are 0.162" dia. x 3-1/2" long.
16d sinkers are 0.148" dia. x 3-1/4" long and may be used where 10d commons are specified.
6) For additional sizes, stock numbers, and modifications not shown, refer to MiTek's Product Catalog.
7) D Dim is the length of the hanger seat.

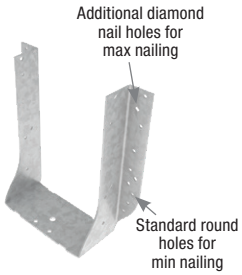
THO Double

BPH




IHF

THF Double




HD



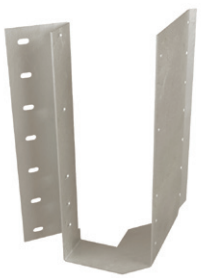
Customer Service & Technical Assistance
1-800-328-5934 · 1-952-898-8772

# Double International Beam® I-Joists U.S./Allowable Load (Lbs.)

MiTek®

| Joist Height | Adjustable Height Hangers | | | | | | | | Skewed 45° Hangers | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MiTek Stock No.[1] | D Dim[8] | Fastener Schedule[4] | | | | DF | S-P-F | MiTek Stock No.[1] | D Dim[8] | Fastener Schedule[4] | | | | | DF | | S-P-F | | |
| | | | Header | | Joist | | Down[2] 100% | Down[2] 100% | | | Min/ Max | Header | | Joist | | Uplift[3] 100% | Down[2] 100% | Uplift[3] 100% | Down[2] 100% |
| | | | Qty | Type | Qty | Type | | | | | | Qty | Type | Qty | Type | | | | |
| **Double IB400 or IB600** | | | | | | | | | **Joist Width = 5"** | | | | | | | | | | | |
| 9-1/2 | MSH2622-2 | 1-3/4 | 6 | 10d | 4 | 10d | 2530 | 1865 | SKH2520L/R-2 [7] | 3-1/2 | -- | 14 | 10d | 10 | 10d | 1645 | 1710 | 1265 | 1480 |
| 11-7/8 | MSH2622-2 | 1-3/4 | 6 | 10d | 4 | 10d | 2530 | 1865 | SKH2520L/R-2 [7] | 3-1/2 | -- | 14 | 10d | 10 | 10d | 1645 | 1710 | 1265 | 1480 |
| 14 | MSH2622-2 | 1-3/4 | 6 | 10d | 4 | 10d | 2530 | 1865 | SKH2524L/R-2 [7] | 3-1/2 | -- | 16 | 10d | 10 | 10d | 1680 | 1950 | 1295 | 1690 |
| 16 | MSH2622-2 | 1-3/4 | 6 | 10d | 4 | 10d | 2530 | 1865 | SKH2524L/R-2 [7] | 3-1/2 | -- | 16 | 10d | 10 | 10d | 1680 | 1950 | 1295 | 1690 |
| 18 | MSH2622-2 | 1-3/4 | 6 | 10d | 4 | 10d | 2530 | 1865 | SKH2524L/R-2 [7] | 3-1/2 | -- | 16 | 10d | 10 | 10d | 1680 | 1950 | 1295 | 1690 |
| 20 | MSH2622-2 | 1-3/4 | 6 | 10d | 4 | 10d | 2530 | 1865 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Double IB900** | | | | | | | | | **Joist Width = 7"** | | | | | | | | | | | |
| 9-1/2 | MSH422-2 [9] | 2 | 8 | 16d | 6 | 16d | 3740 | 2665 | HD7100_SK45L/R_BV [7,8] | 2-1/2 | Min | 14 | 16d | 6 | 16d | 980 | 2155 | 775 | 1895 |
| | | | | | | | | | | | Max | 18 | | 8 | | 1385 | 2770 | 1215 | 2440 |
| 11-7/8 | MSH422-2 | 2 | 8 | 16d | 6 | 16d | 3740 | 2665 | HD7120-SK45L/R_BV [7,8] | 2-1/2 | Min | 16 | 16d | 6 | 16d | 980 | 2465 | 775 | 2165 |
| | | | | | | | | | | | Max | 22 | | 8 | | 1385 | 3390 | 1215 | 2980 |
| 14 | MSH422-2 | 2 | 8 | 16d | 6 | 16d | 3740 | 2665 | HD7140-SK45L/R_BV [7,8] | 2-1/2 | Min | 20 | 16d | 8 | 16d | 1385 | 3080 | 1215 | 2710 |
| | | | | | | | | | | | Max | 26 | | 12 | | 2075 | 4005 | 1825 | 3520 |
| 16 | MSH422-2 | 2 | 8 | 16d | 6 | 16d | 3740 | 2665 | HD7140-SK45L/R_BV [7,8] | 2-1/2 | Min | 20 | 16d | 8 | 16d | 1385 | 3080 | 1215 | 2710 |
| | | | | | | | | | | | Max | 26 | | 12 | | 2075 | 4005 | 1825 | 3520 |
| 18 | MSH422-2 | 2 | 8 | 16d | 6 | 16d | 3740 | 2665 | HD7140-SK45L/R_BV [7,8] | 2-1/2 | Min | 20 | 16d | 8 | 16d | 1385 | 3080 | 1215 | 2710 |
| | | | | | | | | | | | Max | 26 | | 12 | | 2075 | 4005 | 1825 | 3520 |
| 20 | MSH422-2 | 2 | 8 | 16d | 6 | 16d | 3740 | 2665 | HD7140-SK45L/R_BV [7,8] | 2-1/2 | Min | 20 | 16d | 8 | 16d | 1385 | 3080 | 1215 | 2710 |
| | | | | | | | | | | | Max | 26 | | 12 | | 2075 | 4005 | 1825 | 3520 |
| **Double IB900** | | | | | | | | | **Joist Width = 7"** | | | | | | | | | | | |
| 11-7/8 | MSH422-2 | 2 | 8 | 16d | 6 | 16d | 3740 | 2665 | HD7120-SK45L/R_BV [7,8] | 2-1/2 | Min | 16 | 16d | 6 | 16d | 980 | 2465 | 775 | 2165 |
| | | | | | | | | | | | Max | 22 | | 8 | | 1385 | 3390 | 1215 | 2980 |
| 14 | MSH422-2 | 2 | 8 | 16d | 6 | 16d | 3740 | 2665 | HD7140-SK45L/R_BV [7,8] | 2-1/2 | Min | 20 | 16d | 8 | 16d | 1385 | 3080 | 1215 | 2710 |
| | | | | | | | | | | | Max | 26 | | 12 | | 2075 | 4005 | 1825 | 3520 |
| 16 | MSH422-2 | 2 | 8 | 16d | 6 | 16d | 3740 | 2665 | HD7140-SK45L/R_BV [7,8] | 2-1/2 | Min | 20 | 16d | 8 | 16d | 1385 | 3080 | 1215 | 2710 |
| | | | | | | | | | | | Max | 26 | | 12 | | 2075 | 4005 | 1825 | 3520 |
| 18 | MSH422-2 | 2 | 8 | 16d | 6 | 16d | 3740 | 2665 | HD7140-SK45L/R_BV [7,8] | 2-1/2 | Min | 20 | 16d | 8 | 16d | 1385 | 3080 | 1215 | 2710 |
| | | | | | | | | | | | Max | 26 | | 12 | | 2075 | 4005 | 1825 | 3520 |
| 20 | MSH422-2 | 2 | 8 | 16d | 6 | 16d | 3740 | 2665 | HD7140-SK45L/R_BV [7,8] | 2-1/2 | Min | 20 | 16d | 8 | 16d | 1385 | 3080 | 1215 | 2710 |
| | | | | | | | | | | | Max | 26 | | 12 | | 2075 | 4005 | 1825 | 3520 |

1) Shaded hangers require web stiffeners at joist ends. Web stiffeners may be required for non-shaded hangers by joist manufacturer.
2) Loads listed are based on hanger attachment to a DF or S-P-F species solid sawn or LVL header.
Some loads may be increased for duration of load adjustments. Refer to MiTek Product Catalog for details.
3) Uplift loads have been increased 60% for wind and seismic loading; no further increase shall be permitted.
4) 10d nails are 0.148" dia. x 3" long and 16d nails are 0.162" dia. x 3-1/2" long.
16d sinkers are 0.148" dia. x 3-1/4" long and may be used where 10d commons are specified.
5) Hangers are special order. Consult MiTek for pricing and lead times.
6) Bevel cut required on end of joist to achieve design loads.
7) MSH allowable loads listed in this table assume Top-Min mounting condition installed with 4 - 10d top nails and 2 - 10d face nails. For MSH Face-Max and Top-Max mounting conditions not included in this table, refer to the current MiTek Product Catalog.
8) D Dim is the length of the hanger seat.
9) Flanges on the bucket of the hanger may extend above the top of the joist.



SKH_L Double
Left shown

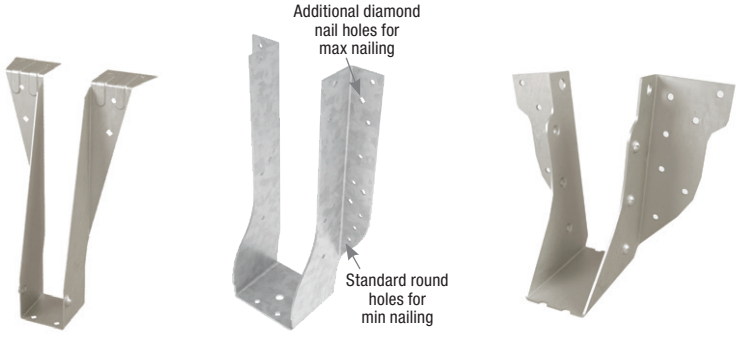
MSH

# International Beam® LVL Beams & Headers

MiTek®

| Joist Height | Top Mount Hangers[3] | | | | | | | | | | Face Mount Hangers | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Fastener Schedule[4] | | | | DF | | S-P-F | | | | Fastener Schedule[4] | | | | | DF | | S-P-F | |
| | | | Header | | Joist | | | | | | | | | Header | | Joist | | | | | |
| | MiTek Stock No.[6] | D Dim[8] | Qty | Type | Qty | Type | Uplift[2] 160% | Down[1] 100% | Uplift[2] 160% | Down[1] 100% | MiTek Stock No.[6] | D Dim[8] | Min/ Max | Qty | Type | Qty | Type | Uplift[2] 160% | Down[1] 100% | Uplift[2] 160% | Down[1] 100% |
| **1-3/4" IB LVL** | | | | | | | | | | | | | | | | | | | | | |
| 7-1/4 | PHXU17725 | 3-1/4 | 8 | 16d | 6 | 10d x 1-1/2 | 930 | 4350 | 710 | 3245 | HD1770 | 2-1/2 | Min | 12 | 16d | 4 | 10d x 1-1/2 | 760 | 1850 | 610 | 1625 |
| | | | | | | | | | | | | | Max | 16 | 16d | 8 | 10d x 1-1/2 | 1190 | 2465 | 960 | 2165 |
| 9-1/4 | BPH17925 | 2-3/8 | 10 | 16d | 4 | 10d x 1-1/2 | 850 | 2970 | 665 | 2300 | HD17925 | 2-1/2 | Min | 18 | 16d | 6 | 10d x 1-1/2 | 1170 | 2770 | 955 | 2440 |
| | | | | | | | | | | | | | Max | 24 | 16d | 10 | 10d x 1-1/2 | 1900 | 3695 | 1545 | 3020 |
| | PHXU17925 | 3-1/4 | 8 | 16d | 6 | 10d x 1-1/2 | 930 | 4350 | 710 | 3245 | HUS179[5] | 3 | -- | 30 | 16d | 10 | 16d | 4110 | 5580 | 3410 | 4555 |
| 9-1/2 | THO17950 | 2 | 6 | 10d | 2 | 10d x 1-1/2 | 230 | 1235 | 180 | 950 | HD17925 | 2-1/2 | Min | 18 | 16d | 6 | 10d x 1-1/2 | 1170 | 2770 | 955 | 2440 |
| | | | | | | | | | | | | | Max | 24 | 16d | 10 | 10d x 1-1/2 | 1900 | 3695 | 1545 | 3020 |
| | PHXU1795 | 3-1/4 | 8 | 16d | 6 | 10d x 1-1/2 | 930 | 4350 | 710 | 3245 | HUS179[5] | 3 | -- | 30 | 16d | 10 | 16d | 4110 | 5580 | 3410 | 4555 |
| 11-1/4 | BPH17112 | 2-3/8 | 10 | 16d | 4 | 10d x 1-1/2 | 850 | 2970 | 665 | 2300 | HD17112 | 2-1/2 | Min | 22 | 16d | 6 | 10d x 1-1/2 | 1170 | 3390 | 955 | 2555 |
| | | | | | | | | | | | | | Max | 30 | 16d | 12 | 10d x 1-1/2 | 1900 | 4320 | 1550 | 3255 |
| | PHXU17112 | 3-1/4 | 8 | 16d | 6 | 10d x 1-1/2 | 930 | 4350 | 710 | 3245 | HUS179[5] | 3 | -- | 30 | 16d | 10 | 16d | 4110 | 5580 | 3410 | 4555 |
| 11-7/8 | THO17118 | 2 | 6 | 10d | 2 | 10d x 1-1/2 | 230 | 1235 | 180 | 950 | HD17112 | 2-1/2 | Min | 22 | 16d | 6 | 10d x 1-1/2 | 1170 | 3390 | 955 | 2555 |
| | | | | | | | | | | | | | Max | 30 | 16d | 12 | 10d x 1-1/2 | 1900 | 4320 | 1550 | 3255 |
| | PHXU17118 | 3-1/4 | 8 | 16d | 6 | 10d x 1-1/2 | 930 | 4350 | 710 | 3245 | HUS179[5] | 3 | -- | 30 | 16d | 10 | 16d | 4110 | 5580 | 3410 | 4555 |
| 14 | BPH1714 | 2-3/8 | 10 | 16d | 4 | 10d x 1-1/2 | 850 | 2970 | 665 | 2300 | HD1714 | 2-1/2 | Min | 28 | 16d | 8 | 10d x 1-1/2 | 1510 | 3790 | 1220 | 2790 |
| | | | | | | | | | | | | | Max | 36 | 16d | 14 | 10d x 1-1/2 | 1900 | 4580 | 1555 | 3485 |
| | PHXU1714 | 3-1/4 | 8 | 16d | 6 | 10d x 1-1/2 | 930 | 4350 | 710 | 3150 | HUS179[5] | 3 | -- | 30 | 16d | 10 | 16d | 4110 | 5580 | 3410 | 4555 |
| **2 Ply 1-3/4" IB LVL or 3-1/2" IB LVL** | | | | | | | | | | | | | | | | | | | | | |
| 7-1/4 | PHXU35725 | 3-1/4 | 8 | 16d | 6 | 10d | 1120 | 5910 | 860 | 4535 | THD48 | 3 | -- | 28 | 16d | 16 | 10d | 2595 | 4310 | 2080 | 3795 |
| 9-1/4 | HBPH35925 | 3-1/2 | 22 | 16d | 10 | 16d | 2705 | 6310 | 2335 | 5035 | THD410 | 3 | -- | 38 | 16d | 20 | 10d | 3905 | 5850 | 3255 | 5145 |
| | HLBH35925 | 6 | 15 | NA16D-RS | 6 | 16d | 1420 | 10045 | 1090 | 7705 | THDH410[5] | 4 | -- | 46 | 16d | 12 | 16d | 4345 | 9020 | 3470 | 7820 |
| 9-1/2 | HBPH3595 | 3-1/2 | 22 | 16d | 10 | 16d | 2705 | 6310 | 2335 | 5035 | THD410 | 3 | -- | 38 | 16d | 20 | 10d | 3905 | 5850 | 3255 | 5145 |
| | HLBH3595 | 6 | 15 | NA16D-RS | 6 | 16d | 1420 | 10045 | 1090 | 7705 | THDH410[5] | 4 | -- | 46 | 16d | 12 | 16d | 4345 | 9020 | 3470 | 7820 |
| 11-1/4 | HBPH35112 | 3-1/2 | 22 | 16d | 10 | 16d | 2705 | 6310 | 2335 | 5035 | THD410 | 3 | -- | 38 | 16d | 20 | 10d | 3905 | 5850 | 3255 | 5145 |
| | HLBH35112 | 6 | 15 | NA16D-RS | 6 | 16d | 1420 | 10045 | 1090 | 7705 | THDH412[5] | 4 | -- | 56 | 16d | 14 | 16d | 5290 | 9710 | 4230 | 7765 |
| 11-7/8 | HBPH35118 | 3-1/2 | 22 | 16d | 10 | 16d | 2705 | 6310 | 2335 | 5035 | THD410 | 3 | -- | 38 | 16d | 20 | 10d | 3905 | 5850 | 3255 | 5145 |
| | HLBH35118 | 6 | 15 | NA16D-RS | 6 | 16d | 1420 | 10045 | 1090 | 7705 | THDH412[5] | 4 | -- | 56 | 16d | 14 | 16d | 5290 | 9710 | 4230 | 7765 |
| 14 | HBPH3514 | 3-1/2 | 22 | 16d | 10 | 16d | 2705 | 6310 | 2335 | 5035 | THD410 | 3 | -- | 38 | 16d | 20 | 10d | 3905 | 5850 | 3255 | 5145 |
| | HLBH3514 | 6 | 15 | NA16D-RS | 6 | 16d | 1420 | 10045 | 1090 | 7705 | THDH414[5] | 4 | -- | 66 | 16d | 16 | 16d | 5305 | 11325 | 4250 | 9075 |
| 16 | HBPH3516 | 3-1/2 | 22 | 16d | 10 | 16d | 2705 | 6310 | 2335 | 5035 | THD412 | 3 | -- | 48 | 16d | 20 | 10d | 3905 | 7045 | 3255 | 5680 |
| | HLBH3516 | 6 | 15 | NA16D-RS | 6 | 16d | 1420 | 10045 | 1090 | 7705 | THDH414[5] | 4 | -- | 66 | 16d | 16 | 16d | 5305 | 11325 | 4250 | 9075 |
| 18 | HBPH3518 | 3-1/2 | 22 | 16d | 10 | 16d | 2705 | 6310 | 2335 | 5035 | THD412 | 3 | -- | 48 | 16d | 20 | 10d | 3905 | 7045 | 3255 | 5680 |
| | HLBH3518 | 6 | 15 | NA16D-RS | 6 | 16d | 1420 | 10045 | 1090 | 7705 | THDH414[5] | 4 | -- | 66 | 16d | 16 | 16d | 5305 | 11325 | 4250 | 9075 |

1) Loads listed are based on hanger attachment to a DF or S-P-F species LVL header. Some loads may be increased for duration of load adjustments. Refer to MiTek's Product Catalog for details.
2) Uplift loads have been increased 60% for wind and seismic loading; no further increase shall be permitted.
3) Top Mount Hangers require a minimum 3" header thickness for THO series hangers; 3-1/2" minimum header thickness for all other stock numbers.
4) 10d x 1-1/2 nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, and 16d nails are 0.162" dia. x 3-1/2" long. 16d sinkers are 0.148" dia. x 3-1/4" long and may be used where 10d commons are specified.
5) Joist nails need to be toe nailed at a 30° to 45° angle to achieve listed loads for THDH and HUS models.
6) For additional sizes, stock numbers, and modifications not shown, refer to MiTek's Product Catalog.
7) Supplemental lateral support connection recommended when hanger height is less than 60% of joist height.
8) D Dim is the length of the hanger seat.




THO HD HUS



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# International Beam® LVL Beams & Headers

MiTek®

| Joist Height | Top Mount Hangers[3] | | | | | | | | | | Face Mount Hangers | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MiTek Stock No.[6] | D Dim[8] | Fastener Schedule[4] | | | | DF | | S-P-F | | MiTek Stock No.[6] | D Dim[8] | Fastener Schedule[4] | | | | | DF | | S-P-F | |
| | | | Header | | Joist | | Uplift[2] 100% | Down[1] 100% | Uplift[2] 100% | Down[1] 100% | | | Min/ Max | Header | | Joist | | Uplift[2] 100% | Down[1] 100% | Uplift[2] 100% | Down[1] 100% |
| | | | Qty | Type | Qty | Type | | | | | | | | Qty | Type | Qty | Type | | | | |
| **3 Ply 1-3/4" IB LVL** | | | | | | | | | | | | | | | | | | | | | |
| 7-1/4 | BPH55725 | 2-1/4 | 10 | 16d | 6 | 10d | 850 | 3065 | 735 | 2340 | HD68 | 2-1/2 | Min | 10 | 16d | 4 | 16d | 920 | 1540 | 760 | 1355 |
| | | | | | | | | | | | | | Max | 14 | | 6 | | 1305 | 2155 | 1035 | 1895 |
| 9-1/4 | HBPH55925 | 3-1/2 | 22 | 16d | 10 | 16d | 2705 | 6185 | 2325 | 4910 | THD610 | 3 | -- | 38 | 16d | 20 | 10d | 4035 | 6535 | 3230 | 5750 |
| | HLBH55925 | 6 | 15 | NA16D-RS | 6 | 16d | 1580 | 10045 | 1210 | 7680 | THDH610[5] | 4 | -- | 46 | 16d | 16 | 16d | 5290 | 9020 | 4210 | 7805 |
| 9-1/2 | HBPH5595 | 3-1/2 | 22 | 16d | 10 | 16d | 2705 | 6185 | 2325 | 4910 | THD610 | 3 | -- | 38 | 16d | 20 | 10d | 4035 | 6535 | 3230 | 5750 |
| | HLBH5595 | 6 | 15 | NA16D-RS | 6 | 16d | 1580 | 10045 | 1210 | 7680 | THDH610[5] | 4 | -- | 46 | 16d | 16 | 16d | 5290 | 9020 | 4210 | 7805 |
| 11-1/4 | HBPH55112 | 3-1/2 | 22 | 16d | 10 | 16d | 2705 | 6185 | 2325 | 4910 | THD610 | 3 | -- | 38 | 16d | 20 | 10d | 4035 | 6535 | 3230 | 5750 |
| | HLBH55112 | 6 | 15 | NA16D-RS | 6 | 16d | 1580 | 10045 | 1210 | 7680 | THDH612[5] | 4 | -- | 56 | 16d | 20 | 16d | 5290 | 9530 | 4225 | 7610 |
| 11-7/8 | HBPH55118 | 3-1/2 | 22 | 16d | 10 | 16d | 2705 | 6185 | 2325 | 4910 | THD610 | 3 | -- | 38 | 16d | 20 | 10d | 4035 | 6535 | 3230 | 5750 |
| | HLBH55118 | 6 | 15 | NA16D-RS | 6 | 16d | 1580 | 10045 | 1210 | 7680 | THDH612[5] | 4 | -- | 56 | 16d | 20 | 16d | 5290 | 9530 | 4225 | 7610 |
| 14 | HBPH5514 | 3-1/2 | 22 | 16d | 10 | 16d | 2705 | 6185 | 2325 | 4910 | THD610 | 3 | -- | 38 | 16d | 20 | 10d | 4035 | 6535 | 3230 | 5750 |
| | HLBH5514 | 6 | 15 | NA16D-RS | 6 | 16d | 1580 | 10045 | 1210 | 7680 | THDH614[5] | 4 | -- | 66 | 16d | 22 | 16d | 5305 | 11325 | 4245 | 9055 |
| 16 | HBPH5516 | 3-1/2 | 22 | 16d | 10 | 16d | 2705 | 6185 | 2325 | 4910 | THD612 | 3 | -- | 48 | 16d | 20 | 10d | 4035 | 8255 | 3230 | 6630 |
| | HLBH5516 | 6 | 15 | NA16D-RS | 6 | 16d | 1580 | 10045 | 1210 | 7680 | THDH614[5] | 4 | -- | 66 | 16d | 22 | 16d | 5305 | 11325 | 4245 | 9055 |
| 18 | HBPH5518 | 3-1/2 | 22 | 16d | 10 | 16d | 2705 | 6185 | 2325 | 4910 | THD612 | 3 | -- | 48 | 16d | 20 | 10d | 4035 | 8255 | 3230 | 6630 |
| | HLBH5518 | 6 | 15 | NA16D-RS | 6 | 16d | 1580 | 10045 | 1210 | 7680 | THDH614[5] | 4 | -- | 66 | 16d | 22 | 16d | 5305 | 11325 | 4245 | 9055 |
| **4 Ply 1-3/4" IB LVL** | | | | | | | | | | | | | | | | | | | | | |
| 9-1/4 | HBPH71925 | 3-1/2 | 22 | 16d | 10 | 16d | 2705 | 6185 | 2320 | 4895 | THD7210 | 3 | -- | 38 | 16d | 20 | 10d | 4035 | 6535 | 3220 | 5750 |
| | HLBH71925 | 6 | 15 | NA16D-RS | 6 | 16d | 1580 | 10045 | 1205 | 7670 | THDH7210[5] | 4 | -- | 46 | 16d | 12 | 16d | 4345 | 9020 | 3440 | 7760 |
| 9-1/2 | HBPH7195 | 3-1/2 | 22 | 16d | 10 | 16d | 2705 | 6185 | 2320 | 4895 | THD7210 | 3 | -- | 38 | 16d | 20 | 10d | 4035 | 6535 | 3220 | 5750 |
| | HLBH7195 | 6 | 15 | NA16D-RS | 6 | 16d | 1580 | 10045 | 1205 | 7670 | THDH7210[5] | 4 | -- | 46 | 16d | 12 | 16d | 4345 | 9020 | 3440 | 7760 |
| 11-1/4 | HBPH71112 | 3-1/2 | 22 | 16d | 10 | 16d | 2705 | 6185 | 2320 | 4895 | THD7210 | 3 | -- | 38 | 16d | 20 | 10d | 4035 | 6535 | 3220 | 5750 |
| | HLBH71112 | 6 | 15 | NA16D-RS | 6 | 16d | 1580 | 10045 | 1205 | 7670 | THDH7212[5] | 4 | -- | 56 | 16d | 14 | 16d | 5290 | 9020 | 4195 | 7770 |
| 11-7/8 | HBPH71118 | 3-1/2 | 22 | 16d | 10 | 16d | 2705 | 6185 | 2320 | 4895 | THD7210 | 3 | -- | 38 | 16d | 20 | 10d | 4035 | 6535 | 3220 | 5750 |
| | HLBH71118 | 6 | 15 | NA16D-RS | 6 | 16d | 1580 | 10045 | 1205 | 7670 | THDH7212[5] | 4 | -- | 56 | 16d | 14 | 16d | 5290 | 9020 | 4195 | 7770 |
| 14 | HBPH7114 | 3-1/2 | 22 | 16d | 10 | 16d | 2705 | 6185 | 2320 | 4895 | THD7210 | 3 | -- | 38 | 16d | 20 | 10d | 4035 | 6535 | 3220 | 5750 |
| | HLBH7114 | 6 | 15 | NA16D-RS | 6 | 16d | 1580 | 10045 | 1205 | 7670 | THDH7214[5] | 4 | -- | 66 | 16d | 16 | 16d | 5305 | 11325 | 4215 | 8990 |
| 16 | HBPH7116 | 3-1/2 | 22 | 16d | 10 | 16d | 2705 | 6185 | 2320 | 4895 | HD7120 | 2-1/2 | Min | 16 | 16d | 6 | 16d | 1305 | 2465 | 1035 | 2165 |
| | | | | | | | | | | | | | Max | 22 | 16d | 8 | 16d | 1845 | 3390 | 1620 | 2980 |
| | HLBH7116 | 6 | 15 | NA16D-RS | 6 | 16d | 1580 | 10045 | 1205 | 7670 | THDH7214[5] | 4 | -- | 66 | 16d | 16 | 16d | 5305 | 11325 | 4215 | 8990 |
| 18 | HBPH7118 | 3-1/2 | 22 | 16d | 10 | 16d | 2705 | 6185 | 2320 | 4895 | HD7140 | 2-1/2 | Min | 20 | 16d | 8 | 16d | 1845 | 3080 | 1620 | 2710 |
| | | | | | | | | | | | | | Max | 26 | 16d | 12 | 16d | 2765 | 4005 | 2430 | 3520 |
| | HLBH7118 | 6 | 15 | NA16D-RS | 6 | 16d | 1580 | 10045 | 1205 | 7670 | THDH7214[5] | 4 | -- | 66 | 16d | 16 | 16d | 5305 | 11325 | 4215 | 8990 |

1) Loads listed are based on hanger attachment to a DF or S-P-F species LVL header. Some loads may be increased for duration of load adjustments. Refer to MiTek's Product Catalog for details.
2) Uplift loads have been increased 60% for wind and seismic loading; no further increase shall be permitted.
3) Top Mount Hangers require a minimum 3" header thickness for THO series hangers; 3-1/2" minimum header thickness for all other stock numbers.
4) 10d x 1-1/2 nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, and 16d nails are 0.162" dia. x 3-1/2" long. 16d sinkers are 0.148" dia. x 3-1/4" long and may be used where 10d commons are specified.
5) Joist nails need to be toe nailed at a 30° to 45° angle to achieve listed loads for THDH and HUS models.
6) For additional sizes, stock numbers, and modifications not shown, refer to MiTek's Product Catalog.
7) Supplemental lateral support connection recommended when hanger height is less than 60% of joist height.
8) D Dim is the length of the hanger seat.

PHXU

HLBH

THD

THDH

# Slope/Skew Hangers

The LSSH series connects rafters to ridge beams in vaulted roof structures. This series is field adjustable to meet a variety of skew and/or slope applications. Slopes and skews 0° to 45°.

**Installation:**

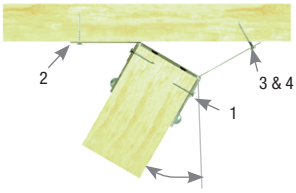
- Use all specified fasteners.

**Steps: (See LSSH Figure 1)**

1. Position LSSH connector against plumb-cut end of joist. Fasten joist side flanges on both sides with 10d (0.148") x 1-1/2" HDG nails. Bend seat up to fit against joist bottom and drive (1) 10d (0.148") x 1-1/2" HDG nail through bottom seat into joist bottom flange. Drive (2) 10d (0.148") x 1-1/2" HDG nails at downward angle through dimpled nailing guides.
2. Lean connector and rafter end against ridge beam at desired position. Install 10d (0.148" x 3") HDG or 16d (0.162" x 3-1/2") HDG nails through nail holes into ridge beam at right 90° angle. If skewing the rafter, only drive nails into ridge beam on inside flange.
3. Bend flange to desired angle.
4. Hammer outside flange until edge touches header. Fasten outside flange to ridge by driving 10d (0.148" x 3") HDG or 16d (0.162" x 3-1/2") HDG nails through nail holes.

- Web stiffeners are required for all wood I-Joist installations.
- Designer may consider adding a tension restraint for the supported member for roof slopes exceeding 6/12.

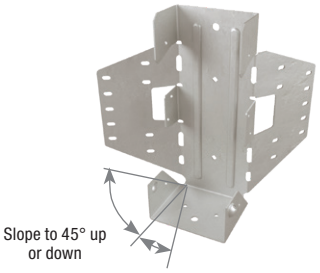
**Typical LSSH installation**




Skew to 45° maximum

**LSSH Figure 1**

| Joist Height | Mitek Stock No.[1,5] | Installation Type | Fastener Schedule[4] | | | | DF | | S-P-F | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Header | | Joist | | | | | |
| | | | Qty | Type | Qty | Type | Uplift[3] 160% | Down[2] 100% | Uplift[3] 160% | Down[2] 100% |
| **IB400 or IB600** | | **Joist Width = 2-1/2"** | | | | | | | | |
| 9-1/2 – 16 | LSSH25-TZ | Sloped Only | 18 | 16d HDG | 12 | 10d x 1-1/2 HDG | 945 | 2095 | 740 | 1640 |
| | | Skewed Only or Sloped & Skewed | 14 | 16d HDG | 12 | 10d x 1-1/2 HDG | | 1610 | | 1260 |
| **IB800 or IB900** | | **Joist Width = 3-1/2"** | | | | | | | | |
| 11-7/8 – 16 | LSSH35-TZ | Sloped Only | 18 | 16d HDG | 12 | 10d x 1-1/2 HDG | 1310 | 2645 | 1020 | 2345 |
| | | Skewed Only or Sloped & Skewed | 14 | 16d HDG | 12 | 10d x 1-1/2 HDG | | 1610 | | 1255 |




**LSSH**

1) Shaded hangers require web stiffeners at joist ends.
2) Loads listed are based on hanger attachment to a DF or S-P-F species solid sawn or LVL header. Some loads may be increased for duration of load adjustments. Refer to MiTek Product Catalog for details.
3) Uplift loads have been increased 60% for wind and seismic loading; no further increase shall be permitted.
4) 10d x 1-1/2 HDG nails are 0.148" dia. x 1-1/2" long and 16d HDG nails are 0.162" dia. x 3-1/2" long.
5) Hangers utilizing 16d nails are not compatible with International Beam® joists.
6) Supplemental lateral support connection recommended when hanger height is less than 60% of joist height.



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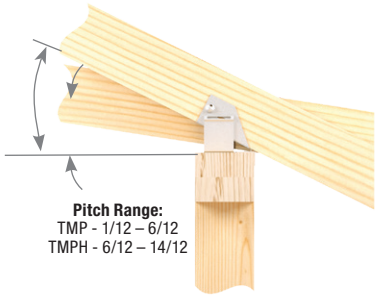
# Variable Pitch Connectors

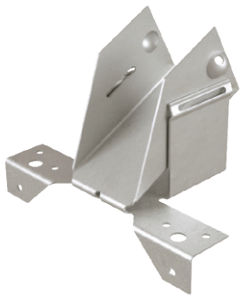
The TMP and TMPH are designed to make rafter-to-plate connections and eliminate time-consuming bird's-mouth notching or bevel plate installation.

**Installation:**

- Use all specified fasteners.
- Position connector on top plate. Fasten connector to outside of top plate with specified nails. Insert rafter into rafter pocket. Adjust rafter and pocket to correct pitch. Fasten rafter to connector with specified nails. Installing the **TMP** requires driving specified nails through the opposing slots in the pocket. **TMPH** installation involves sliding the fulcrum until it supports the pocket at the desired pitch and nailing down through the fulcrum base into the top plate to lock the fulcrum into position.




Typical TMP installation



TMP

## TMP chart

| Joist Height | MiTek Stock No. | Fastener Schedule[4] Plate Qty | Plate Type | Rafter Qty | Rafter Type | DF Uplift[3] 160% | DF Down[2] 100% | S-P-F Uplift[3] 160% | S-P-F Down[2] 100% |
|---|---|---|---|---|---|---|---|---|---|
| **IB400 or IB600** | | | | | **Joist Width = 2-1/2"** | | | | |
| All | TMP25 | 6 | 10d | 4 | 10d x 1-1/2 | 245 | 1705 | 185 | 1705 |
| **IB800 or IB900** | | | | | **Joist Width = 3-1/2"** | | | | |
| All | TMP4 | 6 | 10d | 4 | 10d x 1-1/2 | 245 | 1705 | 185 | 1705 |

1) Web stiffeners may be required for hanger by International Beams.
2) Loads listed are based on hanger attachment to a DF or S-P-F species solid sawn or LVL header. Loads are governed by test results; no further increase shall be permitted.
3) Uplift loads have been increased 60% for wind and seismic loading; no further increase shall be permitted.
4) 10d x 1-1/2 nails are 0.148" diameter x 1-1/2" long, 10d nails are 0.148" diameter x 3" long.

Typical TMPH installation

TMPH

## TMPH chart

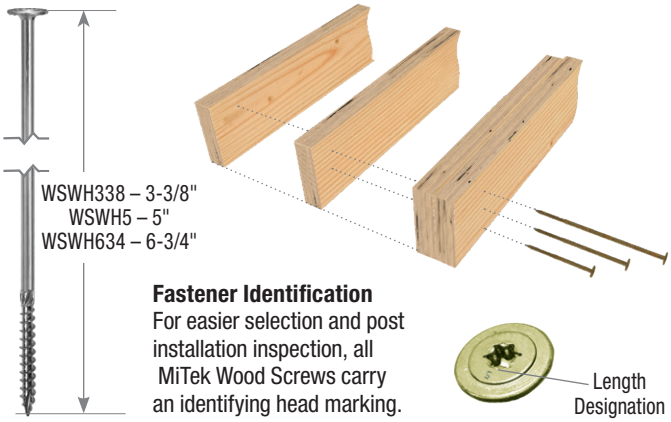
| Joist Height | MiTek Stock No.[1] | Fastener Schedule[4] Plate Top Qty | Plate Side Qty | Plate Type | Rafter Qty | Rafter Type | Wood Species | According to Pitch[2] 6/12 | 7/12 | 8/12 | 9/12 | 10/12 | 11/12 | 12/12 | 13/12 | 14/12 | Uplift[3] 160% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **IB400 or IB600** | | | | | | **Joist Width = 2-1/2"** | | | | | | | | | | | |
| All | TMPH25 | 8 | 2 | 10d | 8 | 10d x 1-1/2 | DF | 3190 | 3290 | 3390 | 3140 | 2900 | 2710 | 2520 | 2230 | 1950 | 330 |
| | | | | | | | S-P-F | 2535 | 2615 | 2695 | 2500 | 2305 | 2155 | 2000 | 1775 | 1545 | 330 |
| **IB800 or IB900** | | | | | | **Joist Width = 3-1/2"** | | | | | | | | | | | |
| All | TMPH4 | 8 | 2 | 10d | 8 | 10d x 1-1/2 | DF | 3190 | 3290 | 3390 | 3140 | 2900 | 2710 | 2520 | 2230 | 1950 | 330 |
| | | | | | | | S-P-F | 2525 | 2605 | 2685 | 2495 | 2300 | 2150 | 1995 | 1770 | 1540 | 330 |

1) Web stiffeners are required for all Wood I-Joist installations.
2) Loads listed are based on hanger attachment to a DF or S-P-F species solid sawn or LVL header. Loads are governed by test results; no further increase shall be permitted.
3) Uplift loads have been increased 60% for wind and seismic loading; no further increase shall be permitted.
4) 10d x 1-1/2 nails are 0.148" diameter x 1-1/2" long, 10d nails are 0.148" diameter x 3" long.

# WSWH Series Washer Head Screw Applications - Joining 2, 3, or 4 LVL Members or Parallam PSL Members

**Installation:**

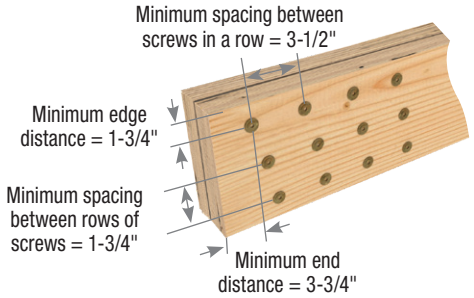
- Using a standard 1/2'' low speed/high torque drill, install screws into the side of the outermost ply. As the threads fully engage the final ply, allow the underside of the washer head to pull the plies firmly together. Washer head will install flush with the surface of the wood, but do not overdrive as this may damage the beam.
- Beams wider than 7" require special consideration by the design professional. The values in the table below do not apply.
- Excessively warped or curved LVL should never be forced into alignment by use of clamps, screws or bolts as splitting may occur, potentially decreasing the carrying capacity of the beam.
- A qualified designer or engineer should always be consulted for critical assemblies and fastening requirements.




**Fastener Identification**
For easier selection and post installation inspection, all MiTek Wood Screws carry an identifying head marking.

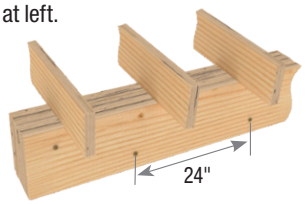



## Minimum Spacing Requirements:

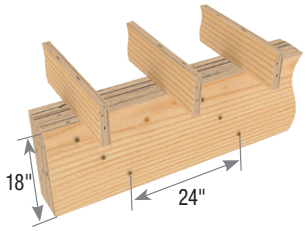



## Top Loaded Beams

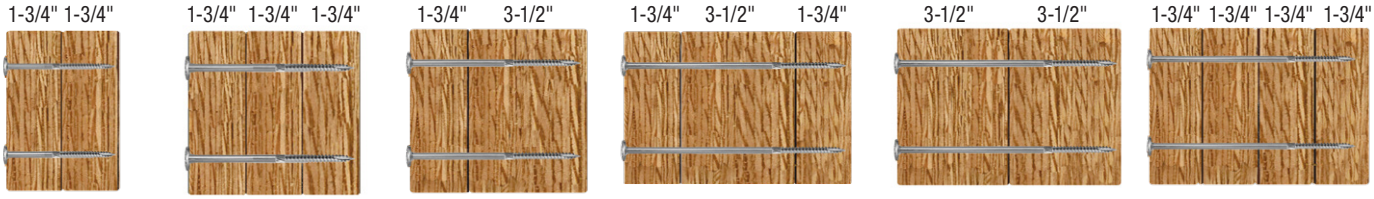
Where floor joists rest on all plies of the beam, WSWH screws should be installed in two staggered rows at 24" O.C. spacing. Maintain the minimum end and edge distance as indicated at left.




For beam depths of 18" or more, this pattern should be increased to three staggered rows of WSWH screws at 24" on center.




## Fastener Size Selection by Assembly Type




**A** WSWH338 3-3/8" | **B** WSWH5 5" | **C** WSWH5 5" | **D** WSWH634 6-3/4" | **E** WSWH634 6-3/4" | **F** WSWH634 6-3/4"

**Side Loaded Beams –** Where floor joists are joined to the side of the beam (typically using a joist hanger), this load chart must be used to establish the proper pattern based on the design load as determined by the engineer and noted on the plans.

| Length (in) | MiTek Stock No. | No. of Screws Vertical Column | Spacing Between Screws in a Row (in) | Allowable Uniform Load Applied to Either Outside Member by Assembly Type (lbs/lineal ft) (See Graphics) [1,2,3,4,5] EWP Wood Specific Gravity G ≥ 0.50 | | |
|---|---|---|---|---|---|---|
| | | | | A | B | C |
| 3-3/8 | WSWH338 | 2 | 24 | 600 | -- | -- |
| | | | 19.2 | 755 | | |
| | | | 16 | 905 | | |
| | | 3 | 24 | 905 | -- | -- |
| | | | 19.2 | 1130 | | |
| | | | 16 | 1355 | | |
| 5 | WSWH5 | 2 | 24 | -- | 430 | 535 |
| | | | 19.2 | | 535 | 670 |
| | | | 16 | | 645 | 805 |
| | | 3 | 24 | -- | 645 | 805 |
| | | | 19.2 | | 805 | 1005 |
| | | | 16 | | 965 | 1210 |
| 6-3/4 | WSWH634 | 2 | 24 | -- | -- | 475 |
| | | | 19.2 | | | 595 |
| | | | 16 | | | 715 |
| | | 3 | 24 | -- | -- | 715 |
| | | | 19.2 | | | 895 |
| | | | 16 | | | 1075 |
| Head Side Multiplier [6] | | | | 1.06 | 1.25 | 1 |

1) Allowable loads are derived from tested fastener values as reported in ICC-ES ESR-2761.
2) The uniform loads in this table relate only to the capacity of the fastener to transfer shear loads between plies. The equivalent specific gravity (SG) and the capacity of the EWP should be verified with manufacturer's literature.
3) Values listed reflect 100% load duration. (CD=1.0) The designer may apply adjustment factors to increase or decrease these loads per the NDS based on conditions for each assembly.
4) Load values depicted assume all uniform load is applied to the outermost ply.
5) To minimize rotation, 7" wide beams shall be side loaded only when loads are applied to both sides of the beam with the lesser loaded side bearing at least 25% of the overall design load.
6) When the uniform load is applied to the outermost ply with the screw head, listed allowable loads can be multiplied by this value.



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# SPECIFICATION TOOLS

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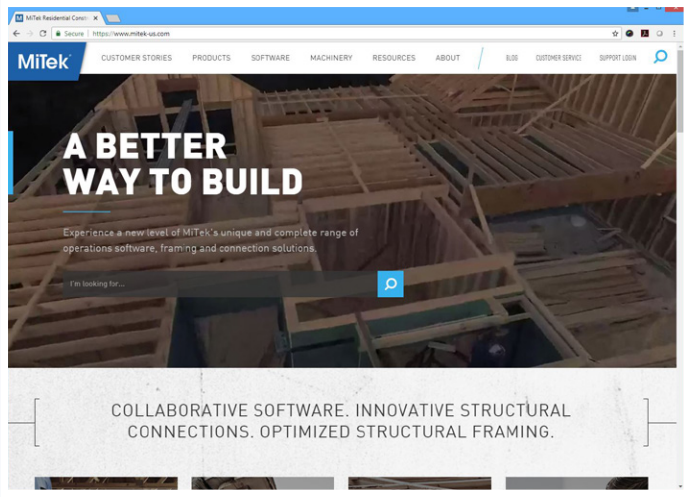


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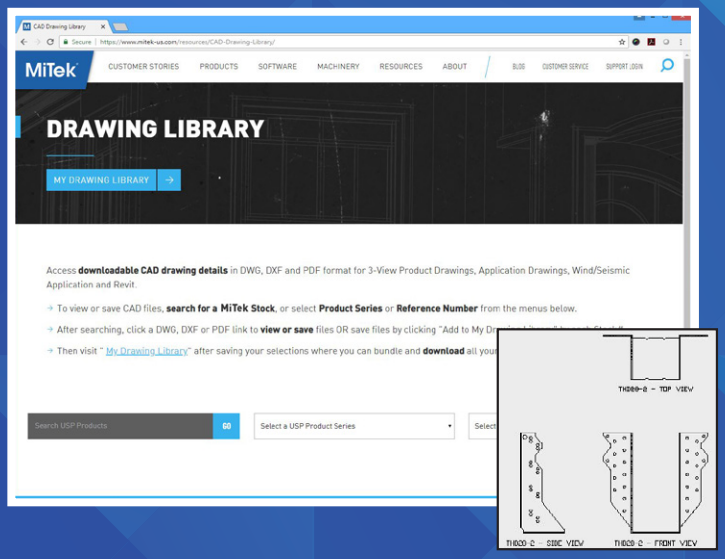


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