MiTek®

EWP PRODUCT GUIDE

For Use With Products Manufactured by

LP® BUILDING SOLUTIONS

MITEK-US.COM

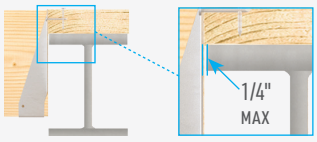
800-328-5934

GENERAL NOTES

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 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.
- 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. Hangers for joists with web stiffeners must support a minimum of 60% of joist depth or potential joist rotation must be addressed. For hangers less than 60% joist depth, install framing angles, one on each side, for lateral stability. 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 allowable 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".

NAILER INSTALLATIONS



Correct Attachment

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

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 structure 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.

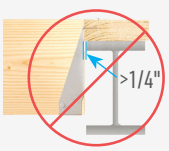
Wrong Nailer Size Causes Component Failure

⚠ 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 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.



⚠ TOO WIDE

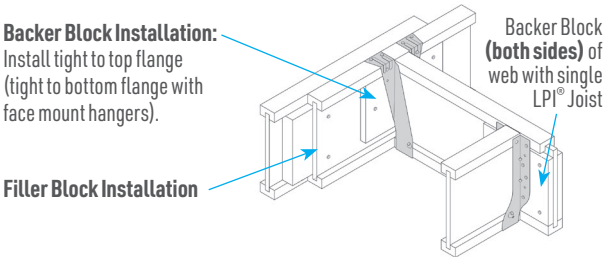
Loading can cause cross grain breaking of nailer. The recommended nailer overhang is 1/4" maximum per side.

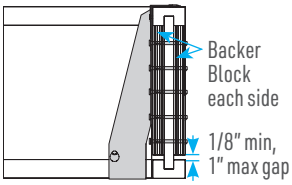
GENERAL NOTES

BACKER BLOCKS

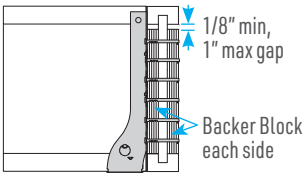
Pattern the nails used to install backer blocks or web stiffeners in wood LPI Joists to avoid splitting the block. The nail pattern should be sufficiently spaced to avoid the same grain line, particularly with solid sawn backer blocks. Backer blocks must be installed on wood LPI Joists acting as the header, or supporting member. Install in accordance with the LP Building Solutions installation guidelines. The nails used to install hangers mounted to LPI 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 Top Mount Hanger backer block installation



Typical Face Mount Hanger backer block installation

Web Stiffeners are optional except as noted below:

- Web stiffeners are always required in hangers that do not extend up to support the top flange of the LPI® Joist.
- Web stiffeners may be required with certain sloped or skewed hangers or to achieve uplift values. Refer to the hanger manufacturer's installation requirements.

Filler and Backer Block sizes

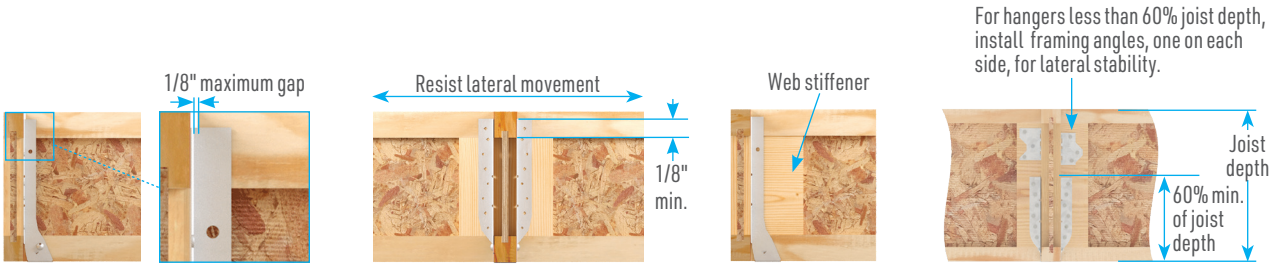
LPI Series	Joist Width	Joist Height	Filler Block Thickness	Backer Block Thickness
LPI 450	1-3/4	11-7/8	1-1/2"	23/32"
		14		
LPI 530	2-1/16	9-1/2	1-3/4"	7/8"
		11-7/8		
		14		
		16		
LPI 36	2-1/4	11-7/8	1-7/8"	7/8"
		14		
		16		
		18		
LPI 18	2-1/2	9-1/2	2-1/8"	1"
		11-7/8		
LPI 20Plus, LPI 32Plus	2-1/2	9-1/2		
		11-7/8		
		14		
		16		
LPI 42Plus	3-1/2	9-1/2	3"	1-1/2"
		11-7/8		
		14		
		16		
		18		
		20		
		24		
LPI 52Plus	3-1/2	11-7/8	3"	1-1/2"
		14		
		16		
LPI 56	3-1/2	11-7/8	3"	1-1/2"
		14		
		16		
		18		
		24		

1) Backer blocks and filler blocks shall consist of APA rated wood structural panel (OSB or plywood), or 2x lumber (SPF or better).
2) LP LVL, LSL, or OSB Rim Board may also be used.

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)

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 that 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 that 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 I-JOISTS

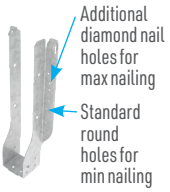
Joist Height	Top Mount Hangers[4,6] MiTek Stock No.[1]	Fastener Schedule[5] Header Qty	Header Type	Joist Qty	Joist Type	Uplift[3] 160%	Down[2] 100%	Face Mount Hangers MiTek Stock No.[1]	Min / Max	Fastener Schedule[5] Header Qty	Header Type	Joist Qty	Joist Type	Uplift[3] 160%	Down[2] 100%
LPI 450	**Joist Width = 1-3/4"**														
11-7/8	THO17118	6	10d	2	10d x 1-1/2	230	1235	IHFL17112	--	10	10d	--	--	50	1200
14	TFL1714	6	10d	2	10d x 1-1/2	130	1585	IHFL1714	Min	12	10d	--	--	50	1440
									Max	14	10d				1680
LPI 530	**Joist Width = 2-1/16"**														
9-1/2	TFL2095	6	10d	2	10d x 1-1/2	130	1585	IHFL20925	--	8	10d	--	--	50	960
11-7/8	TFL20118	6	10d	2	10d x 1-1/2	130	1585	IHFL20112	--	10	10d	--	--	50	1200
14	TFL2014	6	10d	2	10d x 1-1/2	130	1585	IHFL2014	Min	12	10d	--	--	50	1440
									Max	14	10d				1680
16	TFL2016	6	10d	2	10d x 1-1/2	130	1585	IHFL2016	Min	14	10d	--	--	50	1680
									Max	16	10d				1920
LPI 36	**Joist Width = 2-1/4"**														
11-7/8	TFL23118	6	10d	2	10d x 1-1/2	130	1585	IHFL23112	--	10	10d	--	--	50	1200
14	TFL2314	6	10d	2	10d x 1-1/2	130	1585	IHFL2314	Min	12	10d	--	--	50	1440
									Max	14	10d				1680
16	TFL2316	6	10d	2	10d x 1-1/2	130	1585	IHFL2316	Min	14	10d	--	--	50	1680
									Max	16	10d				1920
18	TFI3518	6	16d	2	10d x 1-1/2	215	2715	IHFL2316	Min	14	10d	--	--	50	1680
									Max	16	10d				1920
LPI 18	**Joist Width = 2-1/2"**														
9-1/2	TFL2595	6	10d	2	10d x 1-1/2	130	1585	THFI2595	--	8	10d	--	--	125	960
11-7/8	TFL25118	6	10d	2	10d x 1-1/2	130	1585	THFI25118	--	10	10d	--	--	125	1200
LPI 20Plus, 32Plus	**Joist Width = 2-1/2"**														
9-1/2	TFL2595	6	10d	2	10d x 1-1/2	130	1585	THFI2595	--	8	10d	--	--	125	960
11-7/8	TFL25118	6	10d	2	10d x 1-1/2	130	1585	THFI25118	--	10	10d	--	--	125	1200
14	TFL2514	6	10d	2	10d x 1-1/2	130	1585	THFI2514	Min	12	10d	--	--	125	1440
									Max	14	10d				1680
16	TFL2516	6	10d	2	10d x 1-1/2	130	1585	IHFL2516	Min	14	10d	--	--	50	1680
									Max	16	10d				1920
LPI 42Plus	**Joist Width = 3-1/2"**														
9-1/2	THO35950	10	10d	2	10d x 1-1/2	230	2370	IHFL35925	--	10	10d	--	--	50	1200
11-7/8	THO35118	10	10d	2	10d x 1-1/2	230	2525	IHFL35112	Min	10	10d	--	--	50	1200
									Max	12	10d				1440
14	THO35140	12	10d	2	10d x 1-1/2	230	2400	IHFL3514	Min	12	10d	--	--	50	1440
									Max	14	10d				1680
16	THO35160	12	10d	2	10d x 1-1/2	230	2400	IHFL3516	Min	14	10d	--	--	50	1680
									Max	16	10d				1920
18	TFI418	6	16d	2	10d x 1-1/2	215	2715	IHF3518	Min	14	10d	2	10d x 1-1/2	330	1750
									Max	30	16d				4410
20	TFI420	6	16d	2	10d x 1-1/2	215	2715	IHF3518	Min	14	10d	2	10d x 1-1/2	330	1750
									Max	30	16d				4410
24	TFI424	10	16d	2	10d x 1-1/2	215	2820	IHF3518	Min	14	10d	2	10d x 1-1/2	330	1750
									Max	30	16d				4410
LPI 52Plus	**Joist Width = 3-1/2"**														
11-7/8	THO35118	10	10d	2	10d x 1-1/2	230	2525	IHFL35112	Min	10	10d	--	--	50	1200
									Max	12	10d				1440
14	THO35140	12	10d	2	10d x 1-1/2	230	2400	IHFL3514	Min	12	10d	--	--	50	1440
									Max	14	10d				1680
16	THO35160	12	10d	2	10d x 1-1/2	230	2400	IHFL3516	Min	14	10d	--	--	50	1680
									Max	16	10d				1920
LPI 56	**Joist Width = 3-1/2"**														
11-7/8	THO35118	10	10d	2	10d x 1-1/2	230	2525	IHFL35112	Min	10	10d	--	--	50	1200
									Max	12	10d				1440
14	THO35140	12	10d	2	10d x 1-1/2	230	2400	IHFL3514	Min	12	10d	--	--	50	1440
									Max	14	10d				1680
16	THO35160	12	10d	2	10d x 1-1/2	230	2400	IHFL3516	Min	14	10d	--	--	50	1680
									Max	16	10d				1920
18	TFI418	6	16d	2	10d x 1-1/2	215	2715	IHFL3516	Min	14	10d	--	--	50	1680
									Max	16	10d				1920
24	TFI424	10	16d	2	10d x 1-1/2	215	2820	IHFL3516	Min	14	10d	--	--	50	1680
									Max	16	10d				1920

THO

TFL

TFI

THFI



IHFL

Footnotes on page 9

SINGLE I–JOISTS

Joist Height	Adjustable Height Hangers: MiTek Stock No.[1,8]	Fastener Schedule[4] Header Qty	Header Type	Joist Qty	Joist Type	Down[2] 100%	Skewed 45° Hangers: MiTek Stock No.[1,6,7]	Min / Max	Fastener Schedule[4] Header Qty	Header Type	Joist Qty	Joist Type	Uplift[3] 160%	Down[2] 100%
LPI 450							**Joist Width = 1-3/4"**							
11-7/8	MSH1722	6	10d	4	10d x 1-1/2	2390	SKH1720L/R	--	14	10d	10	10d x 1-1/2	1530	1650
14	MSH1722	6	10d	4	10d x 1-1/2	2390	SKH1724L/R	--	16	10d	10	10d x 1-1/2	1530	1890
LPI 530							**Joist Width = 2-1/16"**							
9-1/2	MSH2022 [9]	6	10d	4	10d	2390	SKH2020L/R	--	14	10d	10	10d x 1-1/2	1530	1650
11-7/8	MSH2022	6	10d	4	10d	2390	SKH2020L/R	--	14	10d	10	10d x 1-1/2	1530	1650
14	MSH2022	6	10d	4	10d	2390	SKH2024L/R	--	16	10d	10	10d x 1-1/2	1530	1890
16	MSH2022	6	10d	4	10d	2390	SKH2024L/R	--	16	10d	10	10d x 1-1/2	1530	1890
LPI 36							**Joist Width = 2-1/4"**							
11-7/8	MSH2322	6	10d	4	10d x 1-1/2	2395	SKH2320L/R	--	14	10d	10	10d x 1-1/2	1530	1650
14	MSH2322	6	10d	4	10d x 1-1/2	2395	SKH2324L/R	--	16	10d	10	10d x 1-1/2	1530	1890
16	MSH2322	6	10d	4	10d x 1-1/2	2395	SKH2324L/R	--	16	10d	10	10d x 1-1/2	1530	1890
18	MSH2322	6	10d	4	10d x 1-1/2	2395	SKH2324L/R	--	16	10d	10	10d x 1-1/2	1530	1890
LPI 18							**Joist Width = 2-1/2"**							
9-1/2	MSH322 [9]	6	10d	4	10d x 1-1/2	2395	SKH2520L/R	--	14	10d	10	10d x 1-1/2	1530	1650
11-7/8	MSH322	6	10d	4	10d x 1-1/2	2395	SKH2520L/R	--	14	10d	10	10d x 1-1/2	1530	1650
LPI 20Plus, 32Plus							**Joist Width = 2-1/2"**							
9-1/2	MSH322 [9]	6	10d	4	10d x 1-1/2	2395	SKH2520L/R	--	14	10d	10	10d x 1-1/2	1530	1650
11-7/8	MSH322	6	10d	4	10d x 1-1/2	2395	SKH2520L/R	--	14	10d	10	10d x 1-1/2	1530	1650
14	MSH322	6	10d	4	10d x 1-1/2	2395	SKH2524L/R	--	16	10d	10	10d x 1-1/2	1530	1890
16	MSH322	6	10d	4	10d x 1-1/2	2395	SKH2524L/R	--	16	10d	10	10d x 1-1/2	1530	1890
LPI 42Plus							**Joist Width = 3-1/2"**							
9-1/2	MSH422	6	10d	6	10d	2530	HD410_SK45L/R_BV [5,9]	Min	14	16d	6	10d	880	2155
								Max	20		10		1465	3080
11-7/8	MSH422	6	10d	6	10d	2530	HD410_SK45L/R_BV [5,9]	Min	14	16d	6	10d	880	2155
								Max	20		10		1465	3080
14	MSH422	6	10d	6	10d	2530	HD414_SK45L/R_BV [5,9]	Min	18	16d	8	10d	1135	2770
								Max	26		12		1755	4005
16	MSH422	6	10d	6	10d	2530	HD414_SK45L/R_BV [5,9]	Min	18	16d	8	10d	1135	2770
								Max	26		12		1755	4005
18	MSH422	6	10d	6	10d	2530	HD414_SK45L/R_BV [5,9]	Min	18	16d	8	10d	1135	2770
								Max	26		12		1755	4005
20	MSH422	6	10d	6	10d	2530	HD416_SK45L/R_BV [5,9]	Min	22	16d	10	10d	1465	3390
								Max	30		14		1685	4620
24	MSH422	6	10d	6	10d	2530	HD416_SK45L/R_BV [5,9]	Min	22	16d	10	10d	1465	3390
								Max	30		14		1685	4620
LPI 52Plus							**Joist Width = 3-1/2"**							
11-7/8	MSH422	6	10d	6	10d	2530	HD410_SK45L/R_BV [5,9]	Min	14	16d	6	10d	880	2155
								Max	20		10		1465	3080
14	MSH422	6	10d	6	10d	2530	HD414_SK45L/R_BV [5,9]	Min	18	16d	8	10d	1135	2770
								Max	26		12		1755	4005
16	MSH422	6	10d	6	10d	2530	HD414_SK45L/R_BV [5,9]	Min	18	16d	8	10d	1135	2770
								Max	26		12		1755	4005
LPI 56							**Joist Width = 3-1/2"**							
11-7/8	MSH422	6	10d	6	10d	2530	HD410_SK45L/R_BV [5,9]	Min	14	16d	6	10d	880	2155
								Max	20		10		1465	3080
14	MSH422	6	10d	6	10d	2530	HD414_SK45L/R_BV [5,9]	Min	18	16d	8	10d	1135	2770
								Max	26		12		1755	4005
16	MSH422	6	10d	6	10d	2530	HD414_SK45L/R_BV [5,9]	Min	18	16d	8	10d	1135	2770
								Max	26		12		1755	4005
18	MSH422	6	10d	6	10d	2530	HD414_SK45L/R_BV [5,9]	Min	18	16d	8	10d	1135	2770
								Max	26		12		1755	4005
24	MSH422	6	10d	6	10d	2530	HD416_SK45L/R_BV [5,9]	Min	22	16d	10	10d	1465	3390
								Max	30		14		1685	4620

MSH

SKH_L
left shown

Footnotes on page 9

DOUBLE I–JOISTS

Joist Height	Top Mount Hangers[4,7] MiTek Stock No.[1,6]	Fastener Schedule[5] Header Qty	Header Type	Joist Qty	Joist Type	Uplift[3] 160%	Down[2] 100%	Face Mount Hangers MiTek Stock No.[1,6]	Min/ Max	Fastener Schedule[5] Header Qty	Header Type	Joist Qty	Joist Type	Uplift[3] 160%	Down[2] 100%
Double LPI 450							**Joist Width = 3-1/2"**								
11-7/8	THO35118	10	10d	2	10d x 1-1/2	230	2525	IHF35112	Min	10	10d	2	10d x 1-1/2	330	1250
									Max	24	16d				3530
14	THO35140	12	10d	2	10d x 1-1/2	230	2400	IHF3514	Min	12	10d	2	10d x 1-1/2	330	1500
									Max	28	16d				4115
Double LPI 530							**Joist Width = 4-1/8"**								
9-1/2	THO20950-2	10	16d	6	10d	1135	2920	IHF20925-2	Min	10	10d	2	10d x 1-1/2	330	1250
									Max	24	16d				3530
11-7/8	THO20118-2	10	16d	6	10d	1135	2920	IHF20112-2	Min	10	10d	2	10d x 1-1/2	330	1250
									Max	24	16d				3530
14	THO20140-2	10	16d	6	10d	1145	3640	IHF2014-2	Min	12	10d	2	10d x 1-1/2	330	1500
									Max	28	16d				3960
16	THO20160-2	10	16d	6	10d	1145	3640	IHF2014-2	Min	12	10d	2	10d x 1-1/2	330	1500
									Max	28	16d				3960
Double LPI 36							**Joist Width = 4-1/2"**								
11-7/8	THO23118-2	10	16d	6	10d	1145	3640	THF23118-2	--	16	10d	6	10d	1135	1890
14	THO23140-2	12	16d	6	10d	1145	4420	THF23140-2	--	20	10d	6	10d	1275	2660
16	THO23160-2	12	16d	6	10d	1145	4420	THF23160-2	--	24	10d	6	10d	1275	3190
18	THO23180-2	14	16d	6	10d	1145	5000	THF23160-2	--	24	10d	6	10d	1275	3190
Double LPI 18							**Joist Width = 5"**								
9-1/2	THO25950-2	10	16d	6	10d	1145	3640	IHF25925-2	Min	10	10d	2	10d x 1-1/2	330	1250
									Max	24	16d				3530
11-7/8	THO25118-2	10	16d	6	10d	1145	3640	IHF25112-2	Min	10	10d	2	10d x 1-1/2	330	1250
									Max	24	16d				3530
Double LPI 20Plus, 32Plus							**Joist Width = 5"**								
9-1/2	THO25950-2	10	16d	6	10d	1145	3640	IHF25925-2	Min	10	10d	2	10d x 1-1/2	330	1250
									Max	24	16d				3530
11-7/8	THO25118-2	10	16d	6	10d	1145	3640	IHF25112-2	Min	10	10d	2	10d x 1-1/2	330	1250
									Max	24	16d				3530
14	THO25140-2	12	16d	6	10d	1145	4420	THF25140-2	--	20	10d	6	10d	1235	2660
16	THO25160-2	12	16d	6	10d	1145	4420	THF25160-2	--	24	10d	6	10d	1235	3190
Double LPI 42Plus							**Joist Width = 7"**								
9-1/2	BPH7195	10	16d	6	10d	1275	3100	HD7100	Min	14	16d	6	16d	1305	2155
									Max	18		8		1845	2770
11-7/8	BPH71118	10	16d	6	10d	1275	3075	HD7120	Min	16	16d	6	16d	1305	2465
									Max	22		8		1845	3390
14	BPH7114	10	16d	6	10d	1275	3075	HD7140	Min	20	16d	8	16d	1845	3080
									Max	26		12		2765	4005
16	BPH7116	10	16d	6	10d	1275	3075	HD7160	--	24	16d	8	10d	1560	3695
18	BPH7118	10	16d	6	10d	1275	3075	HD7160	--	24	16d	8	10d	1560	3695
20	BPH7120	10	16d	6	10d	1275	3075	HD7160	--	24	16d	8	10d	1560	3695
24	BPH7122	10	16d	6	10d	1275	3075	HD7180	--	28	16d	8	10d	1560	4310
Double LPI 52Plus							**Joist Width = 7"**								
11-7/8	BPH71118	10	16d	6	10d	1275	3075	HD7120	Min	16	16d	6	16d	1305	2465
									Max	22		8		1845	3390
14	BPH7114	10	16d	6	10d	1275	3075	HD7140	Min	20	16d	8	16d	1845	3080
									Max	26		12		2765	4005
16	BPH7116	10	16d	6	10d	1275	3075	HD7160	--	24	16d	8	10d	1560	3695
Double LPI 56							**Joist Width = 7"**								
11-7/8	BPH71118	10	16d	6	10d	1275	3075	HD7120	Min	16	16d	6	16d	1305	2465
									Max	22		8		1845	3390
14	BPH7114	10	16d	6	10d	1275	3075	HD7140	Min	20	16d	8	16d	1845	3080
									Max	26		12		2765	4005
16	BPH7116	10	16d	6	10d	1275	3075	HD7160	--	24	16d	8	10d	1560	3695
18	BPH7118	10	16d	6	10d	1275	3075	HD7160	--	24	16d	8	10d	1560	3695
24	BPH7124	10	16d	6	10d	1275	3075	HD7180	--	28	16d	8	10d	1560	4310

THO Double

BPH

THF Double

IHF

HD

Footnotes on page 9

DOUBLE I–JOISTS

Joist Height	Adjustable Height Hangers: MiTek Stock No.[1,5,6,9]	Fastener Schedule[4] Header Qty	Header Type	Joist Qty	Joist Type	Down[2] 100%	Skewed 45° Hangers: MiTek Stock No.[1,5,6]	Min/ Max	Fastener Schedule[4] Header Qty	Header Type	Joist Qty	Joist Type	Uplift[3] 160%	Down[2] 100%
Double LPI 450							**Joist Width = 3-1/2"**							
11-7/8	MSH422	6	10d	6	10d	2530	HD410_SK45L/R_BV [7,8]	Min	14	16d	6	10d	880	2155
								Max	20		10		1465	3080
14	MSH422	6	10d	6	10d	2530	HD414_SK45L/R_BV [7,8]	Min	18	16d	8	10d	1135	2770
								Max	26		12		1755	4005
Double LPI 530							**Joist Width = 4-1/8"**							
9-1/2	See current MiTek Product Catalog for specialty hanger options						SKH2020L/R-2 [7]	--	14	10d	10	10d	1645	1710
11-7/8							SKH2020L/R-2 [7]	--	14	10d	10	10d	1645	1710
14							SKH2024L/R-2 [7]	--	16	10d	10	10d	1680	1950
16							SKH2024L/R-2 [7]	--	16	10d	10	10d	1680	1950
Double LPI 36							**Joist Width = 4-1/2"**							
11-7/8	MSH2322-2	6	10d	4	10d	2530	SKH2320L/R-2 [7]	--	14	10d	10	10d	1645	1710
14	MSH2322-2	6	10d	4	10d	2530	SKH2324L/R-2 [7]	--	16	10d	10	10d	1645	1710
16	MSH2322-2	6	10d	4	10d	2530	SKH2324L/R-2 [7]	--	16	10d	10	10d	1680	1950
18	MSH2322-2	6	10d	4	10d	2530	SKH2324L/R-2 [7]	--	16	10d	10	10d	1680	1950
Double LPI 18							**Joist Width = 5"**							
9-1/2	MSH2622-2	6	10d	4	10d	2530	SKH2520L/R-2 [7]	--	14	10d	10	10d	1645	1710
11-7/8	MSH2622-2	6	10d	4	10d	2530	SKH2524L/R-2 [7]	--	16	10d	10	10d	1645	1710
Double LPI 20Plus, 32Plus							**Joist Width = 5"**							
9-1/2	MSH2622-2	6	10d	4	10d	2530	SKH2520L/R-2 [7]	--	14	10d	10	10d	1645	1710
11-7/8	MSH2622-2	6	10d	4	10d	2530	SKH2524L/R-2 [7]	--	16	10d	10	10d	1645	1710
14	MSH2622-2	6	10d	4	10d	2530	SKH2524L/R-2 [7]	--	16	10d	10	10d	1680	1950
16	MSH2622-2	6	10d	4	10d	2530	SKH2524L/R-2 [7]	--	16	10d	10	10d	1680	1950
Double LPI 42Plus							**Joist Width = 7"**							
9-1/2	MSH422-2 [10]	8	16d	6	16d	3740	HD7100_SK45L/R_BV [7,	Min	14	16d	6	16d	980	2155
								Max	18		8		1385	2770
11-7/8	MSH422-2	8	16d	6	16d	3740	HD7120_SK45L/R_BV [7,	Min	16	16d	6	16d	980	2465
								Max	22		8		1385	3390
14	MSH422-2	8	16d	6	16d	3740	HD7140_SK45L/R_BV [7,	Min	20	16d	8	16d	1385	3080
								Max	26		12		2075	4005
16	MSH422-2	8	16d	6	16d	3740	HD7160_SK45L/R_BV [7,	--	24	16d	8	10d	1170	3695
18	MSH422-2	8	16d	6	16d	3740	HD7160_SK45L/R_BV [7,	--	24	16d	8	10d	1170	3695
20	MSH422-2	8	16d	6	16d	3740	HD7160_SK45L/R_BV [7,	--	24	16d	8	10d	1170	3695
24	MSH422-2	8	16d	6	16d	3740	HD7180_SK45L/R_BV [7,	--	28	16d	8	10d	1170	4310
Double LPI 52Plus							**Joist Width = 7"**							
11-7/8	MSH422-2	8	16d	6	16d	3740	HD7120_SK45L/R_BV [7,	Min	16	16d	6	16d	980	2465
								Max	22		8		1385	3390
14	MSH422-2	8	16d	6	16d	3740	HD7140_SK45L/R_BV [7,	Min	20	16d	8	16d	1385	3080
								Max	26		12		2075	4005
16	MSH422-2	8	16d	6	16d	3740	HD7160_SK45L/R_BV [7,	--	24	16d	8	10d	1170	3695
Double LPI 56							**Joist Width = 7"**							
11-7/8	MSH422-2	8	16d	6	16d	3740	HD7120_SK45L/R_BV [7,	Min	16	16d	6	16d	980	2465
								Max	22		8		1385	3390
14	MSH422-2	8	16d	6	16d	3740	HD7140_SK45L/R_BV [7,	Min	20	16d	8	16d	1385	3080
								Max	26		12		2075	4005
16	MSH422-2	8	16d	6	16d	3740	HD7160_SK45L/R_BV [7,	--	24	16d	8	10d	1170	3695
18	MSH426-2	8	16d	6	16d	3740	HD7180_SK45L/R_BV [7,	--	28	16d	8	10d	1170	3695
24	MSH426-2	8	16d	6	16d	3740	HD7180_SK45L/R_BV [7,	--	28	16d	8	10d	1170	4310

SKH_L Double - Left shown

MSH

Footnotes on page 9

SINGLE I–JOISTS FOOTNOTES

PAGE 5

1) Shaded hangers require bearing/web stiffeners at joist ends. Bearing/web stiffeners may be required for non-shaded hangers by LP Building Solutions.
2) Loads listed are based on hanger attachment to a DF-L or SP species solid sawn or glulam beam, LPI joists, or LP® LSL or LVL header. Some loads may be increased for duration of load adjustments. Refer to MiTek's 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. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, 16d sinkers are 0.148" dia. x 3-1/4" long and may be substituted for 10d common nails with no load reduction.
6) For top mount hangers supported by LPI headers with a flange thickness less than 1-1/2", the reduction factor for a 1-1/4" flange is 0.69 and 0.84 for a 1-3/8" flange.

PAGE 6

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, LPI joists, or LP® LSL or LVL header. Some loads may be increased for duration of load adjustments. Refer to MiTek's Product Catalog for details.
3) Uplift loads have been increased 60% for wind and seismic loading; no further increase shall be permitted.
4) 10d x 1-1/2 nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, and 16d nails are 0.162" dia. x 3-1/2" long.
5) Bevel cut required on end of joist to achieve design loads.
6) For additional sizes, stock numbers, and modifications not shown, refer to MiTek's Product Catalog.
7) Hangers utilizing 16d nails are not compatible with I-joist headers.
8) 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.
9) Joists may extend above the MSH bucket side flanges. The installation of web stiffeners may be required per LP's instructions.

DOUBLE I–JOISTS FOOTNOTES

PAGE 7

1) Shaded hangers require bearing/web stiffeners at joist ends. Bearing/web stiffeners may be required for non-shaded hangers by LP Building Solutions.
2) Loads listed are based on hanger attachment to a DF-L or SP species solid sawn or glulam beam, LPI joists, or LP® LSL or LVL header. Some loads may be increased for duration of load adjustments. Refer to MiTek's 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. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, 16d sinkers are 0.148" dia. x 3-1/4" long and 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 LPI headers with a flange thickness less than 1-1/2", the reduction factor for a 1-1/4" flange is 0.69 and 0.84 for a 1-3/8" flange.

PAGE 8

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, LPI joists, or LP® LSL or LVL header. Some loads may be increased for duration of load adjustments. Refer to MiTek's Product Catalog for details.
3) Uplift loads have been increased 60% for wind and seismic loading; no further increase shall be permitted.
4) 10d nails are 0.148" dia. x 3" long, 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 substituted for 10d common nails with no load reduction.
5) For additional sizes, stock numbers, and modifications not shown, refer to MiTek's 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 Product Catalog.
10) Joists may extend above the MSH bucket side flanges. The installation of web stiffeners may be required per LP's instructions.

LP® LVL BEAMS & HEADERS


BPH


THO


PHXU


HD


HUS

Joist Height	Top Mount Hangers[3] MiTek Stock No.[6]	Fastener Schedule[4] Header Qty	Header Type	Joist Qty	Joist Type	Uplift[2] 160%	Down[1] 100%	Face Mount Hangers MiTek Stock No.	Min/ Max	Fastener Schedule[4] Header Qty	Header Type	Joist Qty	Joist Type	Uplift[2] 160%	Down[1] 100%
1-3/4" LP® SOLIDSTART® LVL & LSL															
7-1/4	PHXU17725	8	16d	6	10d x 1-1/2	930	4350	HD1770	Min	12	16d	4	10d x 1-1/2	760	1850
									Max	16	16d	8	10d x 1-1/2	1190	2465
9-1/4	BPH17925	10	16d	4	10d x 1-1/2	850	2970	HD17925	Min	18	16d	6	10d x 1-1/2	1170	2770
									Max	24	16d	10	10d x 1-1/2	1900	3695
	PHXU17925	8	16d	6	10d x 1-1/2	930	4350	HUS179[5]	--	30	16d	10	16d	4110	5580
9-1/2	THO17950	6	10d	2	10d x 1-1/2	230	1235	HD17925	Min	18	16d	6	10d x 1-1/2	1170	2770
									Max	24	16d	10	10d x 1-1/2	1900	3695
	PHXU1795	8	16d	6	10d x 1-1/2	930	4350	HUS179[5]	--	30	16d	10	16d	4110	5580
11-1/4	BPH17112	10	16d	4	10d x 1-1/2	850	2970	HD17112	Min	22	16d	6	10d x 1-1/2	1170	3390
									Max	30	16d	12	10d x 1-1/2	1900	4320
	PHXU17112	8	16d	6	10d x 1-1/2	930	4350	HUS179[5]	--	30	16d	10	16d	4110	5580
11-7/8	THO17118	6	10d	2	10d x 1-1/2	230	1235	HD17112	Min	22	16d	6	10d x 1-1/2	1170	3390
									Max	30	16d	12	10d x 1-1/2	1900	4320
	PHXU17118	8	16d	6	10d x 1-1/2	930	4350	HUS179[5]	--	30	16d	10	16d	4110	5580
14	BPH1714	10	16d	4	10d x 1-1/2	850	2970	HD1714	Min	28	16d	8	10d x 1-1/2	1510	3790
									Max	36	16d	14	10d x 1-1/2	1900	4580
	PHXU1714	8	16d	6	10d x 1-1/2	930	4350	HUS179[5]	--	30	16d	10	16d	4110	5580
16	BPH1716	10	16d	4	10d x 1-1/2	850	2970	HD1714	Min	28	16d	8	10d x 1-1/2	1510	3790
									Max	36	16d	14	10d x 1-1/2	1900	4580
18	--	--	--	--	--	--	--	HD1714	Min	28	16d	8	10d x 1-1/2	1510	3790
									Max	36	16d	14	10d x 1-1/2	1900	4580
2 Ply 1-3/4" or 1 Ply 3-1/2" LP® SOLIDSTART® LVL & LSL															
7-1/4	PHXU35725	8	16d	6	10d	1120	5910	THD48	5910	28	16d	16	10d	2595	4310
9-1/4	HBPH35925	22	16d	10	16d	2705	6310	THD410	6310	38	16d	20	10d	3905	5850
	HLBH35925	15	NA16D-RS	6	16d	1420	10045	THDH410[5]	10045	46	16d	12	16d	4345	9020
9-1/2	HBPH3595	22	16d	10	16d	2705	6310	THD410	6310	38	16d	20	10d	3905	5850
	HLBH3595	15	NA16D-RS	6	16d	1420	10045	THDH410[5]	10045	46	16d	12	16d	4345	9020
11-1/4	HBPH35112	22	16d	10	16d	2705	6310	THD410	6310	38	16d	20	10d	3905	5850
	HLBH35112	15	NA16D-RS	6	16d	1420	10045	THDH412[5]	10045	56	16d	14	16d	5290	9710
11-7/8	HBPH35118	22	16d	10	16d	2705	6310	THD410	6310	38	16d	20	10d	3905	5850
	HLBH35118	15	NA16D-RS	6	16d	1420	10045	THDH412[5]	10045	56	16d	14	16d	5290	9710
14	HBPH3514	22	16d	10	16d	2705	6310	THD410	6310	38	16d	20	10d	3905	5850
	HLBH3514	15	NA16D-RS	6	16d	1420	10045	THDH414[5]	10045	66	16d	16	16d	5305	11325
16	HBPH3516	22	16d	10	16d	2705	6310	THD412	6310	48	16d	20	10d	3905	7045
	HLBH3516	15	NA16D-RS	6	16d	1420	10045	THDH414[5]	10045	66	16d	16	16d	5305	11325
18	HBPH3518	22	16d	10	16d	2705	6310	THD412	6310	48	16d	20	10d	3905	7045
	HLBH3518	15	NA16D-RS	6	16d	1420	10045	THDH414[5]	10045	66	16d	16	16d	5305	11325

1) Loads listed are based on hanger attachment to a LP® LVL header. Some loads may be increased for duration of load adjustments. Refer to MiTek's Product Catalog for details.

2) Uplift loads have been increased 60% for wind and seismic loading; no further increase shall be permitted.

3) Top Mount Hangers require a minimum 3" header thickness for THO series hangers; 3-1/2" minimum header thickness for all other stock numbers.

4) 10d x 1-1/2 nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, 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 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 Product Catalog.

7) Supplemental lateral support connection recommended when hanger height is less than 60% of joist height.

LP® LVL BEAMS & HEADERS

 HBPH

 HLBH

 THD

 THDH

Joist Height	MiTek Stock No.	Top Mount Hangers[3]						Face Mount Hangers							
		Fastener Schedule[4]				Uplift[2] 160%	Down[1] 100%	MiTek Stock No.[6]	Fastener Schedule[4]					Uplift[2] 160%	Down[1] 100%
		Header		Joist					Min/ Max	Header		Joist			
		Qty	Type	Qty	Type					Qty	Type	Qty	Type		
3 Ply 1-3/4" LP® SOLIDSTART® LVL & LSL															
7-1/4	BPH55725	10	16d	6	10d	850	3065	HD68	Min	10	16d	4	16d	920	1540
									Max	14		6		1305	2155
9-1/4	HBPH55925	22	16d	10	16d	2705	6185	THD610	--	38	16d	20	10d	4035	6535
	HLBH55925	15	NA16D-RS	6	16d	1580	10045	THDH610[5]	--	46	16d	16	16d	5290	9020
9-1/2	HBPH5595	22	16d	10	16d	2705	6185	THD610	--	38	16d	20	10d	4035	6535
	HLBH5595	15	NA16D-RS	6	16d	1580	10045	THDH610[5]	--	46	16d	16	16d	5290	9020
11-1/4	HBPH55112	22	16d	10	16d	2705	6185	THD610	--	38	16d	20	10d	4035	6535
	HLBH55112	15	NA16D-RS	6	16d	1580	10045	THDH612[5]	--	56	16d	20	16d	5290	9530
11-7/8	HBPH55118	22	16d	10	16d	2705	6185	THD610	--	38	16d	20	10d	4035	6535
	HLBH55118	15	NA16D-RS	6	16d	1580	10045	THDH612[5]	--	56	16d	20	16d	5290	9530
14	HBPH5514	22	16d	10	16d	2705	6185	THD610	--	38	16d	20	10d	4035	6535
	HLBH5514	15	NA16D-RS	6	16d	1580	10045	THDH614[5]	--	66	16d	22	16d	5305	11325
16	HBPH5516	22	16d	10	16d	2705	6185	THD612	--	48	16d	20	10d	4035	8255
	HLBH5516	15	NA16D-RS	6	16d	1580	10045	THDH614[5]	--	66	16d	22	16d	5305	11325
18	HBPH5518	22	16d	10	16d	2705	6185	THD612	--	48	16d	20	10d	4035	8255
	HLBH5518	15	NA16D-RS	6	16d	1580	10045	THDH614[5]	--	66	16d	22	16d	5305	11325
4 Ply 1-3/4" or 2 Ply 3-1/2" LP® SOLIDSTART® LVL & LSL															
9-1/4	HBPH71925	22	16d	10	16d	2705	6185	THD7210	--	38	16d	20	10d	4035	6535
	HLBH71925	15	NA16D-RS	6	16d	1580	10045	THDH7210[5]	--	46	16d	12	16d	4345	9020
9-1/2	HBPH7195	22	16d	10	16d	2705	6185	THD7210	--	38	16d	20	10d	4035	6535
	HLBH7195	15	NA16D-RS	6	16d	1580	10045	THDH7210[5]	--	46	16d	12	16d	4345	9020
11-1/4	HBPH71112	22	16d	10	16d	2705	6185	THD7210	--	38	16d	20	10d	4035	6535
	HLBH71112	15	NA16D-RS	6	16d	1580	10045	THDH7212[5]	--	56	16d	14	16d	5290	9020
11-7/8	HBPH71118	22	16d	10	16d	2705	6185	THD7210	--	38	16d	20	10d	4035	6535
	HLBH71118	15	NA16D-RS	6	16d	1580	10045	THDH7212[5]	--	56	16d	14	16d	5290	9020
14	HBPH7114	22	16d	10	16d	2705	6185	THD7210	--	38	16d	20	10d	4035	6535
	HLBH7114	15	NA16D-RS	6	16d	1580	10045	THDH7214[5]	--	66	16d	16	16d	5305	11325
16	HBPH7116	22	16d	10	16d	2705	6185	HD7120	Min	16	16d	6	16d	1305	2465
									Max	22	16d	8	16d	1845	3390
	HLBH7116	15	NA16D-RS	6	16d	1580	10045	THDH7214[5]	--	66	16d	16	16d	5305	11325
18	HBPH7118	22	16d	10	16d	2705	6185	HD7140	Min	20	16d	8	16d	1845	3080
									Max	26	16d	12	16d	2765	4005
	HLBH7118	15	NA16D-RS	6	16d	1580	10045	THDH7214[5]	--	66	16d	16	16d	5305	11325

1) Loads listed are based on hanger attachment to a LP® 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 nails are 0.148" dia. x 3" long, 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 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) For additional sizes, stock numbers, and modifications not shown, refer to MiTek's Product Catalog.

7) Supplemental lateral support connection recommended when hanger height is less than 60% of joist height.

SLOPE/SKEW HANGERS

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

Installation:

→ Use all specified fasteners.

Steps: (See LSSH Figure 1)

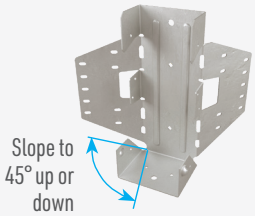
1. Position LSSH connector against plumb-cut end of joist. Fasten joist side flanges on both sides with 10d (0.148") x 1-1/2" nails. Bend seat up to fit against joist bottom and drive (1) 10d (0.148") x 1-1/2" nail through bottom seat into joist bottom flange. Drive (2) 10d (0.148") x 1-1/2" nail at 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.

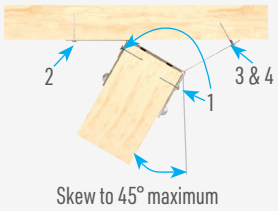
→ Designer may consider adding a tension restraint for the supported member for roof slopes exceeding 6/12.

Typical LSSH installation

LSSH



LSSH Figure 1



Joist Height	MiTek Stock No.[1,4]	Installation Type	Fastener Schedule[4,6,7] Header Qty	Header Type	Joist Qty	Joist Type	DF Uplift[3] 160%	DF Down[2] 100%
LPI 450		**Joist Width = 1-3/4"**						
11-7/8– 14	LSSH179-TZ	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
LPI 530		**Joist Width = 2-1/16"**						
9-1/2– 16	LSSH20-TZ	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
LPI 36		**Joist Width = 2-1/4"**						
11-7/8– 18	LSSH23-TZ	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
LPI 18, 20Plus, 32Plus		**Joist Width = 2-1/2"**						
9-1/2– 16	LSSH25-TZ	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
LPI 42Plus, 52Plus, LPI 56		**Joist Width = 3-1/2"**						
9-1/2– 24	LSSH35-TZ	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

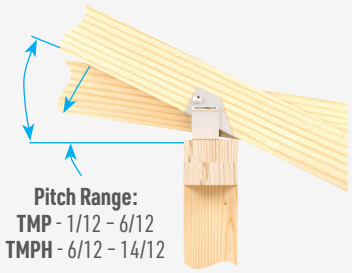
1) Shaded hangers require bearing/ web stiffeners at joist ends.
2) Loads listed are based on hanger attachment to a DF or SP species solid sawn, LPI Joists, or LP® LSL or LVL header. Some loads may be increased for duration of load adjustments. Refer to MiTek Product Catalog for details.
3) Uplift loads have been increased 60% for wind and seismic loading; no further increase shall be permitted.
4) Hangers utilizing 16d nails are not compatible with LPI joists.
5) Supplemental lateral support connection recommended when hanger height is less than 60% of joist height.
6) For exterior applications, hot-dip galvanized (HDG) fasteners must be used.
7) **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.

VARIABLE PITCH CONNECTORS

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

Installation:

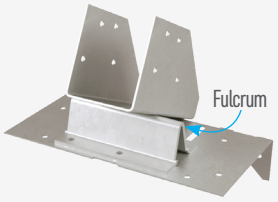
- → Use all specified fasteners.
- → Position connector on top plate. Fasten connector to outside of top plate with specified nails. Insert rafter into rafter pocket. Adjust rafter and pocket to correct pitch. Fasten rafter to connector with specified nails. Installing the **TMP** require driving specified 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

Typical TMPH installation



TMPH

TMP Chart

Joist		Fastener Schedule[4]				DF	
	MiTek	Plate		Rafter		Uplift[3]	Down[2]
LPI	Stock No.[1]	Qty	Type	Qty	Type	160%	100%
450	TMP175	6	10d	4	10d x 1-1/2	245	1705
530	TMP21	6	10d	4	10d x 1-1/2	245	1705
36	TMP23	6	10d	4	10d x 1-1/2	245	1705
18, 20Plus, 32Plus	TMP25	6	10d	4	10d x 1-1/2	245	1705
42Plus, 52 Plus, 56	TMP4	6	10d	4	10d x 1-1/2	245	1705

1) Bearing/web stiffeners may be required for hangers by LP Building Solutions.
2) Loads listed are based on hanger attachment to a DF-L or SP species solid sawn, LPI Joists, LP® LSL or LVL. 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) **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.[1]	Fastener Schedule[4]					DF									
		Plate			Rafter		According to Pitch[2]									Uplift[3]
		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	160%
450	TMPH175	8	2	10d	8	10d x 1-1/2	3190	3290	3390	3140	2900	2710	2520	2230	1950	330
530	TMPH21	8	2	10d	8	10d x 1-1/2	3190	3290	3390	3140	2900	2710	2520	2230	1950	330
36	TMPH23	8	2	10d	8	10d x 1-1/2	3190	3290	3390	3140	2900	2710	2520	2230	1950	330
18, 20Plus, 32Plus	TMPH25	8	2	10d	8	10d x 1-1/2	3190	3290	3390	3140	2900	2710	2520	2230	1950	330
42Plus, 52 Plus, 56	TMPH4	8	2	10d	8	10d x 1-1/2	3190	3290	3390	3140	2900	2710	2520	2230	1950	330

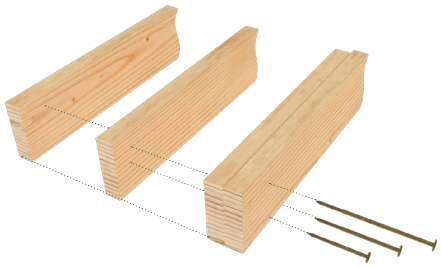
1) Bearing/web stiffeners are required for all Wood I-Joist installations.
2) Loads listed are based on hanger attachment to a DF-L or SP species solid sawn, LPI Joists or LP® LSL or LVL header. Loads are governed by test results; no further increase shall be permitted.
3) Uplift loads have been increased 60% for wind and seismic loading; no further increase shall be permitted.
4) **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.

JOINING 2, 3, OR 4 PLY LP® LVL MEMBERS

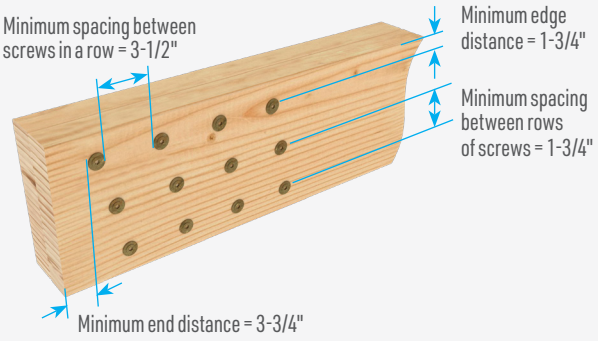
WSWH WASHER HEAD INTERIOR STRUCTURAL WOOD SCREW APPLICATIONS

Installation Notes:

- 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.
- Refer to the information in this bulletin for proper WSWH screw size selection and fastening pattern.

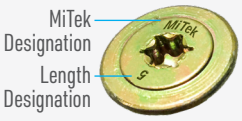


Minimum Spacing Requirements:



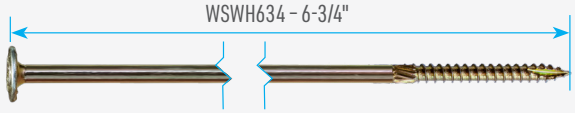
Fastener Identification

For easier selection and post installation inspection, all MiTek Structural Wood Screws carry an identifying headmarking



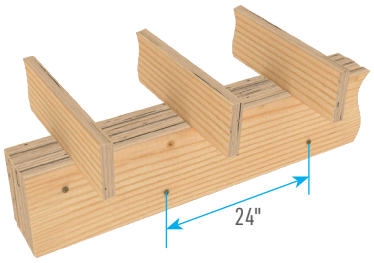
Screw Length

WSWH338 – 3-3/8"
WSWH5 – 5"
WSWH634 – 6-3/4"

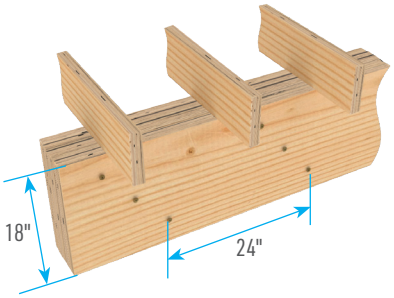


Top Loaded Beams

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 above.



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



General Guidelines:

- Beams wider than 7" require special consideration by the design professional. The values on the next page do not apply.
- Excessively warped or curved lumber 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.
- Refer to MiTek's Joining Multiple Member (Multi-ply) Engineered Wood (EWP) Beams Technical Bulletin as a guide for selecting the proper length wood screw for that application.
- The WSWH338, WSWH5, and WSWH634 are not designed for use with dimensional lumber. Refer to MiTek's Joining Multi-Ply Dimensional Lumber Beams Application Technical Bulletin as a guide for selecting the proper length wood screw for that application.
- A qualified designer or engineer should always be consulted for critical assemblies and fastening requirements.

JOINING 2, 3, OR 4 PLY LP® LVL MEMBERS

WSWH WASHER HEAD INTERIOR STRUCTURAL WOOD SCREW APPLICATIONS

Fastener Size Selection by Assembly Type

A
WSWH338
3-3/8"

B
WSWH5
5"

C
WSWH5
5"

D
WSWH634
6-3/4"

E
WSWH634
6-3/4"

F
WSWH634
6-3/4"

Side Loaded Beams

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

Length (in)	MiTek Stock No.	No. of Screws Vertical Column	Spacing Between Screws in a Row (in)	Allowable Uniform Load Applied to Either Outside Member by Assembly Type (lbs/lineal ft) (See Graphics) [1,2,3,4,5]											
				EWP Wood Specific Gravity G ≥ 0.50						EWP Wood Specific Gravity G ≥ 0.42					
				A	B	C	D	E	F	A	B	C	D	E	F
3-3/8	WSWH338	2	24	600	--	--	--	--	--	525	--	--	--	--	--
			19.2	755						655					
			16	905						785					
			12	1205						1050					
		3	24	905	--	--	--	--	--	785	--	--	--	--	--
			19.2	1130						985					
			16	1355						1180					
			12	1805						1570					
5	WSWH5	2	24	--	430	535	--	--	--	--	325	545	--	--	--
			19.2		535	670					410	685			
			16		645	805					490	820			
			12		860	1075					655	1090			
		3	24	--	645	805	--	--	--	--	490	820	--	--	--
			19.2		805	1005					615	1025			
			16		965	1210					735	1230			
			12		1285	1610					980	1640			
6-3/4	WSWH634	2	24	--	--	--	380	715	380	--	--	--	290	730	290
			19.2				475	895	475				365	910	365
			16				570	1075	570				435	1090	435
			12				765	1430	765				580	1455	580
		3	24	--	--	--	570	1075	570	--	--	--	435	1090	435
			19.2				715	1345	715				545	1365	545
			16				860	1610	860				655	1640	655
			12				1145	2150	1145				870	2185	870
Head Side Multiplier [6]				1.06	1.25	1	1.25	1	1.25	1.19	1.67	1	1.67	1	1.67

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

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