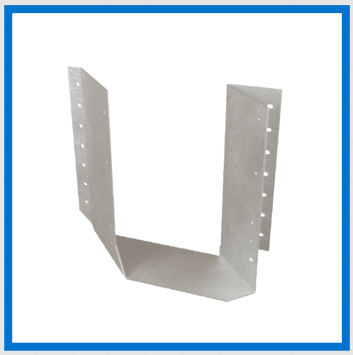
# EWP PRODUCT GUIDE

## For Use With Products Manufactured by

NORDIC STRUCTURES



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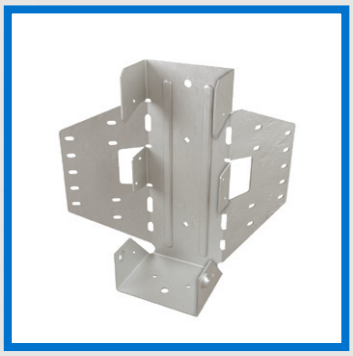

LSSH35

THFI2514

TFL25118

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# General Notes

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## 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 S-P-F or Nordic Lam. 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 factored resistances shown in this document, 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 document, dimensions are expressed in inches and allowable loads in pounds, unless specifically noted otherwise.
- Load values for 10d and 16d designations in the fastener schedules throughout this document refer to common wire nails, unless noted otherwise.
- The allowable loads shown in this document are based on Allowable Stress Design methodology (U.S. only).
- **Multiple Joist Plies:** Fasten together multiple plies of wood joists, in accordance with the manufacturer's installation guidelines, such that the joists act as a single unit.
- **Sloped Joists:** Use slope seat hangers and beveled web stiffeners whenever the slope exceeds the following: ½:12 for seat bearing lengths of 2½" or less; ⅜:12 for bearing lengths between 2½" and 3½"; and ¼:12 for bearing lengths in excess of 3½".

**Backer Blocks –** Pattern the nails used to install backer blocks or web stiffeners in wood Joists 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 Joists 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 Joist header must penetrate through the web and into the backer block on the opposite side.

### Filler and Backer Block sizes

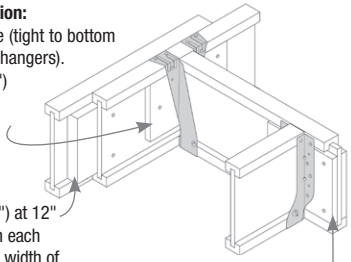
| Flange Width (in) | Backer Block Material Thickness Required* (in) | Backer Block Minimum Depth** (in) | Filler Block Net Depth (in) | Filler Block Size (in) |
|---|---|---|---|---|
| 2-1/2 x 1-1/2 | 1 | 5-1/2 | 9-1/2<br>11-7/8<br>14<br>16 | 2-1/8 to 2-1/4 x 6<br>2-1/8 to 2-1/4 x 8<br>2-1/8 to 2-1/4 x 10<br>2-1/8 to 2-1/4 x 12 |
| 3-1/2 x 1-1/2 | 1-1/2 | 7-1/4 | 9-1/2<br>11-7/8<br>14<br>16 | 3 x 6<br>3 x 8<br>3 x 10<br>3 x 12 |
| 3-1/2 x 2 | 1-1/2 | 7-1/4 | 11-7/8<br>14<br>16 | 3 x 7<br>3 x 9<br>3 x 11 |

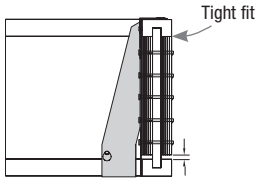
* Minimum grade for backer block material shall be Utility grade S-P-F (south) or better for solid sawn lumber and Rated Sheathing grade for wood structural panels.
** For face-mount hangers, use net joist depth minus 3-1/4" for joists with 1-1/2" thick flanges. For 2" thick flanges, use net depth minus 4-1/4".

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

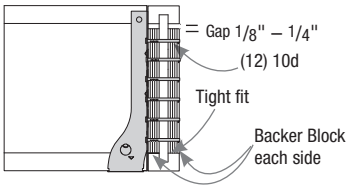
**Backer Block Installation:**
Install tight to top flange (tight to bottom flange with face mount hangers). Attach with (12) 10d (3") box nails, clinched when possible.

**Filler Block Installation:**
Nail with 2 rows of 10d nails (3") at 12" o.c. (clinched when possible) on each side of double I-joist. For flange width of 3-1/2", use 2 rows of 10d nails (3") at 6" o.c. on each side of the double I-joist. (total of 8 nails per foot.)




Typical **THO** (top mount) backer block installation




Typical **THF** (face mount) backer block installation

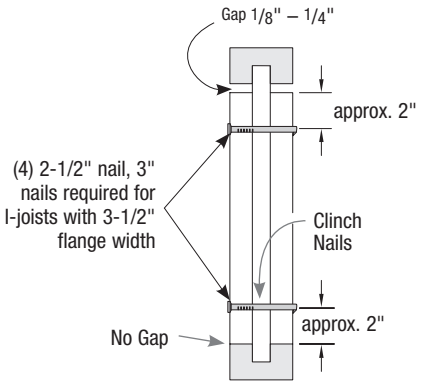
## Web Stiffener Attachment

**Web Stiffeners are optional except as noted below:**

- A bearing stiffener is required when the I-joist is supported in a hanger and the sides of the hanger do not extend up to, and support, the top flange. The gap between the stiffener and flange is at the top.

| Flange Width | Web Stiffener Size Each Side of Web |
|---|---|
| 2-1/2" | 1" x 2-5/16" minimum width |
| 3-1/2" | 1-1/2" x 2-5/16" minimum width |

Stiffeners 1" thick are wood structural panels and stiffeners 1-1/2" thick are SPF lumber or denser.



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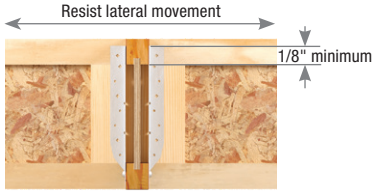
# EWP Installation

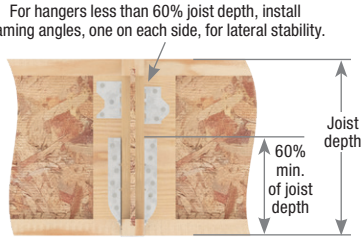
## Support Height & Lateral Stability

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

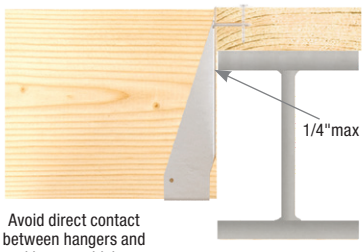
### Correct Hanger Attachment to Nailer

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

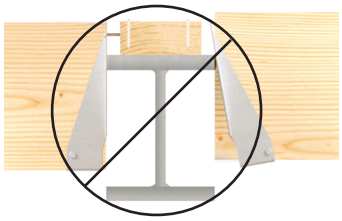
Top flange of hanger is fully supported and recommended nails have full penetration into nailer, resulting in a carried member hanging safely at the proper height.

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.



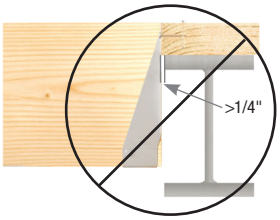

Avoid direct contact between hangers and steel beams which may cause squeaks

### 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**

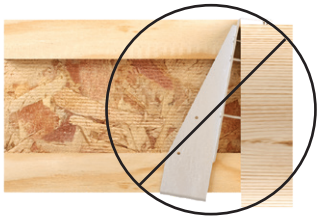
Top flange nailing cannot fully penetrate nailer, causing reduced allowable loads. Never use hangers which require multiple face nails since the allowable loads are dependent on all nail holes being used.

## 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 NI Joists – U.S. Allowable Load (Lbs)

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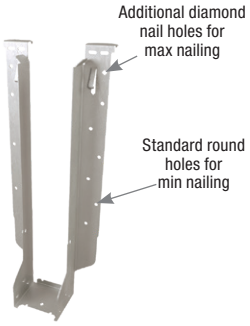
| Joist Height | Top Mount Hangers[4,6] | | | | | | | | Face Mount Hangers | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Fastener Schedule[5] | | | | S-P-F | | | | | Fastener Schedule[5] | | | | S-P-F | |
| | | | Header | | Joist | | | | | | | Header | | Joist | | | |
| | MiTek Stock No.[1] | Length of Hanger Seat (in) | Qty | Type | Qty | Type | Down[2] 100% | Uplift[3] 160% | MiTek Stock No.[1] | Length of Hanger Seat (in) | Min/ Max | Qty | Type | Qty | Type | Down[2] 100% | Uplift[3] 160% |
| **NI-20, NI-40x, NI-60 Series** | | | | | | | | | **Joist Width = 2-1/2"** | | | | | | | | |
| 9-1/2 | TFL2595 | 2 | 6 | 10d | 2 | 10d x 1-1/2 | 1260 | 100 | THFI2595 | 2-1/2 | -- | 8 | 10d | -- | -- | 845 | 100 |
| 11-7/8 | TFL25118 | 2 | 6 | 10d | 2 | 10d x 1-1/2 | 1260 | 100 | THFI25118 | 2-1/2 | -- | 10 | 10d | -- | -- | 995 | 100 |
| 14 | TFL2514 | 2 | 6 | 10d | 2 | 10d x 1-1/2 | 1260 | 100 | THFI2514 | 2-1/2 | Min | 12 | 10d | -- | -- | 1265 | 100 |
| | | | | | | | | | | | Max | 14 | | | | 1480 | |
| 16 | TFL2516 | 2 | 6 | 10d | 2 | 10d x 1-1/2 | 1260 | 100 | IHFL2516 | 2-1/2 | Min | 14 | 10d | -- | -- | 1455 | 40 |
| | | | | | | | | | | | Max | 16 | | | | 1660 | |
| 18 | TFI318 | 2-1/2 | 6 | 16d | 2 | 10d x 1-1/2 | 2080 | 165 | IHFL2516 | 2-1/2 | Min | 14 | 10d | -- | -- | 1455 | 40 |
| | | | | | | | | | | | Max | 16 | | | | 1660 | |
| **NI-80, NI-90 Series** | | | | | | | | | **Joist Width = 3-1/2"** | | | | | | | | |
| 9-1/2 | THO35950 | 2-3/8 | 10 | 10d | 2 | 10d x 1-1/2 | 2370 | 175 | IHFL35925 | 2-1/2 | -- | 10 | 10d | -- | -- | 1040 | 40 |
| 11-7/8 | THO35118 | 2-3/8 | 10 | 10d | 2 | 10d x 1-1/2 | 2265 | 175 | IHFL35112 | 2-1/2 | Min | 10 | 10d | -- | -- | 1040 | 40 |
| | | | | | | | | | | | Max | 12 | | | | 1245 | |
| 14 | THO35140 | 2-3/8 | 12 | 10d | 2 | 10d x 1-1/2 | 1835 | 175 | IHFL3514 | 2-1/2 | Min | 12 | 10d | -- | -- | 1245 | 40 |
| | | | | | | | | | | | Max | 14 | | | | 1455 | |
| 16 | THO35160 | 2-3/8 | 12 | 10d | 2 | 10d x 1-1/2 | 1835 | 175 | IHFL3516 | 2-1/2 | Min | 14 | 10d | -- | -- | 1455 | 40 |
| | | | | | | | | | | | Max | 16 | | | | 1660 | |
| **NI-80x Series** | | | | | | | | | **Joist Width = 3-1/2"** | | | | | | | | |
| 18 | TFI418 | 2-1/2 | 6 | 16d | 2 | 10d x 1-1/2 | 2075 | 165 | IHFL3516 | 2-1/2 | Min | 14 | 10d | -- | -- | 1455 | 40 |
| | | | | | | | | | | | Max | 16 | | | | 1660 | |
| 20 | TFI420 | 2-1/2 | 6 | 16d | 2 | 10d x 1-1/2 | 2075 | 165 | IHFL3516 | 2-1/2 | Min | 14 | 10d | -- | -- | 1455 | 40 |
| | | | | | | | | | | | Max | 16 | | | | 1660 | |
| 22 | TFI422 | 2-1/2 | 10 | 16d | 2 | 10d x 1-1/2 | 2480 | 165 | IHFL3516 | 2-1/2 | Min | 14 | 10d | -- | -- | 1455 | 40 |
| | | | | | | | | | | | Max | 16 | | | | 1660 | |
| 24 | TFI424 | 2-1/2 | 10 | 16d | 2 | 10d x 1-1/2 | 2480 | 165 | IHFL3516 | 2-1/2 | Min | 14 | 10d | -- | -- | 1455 | 40 |
| | | | | | | | | | | | Max | 16 | | | | 1660 | |

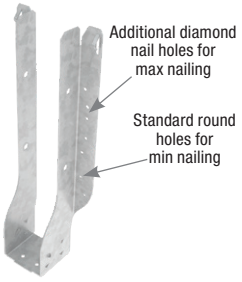
1) Shaded hangers require web stiffeners at joist ends.
2) Loads listed are based on hanger attachment to a S-P-F species solid sawn or NORDIC-LAM® header.
3) Uplift loads have been increased 60% for wind and seismic loading; no further increase shall be permitted.
4) Top Mount Hangers assume supporting headers to have a minimum height of 5-1/2" and a minimum thickness of the length of the header nails or the depth of the top flange, whichever is greater. For wood nailer options or header materials not included in this table, refer to the current MiTek Product Catalog.
5) **NAILS:** 10d x 1-1/2 nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long.
6) For top mount hangers supported by I-Joist headers with a flange thickness less than 1-1/2", consult MiTek and Nordic for hanger limitations.

THO

TFL




THFI




IHFL



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# Single NI Joists – U.S. Allowable Load (Lbs)

MiTek®

| Joist Height | Adjustable Height Hangers | | | | | | | | Skewed 45° Hangers | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MiTek Stock No.[1,5] | Length of Hanger Seat (in) | Fastener Schedule[4] Header Qty | Header Type | Joist Qty | Joist Type | S-P-F Down[2] 100% | S-P-F Uplift[3] 160% | MiTek Stock No.[1] | Length of Hanger Seat (in) | Min/ Max | Fastener Schedule[4] Header Qty | Header Type | Joist Qty | Joist Type | S-P-F Down[2] 100% | S-P-F Uplift[3] 160% |
| **NI-20, NI-40x, NI-60 Series** | | | | | | | | | **Joist Width = 2-1/2"** | | | | | | | | |
| 9-1/2 | MSH322[5,8] | 1-3/4 | 6 | 10d | 4 | 10d x 1-1/2 | 1895 | -- | SKH2520L/R | 1-7/8 | -- | 14 | 10d | 10 | 10d x 1-1/2 | 1380 | 1205 |
| 11-7/8 | MSH322[5] | 1-3/4 | 6 | 10d | 4 | 10d x 1-1/2 | 1895 | -- | SKH2520L/R | 1-7/8 | -- | 14 | 10d | 10 | 10d x 1-1/2 | 1380 | 1205 |
| 14 | MSH322[5] | 1-3/4 | 6 | 10d | 4 | 10d x 1-1/2 | 1895 | -- | SKH2524L/R | 1-7/8 | -- | 16 | 10d | 10 | 10d x 1-1/2 | 1635 | 1205 |
| 16 | MSH322[5] | 1-3/4 | 6 | 10d | 4 | 10d x 1-1/2 | 1895 | -- | SKH2524L/R | 1-7/8 | -- | 16 | 10d | 10 | 10d x 1-1/2 | 1635 | 1205 |
| **NI-80, NI-90 Series** | | | | | | | | | **Joist Width = 3-1/2"** | | | | | | | | |
| 9-1/2 | MSH422[5] | 1-3/4 | 6 | 10d | 6 | 10d | 2005 | -- | HD410_SK45L/R_BV [6,7] | 2-1/2 | Min | 14 | 16d | 6 | 10d | 1895 | 775 |
| | | | | | | | | | | | Max | 20 | | 10 | | 2710 | 1285 |
| 11-7/8 | MSH422[5] | 1-3/4 | 6 | 10d | 6 | 10d | 2005 | -- | HD410_SK45L/R_BV [6,7] | 2-1/2 | Min | 14 | 16d | 6 | 10d | 1895 | 775 |
| | | | | | | | | | | | Max | 20 | | 10 | | 2710 | 1285 |
| 14 | MSH422[5] | 1-3/4 | 6 | 10d | 6 | 10d | 2005 | -- | HD414_SK45L/R_BV [6,7] | 2-1/2 | Min | 18 | 16d | 8 | 10d | 2440 | 905 |
| | | | | | | | | | | | Max | 26 | | 12 | | 3520 | 1545 |
| 16 | MSH422[5] | 1-3/4 | 6 | 10d | 6 | 10d | 2005 | -- | HD414_SK45L/R_BV [6,7] | 2-1/2 | Min | 18 | 16d | 8 | 10d | 2440 | 905 |
| | | | | | | | | | | | Max | 26 | | 12 | | 3520 | 1545 |
| **NI-80x Series** | | | | | | | | | **Joist Width = 3-1/2"** | | | | | | | | |
| 18 | MSH422[5,8] | 1-3/4 | 6 | 10d | 6 | 10d | 2005 | -- | HD414_SK45L/R_BV [6,7] | 2-1/2 | Min | 18 | 16d | 8 | 10d | 2440 | 905 |
| | | | | | | | | | | | Max | 26 | | 12 | | 3520 | 1545 |
| 20 | MSH422[5,8] | 1-3/4 | 6 | 10d | 6 | 10d | 2005 | -- | HD414_SK45L/R_BV [6,7] | 2-1/2 | Min | 18 | 16d | 8 | 10d | 2440 | 905 |
| | | | | | | | | | | | Max | 26 | | 12 | | 3520 | 1545 |
| 22 | MSH422[5,8] | 1-3/4 | 6 | 10d | 6 | 10d | 2005 | -- | HD416_SK45L/R_BV [6,7] | 2-1/2 | Min | 22 | 16d | 10 | 10d | 2980 | 1285 |
| | | | | | | | | | | | Max | 30 | | 14 | | 4015 | 1355 |
| 24 | MSH422[5,8] | 1-3/4 | 6 | 10d | 6 | 10d | 2005 | -- | HD416_SK45L/R_BV [6,7] | 2-1/2 | Min | 22 | 16d | 10 | 10d | 2980 | 1285 |
| | | | | | | | | | | | Max | 30 | | 14 | | 4015 | 1355 |

1) Shaded hangers require web stiffeners at joist ends.
2) Loads listed are based on hanger attachment to a S-P-F species solid sawn or NORDIC-LAM® header.
3) Uplift loads have been increased 60% for wind and seismic loading; no further increase shall be permitted.
4) **NAILS:** 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) 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.
6) Bevel cut required on end of joist to achieve design loads.
7) Hangers are special order. Consult MiTek for pricing and lead times.
8) Flanges on the bucket of the hanger may extend above the top of the joist.

**MSH**

**SKH_L**
**left shown**

**SKH_R**
**right shown**

# Double NI Joists – U.S. Allowable Load (Lbs)

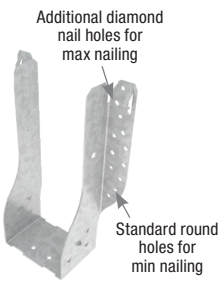
MiTek®

| Joist Height | Top Mount Hangers[4,6] | | | | | | | | Face Mount Hangers | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MiTek Stock No.[1] | Length of Hanger Seat (in) | Fastener Schedule[5] Header Qty | Header Type | Joist Qty | Joist Type | S-P-F Down[2] 100% | S-P-F Uplift[3] 160% | MiTek Stock No.[1] | Length of Hanger Seat (in) | Fastener Schedule[5] Min/Max | Header Qty | Header Type | Joist Qty | Joist Type | S-P-F Down[2] 100% | S-P-F Uplift[3] 160% |
| **Double NI-20, NI-40x, NI-60 Series** | | | | | | | | | **Joist Width = 5"** | | | | | | | | |
| 9-1/2 | THO25950-2 | 3 | 10 | 16d | 6 | 10d | 2790 | 880 | IHF25925-2 | 2-1/2 | Min | 10 | 10d | 2 | 10d x 1-1/2 | 1100 | 260 |
| | | | | | | | | | | | Max | 24 | 16d | | | 3105 | |
| 11-7/8 | THO25118-2 | 3 | 10 | 16d | 6 | 10d | 2790 | 880 | IHF25112-2 | 2-1/2 | Min | 10 | 10d | 2 | 10d x 1-1/2 | 1100 | 260 |
| | | | | | | | | | | | Max | 24 | 16d | | | 3105 | |
| 14 | THO25140-2 | 3 | 12 | 16d | 6 | 10d | 3390 | 880 | THF25140-2 | 2-1/2 | -- | 20 | 10d | 6 | 10d | 2340 | 1015 |
| 16 | THO25160-2 | 3 | 12 | 16d | 6 | 10d | 3390 | 880 | THF25160-2 | 2-1/2 | -- | 24 | 10d | 6 | 10d | 2810 | 1015 |
| **Double NI-80, NI-90 Series** | | | | | | | | | **Joist Width = 7"** | | | | | | | | |
| 9-1/2 | BPH7195 | 3 | 10 | 16d | 6 | 10d | 2370 | 1105 | HD7100 | 2-1/2 | Min | 14 | 16d | 6 | 16d | 1895 | 1035 |
| | | | | | | | | | | | Max | 18 | | 8 | | 2440 | 1620 |
| 11-7/8 | BPH71118 | 3 | 10 | 16d | 6 | 10d | 2350 | 1105 | HD7120 | 2-1/2 | Min | 16 | 16d | 6 | 16d | 2165 | 1035 |
| | | | | | | | | | | | Max | 22 | | 8 | | 2980 | 1620 |
| 14 | BPH7114 | 3 | 10 | 16d | 6 | 10d | 2350 | 1105 | HD7140 | 2-1/2 | Min | 20 | 16d | 8 | 16d | 2710 | 1620 |
| | | | | | | | | | | | Max | 26 | | 12 | | 3520 | 2430 |
| 16 | BPH7116 | 3 | 10 | 16d | 6 | 10d | 2350 | 1105 | HD7160 | 2-1/2 | -- | 24 | 16d | 8 | 10d | 3250 | 1375 |
| **Double NI-80x Series** | | | | | | | | | **Joist Width = 7"** | | | | | | | | |
| 18 | BPH7118 | 3 | 10 | 16d | 6 | 10d | 2350 | 1105 | HD7160 | 2-1/2 | -- | 24 | 16d | 8 | 10d | 3250 | 1375 |
| 20 | BPH7120 | 3 | 10 | 16d | 6 | 10d | 2350 | 1105 | HD7160 | 2-1/2 | -- | 24 | 16d | 8 | 10d | 3250 | 1375 |
| 22 | BPH7122 | 3 | 10 | 16d | 6 | 10d | 2350 | 1105 | HD7160 | 2-1/2 | -- | 24 | 16d | 8 | 10d | 3250 | 1375 |
| 24 | BPH7124 | 3 | 10 | 16d | 6 | 10d | 2350 | 1105 | HD7160 | 2-1/2 | -- | 24 | 16d | 8 | 10d | 3250 | 1375 |

1) Shaded hangers require web stiffeners at joist ends.
2) Loads listed are based on hanger attachment to a S-P-F species solid sawn or NORDIC-LAM® header.
3) Uplift loads have been increased 60% for wind and seismic loading; no further increase shall be permitted.
4) Top Mount Hangers assume supporting headers to have a minimum height of 5-1/2" and a minimum thickness of the length of the header nails or the depth of the top flange, whichever is greater. For wood nailer options or header materials not included in this table, refer to the current MiTek Product Catalog.
5) **NAILS:** 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 top mount hangers supported by I-Joist headers with a flange thickness less than 1-1/2", consult MiTek and Nordic for hanger limitations.

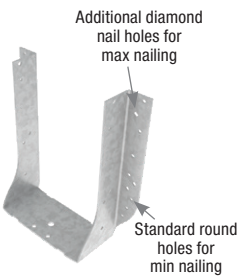
THO

BPH




IHF

THF




HD



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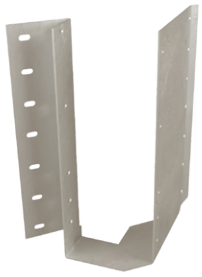
# Double NI Joists – U.S. Allowable Load (Lbs)

MiTek®

| Joist Height | Adjustable Height Hangers | | | | | | | | Skewed 45° Hangers | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MiTek Stock No.[1,5] | Length of Hanger Seat (in) | Fastener Schedule[4] Header Qty | Header Type | Joist Qty | Joist Type | S-P-F Down[2] 100% | S-P-F Uplift[3] 160% | MiTek Stock No.[1] | Length of Hanger Seat (in) | Fastener Schedule[4] Min/Max | Header Qty | Header Type | Joist Qty | Joist Type | S-P-F Down[2] 100% | S-P-F Uplift[3] 160% |
| **Double NI-20, NI-40x, NI-60 Series** | | | | | | | | | **Joist Width = 5"** | | | | | | | | |
| 9-1/2 | MSH2622-2[7] | 1-3/4 | 6 | 10d | 4 | 10d | 2000 | -- | SKH2520L/R-2[6] | 3-1/2 | -- | 14 | 10d | 10 | 10d | 1480 | 1265 |
| 11-7/8 | MSH2622-2[7] | 1-3/4 | 6 | 10d | 4 | 10d | 2000 | -- | SKH2520L/R-2[6] | 3-1/2 | -- | 14 | 10d | 10 | 10d | 1480 | 1265 |
| 14 | MSH2622-2[7] | 1-3/4 | 6 | 10d | 4 | 10d | 2000 | -- | SKH2524L/R-2[6] | 3-1/2 | -- | 16 | 10d | 10 | 10d | 1690 | 1295 |
| 16 | MSH2622-2[7] | 1-3/4 | 6 | 10d | 4 | 10d | 2000 | -- | SKH2524L/R-2[6] | 3-1/2 | -- | 16 | 10d | 10 | 10d | 1690 | 1295 |
| **Double NI-80, NI-90 Series** | | | | | | | | | **Joist Width = 7"** | | | | | | | | |
| 9-1/2 | MSH422-2[7] | 2 | 8 | 16d | 6 | 16d | 2665 | -- | HD7100-SK45L/R_BV[6,8] | 2-1/2 | Min | 14 | 16d | 6 | 16d | 1895 | 775 |
| | | | | | | | | | | | Max | 18 | | 8 | | 2440 | 1215 |
| 11-7/8 | MSH422-2[7] | 2 | 8 | 16d | 6 | 16d | 2665 | -- | HD7120_SK45L/R_BV[6,8] | 2-1/2 | Min | 16 | 16d | 6 | 16d | 2165 | 775 |
| | | | | | | | | | | | Max | 22 | | 8 | | 2980 | 1215 |
| 14 | MSH422-2[7] | 2 | 8 | 16d | 6 | 16d | 2665 | -- | HD7140_SK45L/R_BV[6,8] | 2-1/2 | Min | 20 | 16d | 8 | 16d | 2710 | 1215 |
| | | | | | | | | | | | Max | 26 | | 12 | | 3520 | 1825 |
| 16 | MSH422-2[7] | 2 | 8 | 16d | 6 | 16d | 2665 | -- | HD7160_SK45L/R_BV[6,8] | 2-1/2 | -- | 24 | 16d | 8 | 10d | 3250 | 1030 |
| **Double NI-80x Series** | | | | | | | | | **Joist Width = 7"** | | | | | | | | |
| 18 | MSH422-2[7] | 2 | 8 | 16d | 6 | 16d | 2665 | -- | HD7160_SK45L/R_BV[6,8] | 2-1/2 | -- | 24 | 16d | 8 | 10d | 3250 | 1030 |
| 20 | MSH422-2[7] | 2 | 8 | 16d | 6 | 16d | 2665 | -- | HD7160_SK45L/R_BV[6,8] | 2-1/2 | -- | 24 | 16d | 8 | 10d | 3250 | 1030 |
| 22 | MSH422-2[7] | 2 | 8 | 16d | 6 | 16d | 2665 | -- | HD7160_SK45L/R_BV[6,8] | 2-1/2 | -- | 24 | 16d | 8 | 10d | 3250 | 1030 |
| 24 | MSH422-2[7] | 2 | 8 | 16d | 6 | 16d | 2665 | -- | HD7160_SK45L/R_BV[6,8] | 2-1/2 | -- | 24 | 16d | 8 | 10d | 3250 | 1030 |

1) Shaded hangers require web stiffeners at joist ends.
2) Loads listed are based on hanger attachment to a S-P-F species solid sawn or NORDIC-LAM® header.
3) Uplift loads have been increased 60% for wind and seismic loading; no further increase shall be permitted.
4) **NAILS:** 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) 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) Hangers are special order. Consult MiTek for pricing and lead times.

**MSH**



**SKH_L**
**left shown**

**SKH_R**
**right shown**

## U.S. / Allowable Load (Lbs)

| Joist Height | Top Mount Hangers[3] MiTek Stock No. | Length of Hanger Seat (in) | Fastener Schedule[4] Header Qty | Header Type | Joist Qty | Joist Type | S-P-F Down[1] 100% | S-P-F Uplift[2] 160% | Face Mount Hangers MiTek Stock No. | Length of Hanger Seat (in) | Fastener Schedule[4] Min/Max | Header Qty | Header Type | Joist Qty | Joist Type | S-P-F Down[1] 100% | S-P-F Uplift[2] 160% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1-3/4" NORDIC-LAM** | | | | | | | | | | | | | | | | | |
| 9-1/2 | THO17950 | 2 | 6 | 10d | 2 | 10d x 1-1/2 | 950 | 180 | HD17925 | 2-1/2 | Min | 18 | 16d | 6 | 10d x 1-1/2 | 2440 | 955 |
| | | | | | | | | | | | Max | 24 | | 10 | | 3020 | 1545 |
| | BPH1795 | 2-3/8 | 10 | 16d | 4 | 10d x 1-1/2 | 2300 | 665 | HUS179[5] | 3 | -- | 30 | 16d | 10 | 16d | 4555 | 3410 |
| 11-7/8 | THO17118 | 2 | 6 | 10d | 2 | 10d x 1-1/2 | 950 | 180 | HD17112 | 2-1/2 | Min | 22 | 16d | 6 | 10d x 1-1/2 | 2555 | 955 |
| | | | | | | | | | | | Max | 30 | | 12 | | 3255 | 1550 |
| | BPH17118 | 2-3/8 | 10 | 16d | 4 | 10d x 1-1/2 | 2300 | 665 | HUS179[5] | 3 | -- | 30 | 16d | 10 | 16d | 4555 | 3410 |
| 14 | BPH1714 | 2-3/8 | 10 | 16d | 4 | 10d x 1-1/2 | 2300 | 665 | HD1714 | 2-1/2 | Min | 28 | 16d | 8 | 10d x 1-1/2 | 2790 | 1220 |
| | | | | | | | | | | | Max | 36 | | 14 | | 3485 | 1555 |
| | PHXU1714 | 3-1/4 | 8 | 16d | 6 | 10d x 1-1/2 | 3245 | 710 | HUS179[5] | 3 | -- | 30 | 16d | 10 | 16d | 4555 | 3410 |
| **2 Ply 1-3/4" NORDIC-LAM or 3-1/2" NORDIC-LAM** | | | | | | | | | | | | | | | | | |
| 9-1/2 | HBPH3595 | 3-1/2 | 22 | 16d | 10 | 16d | 5035 | 2335 | THD410 | 3 | -- | 38 | 16d | 20 | 10d | 5145 | 3255 |
| | HLBH3595 | 6 | 15 | NA16D-RS | 6 | 16d | 7705 | 1090 | THDH410[5] | 4 | -- | 46 | 16d | 12 | 16d | 7820 | 3470 |
| 11-7/8 | HBPH35118 | 3-1/2 | 22 | 16d | 10 | 16d | 5035 | 2335 | THD410 | 3 | -- | 38 | 16d | 20 | 10d | 5145 | 3255 |
| | HLBH35118 | 6 | 15 | NA16D-RS | 6 | 16d | 7705 | 1090 | THDH412[5] | 4 | -- | 56 | 16d | 14 | 16d | 7765 | 4230 |
| 14 | HBPH3514 | 3-1/2 | 22 | 16d | 10 | 16d | 5035 | 2335 | THD410 | 3 | -- | 38 | 16d | 20 | 10d | 5145 | 3255 |
| | HLBH3514 | 6 | 15 | NA16D-RS | 6 | 16d | 7705 | 1090 | THDH414[5] | 4 | -- | 66 | 16d | 16 | 16d | 9075 | 4250 |
| 16 | HBPH3516 | 3-1/2 | 22 | 16d | 10 | 16d | 5035 | 2335 | THD412 | 3 | -- | 48 | 16d | 20 | 10d | 5680 | 3255 |
| | HLBH3516 | 6 | 15 | NA16D-RS | 6 | 16d | 7705 | 1090 | THDH414[5] | 4 | -- | 66 | 16d | 16 | 16d | 9075 | 4250 |
| 18 | HBPH3518 | 3-1/2 | 22 | 16d | 10 | 16d | 5035 | 2335 | THDH414[5] | 4 | -- | 66 | 16d | 16 | 16d | 9075 | 4250 |
| | HLBH3518 | 6 | 15 | NA16D-RS | 6 | 16d | 7705 | 1090 | HGU363 | 5-1/4 | -- | 38 | WS3 | 24 | WS3 | 12175 | 5990 |
| **3 Ply 1-3/4" NORDIC-LAM or 5-1/4" NORDIC-LAM** | | | | | | | | | | | | | | | | | |
| 9-1/2 | KHGLT537 | 6 | 18 | WS3 | 6 | WS3 | 11190 | 1530 | THD610 | 3 | -- | 38 | 16d | 20 | 10d | 5750 | 3230 |
| | | | | | | | | | THDH610[5] | 4 | -- | 46 | 16d | 16 | 16d | 7805 | 4210 |
| 11-7/8 | KHGLT537 | 6 | 18 | WS3 | 6 | WS3 | 11190 | 1530 | THD610 | 3 | -- | 38 | 16d | 20 | 10d | 5750 | 3230 |
| | | | | | | | | | THDH612[5] | 4 | -- | 56 | 16d | 20 | 16d | 7610 | 4225 |
| 14 | KHGLT537 | 6 | 18 | WS3 | 6 | WS3 | 11190 | 1530 | THD610 | 3 | -- | 38 | 16d | 20 | 10d | 5750 | 3230 |
| | | | | | | | | | THDH614[5] | 4 | -- | 66 | 16d | 22 | 16d | 9055 | 4245 |
| 16 | KHGLT537 | 6 | 18 | WS3 | 6 | WS3 | 11190 | 1530 | HGU550_H=16 | 5-1/4 | -- | 38 | WS3 | 24 | WS3 | 12060 | 5930 |
| | | | | | | | | | THDH614[5] | 4 | -- | 66 | 16d | 22 | 16d | 9055 | 4245 |
| 18 | KHGLT537 | 6 | 18 | WS3 | 6 | WS3 | 11190 | 1530 | HGU550_H=18 | 5-1/4 | -- | 38 | WS3 | 24 | WS3 | 12060 | 5930 |
| | | | | | | | | | THDH614[5] | 4 | -- | 66 | 16d | 22 | 16d | 9055 | 4245 |
| **4 Ply 1-3/4" NORDIC-LAM or 7" NORDIC-LAM** | | | | | | | | | | | | | | | | | |
| 9-1/2 | HBPH7195 | 3-1/2 | 22 | 16d | 10 | 16d | 4895 | 2320 | THD7210 | 3 | -- | 38 | 16d | 20 | 10d | 5750 | 3220 |
| | KHGLT7_H=9.5 | 6 | 18 | WS3 | 6 | WS3 | 12495 | 1525 | THDH7210[5] | 4 | -- | 46 | 16d | 12 | 16d | 7760 | 3440 |
| 11-7/8 | HBPH71118 | 3-1/2 | 22 | 16d | 10 | 16d | 4895 | 2320 | THD7210 | 3 | -- | 38 | 16d | 20 | 10d | 5750 | 3220 |
| | KEGQ725_H=11.87 | 6 | 28 | WS3 | 12 | WS3 | 13680 | 6525 | THDH7212[5] | 4 | -- | 56 | 16d | 14 | 16d | 7770 | 4195 |
| 14 | HLBH7114 | 6 | 15 | NA16D-RS | 6 | 16d | 7670 | 1205 | HGU725_H=14 | 5-1/4 | -- | 38 | WS3 | 24 | WS3 | 12000 | 5905 |
| | KEGQ725_H=14 | 6 | 28 | WS3 | 12 | WS3 | 13680 | 6525 | THDH7214[5] | 4 | -- | 66 | 16d | 16 | 16d | 8990 | 4215 |
| 16 | KEGQ725_H=16 | 6 | 28 | WS3 | 12 | WS3 | 13680 | 6525 | THDH7214[5] | 4 | -- | 66 | 16d | 16 | 16d | 8990 | 4215 |
| 18 | KEGQ725_H=18 | 6 | 28 | WS3 | 12 | WS3 | 13680 | 6525 | THDH7214[5] | 4 | -- | 66 | 16d | 16 | 16d | 8990 | 4215 |

1) Loads listed are based on hanger attachment to a S-P-F species solid sawn or NORDIC-LAM® header.
2) Uplift loads have been increased 60% for wind and seismic loading; no further increase shall be permitted.
3) Top Mount Hangers assume supporting headers to have a minimum height of 5-1/2" and a minimum thickness of the length of the header nails or the depth of the top flange, whichever is greater. For wood nailer options or header materials not included in this table, refer to the current MiTek Product Catalog.
4) **NAILS:** 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, NA16D-RS are 10d (0.148" dia.) x 3-1/2" long, ring shank nails. 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.

THO Double

BPH

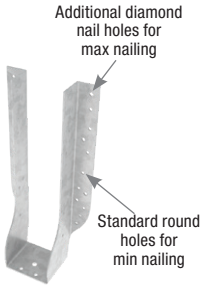
PHXU

HBPH

THDH

THD

HUS




HD

HLBH

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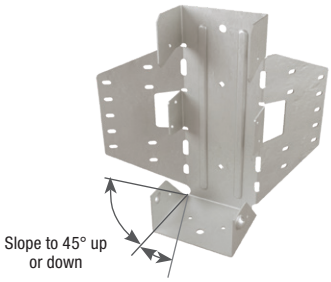
# Slope/Skew Hangers – U.S. Allowable Load (Lbs)

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°.




LSSH

Typical LSSH installation

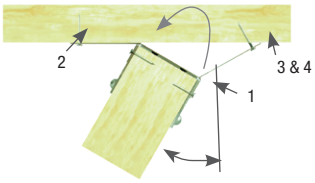
**Installation:**

- 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.




Skew to 45° maximum

LSSH Figure 1

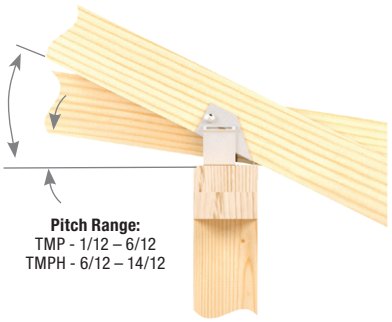
| Joist Height | MiTek Stock No.[1] | Length of Hanger Seat (in) | Installation Type | Fastener Schedule[4] Header Qty | Header Type | Joist Qty | Joist Type | S-P-F Allowable Loads (Lbs) Down 100% | Uplift[2] 160% |
|---|---|---|---|---|---|---|---|---|---|
| **NI-20, NI-40x, NI-60 Series** | | | **Joist Width = 2-1/2"** | | | | | | |
| ALL | LSSH25-TZ[3] | 3 | Sloped Only | 18 | 16d HDG | 12 | 10d x 1-1/2 HDG | 1640 | 740 |
| | | | Skewed Only or Sloped & Skewed | 14 | 16d HDG | 12 | 10d x 1-1/2 HDG | 1260 | 740 |
| **NI-80, NI-80x, NI-90 Series** | | | **Joist Width = 3-1/2"** | | | | | | |
| ALL | LSSH35-TZ[3] | 3 | Sloped Only | 18 | 16d HDG | 12 | 10d x 1-1/2 HDG | 2345 | 1020 |
| | | | Skewed Only or Sloped & Skewed | 14 | 16d HDG | 12 | 10d x 1-1/2 HDG | 1255 | 1020 |

1) Shaded hangers require web stiffeners at joist ends.
2) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
3) Supplemental lateral support connection recommended when hanger height is less than 60% of joist height.
4) **NAILS:** 10d x 1-1/2 HDG nails are 0.148" dia. x 1-1/2" long, 16d HDG nails are 0.162" dia. x 3-1/2" long.

# Variable Pitch Connectors – U.S. Allowable Load (Lbs)

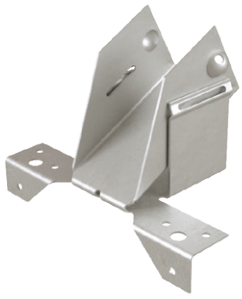
MiTek®

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. For **TMP**: drive specified nails through the opposing slots in the pocket. For **TMPH**: slide the fulcrum until it supports the pocket at the desired pitch and drive nails down through the fulcrum base into the top plate to lock the fulcrum into position.



TMP

Typical TMP installation

Typical TMPH installation

TMPH

## TMP Chart

| Joist Height | MiTek Stock No. | Fastener Schedule[3] Header Qty | Header Type | Joist Qty | Joist Type | S-P-F Allowable Loads (Lbs) Floor[1] 100% | Uplift[2] 115% |
|---|---|---|---|---|---|---|---|
| **NI-20, NI-40x, NI-60 Series** | | | | **Joist Width = 2-1/2"** | | | |
| All | TMP25 | 6 | 10d | 4 | 10d x 1-1/2 | 1705 | 185 |
| **NI-80, NI-80x NI-90 Series** | | | | **Joist Width = 3-1/2"** | | | |
| All | TMP4 | 6 | 10d | 4 | 10d x 1-1/2 | 1705 | 185 |

1) Web stiffeners may be required for hangers by I-joist manufacturers.
2) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
3) **NAILS:** 10d x 1-1/2 nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long.

## TMPH Chart

| Joist Height | MiTek Stock No. | Fastener Schedule[3] Plate Qty | Plate Type | Rafter Qty | Rafter Type | S-P-F Allowable Loads (Lbs) According to Pitch 6/12 | 7/12 | 8/12 | 9/12 | 10/12 | 11/12 | 12/12 | 13/12 | 14/12 | Uplift[2] 160% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NI-20, NI-40x, NI-60 Series** | | | | | **Joist Width = 2-1/2"** | | | | | | | | | | |
| All | TMPH25 | 10 | 10d | 8 | 10d x 1-1/2 | 2535 | 2615 | 2695 | 2500 | 2305 | 2155 | 2000 | 1775 | 1545 | 330 |
| **NI-80, NI-80x NI-90 Series** | | | | | **Joist Width = 3-1/2"** | | | | | | | | | | |
| All | TMPH4 | 10 | 10d | 8 | 10d x 1-1/2 | 2525 | 2605 | 2685 | 2495 | 2300 | 2150 | 1995 | 1770 | 1540 | 330 |

1) Web stiffeners are required for all Wood I-Joist installations.
2) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
3) **NAILS:** 10d x 1-1/2 nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long.



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# SPECIFICATION TOOLS

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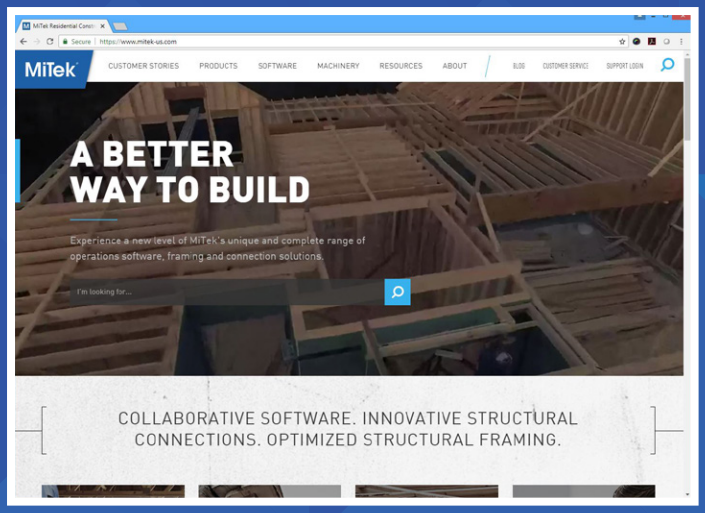


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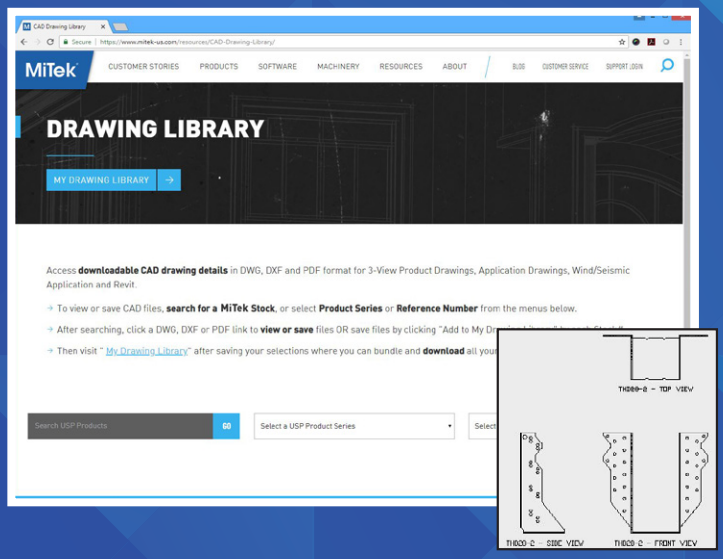


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