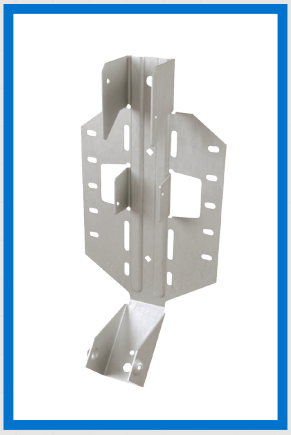
EWP PRODUCT GUIDE

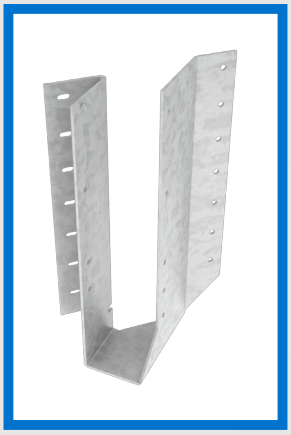
For Use With Products Manufactured by

Integrity
PREMIUM STRUCTURAL ENGINEERED WOOD PRODUCTS


THO17118


THFI2514


LSSH179


SKH1720L

MiTek®

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

General Notes

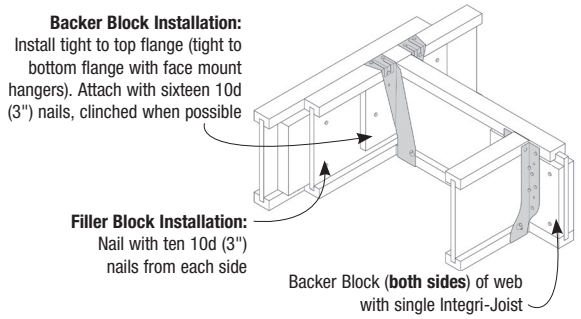
MiTek®

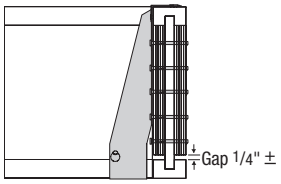
Follow these instructions to ensure the proper installation of MiTek products.

- See current MiTek USP 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 assuming header material is Douglas Fir-Larch, Southern Pine, or LVL manufactured in the U.S. 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.
- **Multiple I-Joist Plies:** Fasten together multiple plies of wood I-Joists, in accordance with the manufacturer's installation guidelines, such that the joists act as a single unit.
- **Sloped I-Joists:** Use hangers with sloped seats and beveled web stiffeners whenever the slope exceeds the following: ½:12 for seat bearing lengths of 2½" or less; 3⁄8:12 for bearing lengths between 2½" and 3½"; and ¼:12 for bearing lengths in excess of 3½".

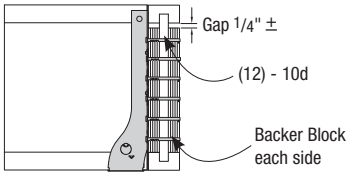
Backer Blocks – Pattern the nails used to install backer blocks or web stiffeners in wood I-Joists to avoid splitting the block. The nail pattern should be sufficiently spaced to avoid the same grain line, particularly with solid sawn backer blocks. Backer blocks must be installed on wood I-Joists acting as the header, or supporting member. Install in accordance with the Integrity Engineered Wood Products installation guidelines. The nails used to install hangers mounted to an 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





Typical **THO** backer block installation



Typical **THF** backer block installation

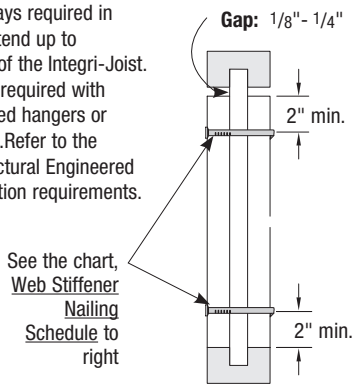
Flange Width	Depth	Backer Block Thickness Required	Backer Block Minimum[1] Depth	Filler Block Size
1-3/4"	9-1/2"	23/32"	5-1/2"	1-3/8" x 6" high
	11-7/8"			1-3/8" x 8" high
	14"			1-3/8" x 10" high
	16"			1-3/8" x 12" high
2-1/16"	9-1/2"	7/8"	5-1/2"	1-3/4" x 6" high
	11-7/8"			1-3/4" x 8" high
	14"			1-3/4" x 10" high
	16"			1-3/4" x 12" high
2-5/16"	9-1/2"	1"	5-1/2"	2" x 6" high
	11-7/8"			2" x 8" high
	14"			2" x 10" high
	16"			2" x 12" high
2-1/2"	9-1/2"	1-1/8"	5-1/2"	2-1/8" x 6" high
	11-7/8"			2-1/8" x 8" high
	14"			2-1/8" x 10" high
	16"			2-1/8" x 12" high
3-1/2"	11-7/8"	1-1/2"	7-1/4"	3" x 8" high
	14"			3" x 10" high
	16"			3" x 12" high

1) For face-mount hangers use net joist depth minus 3-1/4".

Web Stiffener Attachment

Web Stiffeners may be required as noted below:

- Web stiffeners are always required in hangers that do not extend up to support the top flange of the Integri-Joist. Web stiffeners may be required with certain sloped or skewed hangers or to achieve uplift values.Refer to the Integrity Premium Structural Engineered Wood Products installation requirements.



Web Stiffener Nailing Schedule

Joist Series	Joist Width	Joist Depth	Minimum Stiffener Size	Nails
IJ-20 & IJ-50	1-3/4"	9-1/2"	19/32" x 2-5/16"	(4) 8d
		11-7/8"		
		14"		
		16"		
IJ-45	2-1/16"	9-1/2"	3/4" x 2-5/16"	(4) 8d
		11-7/8"		
		14"		
		16"		
IJ-40, IJ-47, IJ-60, IJ-70, IJ-77	2-5/16"	9-1/2"	1" x 2-5/16"	(4) 8d
		11-7/8"		
		14"		
		16"		
		18"		
		20"		
		22"		
		24"		

Joist Series	Joist Width	Joist Depth	Minimum Stiffener Size	Nails
IJ-77W	2-1/2"	9-1/2"	1" x 2-5/16"	(4) 8d
		11-7/8"		
		14"		
		16"		
		18"		
		20"		
		22"		
		24"		
IJ-80M & IJ-90	3-1/2"	9-1/2"	1-1/2" x 2-5/16"	(4) 10d
		11-7/8"		
		14"		
		16"		
		18"		
		20"		
		22"		
		24"		

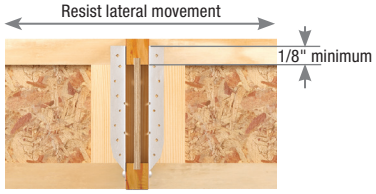
Customer Service & Technical Assistance
1-800-328-5934 · 1-952-898-8772

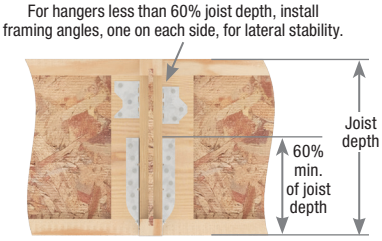
EWP Installation

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.



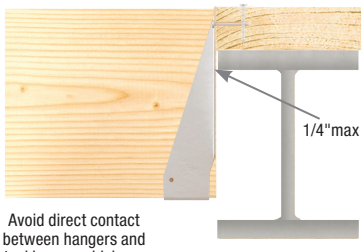


(Top flange support requirements can be verified in EWP Top Mount Hangers charts under Web stiffener Reqd. column) of MiTek's USP Product Catalog.

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.



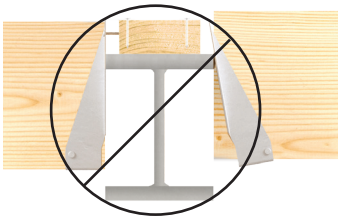
Avoid direct contact between hangers and steel beams which may cause squeaks

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.

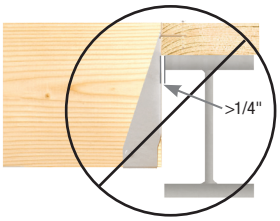
The nailer must be sized to fit the support width as shown and be of sufficient thickness to satisfy recommended top flange nailing requirements. A design professional must specify nailer attachment to steel beams.

Wrong Nailer Size Causes Component Failure



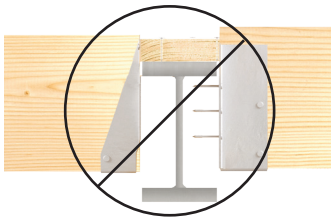
Too Narrow

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.



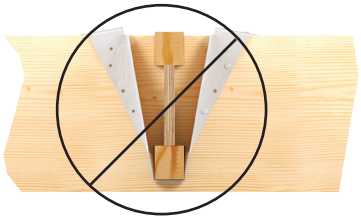
Too Thin

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.

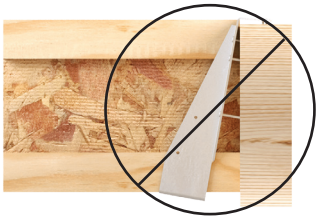
Top Flange Hangers

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 Integri-Joists™

MiTek®

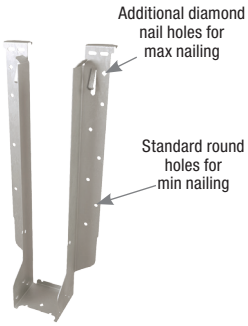
Joist Height	Top Mount Hangers[4,6] USP Stock No.[1]	D Dim[8]	Fastener Schedule[5] Header Qty	Header Type	Joist Qty	Joist Type	Uplift 160%[3]	Down 100%[2]	Face Mount Hangers USP Stock No.[1]	D Dim[8]	Min/ Max	Fastener Schedule[5] Header Qty	Header Type	Joist Qty	Joist Type	Uplift 160%[3]	Down 100%[2]
IJ-20 & IJ-50	**Joist Width = 1-3/4"**																
9-1/2	TH017950	2	6	10d	2	10d x 1-1/2	230	1235	IHFL17925	2-1/2	--	8	10d	--	--	50	960
11-7/8	TH017118	2	6	10d	2	10d x 1-1/2	230	1235	IHFL17112	2-1/2	--	10	10d	--	--	50	1200
14	TFL1714	2	6	10d	2	10d x 1-1/2	130	1585	IHFL1714	2-1/2	Min	12	10d	--	--	50	1440
											Max	14	10d				1680
16	TFL1716	2	6	10d	2	10d x 1-1/2	130	1585	IHFL1716	2-1/2	Min	14	10d	--	--	50	1680
											Max	16	10d				1920
IJ-45	**Joist Width = 2-1/16"**																
9-1/2	TFL2095	2	6	10d	2	10d x 1-1/2	130	1585	IHFL20925	2-1/2	--	8	10d	--	--	50	960
11-7/8	TFL20118	2	6	10d	2	10d x 1-1/2	130	1585	IHFL20112	2-1/2	--	10	10d	--	--	50	1200
14	TFL2014	2	6	10d	2	10d x 1-1/2	130	1585	IHFL2014	2-1/2	Min	12	10d	--	--	50	1440
											Max	14	10d				1680
16	TFL2016	2	6	10d	2	10d x 1-1/2	130	1585	IHFL2016	2-1/2	Min	14	10d	--	--	50	1680
											Max	16	10d				1920
IJ-40, IJ-47, IJ-60 & IJ-70	**Joist Width = 2-5/16"**																
9-1/2	TFL2395	2	6	10d	2	10d x 1-1/2	130	1585	IHFL23925	2-1/2	--	8	10d	--	--	50	960
11-7/8	TFL23118	2	6	10d	2	10d x 1-1/2	130	1585	IHFL23112	2-1/2	--	10	10d	--	--	50	1200
14	TFL2314	2	6	10d	2	10d x 1-1/2	130	1585	IHFL2314	2-1/2	Min	12	10d	--	--	50	1440
											Max	14	10d				1680
16	TFL2316	2	6	10d	2	10d x 1-1/2	130	1585	IHFL2316	2-1/2	Min	14	10d	--	--	50	1680
											Max	16	10d				1920
18	TFI3518	2-1/2	6	16d	2	10d x 1-1/2	215	2715	IHFL2316	2-1/2	Min	14	10d	--	--	50	1680
											Max	16	10d				1920
20	TFI3520	2-1/2	6	16d	2	10d x 1-1/2	215	2715	IHFL2316	2-1/2	Min	14	10d	--	--	50	1680
											Max	16	10d				1920
IJ-77w	**Joist Width = 2-1/2"**																
9-1/2	TFL2595	2	6	10d	2	10d x 1-1/2	130	1585	THFI2595	2-1/2	--	8	10d	--	--	120	960
11-7/8	TFL25118	2	6	10d	2	10d x 1-1/2	130	1585	THFI25118	2-1/2	--	10	10d	--	--	120	1200
14	TFL2514	2	6	10d	2	10d x 1-1/2	130	1585	THFI2514	2-1/2	Min	12	10d	--	--	120	1440
										2-1/2	Max	14	10d				1680
16	TFL2516	2	6	10d	2	10d x 1-1/2	130	1585	IHFL2516	2-1/2	Min	14	10d	--	--	50	1680
											Max	16	10d				1920
18	TFI318	2-1/2	6	16d	2	10d x 1-1/2	215	2715	IHFL2516	2-1/2	Min	14	10d	--	--	50	1680
											Max	16	10d				1920
20	TFI320	2-1/2	6	16d	2	10d x 1-1/2	215	2715	IHFL2516	2-1/2	Min	14	10d	--	--	50	1680
											Max	16	10d				1920
22	TFI322	2-1/2	10	16d	2	10d x 1-1/2	215	2820	IHFL2516	2-1/2	Min	14	10d	--	--	50	1680
											Max	16	10d				1920
24	TFI324	2-1/2	10	16d	2	10d x 1-1/2	215	2820	IHFL2516	2-1/2	Min	14	10d	--	--	50	1680
											Max	16	10d				1920
IJ-77	**Joist Width = 2-5/16"**																
9-1/2	TFL2395	2	6	10d	2	10d x 1-1/2	130	1585	IHFL23925	2-1/2	--	8	10d	--	--	50	960
11-7/8	TFL23118	2	6	10d	2	10d x 1-1/2	130	1585	IHFL23112	2-1/2	--	10	10d	--	--	50	1200
14	TFL2314	2	6	10d	2	10d x 1-1/2	130	1585	IHFL2314	2-1/2	Min	12	10d	--	--	50	1440
											Max	14	10d				1680
16	TFL2316	2	6	10d	2	10d x 1-1/2	130	1585	IHFL2316	2-1/2	Min	14	10d	--	--	50	1680
											Max	16	10d				1920
18	TFI3518	2-1/2	6	16d	2	10d x 1-1/2	215	2715	IHFL2316	2-1/2	Min	14	10d	--	--	50	1680
											Max	16	10d				1920
20	TFI3520	2-1/2	6	16d	2	10d x 1-1/2	215	2715	IHFL2316	2-1/2	Min	14	10d	--	--	50	1680
											Max	16	10d				1920
22	TFI3522[7]	2-1/2	6	16d	2	10d x 1-1/2	215	2715	IHFL2316	2-1/2	Min	14	10d	--	--	50	1680
											Max	16	10d				1920
24	TFI3524[7]	2-1/2	6	16d	2	10d x 1-1/2	215	2715	IHFL2316	2-1/2	Min	14	10d	--	--	50	1680
											Max	16	10d				1920
IJ-80M & IJ-90	**Joist Width = 3-1/2"**																
9-1/2	TH035950	2-3/8	10	10d	2	10d x 1-1/2	230	2370	IHF35925	2-1/2	--	10	10d	--	--	50	1200
11-7/8	TH035118	2-3/8	10	10d	2	10d x 1-1/2	230	2525	IHFL35112	2-1/2	Min	10	10d	--	--	50	1200
											Max	12	10d				1440
14	TH035140	2-3/8	12	10d	2	10d x 1-1/2	230	2400	IHFL3514	2-1/2	Min	12	10d	--	--	50	1440
											Max	14	10d				1680
16	TH035160	2-3/8	12	10d	2	10d x 1-1/2	230	2400	IHFL3516	2-1/2	Min	14	10d	--	--	50	1680
											Max	16	10d				1920
18	TFI418	2-1/2	6	16d	2	10d x 1-1/2	215	2715	IHFL3516	2-1/2	Min	14	10d	--	--	50	1680
											Max	16	10d				1920
20	TFI420	2-1/2	6	16d	2	10d x 1-1/2	215	2715	IHFL3516	2-1/2	Min	14	10d	--	--	50	1680
											Max	16	10d				1920
22	TFI422	2-1/2	10	16d	2	10d x 1-1/2	215	2820	IHFL3516	2-1/2	Min	14	10d	--	--	50	1680
											Max	16	10d				1920
24	TFI424	2-1/2	10	16d	2	10d x 1-1/2	215	2820	IHFL3516	2-1/2	Min	14	10d	--	--	50	1680
											Max	16	10d				1920

1) Bearing/web stiffeners may be required for hangers by Integrity Premium Structural Engineered Wood Products. See notes on page 2.
2) Loads listed are based on hanger attachment to a DF-L or SP species solid sawn or glulam beam, or Integri-LamTM LVL header.
Some loads may be increased for duration of load adjustments. Refer to MiTek USP 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 thickness 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. by 1-1/2" long and 10d nails are 0.148" dia. by 3" long. 16d sinkers (0.148" dia.) by 3-1/4" long may be substituted for 10d common nails with no load reduction.
6) For top mount hangers supported by I-Joist headers with a flange thickness less than 1-1/2", consult MiTek and Integrity Premium Structural Engineered Wood Products for hanger limitations.
7) Hangers are special order. Consult MiTek for pricing and lead times.
8) D Dim is the length of the hanger seat.

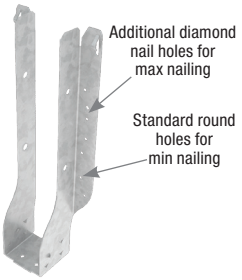
THO

TFL

TFI



THFI



IHFL

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

Single Integri-Joists™

MiTek®

Joist Height	Adjustable Height							Skewed 45° Hangers								
			Fastener Schedule[4]							Fastener Schedule[4]						
			Header		Joist						Header		Joist			
	USP Stock No.[1,7,9]	D Dim[11]	Qty	Type	Qty	Type	Down 100%[2]	USP Stock No.[1,6,7]	D Dim[11]	Min / Max	Qty	Type	Qty	Type	Uplift 160%[3]	Down 100%[2]
IJ-20 & IJ-50	**Joist Width = 1-3/4"**															
9-1/2	MSH1722 [12]	1-3/4	6	10d	4	10d x 1-1/2	2335	SKH1720L/R	1-7/8	--	14	10d	10	10d x 1-1/2	1530	1650
11-7/8	MSH1722	1-3/4	6	10d	4	10d x 1-1/2	2335	SKH1720L/R	1-7/8	--	14	10d	10	10d x 1-1/2	1530	1650
14	MSH1722	1-3/4	6	10d	4	10d x 1-1/2	2335	SKH1724L/R	1-7/8	--	16	10d	10	10d x 1-1/2	1530	1890
16	MSH1722	1-3/4	6	10d	4	10d x 1-1/2	2335	SKH1724L/R	1-7/8	--	16	10d	10	10d x 1-1/2	1530	1890
IJ-45	**Joist Width = 2-1/16"**															
9-1/2	MSH2022 [12]	1-3/4	6	10d	4	10d	2335	SKH2020L/R	1-7/8	--	14	10d	10	10d x 1-1/2	1530	1650
11-7/8	MSH2022	1-3/4	6	10d	4	10d	2335	SKH2020L/R	1-7/8	--	14	10d	10	10d x 1-1/2	1530	1650
14	MSH2022	1-3/4	6	10d	4	10d	2335	SKH2024L/R	1-7/8	--	16	10d	10	10d x 1-1/2	1530	1890
16	MSH2022	1-3/4	6	10d	4	10d	2335	SKH2024L/R	1-7/8	--	16	10d	10	10d x 1-1/2	1530	1890
IJ-40, IJ-47, IJ-60 & IJ-70	**Joist Width = 2-5/16"**															
9-1/2	MSH2322 [12]	1-3/4	6	10d	4	10d x 1-1/2	2175	SKH2320L/R	1-7/8	--	14	10d	10	10d x 1-1/2	1530	1650
11-7/8	MSH2322	1-3/4	6	10d	4	10d x 1-1/2	2175	SKH2320L/R	1-7/8	--	14	10d	10	10d x 1-1/2	1530	1650
14	MSH2322	1-3/4	6	10d	4	10d x 1-1/2	2175	SKH2324L/R	1-7/8	--	16	10d	10	10d x 1-1/2	1530	1890
16	MSH2322	1-3/4	6	10d	4	10d x 1-1/2	2175	SKH2324L/R	1-7/8	--	16	10d	10	10d x 1-1/2	1530	1890
18	MSH2322	1-3/4	6	10d	4	10d x 1-1/2	2175	SKH2324L/R	1-7/8	--	16	10d	10	10d x 1-1/2	1530	1890
20	MSH2322	1-3/4	6	10d	4	10d x 1-1/2	2175	--	--		--			--	--	--
IJ-77w	**Joist Width = 2-1/2"**															
9-1/2	MSH322 [12]	1-3/4	6	10d	4	10d x 1-1/2	2175	SKH2520L/R	1-7/8	--	14	10d	10	10d x 1-1/2	1530	1650
11-7/8	MSH322	1-3/4	6	10d	4	10d x 1-1/2	2175	SKH2520L/R	1-7/8	--	14	10d	10	10d x 1-1/2	1530	1650
14	MSH322	1-3/4	6	10d	4	10d x 1-1/2	2175	SKH2524L/R	1-7/8	--	16	10d	10	10d x 1-1/2	1530	1890
16	MSH322	1-3/4	6	10d	4	10d x 1-1/2	2175	SKH2524L/R	1-7/8	--	16	10d	10	10d x 1-1/2	1530	1890
18	MSH322	1-3/4	6	10d	4	10d x 1-1/2	2175	See current MiTek USP Product Catalog for specialty hanger options								
20	MSH322	1-3/4	6	10d	4	10d x 1-1/2	2175									
22	MSH322	1-3/4	6	10d	4	10d x 1-1/2	2175									
24	MSH322	1-3/4	6	10d	4	10d x 1-1/2	2175									
IJ-77	**Joist Width = 2-5/16"**															
9-1/2	MSH2322 [12]	1-3/4	6	10d	4	10d x 1-1/2	2175	SKH2320L/R	1-7/8	--	14	10d	10	10d x 1-1/2	1530	1650
11-7/8	MSH2322	1-3/4	6	10d	4	10d x 1-1/2		SKH2320L/R	1-7/8	--	14	10d	10	10d x 1-1/2	1530	1650
14	MSH2322	1-3/4	6	10d	4	10d x 1-1/2	2175	SKH2324L/R	1-7/8	--	16	10d	10	10d x 1-1/2	1530	1890
16	MSH2322	1-3/4	6	10d	4	10d x 1-1/2	2175	SKH2324L/R	1-7/8	--	16	10d	10	10d x 1-1/2	1530	1890
18	MSH2322	1-3/4	6	10d	4	10d x 1-1/2	2175	SKH2324L/R	1-7/8	--	16	10d	10	10d x 1-1/2	1530	1890
20	MSH2322	1-3/4	6	10d	4	10d x 1-1/2	2175	See current MiTek USP Product Catalog for specialty hanger options								
22	MSH2322	1-3/4	6	10d	4	10d x 1-1/2	2175									
24	MSH2322	1-3/4	6	10d	4	10d x 1-1/2	2175									
IJ-80M & IJ-90	**Joist Width = 3-1/2"**															
9-1/2	MSH422	1-3/4	6	10d	6	10d	2355	HD410_SK45L/R_BV [5,10]	2-1/2	Min	14	16d	6	10d	880	2155
										Max	20		10		1465	3080
11-7/8	MSH422	1-3/4	6	10d	6	10d	2355	HD410_SK45L/R_BV [5,10]	2-1/2	Min	14	16d	6	10d	880	2155
										Max	20		10		1465	3080
14	MSH422	1-3/4	6	10d	6	10d	2355	HD414_SK45L/R_BV [5,10]	2-1/2	Min	18	16d	8	10d	1165	2770
										Max	26		12		1755	4005
16	MSH422	1-3/4	6	10d	6	10d	2355	HD414_SK45L/R_BV [5,10]	2-1/2	Min	18	16d	8	10d	1165	2770
										Max	26		12		1755	4005
18	MSH422	1-3/4	6	10d	6	10d	2355	HD414_SK45L/R_BV [5,10]	2-1/2	Min	18	16d	8	10d	1165	2770
										Max	26		12		1755	4005
20	MSH422	1-3/4	6	10d	6	10d	2355	HD414_SK45L/R_BV [5,10]	2-1/2	Min	18	16d	8	10d	1165	2770
										Max	26		12		1755	4005
22	MSH422	1-3/4	6	10d	6	10d	2355	See current MiTek USP Product Catalog for specialty hanger options								
24	MSH422	1-3/4	6	10d	6	10d	2355									

1) Shaded hangers require bearing/web stiffeners at joist ends.
2) Loads listed are based on hanger attachment to a DF-L or SP species solid sawn or glulam beam, Integri-Lam™ Joists, or Integri-Lam™ LVL header. Some loads may be increased for duration of load adjustments. Refer to MiTek USP 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. by 1-1/2" long, 10d nails are 0.148" dia. by 3" long, and 16d nails are 0.162" dia. by 3-1/2" long.
5) Bevel cut required on end of joist to achieve design loads.
6) For additional sizes, stock numbers, and modifications not shown, refer to MiTek USP's Product Catalog.
7) Hangers utilizing 16d nails are not compatible with I-joist headers.
8) Supplemental lateral support connection recommended when hanger height is less than 60% of joist height.
9) 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 USP Product Catalog.
10) Hangers are special order. Contact MiTek for pricing and lead times.
11) D Dim is the length of the hanger seat.
12) Flanges on the bucket of the hanger may extend above the top of the joist.

MSH

SKH_L
left shown

Double Integri-Joists™

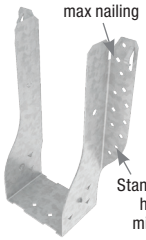
MiTek®

Joist Height	Top Mount Hangers[4,7] USP Stock No.[1,6]	D Dim[8]	Fastener Schedule[5] Header Qty	Header Type	Joist Qty	Joist Type	Uplift 160%[3]	Down 100%[2]	Face Mount Hangers USP Stock No.[1,6]	D Dim[8]	Min/ Max	Fastener Schedule[5] Header Qty	Header Type	Joist Qty	Joist Type	Uplift 160%[3]	Down 100%[2]
Double IJ-20 & IJ-50								**Joist Width = 3-1/2"**									
9-1/2	THO35950	2-3/8	10	10d	2	10d x 1-1/2	230	2370	IHF35925	2-1/2	Min	10	10d	2	10d x 1-1/2	330	1250
											Max	24	16d				3530
11-7/8	THO35118	2-3/8	10	10d	2	10d x 1-1/2	230	2525	IHF35112	2-1/2	Min	10	10d	2	10d x 1-1/2	330	1250
											Max	24	16d				3530
14	THO35140	2-3/8	12	10d	2	10d x 1-1/2	230	2400	IHF3514	2-1/2	Min	12	10d	2	10d x 1-1/2	330	1500
											Max	28	16d				4115
16	THO35160	2-3/8	12	10d	2	10d x 1-1/2	230	2400	IHF3516	2-1/2	Min	14	10d	2	10d x 1-1/2	330	1750
											Max	30	16d				4410
Double IJ-45								**Joist Width = 4-1/8"**									
9-1/2	THO20950-2	3	10	16d	6	10d	1135	2920	IHF20925-2	2-1/2	Min	10	10d	2	10d x 1-1/2	330	1250
											Max	24	16d				3530
11-7/8	THO20118-2	3	10	16d	6	10d	1135	2920	IHF20112-2	2-1/2	Min	10	10d	2	10d x 1-1/2	330	1250
											Max	24	16d				3530
14	THO20140-2	3	10	16d	6	10d	1145	3640	IHF2014-2	2-1/2	Min	12	10d	2	10d x 1-1/2	330	1500
											Max	28	16d				3965
16	THO20160-2	3	10	16d	6	10d	1145	3640	IHF2014-2	2-1/2	Min	12	10d	2	10d x 1-1/2	330	1500
											Max	28	16d				3965
Double IJ-40, IJ-47, IJ-60 & IJ-70								**Joist Width = 4-5/8"**									
9-1/2	THO23950-2	3	10	16d	6	10d	1145	3640	IHF23925-2	2-1/2	Min	10	10d	2	10d x 1-1/2	330	1250
											Max	24	16d				3530
11-7/8	THO23118-2	3	10	16d	6	10d	1145	3640	THF23118-2	2-1/2	--	16	10d	6	10d	1135	1890
14	THO23140-2	3	12	16d	6	10d	1145	4420	THF23140-2	2-1/2	--	20	10d	6	10d	1275	2660
16	THO23160-2	3	12	16d	6	10d	1145	4420	THF23160-2	2-1/2	--	24	10d	6	10d	1275	3190
18	THO23180-2	3	14	16d	6	10d	1145	5000	THF23160-2	2-1/2	--	24	10d	6	10d	1275	3190
20	THO23200-2	3	14	16d	6	10d	1145	5000	THF23160-2	2-1/2	--	24	10d	6	10d	1275	3190
Double IJ-77w								**Joist Width = 5"**									
9-1/2	THO25950-2	3	10	16d	6	10d	1145	3640	IHF25925-2	2-1/2	Min	10	10d	2	10d x 1-1/2	330	1250
											Max	24	16d				3530
11-7/8	THO25118-2	3	10	16d	6	10d	1145	3640	IHF25112-2	2-1/2	Min	10	10d	2	10d x 1-1/2	330	1250
											Max	24	16d				3530
14	THO25140-2	3	12	16d	6	10d	1145	4420	THF25140-2	2-1/2	--	20	10d	6	10d	1235	2660
16	THO25160-2	3	12	16d	6	10d	1145	4420	THF25160-2	2-1/2	--	24	10d	6	10d	1235	3190
18	THO25180-2	3	14	16d	6	10d	1145	5660	THF25160-2	2-1/2	--	24	10d	6	10d	1235	3190
20	THO25200-2	3	14	16d	6	10d	1145	5660	THF25160-2	2-1/2	--	24	10d	6	10d	1235	3190
22	--	--	--			--	--	--	THF25160-2	2-1/2	--	24	10d	6	10d	1235	3190
24	--	--	--			--	--	--	THF25160-2	2-1/2	--	24	10d	6	10d	1235	3190
Double IJ-77								**Joist Width = 4-5/8"**									
9-1/2	THO23950-2	3	10	16d	6	10d	1145	3640	IHF23925-2	2-1/2	Min	10	10d	2	10d x 1-1/2	330	1250
											Max	24	16d				3530
11-7/8	THO23118-2	3	10	16d	6	10d	1145	3640	THF23118-2	2-1/2	--	16	10d	6	10d	1135	1890
14	THO23140-2	3	12	16d	6	10d	1145	4420	THF23140-2	2-1/2	--	20	10d	6	10d	1275	2660
16	THO23160-2	3	12	16d	6	10d	1145	4420	THF23160-2	2-1/2	--	24	10d	6	10d	1275	3190
18	THO23180-2	3	14	16d	6	10d	1145	5000	THF23160-2	2-1/2	--	24	10d	6	10d	1275	3190
20	THO23200-2	3	14	16d	6	10d	1145	5000	THF23160-2	2-1/2	--	24	10d	6	10d	1275	3190
22	--	--	--	--	--	--	--	--	THF23160-2	2-1/2	--	24	10d	6	10d	1275	3190
24	--	--	--	--	--	--	--	--	THF23160-2	2-1/2	--	24	10d	6	10d	1275	3190
Double IJ-80M & IJ-90								**Joist Width = 7"**									
9-1/2	BPH7195	3	10	16d	6	10d	1275	3100	HD7100	2-1/2	Min	14	16d	6	16d	1305	2155
											Max	18	16d	8	16d	1845	2770
11-7/8	BPH71118	3	10	16d	6	10d	1275	3075	HD7120	2-1/2	Min	16	16d	6	16d	1305	2465
											Max	22	16d	8	16d	1845	3390
14	BPH7114	3	10	16d	6	10d	1275	3075	HD7140	2-1/2	Min	20	16d	8	16d	1845	3080
											Max	26	16d	12	16d	2765	4005
16	BPH7116	3	10	16d	6	10d	1275	3075	HD7160	2-1/2	--	24	16d	8	10d	1560	3695
18	BPH7118	3	10	16d	6	10d	1275	3075	HD7160	2-1/2	--	24	16d	8	10d	1560	3695
20	BPH7120	3	10	16d	6	10d	1275	3075	HD7160	2-1/2	--	24	16d	8	10d	1560	3695
22	BPH7122	3	10	16d	6	10d	1275	3075	HD7160	2-1/2	--	24	16d	8	10d	1560	3695
24	BPH7124	3	10	16d	6	10d	1275	3075	HD7160	2-1/2	--	24	16d	8	10d	1560	3695

1) Shaded hangers require bearing/web stiffeners at joist ends. Web stiffeners may be required for non-shaded hangers by Integrity Premium Structural Engineered Wood Products. See notes on page 2.
2) Loads listed are based on hanger attachment to a DF-L or SP species solid sawn or glulam beam, or Integri-LamTM LVL header. Some loads may be increased for duration of load adjustments. Refer to MiTek USP 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 thickness 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. by 1-1/2" long, 10d nails are 0.148" dia. by 3" long, and 16d nails are 0.162" dia. by 3-1/2" long. 16d sinkers (0.148" dia.) by 3-1/4" long may be substituted for 10d common nails with no load reduction.
6) Hangers utilizing 16d nails are not compatible with I-joist headers.
7) For top mount hangers supported by I-Joist headers with a flange thickness less than 1-1/2", consult MiTek and Integrity Premium Structural Engineered Wood Products for hanger limitations.
8) D Dim is the length of the hanger seat.

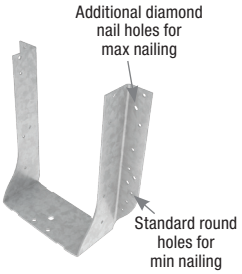
THO Double

BPH



IHF

THF Double



HD

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

Double Integri-Joists™

MiTek®

Joist Height	Adjustable Height: USP Stock No.[1,5,6,9]	D Dim[10]	Fastener Schedule[4] Header Qty	Header Type	Joist Qty	Joist Type	Down 100%[2]	Skewed 45° Hangers: USP Stock No.[1,5,6]	D Dim[10]	Min/ Max	Fastener Schedule[4] Header Qty	Header Type	Joist Qty	Joist Type	Uplift 160%[3]	Down 100%[2]
Double IJ-20 & IJ-50								**Joist Width = 3-1/2"**								
9-1/2	MSH422	1-3/4	6	10d	6	10d	2355	HD410_SK45L/R_BV [7,8]	2-1/2	Min	14	16d	6	10d	880	2155
										Max	20		10		1465	3080
11-7/8	MSH422	1-3/4	6	10d	6	10d	2355	HD410_SK45L/R_BV [7,8]	2-1/2	Min	14	16d	6	10d	880	2155
										Max	20		10		1465	3080
14	MSH422	1-3/4	6	10d	6	10d	2355	HD414_SK45L/R_BV [7,8]	2-1/2	Min	18	16d	8	10d	1165	2770
										Max	26		12		1755	4005
16	MSH422	1-3/4	6	10d	6	10d	2355	HD414_SK45L/R_BV [7,8]	2-1/2	Min	18	16d	8	10d	1165	2770
										Max	26		12		1755	4005
Double IJ-45								**Joist Width = 4-1/8"**								
9-1/2	See current MiTek USP Product Catalog for specialty hanger options							SKH2020L/R-2 [7]	3-1/2	--	14	10d	10	10d	1645	1710
11-7/8								SKH2020L/R-2 [7]	3-1/2	--	14	10d	10	10d	1645	1710
14								SKH2024L/R-2 [7]	3-1/2	--	16	10d	10	10d	1680	1950
16								SKH2024L/R-2 [7]	3-1/2	--	16	10d	10	10d	1680	1950
Double IJ-40, IJ-47, IJ-60 & IJ-70								**Joist Width = 4-5/8"**								
9-1/2	MSH2322-2	1-3/4	6	10d	4	10d	2355	SKH2320L/R-2 [7]	3-1/2	--	14	10d	10	10d	1645	1710
11-7/8	MSH2322-2	1-3/4	6	10d	4	10d	2355	SKH2320L/R-2 [7]	3-1/2	--	14	10d	10	10d	1645	1710
14	MSH2322-2	1-3/4	6	10d	4	10d	2355	SKH2324L/R-2 [7]	3-1/2	--	16	10d	10	10d	1680	1950
16	MSH2322-2	1-3/4	6	10d	4	10d	2355	SKH2324L/R-2 [7]	3-1/2	--	16	10d	10	10d	1680	1950
18	MSH2322-2	1-3/4	6	10d	4	10d	2355	SKH2324L/R-2 [7]	3-1/2	--	16	10d	10	10d	1680	1950
20	MSH2322-2	1-3/4	6	10d	4	10d	2355	--	--	--	--	--	--	--	--	--
Double IJ-77w								**Joist Width = 5"**								
9-1/2	MSH2622-2	1-3/4	6	10d	4	10d	2355	SKH2520L/R-2 [7]	3-1/2	--	14	10d	10	10d	1645	1710
11-7/8	MSH2622-2	1-3/4	6	10d	4	10d	2355	SKH2520L/R-2 [7]	3-1/2	--	14	10d	10	10d	1645	1710
14	MSH2622-2	1-3/4	6	10d	4	10d	2355	SKH2524L/R-2 [7]	3-1/2	--	16	10d	10	10d	1680	1950
16	MSH2622-2	1-3/4	6	10d	4	10d	2355	SKH2524L/R-2 [7]	3-1/2	--	16	10d	10	10d	1680	1950
18	MSH2622-2	1-3/4	6	10d	4	10d	2355	SKH2524L/R-2 [7]	3-1/2	--	16	10d	10	10d	1680	1950
20	MSH2622-2	1-3/4	6	10d	4	10d	2355	See current MiTek USP Product Catalog for specialty hanger options								
22	MSH2622-2	1-3/4	6	10d	4	10d	2355									
24	MSH2622-2	1-3/4	6	10d	4	10d	2355									
Double IJ-77								**Joist Width = 4-5/8"**								
9-1/2	MSH2322-2	1-3/4	6	10d	4	10d	2355	SKH2320L/R-2 [7]	3-1/2	--	14	10d	10	10d	1645	1710
11-7/8	MSH2322-2	1-3/4	6	10d	4	10d	2355	SKH2320L/R-2 [7]	3-1/2	--	14	10d	10	10d	1645	1710
14	MSH2322-2	1-3/4	6	10d	4	10d	2355	SKH2324L/R-2 [7]	3-1/2	--	16	10d	10	10d	1680	1950
16	MSH2322-2	1-3/4	6	10d	4	10d	2355	SKH2324L/R-2 [7]	3-1/2	--	16	10d	10	10d	1680	1950
18	MSH2322-2	1-3/4	6	10d	4	10d	2355	SKH2324L/R-2 [7]	3-1/2	--	16	10d	10	10d	1680	1950
20	MSH2322-2	1-3/4	6	10d	4	10d	2355	See current MiTek USP Product Catalog for specialty hanger options								
22	MSH2322-2	1-3/4	6	10d	4	10d	2355									
24	MSH2322-2	1-3/4	6	10d	4	10d	2355									
Double IJ-80M & IJ-90								**Joist Width = 7"**								
9-1/2	MSH422-2 [12]	2	8	16d	6	16d	3740	HD7100_SK45L/R_BV [7,8]	2-1/2	Min	14	16d	6	16d	980	2155
										Max	18		8		1385	2770
11-7/8	MSH422-2	2	8	16d	6	16d	3740	HD7120-SK45L/R_BV [7,8]	2-1/2	Min	16	16d	6	16d	980	2465
										Max	22		8		1385	3390
14	MSH422-2	2	8	16d	6	16d	3740	HD7140-SK45L/R_BV [7,8]	2-1/2	Min	20	16d	8	16d	1385	3080
										Max	26		12		2075	4005
16	MSH422-2	2	8	16d	6	16d	3740	HD7160-SK45L/R_BV [7,8]	2-1/2	--	24	16d	8	10d	1170	3695
18	MSH422-2	2	8	16d	6	16d	3740	HD7180-SK45L/R_BV [7,8]	2-1/2	--	28	16d	8	10d	1170	4310
20	MSH422-2	2	8	16d	6	16d	3740	HD7180-SK45L/R_BV [7,8]	2-1/2	--	28	16d	8	10d	1170	4310
22	MSH422-2	2	8	16d	6	16d	3740	HD7180-SK45L/R_BV [7,8]	2-1/2	--	28	16d	8	10d	1170	4310
24	MSH422-2	2	8	16d	6	16d	3740	HD7180-SK45L/R_BV [7,8]	2-1/2	--	28	16d	8	10d	1170	4310

1) Shaded hangers require bearing/web stiffeners at joist ends.

2) Loads listed are based on hanger attachment to a DF-L or SP species solid sawn or glulam beam, Integri-Lam™ Joists, or Integri-Lam™ LVL header. Some loads may be increased for duration of load adjustments. Refer to MiTek USP 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. by 1-1/2" long, 10d nails are 0.148" dia. by 3" long, and 16d nails are 0.162" dia. by 3-1/2" long. 16d sinkers (0.148" dia.) by 3-1/4" long may be substituted for 10d common nails with no load reduction.

5) For additional sizes, stock numbers, and modifications not shown, refer to MiTek's USP Product Catalog.

6) Hangers utilizing 16d nails are not compatible with I-joist headers.

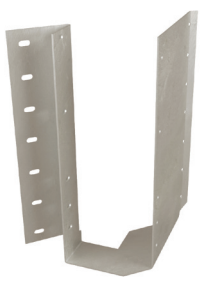
7) Bevel cut required on end of joist to achieve design loads.

8) Hangers are special order. Consult MiTek for pricing and lead times.

9) 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 USP Product Catalog.

10) D Dim is the length of the hanger seat.

11) Flanges on the bucket of the hanger may extend above the top of the joist.



SKH_L Double
Left shown

MSH

Integri-Lam™ LVL Beams & Headers

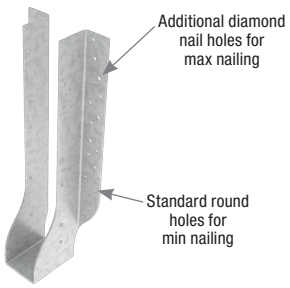
MiTek®

Joist Height	Top Mount Hangers[3]								Face Mount Hangers								
			Fastener Schedule[4]								Fastener Schedule[4]						
			Header		Joist							Header		Joist			
	USP Stock No.[6]	D Dim[8]	Qty	Type	Qty	Type	Uplift 160%[2]	Down 100%[1]	USP Stock No.	D Dim[8]	Min/ Max	Qty	Type	Qty	Type	Uplift 160%[2]	Down 100%[1]
1-3/4" Integri-Lam™ LVL									**Header Width = 1-3/4"**								
9-1/4	BPH17925	2-3/8	10	16d	4	10d x 1-1/2	850	2970	HD17925	2-1/2	Min	18	16d	6	10d x 1-1/2	1170	2770
											Max	24	16d	10	10d x 1-1/2	1900	3695
	PHXU17925	3-1/4	8	16d	6	10d x 1-1/2	930	4350	HUS179[5]	3	--	30	16d	10	16d	4110	5580
9-1/2	THO17950	2	6	10d	2	10d x 1-1/2	230	1235	HD17925	2-1/2	Min	18	16d	6	10d x 1-1/2	1170	2770
											Max	24	16d	10	10d x 1-1/2	1900	3695
	PHXU1795	3-1/4	8	16d	6	10d x 1-1/2	930	4350	HUS179[5]	3	--	30	16d	10	16d	4110	5580
11-1/4	BPH17112	2-3/8	10	16d	4	10d x 1-1/2	850	2970	HD17112	2-1/2	Min	22	16d	6	10d x 1-1/2	1170	3390
											Max	30	16d	12	10d x 1-1/2	1900	4320
	PHXU17112	3-1/4	8	16d	6	10d x 1-1/2	930	4350	HUS179[5]	3	--	30	16d	10	16d	4110	5580
11-7/8	THO17118	2	6	10d	2	10d x 1-1/2	230	1235	HD17112	2-1/2	Min	22	16d	6	10d x 1-1/2	1170	3390
											Max	30	16d	12	10d x 1-1/2	1900	4320
	PHXU17118	3-1/4	8	16d	6	10d x 1-1/2	930	4350	HUS179[5]	3	--	30	16d	10	16d	4110	5580
14	BPH1714	2-3/8	10	16d	4	10d x 1-1/2	850	2970	HD1714	2-1/2	Min	28	16d	8	10d x 1-1/2	1550	3790
											Max	36	16d	14	10d x 1-1/2	1900	4580
	PHXU1714	3-1/4	8	16d	6	10d x 1-1/2	930	4350	HUS179[5]	3	--	30	16d	10	16d	4110	5580
16	BPH1716	2-3/8	10	16d	4	10d x 1-1/2	850	2970	HD1714	2-1/2	Min	28	16d	8	10d x 1-1/2	1550	3790
											Max	36	16d	14	10d x 1-1/2	1900	4580
18	--	--	--	--	--	--	--	--	HD1714	2-1/2	Min	28	16d	8	10d x 1-1/2	1550	3790
											Max	36	16d	14	10d x 1-1/2	1900	4580
2 Ply 1-3/4" Integri-Lam™ LVL									**Header Width = 3-1/2"**								
9-1/4	HBPH35925	3-1/2	22	16d	10	16d	2705	6310	THD410	3	--	38	16d	20	10d	3905	5850
	HLBH35925	6	15	NA16D-RS	6	16d	1420	10045	THDH410[5]	4	--	46	16d	12	16d	4445	9020
9-1/2	HBPH3595	3-1/2	22	16d	10	16d	2705	6310	THD410	3	--	38	16d	20	10d	3905	5850
	HLBH3595	6	15	NA16D-RS	6	16d	1420	10045	THDH410[5]	4	--	46	16d	12	16d	4445	9020
11-1/4	HBPH35112	3-1/2	22	16d	10	16d	2705	6310	THD410	3	--	38	16d	20	10d	3905	5850
	HLBH35112	6	15	NA16D-RS	6	16d	1420	10045	THDH412[5]	4	--	56	16d	14	16d	5260	9710
11-7/8	HBPH35118	3-1/2	22	16d	10	16d	2705	6310	THD410	3	--	38	16d	20	10d	3905	5850
	HLBH35118	6	15	NA16D-RS	6	16d	1420	10045	THDH412[5]	4	--	56	16d	14	16d	5260	9710
14	HBPH3514	3-1/2	22	16d	10	16d	2705	6310	THD410	3	--	38	16d	20	10d	3905	5850
	HLBH3514	6	15	NA16D-RS	6	16d	1420	10045	THDH414[5]	4	--	66	16d	16	16d	5655	11760
16	HBPH3516	3-1/2	22	16d	10	16d	2705	6310	THD412	3	--	48	16d	20	10d	3905	7045
	HLBH3516	6	15	NA16D-RS	6	16d	1420	10045	THDH414[5]	4	--	66	16d	16	16d	5655	11760
18	HBPH3518	3-1/2	22	16d	10	16d	2705	6310	THD412	3	--	48	16d	20	10d	3905	7045
	HLBH3518	6	15	NA16D-RS	6	16d	1420	10045	THDH414[5]	4	--	66	16d	16	16d	5655	11760

1) Loads listed are based on hanger attachment to a Integri-Lam™ 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. by 1-1/2" long, 10d nails are 0.148" dia. by 3" long, and 16d nails are 0.162" dia. by 3-1/2" long.
16d sinkers (0.148" dia.) by 3-1/4" long may be substituted for 10d common nails with no load reduction.
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 USP 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

HBPH



HD

HUS

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

Integri-Lam™ LVL Beams & Headers

MiTek®

Joist Height	Top Mount Hangers[3]								Face Mount Hangers								
	USP Stock No.	D Dim[7]	Fastener Schedule[4]				Uplift 160%[2]	Down 100%[1]	USP Stock No.	D Dim[7]	Min/ Max	Fastener Schedule[4]				Uplift 160%[2]	Down 100%[1]
			Header		Joist							Header		Joist			
			Qty	Type	Qty	Type						Qty	Type	Qty	Type		
3 Ply 1-3/4˝ Integri-Lam™ LVL								**Header Width = 5-1/4"**									
9-1/4	HBPH55925	3-1/2	22	16d	10	16d	2705	6235	THD610	3	--	38	16d	20	10d	4010	6535
	HLBH55925	6	15	NA16D-RS	6	16d	1580	10045	THDH610[5]	4	--	46	16d	16	16d	5260	9020
9-1/2	HBPH5595	3-1/2	22	16d	10	16d	2705	6235	THD610	3	--	38	16d	20	10d	4010	6535
	HLBH5595	6	15	NA16D-RS	6	16d	1580	10045	THDH610[5]	4	--	46	16d	16	16d	5260	9020
11-1/4	HBPH55112	3-1/2	22	16d	10	16d	2705	6235	THD610	3	--	38	16d	20	10d	4010	6535
	HLBH55112	6	15	NA16D-RS	6	16d	1580	10045	THDH612[5]	4	--	56	16d	20	16d	5260	9740
11-7/8	HBPH55118	3-1/2	22	16d	10	16d	2705	6235	THD610	3	--	38	16d	20	10d	4010	6535
	HLBH55118	6	15	NA16D-RS	6	16d	1580	10045	THDH612[5]	4	--	56	16d	20	16d	5260	9740
14	HBPH5514	3-1/2	22	16d	10	16d	2705	6235	THD610	3	--	38	16d	20	10d	4010	6535
	HLBH5514	6	15	NA16D-RS	6	16d	1580	10045	THDH614[5]	4	--	66	16d	22	16d	5655	11760
16	HBPH5516	3-1/2	22	16d	10	16d	2705	6235	THD612	3	--	48	16d	20	10d	4010	8255
	HLBH5516	6	15	NA16D-RS	6	16d	1580	10045	THDH614[5]	4	--	66	16d	22	16d	5655	11760
18	HBPH5518	3-1/2	22	16d	10	16d	2705	6235	THD612	3	--	48	16d	20	10d	4010	8255
	HLBH5518	6	15	NA16D-RS	6	16d	1580	10045	THDH614[5]	4	--	66	16d	22	16d	5655	11760
4 Ply 1-3/4˝ Integri-Lam™ LVL								**Header Width = 7"**									
9-1/4	HBPH71925	3-1/2	22	16d	10	16d	2705	6235	THD7210	3	--	38	16d	20	10d	4010	6535
	HLBH71925	6	15	NA16D-RS	6	16d	1580	10045	THDH7210[5]	4	--	46	16d	12	16d	4445	9020
9-1/2	HBPH7195	3-1/2	22	16d	10	16d	2705	6235	THD7210	3	--	38	16d	20	10d	4010	6535
	HLBH7195	6	15	NA16D-RS	6	16d	1580	10045	THDH7210[5]	4	--	46	16d	12	16d	4445	9020
11-1/4	HBPH71112	3-1/2	22	16d	10	16d	2705	6235	THD7210	3	--	38	16d	20	10d	4010	6535
	HLBH71112	6	15	NA16D-RS	6	16d	1580	10045	THDH7212[5]	4	--	56	16d	14	16d	5260	9020
11-7/8	HBPH71118	3-1/2	22	16d	10	16d	2705	6235	THD7210	3	--	38	16d	20	10d	4010	6535
	HLBH71118	6	15	NA16D-RS	6	16d	1580	10045	THDH7212[5]	4	--	56	16d	14	16d	5260	9020
14	HBPH7114	3-1/2	22	16d	10	16d	2705	6235	THD7210	3	--	38	16d	20	10d	4010	6535
	HLBH7114	6	15	NA16D-RS	6	16d	1580	10045	THDH7214[5]	4	--	66	16d	16	16d	5655	11760
16	HBPH7116	3-1/2	22	16d	10	16d	2705	6235	HD7120	2-1/2	Min	16	16d	6	16d	1305	2465
											Max	22	16d	8	16d	1845	3390
	HLBH7116	6	15	NA16D-RS	6	16d	1580	10045	THDH7214[5]	4	--	66	16d	16	16d	5655	11760
18	HBPH7118	3-1/2	22	16d	10	16d	2705	6235	HD7140	2-1/2	Min	20	16d	8	16d	1845	3080
											Max	26	16d	12	16d	2765	4005
	HLBH7118	6	15	NA16D-RS	6	16d	1580	10045	THDH7214[5]	4	--	66	16d	16	16d	5655	11760

1) Loads listed are based on hanger attachment to a Integri-Lam™ LVL header. Some loads may be increased for duration of load adjustments. Refer to MiTek's USP 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 nails are 0.148" dia. by 3" long, and 16d nails are 0.162" dia. by 3-1/2" long.
16d sinkers (0.148" dia.) by 3-1/4" long may be substituted for 10d common nails with no load reduction.
5) Joist nails need to be toe nailed at a 30° to 45° angle to achieve listed loads for THDH models.
6) Supplemental lateral support connection recommended when hanger height is less than 60% of joist height.
7) D Dim is the length of the hanger seat.

PHXU

HLBH

THD

THDH

Slope/Skew Hangers

MiTek®

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:

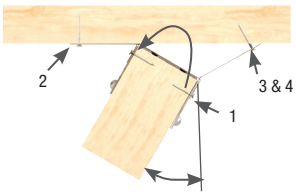
- Use all specified fasteners. (See LSSH Figure 1)

Steps:

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" nails. Bend seat up to fit against joist bottom and drive (1) 10d (0.148") x 1-1/2" nail through bottom seat into joist bottom flange. Drive (2) 10d (0.148") x 1-1/2" nail 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") or 16d (0.162" x 3-1/2") 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") or 16d (0.162" x 3-1/2") nails through nail holes.

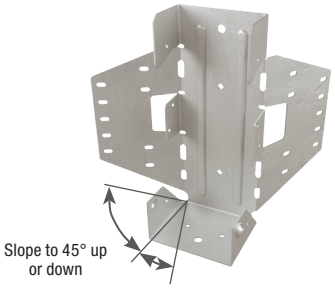
- Web stiffeners are required for all wood I-Joist installations.
- Designer may consider adding a tension restraint for the supported member for roof slopes exceeding 6/12.

Typical LSSH installation



Skew to 45° maximum

LSSH Figure 1



LSSH

Joist Height	USP Stock No.[1,6]	Installation Type	Fastener Schedule[4] Header Qty	Header Type	Joist Qty	Joist Type	DF Uplift[3] 160%	DF Down[2] 100%
IJ-20 & IJ-50		**Joist Width = 1-3/4"**						
9-1/2 – 14	LSSH179	Sloped Only	10	10d	7	10d x 1-1/2	880	1200
		Skewed Only or Sloped & Skewed	10	10d	7	10d x 1-1/2	880	1200
IJ-45		**Joist Width = 2-1/16"**						
9-1/2 – 16	LSSH20	Sloped Only	10	10d	7	10d x 1-1/2	795	1200
		Skewed Only or Sloped & Skewed	10	10d	7	10d x 1-1/2	795	1200
IJ-40, IJ-47, IJ-60, IJ-70 & IJ-77		**Joist Width = 2-5/16"**						
11-7/8 – 24	LSSH23	Sloped Only	10	10d	7	10d x 1-1/2	795	1200
		Skewed Only or Sloped & Skewed	10	10d	7	10d x 1-1/2	795	1200
IJ-77w		**Joist Width = 2-1/2"**						
9-1/2 – 16	LSSH25	Sloped Only	18	16d	12	10d x 1-1/2	945	2095
		Skewed Only or Sloped & Skewed	14	16d	12	10d x 1-1/2	945	1610
IJ-80M & IJ-90		**Joist Width = 3-1/2"**						
9-1/2 – 24	LSSH35	Sloped Only	18	16d	12	10d x 1-1/2	1310	2645
		Skewed Only or Sloped & Skewed	14	16d	12	10d x 1-1/2	1310	1610

1) Shaded hangers require bearing/web stiffeners at joist ends.
2) Loads listed are based on hanger attachment to a DF-L or SP species solid sawn or Integri-Lam™ 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" 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) Hangers utilizing 16d nails are not compatible with I-joist headers.
6) Supplemental lateral support connection recommended when hanger height is less than 60% of joist height.

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

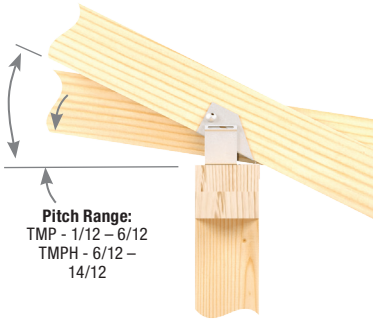
Variable Pitch Connectors

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. The TMP automatically adjusts to pitches from 1/12 to 6/12 and the TMPH from 6/12 to 14/12.

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** require 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.

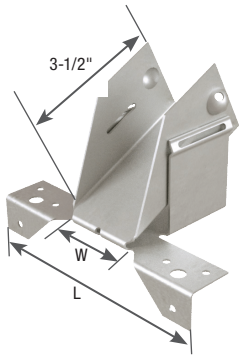


Typical TMP installation

TMP chart

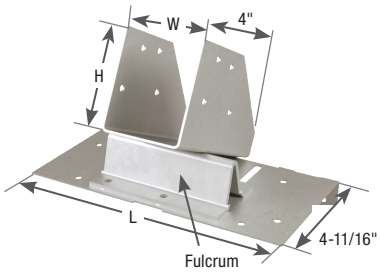
Joist Height	USP Stock No.	Fastener Schedule[4]				DF	
		Plate		Rafter		Uplift[3] 160%	Down[2] 100%
		Qty	Type	Qty	Type		
IJ-20 & IJ-50	**Joist Width = 1-3/4"**						
All	TMP175	6	10d	4	10d x 1-1/2	250	1705
IJ-45	**Joist Width = 2-1/16"**						
All	TMP21	6	10d	4	10d x 1-1/2	250	1705
IJ-40, IJ-47, IJ-60, IJ-70 & IJ-77	**Joist Width = 2-5/16"**						
All	TMP23	6	10d	4	10d x 1-1/2	250	1705
IJ-77w	**Joist Width = 2-1/2"**						
All	TMP25	6	10d	4	10d x 1-1/2	250	1705
IJ-80M & IJ-90	**Joist Width = 3-1/2"**						
All	TMP4	6	10d	4	10d x 1-1/2	250	1705

1) Bearing/web stiffeners may be required for hangers by Integrity Premium Structural Engineered Wood Products.
2) Loads listed are based on hanger attachment to a DF-L or SP species solid sawn or Integri-Lam™ 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" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long.



TMP

Typical TMPH installation



TMPH

TMPH chart

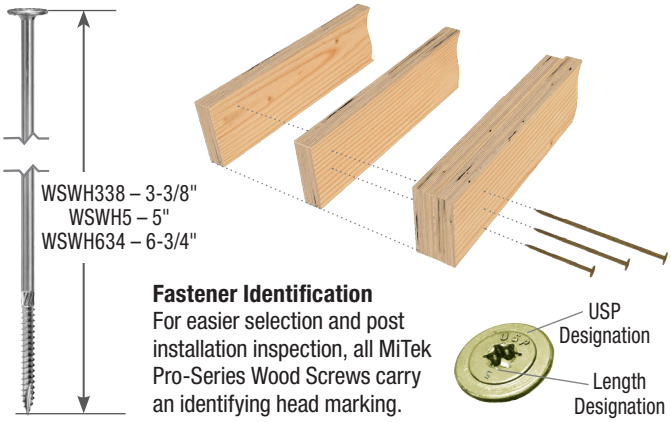
Joist Height	USP Stock No.[1]	Fastener Schedule[4]					DF									
		Plate			Rafter		According to Pitch[2]									Uplift[3] 160%
		Top Qty	Side Qty	Type	Qty	Type	6/12	7/12	8/12	9/12	10/12	11/12	12/12	13/12	14/12	
IJ-20 & IJ-50	**Joist Width = 1-3/4"**															
All	TMPH175	8	2	10d	8	10d x 1-1/2	3190	3290	3390	3140	2900	2710	2520	2230	1950	260
IJ-45	**Joist Width = 2-1/16"**															
All	TMPH21	8	2	10d	8	10d x 1-1/2	3190	3290	3390	3140	2900	2710	2520	2230	1950	260
IJ-40, IJ-47, IJ-60, IJ-70 & IJ-77	**Joist Width = 2-5/16"**															
All	TMPH23	8	2	10d	8	10d x 1-1/2	3190	3290	3390	3140	2900	2710	2520	2230	1950	260
IJ-77w	**Joist Width = 2-1/2"**															
All	TMPH25	8	2	10d	8	10d x 1-1/2	3190	3290	3390	3140	2900	2710	2520	2230	1950	260
IJ-80M & IJ-90	**Joist Width = 3-1/2"**															
All	TMPH4	8	2	10d	8	10d x 1-1/2	3190	3290	3390	3140	2900	2710	2520	2230	1950	260

1) Bearing/web stiffeners are required for all Wood I-Joist installations.
2) Loads listed are based on hanger attachment to a DF-L or SP species solid sawn or Integri-Lam™ 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" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long.

WSWH Series Washer Head Screw Applications - Joining 2, 3, or 4 Ply Integri-Lam™ LVL Members

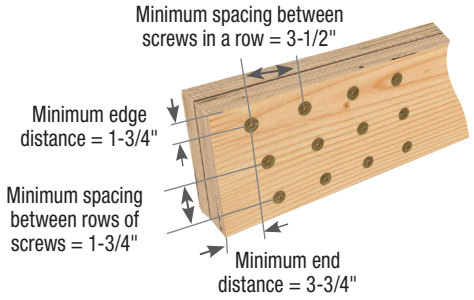
Installation:

- 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.



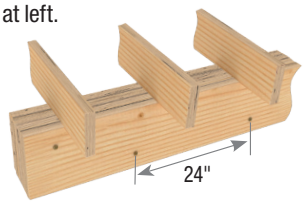
Fastener Identification
For easier selection and post installation inspection, all MiTek Pro-Series Wood Screws carry an identifying head marking.

Minimum Spacing Requirements:

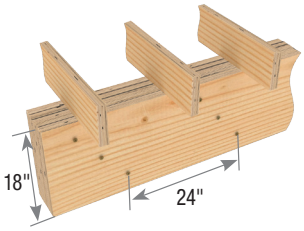


Top Loaded Beams

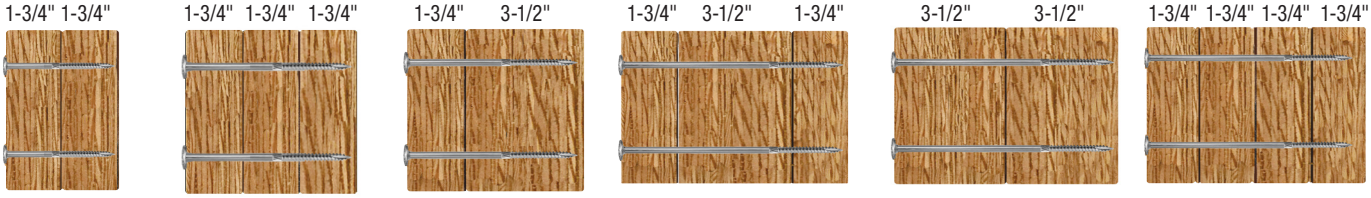
Where floor joists rest on all plies of the beam, WSWH screws should be installed in two staggered rows at 24" O.C. spacing. Maintain the minimum end and edge distance as indicated at left.



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.

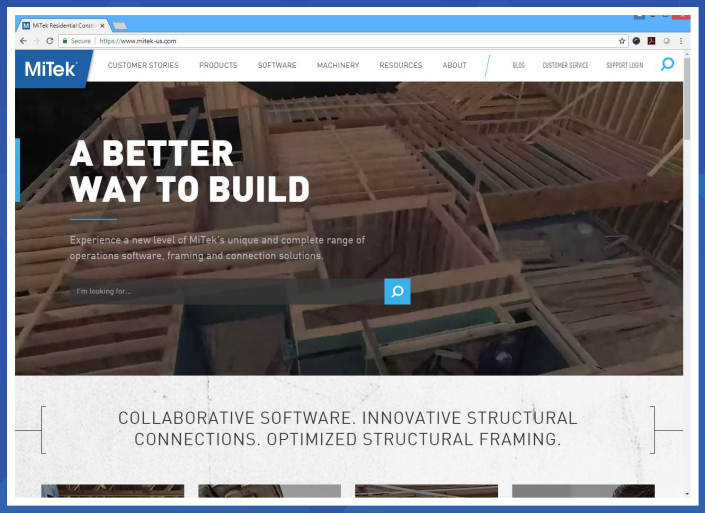
Length (in)	MiTek USP Stock No.	No. of Rows	Spacing Between Screws in a Row (in)	Allowable Side Loads by Assembly Type (lbs/lineal ft) (See Graphics) [1,2,3,4]					
				A	B	C	D	E	F
3-3/8	WSWH338	2	24	640	--	--	--	--	--
			19.2	800					
			16	955					
		3	24	955	--	--	--	--	--
			19.2	1195					
			16	1435					
5	WSWH5	2	24	--	535	535	--	--	--
			19.2		670	670			
			16		805	805			
		3	24	--	805	805	--	--	--
			19.2		1005	1005			
			16		1210	1210			
6-3/4	WSWH634	2	24	--	--	--	475	715	475
			19.2				595	895	595
			16				715	1075	715
		3	24	--	--	--	715	1075	715
			19.2				895	1345	895
			16				1075	1610	1075

1) Allowable loads are derived from tested fastener values as reported in ICC-ES ESR #2761. (Visit icc-es.org)
2) The uniform loads in this table relate only to the capacity of the fastener to transfer shear loads between plies. The capacity of the EWP beam may be less and should be checked against the 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 National Design Specification for Wood (NDS) based on conditions for each assembly.
4) Load values depicted assume all uniform load is applied to the outermost ply or point of entry for the screw.
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.

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

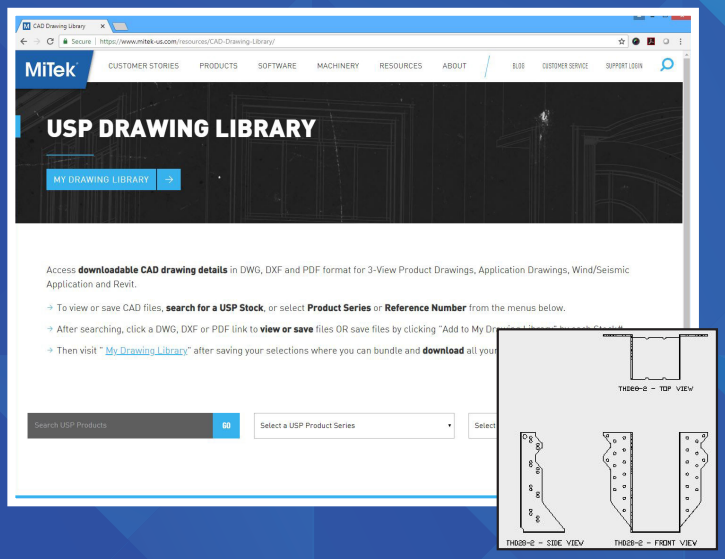
SPECIFICATION TOOLS

Available at MiTek-US.com



Comprehensive Web Site

- Contains all MiTek literature in a printable .pdf format
- Drawing Library downloads



Drawing Library

- Drawing Library contains over 350 illustrations in .DXF and .DWG formats
- Find drawings quickly by MiTek USP Stock No. or Reference No.
- High Wind/Seismic Applications are also available

MiTek®

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