

# EWP PRODUCT GUIDE



For Use With Products Manufactured by



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 breakout. 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



#### 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
I PI 450	1-3/4	11-7/8	1-1/2"	23/32"
	1 0/ 1	14		20/02
		9-1/2		
I PI 530	2-1/16	11-7/8	1-3/4"	7/8"
211000	2 1/10	14	1 0/1	110
		16		
		11-7/8		
I PI 36	2-1/4	14	1_7/8"	7/8"
LITOU	2 1/4	16	1 //0	110
		18		
I PI 18	2-1/2	9-1/2		
LITIO	2 1/2	11-7/8		
		9-1/2	2-1/8"	1"
LPI 20Plus,	2-1/2	11-7/8	2-1/0	
LPI 32Plus	2-1/2	14		
		16		
		9-1/2		
		11-7/8		
		14		
LPI 42Plus	3-1/2	16	3"	1-1/2"
		18		
		20		
		24		
		11-7/8		
52Plus	3-1/2	14	3"	1-1/2"
OEI IGO		16		
		11-7/8		
		14		
LPI 56	3-1/2	16	3"	1-1/2"
		18		
		24		

 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.





HANGER OVER-SPREAD



For hangers less than 60% joist depth,

🔔 HANGER NOT PLUMB

## **SINGLE I-JOISTS**

	Top Mount Hangers <sup>4,6</sup>							Face Mount Hangers							
		Fastener Schedule⁵								Fast	tener S	Sche	dule⁵		
1.1.4	MiTok	He	ader		Joist		<b>D</b> 2	MiTok		He	ader		Joist		D 2
Joist Height	Stock No. <sup>1</sup>	Qtv	Type	Qtv	Type	160%	100%	Stock No. <sup>1</sup>	Min / Max	Qtv	Type	Qtv	Type	Upliπ 160%	100%
LPI 450	)	4.)	Jee	4.)		Joist	Width =	1-3/4"	mast	4.)	Jee		. 16 -	10070	
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
I PI 530	l				_	Joist	Width =	2_1/16"	Wax	14	Tuu				1000
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	TEL 2014	6	104	2	10d x 1 1/0	120	1505		Min	12	10d			50	1440
14	1FL2014	0	100	2	100 X 1-1/2	130	1565		Max	14	10d			50	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	TEL 00440	6	40-1	0	40144/0	Joist	Width =	2-1/4"		40	40-1			50	4000
11-7/8	TFL23118	6	10d	2	10d x 1-1/2	130	1585	IHFL23112	 Min	10	10d			50	1200
14	TFL2314	6	10d	2	10d x 1-1/2	130	1585	IHFL2314	Max	12	10d			50	1680
									Min	14	10d				1680
16	TFL2316	6	10d	2	10d x 1-1/2	130	1585	IHFL2316	Max	16	10d			50	1920
40	TE10540	0	404	0	40-1	045	0745		Min	14	10d			50	1680
18	1113518	6	160	2	10d x 1-1/2	215	2715	IHFL2310	Max	16	10d			50	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 201	Plus, 32Plus	0	40.1	0	40 1 4 4 10	Joist	Width =	2-1/2"		0	40.1			405	000
9-1/2	TEL 25410	6	10d	2	10d x 1-1/2	130	1585	THE12595		8	10d			125	960
11-770	TFL20110	0	100	2	100 X 1-1/2	130	1565		Min	10	10d			125	1440
14	TFL2514	6	10d	2	10d x 1-1/2	130	1585	THFI2514	Max	14	10d			125	1680
10									Min	14	10d			= 0	1680
16	TFL2516	6	10d	2	10d x 1-1/2	130	1585	IHFL2516	Max	16	10d			50	1920
LPI 42	Plus					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	Max	12	100			50	1440
									Min	14	10d				1680
16	THO35160	12	10d	2	10d x 1-1/2	230	2400	IHFL3516	Max	14	10d			50	1920
									Min	14	10d				1750
18	TFI418	6	16d	2	10d x 1-1/2	215	2715	IHF3518	Max	30	16d	2	10d x 1-1/2	330	4410
20	TE1420	6	164	2	$10d \times 1 1/2$	215	2715		Min	14	10d	2	$10d \times 1 1/2$	220	1750
20	1 11420	0	Tou	2	10u x 1-1/2	215	2715	10-3310	Max	30	16d	2	100 X 1-1/2	330	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
			···u	-	104 / 112	2.10	2020		Max	30	16d	~	iou x i iiz		4410
LPI 52	Plus					Joist	Width =	3-1/2"	1.0	40	40.1				1000
11-7/8	THO35118	10	10d	2	10d x 1-1/2	230	2525	IHFL35112	Min	10	10d			50	1200
									Min	12	10d				1440
14	THO35140	12	10d	2	10d x 1-1/2	230	2400	IHFL3514	Max	14	10d			50	1680
10									Min	14	10d			= 0	1680
16	THO35160	12	10d	2	10d x 1-1/2	230	2400	IHFL3516	Max	16	10d			50	1920
LPI 56						Joist	Width =	3-1/2"							
11-7/8	TH035118	10	10d	2	10d x 1-1/2	230	2525	IHFL35112	Min	10	10d	_		50	1200
				Ē					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	Max	14	100			50	1080
									Min	14	10d				1680
18	TFI418	6	16d	2	10d x 1-1/2	215	2715	IHFL3516	Max	16	10d			50	1920
0.4	TELADA	10	10-	0	104 x 4 4/2	045	0000		Min	14	10d			50	1680
24	111424	10	DOL	2	10a x 1-1/2	215	2820	IHFL3516	Max	16	10d			50	1920



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### **SINGLE I-JOISTS**

	Adjustable Height Hangers						Skewed 45° Hangers							
		1	Fastener Schedule <sup>4</sup> Header Joist Down						Fast	ener S	ched	dule <sup>4</sup>		
1-1-4	MiTok	Н	eader		Joist	D2	MiTok	NA1 /	He	ader		Joist	11	<b>D</b> 2
JOIST	Stock No <sup>1,8</sup>	Qtv	Type	Qtv	Type	100%	Stock No <sup>1,6,7</sup>	Min / May	Qtv	Type	Qtv	Type	160%	100%
LPI 45	0	<b></b> ,	Jpe	α.,	. , po	100 /0	Joist Width = 1-3/4"	Max	α.,	Type	α.,	. , po	100 /0	100 /0
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 53	0					J	oist 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	0						Joist Width = 2-1/2"							
9-1/2	MSH322 <sup>9</sup>	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 20	Plus, 32Plus	0	40.4	4	40	0005	Joist Width = 2-1/2"		44	40.4	40	40.1.4.4/0	4500	4050
9-1/2	MSH322	6	100	4	10d X 1-1/2	2395	SKH2520L/R		14	100	10	10d x 1-1/2	1530	1650
11-7/8	MSH322	6	100	4	100 X 1-1/2	2395	SKH2520L/R		14	100	10	100 x 1-1/2	1530	1650
14	MSH322	6	100	4	10d X 1-1/2	2395	SKH2524L/R		16	100	10	10d x 1-1/2	1530	1890
	MSH522	0	Tua	4	10u x 1-1/2	2395	SKH2324L/K		10	TUU	10	10u x 1-1/2	1550	1690
LFI42	Flus						Joist Width - 3-1/2	Min	14		6		880	2155
9-1/2	MSH422	6	10d	6	10d	2530	HD410_SK45L/R_BV 5,9	Max	20	16d	10	10d	1465	3080
								Min	14		6		880	2155
11-7/8	MSH422	6	10d	6	10d	2530	HD410_SK45L/R_BV 5,9	Max	20	16d	10	10d	1465	3080
							5.0	Min	18		8		1135	2770
14	MSH422	6	10d	6	10d	2530	HD414_SK45L/R_BV <sup>5,9</sup>	Max	26	16d	12	10d	1755	4005
							5.0	Min	18		8		1135	2770
16	MSH422	6	10d	6	10d	2530	HD414_SK45L/R_BV <sup>3,*</sup>	Max	26	16d	12	10d	1755	4005
40	1011400	•	40.1	•	40.1	0500		Min	18	40.1	8	40.4	1135	2770
18	MSH422	6	100	6	100	2530	HD414_SK45L/R_BV •,•	Max	26	160	12	100	1755	4005
20	MOLIADO	0	104	0	104	2520		Min	22	104	10	104	1465	3390
20	W5H422	ю	100	0	100	2530	HD416_SK45L/R_BV	Max	30	160	14	TUU	1685	4620
24	MSH422	6	10d	6	10d	2530		Min	22	16d	10	10d	1465	3390
24	101011422	0	iou	0	Tou	2000		Max	30	Tou	14	Tou	1685	4620
LPI 52	Plus						Joist Width = 3-1/2"							
11-7/8	MSH422	6	10d	6	10d	2530	HD410_SK45I /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	Min	14		6	_	880	2155
11-7/8	MSH422	6	10d	6	10d	2530	HD410_SK45L/R_BV 5,9	Mox	14	16d	10	10d	1465	2155
								Min	18		8		1125	2770
14	MSH422	6	10d	6	10d	2530	HD414_SK45L/R_BV 5,9	May	26	16d	0	10d	1755	4005
								Min	18		8		1135	2770
16	MSH422	6	10d	6	10d	2530	HD414_SK45L/R_BV 5,9	Мах	26	16d	12	10d	1755	4005
				-				Min	18		8		1135	2770
18	MSH422	6	10d	6	10d	2530	HD414_SK45L/R_BV 5,9	Max	26	16d	12	10d	1755	4005
					10.1		5.0	Min	22		10		1465	3390
24	MSH422	6	10d	6	10d	2530	HD416_SK45L/R_BV 5,9	Max	30	16d	14	10d	1685	4620



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### **DOUBLE I-JOISTS**

Joint         Marta         Marta <t< th=""><th></th><th></th><th>•</th><th>Тор Мо</th><th>unt H</th><th>langers<sup>4,7</sup></th><th></th><th></th><th></th><th></th><th>Fa</th><th>ce Mou</th><th>nt Ha</th><th>angers</th><th></th><th></th></t<>			•	Тор Мо	unt H	langers <sup>4,7</sup>					Fa	ce Mou	nt Ha	angers		
Image         Image <t< th=""><th></th><th></th><th></th><th>Fasten</th><th>er So</th><th>hedule⁵</th><th></th><th></th><th></th><th></th><th>Fas</th><th>tener S</th><th>chec</th><th>lule⁵</th><th></th><th></th></t<>				Fasten	er So	hedule⁵					Fas	tener S	chec	lule⁵		
Jahla         Banck No. <sup>16</sup> Op         Type         Op         Op        Op	laiot	MiTok	Н	eader		Joist	11-1:43	Dowm <sup>2</sup>	MiTok	Mim/	He	eader		Joist	11-1:643	Dowm <sup>2</sup>
Double LP I450         Diet Wiche 3-3/2*         Diet Wiche 3-3/2*         Min         10         10         2         104 x 1-1/2         200         252         HF35112         Min         10         10         2         104 x 1-1/2         30         1530          11.7/8         THO35118         10         11	Height	Stock No. <sup>1,6</sup>	Qty	Type	Qty	Type	160%	100%	Stock No. <sup>1,6</sup>	Max	Qty	Type	Qty	Type	160%	100%
11-03     1H-03511a     10	Double	e LPI 450		,,				Joist Wi	dth = 3-1/2"			,,,		,,,		
No.       N	11-7/8	THO35118	10	10d	2	10d x 1-1/2	230	2525	IHE35112	Min	10	10d	2	10d x 1-1/2	330	1250
14     THO35140     12     104     2     104     1.11     200     H#3514     Min     12     104     2     104     2     104     2     104     2     104     2     104     2     104     2     104     2     104     2     104     11     201     11     201     11     201     11     201     104     1     105     202     HE2032-2     Min     10     100     2     104     1.1     30     1250       11-70     HO2010-2     10     164     6     100     114     360     HE2012-2     Min     12     104     1     30     1250       11-70     HO2010-2     10     164     6     100     114     360     HE2014-2     Min     1     104     14     145     300     360       11-70     HO2310-2     10     164     6     100     1145     360     HE2014-2     -     16     100     113     190       11-70     HO2310-2     12     164     6     100     1145     360     HE2312-2     -     16     100     113     190       11-70     HO2310-2     10     164     6	11-770	111000110	10	Tou	2	100 X 1-1/2	200	2020	111 00112	Max	24	16d	2	100 X 1-1/2	000	3530
Double         LPI S30         Joint With = 4-1/2*         Min         No         NdX         28         163         Joint With = 4-1/2*           9-1/2         THO20950-2         10         16d         6         10d         1135         2920         HF2092-2         Min         10         10d         2         10d x 1-1/2         300         7530           11-778         THO20118-2         10         16d         6         10d         1135         2920         HF2012-2         Min         10         10d         2         10d x 1-1/2         300         7530           14         THO20160-2         10         16d         6         10d         1145         360         HF2014-2         Min         12         10d x 1-1/2         300         7500           14         TH023118-2         10         16d         6         10d         1145         360         THF2310-2         -         10         6         10d         1135         860         HF2310-2         -         2         10d x 1-1/2         30         7550           11-778         TH02310-2         10         66         10d         1145         360         HF2310-2         -         10         10 </td <td>14</td> <td>THO35140</td> <td>12</td> <td>10d</td> <td>2</td> <td>10d x 1-1/2</td> <td>230</td> <td>2400</td> <td>IHF3514</td> <td>Min</td> <td>12</td> <td>10d</td> <td>2</td> <td>10d x 1-1/2</td> <td>330</td> <td>1500</td>	14	THO35140	12	10d	2	10d x 1-1/2	230	2400	IHF3514	Min	12	10d	2	10d x 1-1/2	330	1500
Double LP180         Description         Description <thdescription< th=""> <thdescription< th=""></thdescription<></thdescription<>	Dauble							10:04 10/		Max	28	16d				4115
9.1/21100 2050-21016610d113529.0IHF2025-2Min2100100 <th< td=""><td>Double</td><td>EPI 530</td><td></td><td></td><td></td><td></td><td></td><td>JOIST WI</td><td>ath = 4-1/8</td><td>Min</td><td>10</td><td>104</td><td></td><td></td><td></td><td>1250</td></th<>	Double	EPI 530						JOIST WI	ath = 4-1/8	Min	10	104				1250
11-78         THO20118-2         10         16d         6         10d         1135         2020         HH20112-2         Mm         10         2         10d         1.17         300         2300           14         THO20140-2         10         16d         6         10d         1145         3640         HH2014-2         Mm         12         10d         1.17         300         1200         1300         1200         1300         1200         1300         1200         1300         1200         1300         1200         1300         1200         1300         1200         1300         1200         1300         1300         3600           117.78         THO23118-2         10         6d         10d         1145         3600         11472318-2         -         10         10d         6         10d         1275         2800           1100         1100         1146         6         10d         1145         3600         11472318-2         -         10         10d         6         10d         1275         3190         100         10d         10         10d         10d         10d         10d         10d         10d         10d         10d	9-1/2	THO20950-2	10	16d	6	10d	1135	2920	IHF20925-2	Max	24	16d	2	10d x 1-1/2	330	3530
11-7.8       THO20118-2       10       164       6       10d       1135       2920         H=20112.2       Max       24       16d       2       100 x1-1/2       330       3530         14       THO20140-2       10       16d       6       10d       1145       3640         H=2014-2       Max       24       16d       2       10d x1-1/2       330       3530         0       11-76       HO20160-2       10       16d       6       10d       1145       3640         H=2014-2       Max       24       10d x1-1/2       330       3530       3580         0       0       16       6       10d       1145       3640       THE23142-2        16       10d       6       10d       1275       3190         0       11402       1145       1145       3640       HE23142-2        24       10d       6       10d       1275       3190       3530										Min	10	10d				1250
114       THO20140-2       10       16d       6       10d       1145       3640       HF2014-2       Mm       12       10d       2       10d x 1-12       300       3600	11-7/8	THO20118-2	10	16d	6	10d	1135	2920	IHF20112-2	Max	24	16d	2	10d x 1-1/2	330	3530
14       14 <th14< th="">       14       14       <th1< td=""><td>14</td><td>THO20140.2</td><td>10</td><td>164</td><td>c</td><td>10d</td><td>1115</td><td>2640</td><td></td><td>Min</td><td>12</td><td>10d</td><td>2</td><td>10d x 1 1/2</td><td>220</td><td>1500</td></th1<></th14<>	14	THO20140.2	10	164	c	10d	1115	2640		Min	12	10d	2	10d x 1 1/2	220	1500
161       THO20160-2       10       164       6       104       1145       3640       HF2014-2       Mm       12       104       2       104       11-78       100       101       100       100       100       100       100       100       100       100       100       100       100	14	1020140-2	10	Tou	0	TUU	1145	3040	INF2014-2	Max	28	16d	2	100 X 1-1/2	330	3960
Indication         Indication <thindication< th="">         Indication         Indicati</thindication<>	16	THO20160-2	10	16d	6	10d	1145	3640	IHF2014-2	Min	12	10d	2	10d x 1-1/2	330	1500
Double LP136         Unit and transform         Unit	10	1110201002	10	Tou	Ŭ	loa	1140	0010	111 2014 2	Max	28	16d	-	104 X 1 1/2	000	3960
11-1/8       11-1/6       11-1/6       3640       11-1/7       11-1/7       10       6       10       6       10       11.7       20       10       6       100       11.7       20       10       6       100       11.7       20       10.0       6       10.0       12.75       23.80         18       THO23160.2       12       16       6       10.0       11.45       44.00       THF23160.2       -       24       10.0       6       10.0       12.75       33.90         18       THO23160.2       12       16       6       10.0       11.45       44.00       THF23160.2       -       24       10.0       6       10.0       12.75       33.90       35.30       35	Double	EPI 36				16		Joist Wi	dth = 4-1/2"			46.1	6	16.1		10
14         17022190-2         12         106         6         100         1145         44.20         17452340-2         -         24         100         6         100         1275         3190           18         THO23180-2         14         16d         6         100         1145         4420         THF23160-2         -         24         100         6         100         1275         3190           Doubit LP1 13         THO23180-2         10         16d         6         100         1145         360         HF23160-2         -         24         100         6         100         1275         3190           Doubit LP1 20Plus 32PUT         U         16d         6         100         1145         3640         HF2512.2         Min         10         100         2         100 x 1-12         330         3530           Doubit LP1 20Plus 32PUT         THO25160-2         10         16d         6         101         1145         3640         HF2512.2         Min         10         104         2         300         3530           11-78         THO25160-2         12         16d         6         10d         1145         3440         THF2510-2	11-7/8	THO23118-2	10	16d	6	10d	1145	3640	THF23118-2		16	10d	6	10d	1135	1890
Index decay is 12       100       0       100       1140       1145       44420       114523160.2       2       100       0       100       1275       3180         Policity       Fill       500       114533160.2       0       100       1275       3180       3180         9-112       TH025180.2       10       16d       6       10d       1145       360       HF253160.2       10       100       100       2       100 x 1-1/2       300       350         0-104       LP1 20Plus, 32Plus       U       6       100       1145       3640       HF25112.2       Min       10       100       2       100 x 1-1/2       300       3530         0-112       TH025118.2       10       16d       6       100       1145       3640       HF2512.2       Min       10       10d       2       100 x 1-1/2       330       3530         11-7/8       TH025118.2       10       16d       6       100       1145       3640       HF2512.2       Min       10       10d       2       100 x 1-1/2       330       3530         11-7/8       TH025118.2       10       16d       6       100       1145       3	14	THO23140-2	12	160	6	10d	1145	4420	THE22160 2		20	104	6	10d	12/5	2000
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	10	THO23160-2	1/	16d	6	100	1145	4420 5000	THE23160-2		24	10d	6	10d	1275	3190
9-1/2         THO25950-2         10         16d         6         10d         1145         3640         IHF25925-2         Min         10         10d         2         10d x 1-1/2         330         1250           11-7/8         THO25950-2         10         16d         6         10d         1145         3640         IHF25112-2         Min         10         10d         2         10d x 1-1/2         330         1250           Double         LPI 20Ptus, 32Ptus         Joist Width = 5"         Joist Width = 7"         Joist Width = 5" </td <td>Double</td> <td>LPI 18</td> <td>14</td> <td>Tou</td> <td>0</td> <td>Tou</td> <td>1145</td> <td>Joist Wi</td> <td>dth = 5''</td> <td></td> <td>24</td> <td>Tou</td> <td>0</td> <td>100</td> <td>1275</td> <td>5190</td>	Double	LPI 18	14	Tou	0	Tou	1145	Joist Wi	dth = 5''		24	Tou	0	100	1275	5190
9.1/2       THO25950-2       10       16d       6       10d       1145       3640       IHF25925-2       Max       24       16d       1       350       3530         11-7/8       THO25118-2       10       16d       6       10d       1145       3640       IHF25112-2       Min       10       10d       2       10d x 1-1/2       330       3530         Doubit       FU20Plus, 322/us       50       Joid W/H       5"       Joid W/H       5"       Joid W/H       340       Joid W/H       Joid W/H       340       Joid W/H       Joid W/H       340       Joid W/H       Joid W/H       Joid X 1-1/2										Min	10	10d				1250
11-78       Hab       Hab       Hab       Hab       Hab       Hab       Min       10       10d       2       Hab       330       1250         000000000000000000000000000000000000	9-1/2	THO25950-2	10	16d	6	10d	1145	3640	IHF25925-2	Max	24	16d	2	10d x 1-1/2	330	3530
Initial       Initia       Initial       Initial	11 7/0	THO25119.2	10	164	c	10d	1115	2640		Min	10	10d	2	10d x 1 1/2	220	1250
Double LP1 20Plus, 32Plus         Joist Width = 5"           9-1/2         TH025950-2         10         16d         6         10d         1145         3640         HF2592-2         Min         10         10d         2         10d x 1-1/2         330         3530           11-7/6         TH025118-2         10         16d         6         10d         1145         3640         HF25112-2         Min         10         10d         2         10d x 1-1/2         330         3530           14         TH025160-2         12         16d         6         10d         1145         4420         THF25160-2         -         24         10d         6         10d         1255         3500           16         TH025160-2         12         16d         6         10d         1275         3100         HD7100         Min         14         6         10d         1285         3100           11-7/6         BPH7118         10         16d         6         10d         1275         3075         HD7120         Min         16         16d         1845         2870           11-7/6         BPH7118         10         16d         6         10d         1275         <	11-770	1025110-2	10	Tou	0	TUU	1145	3040	INF23112-2	Max	24	16d	2	100 X 1-1/2	330	3530
9-12     1	Double	EPI 20Plus, 32	Plus					Joist Wi	dth = 5"							
Introl         THO25118-2         10         16d         6         10d         1145         3640         HF25112-2         Min         10         10d         2         10d x 1.1/2         3350         3530           14         THO25140-2         12         16d         6         10d         1145         4420         THF25140-2          20         10d         6         10d         1235         3600           Double         LPI 42Plus         Jest 4420         THF25160-2          24         10d         6         10d         1235         3600           0-112         BPH7195         10         16d         6         10d         1275         3075         HD7100         Min         16         1d         1305         2455           11-7/8         BPH7118         10         16d         6         10d         1275         3075         HD7140         Min         16         6         1305         2455           11-7/8         BPH7118         10         16d         6         10d         1275         3075         HD7160          24         16d         8         10d         1560         3695           18 <td>9-1/2</td> <td>THO25950-2</td> <td>10</td> <td>16d</td> <td>6</td> <td>10d</td> <td>1145</td> <td>3640</td> <td>IHF25925-2</td> <td>Min</td> <td>10</td> <td>10d</td> <td>2</td> <td>10d x 1-1/2</td> <td>330</td> <td>1250</td>	9-1/2	THO25950-2	10	16d	6	10d	1145	3640	IHF25925-2	Min	10	10d	2	10d x 1-1/2	330	1250
11-7/8       THO25118-2       10       16d       6       10d       1145       3640       IHF25112-2       Min       10       10d       2       10d x 1-1/2       300       1205       3530										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         -         20         10d         6         10d         1235         3190           0         Dolst Width = 7"         V	11-7/8	THO25118-2	10	16d	6	10d	1145	3640	IHF25112-2	Min	10	10d	2	10d x 1-1/2	330	1250
14       141/2       14	14	THO25140.2	12	164	6	10d	1145	4420		Max	24	160	6	104	1025	3530
No         No<	14	THO25160-2	12	16d	6	10d	1145	4420	THF25140-2		20	10d	6	10d	1235	3190
9-1/2         BPH7195         10         16d         6         10d         1275         3100         HD7100         Min         14         16d         6         1305         2155           11-7/8         BPH71118         10         16d         6         10d         1275         3075         HD7120         Min         16d         6         1305         2465           11-7/8         BPH7114         10         16d         6         10d         1275         3075         HD7140         Min         20         16d         8         16d         1845         3390           14         BPH7114         10         16d         6         10d         1275         3075         HD7160          24         16d         8         10d         1560         3695           16         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 <td>Double</td> <td>LPI 42Plus</td> <td>12</td> <td>Iou</td> <td>0</td> <td>Tod</td> <td>1145</td> <td>Joist Wi</td> <td>dth = 7"</td> <td></td> <td>24</td> <td>Tou</td> <td>0</td> <td>100</td> <td>1200</td> <td>0100</td>	Double	LPI 42Plus	12	Iou	0	Tod	1145	Joist Wi	dth = 7"		24	Tou	0	100	1200	0100
9-1/2       BPH7195       10       16d       6       10d       1275       3100       HD7100       Max       18       16d       8       16d       1845       2770         11-7/8       BPH7118       10       16d       6       10d       1275       3075       HD7120       Min       16       6       1845       3390         14       BPH7114       10       16d       6       10d       1275       3075       HD7140       Min       20       16d       8       16d       1845       3390         16       BPH7114       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       BPH7122       10       16d       6       10d       1275       3075       HD7160        24       16d       8       10d       1560       3695         204       BPH7122       10       16d       6	0.4/0	DDUZIOS	40	40.1		10.1	4075		1102100	Min	14	40.1	6	10.1	1305	2155
11-7/8     BPH71118     10     16d     6     10d     1275     3075     HD7120     Min     16     6     16d     8     16d     1845     3390       14     BPH7114     10     16d     6     10d     1275     3075     HD7140     Min     20     16d     8     10d     1756     3075       16     BPH7114     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       18     BPH7120     10     16d     6     10d     1275     3075     HD7160     -     24     16d     8     10d     1560     3695       24     BPH7122     10     16d     6     10d     1275     3075     HD7160     -     24     16d     8     10d     1560     3695       24     BPH7118     10     16d     6     10d     1275     3075     HD7160     -     24     16d     8     10d     1560     3695 <td>9-1/2</td> <td>BPH/195</td> <td>10</td> <td>16d</td> <td>6</td> <td>10d</td> <td>1275</td> <td>3100</td> <td>HD7100</td> <td>Max</td> <td>18</td> <td>16d</td> <td>8</td> <td>16d</td> <td>1845</td> <td>2770</td>	9-1/2	BPH/195	10	16d	6	10d	1275	3100	HD7100	Max	18	16d	8	16d	1845	2770
Initial       Initia       Initial       Initial	11-7/8	BPH71118	10	16d	6	10d	1275	3075	HD7120	Min	16	16d	6	16d	1305	2465
14       BPH7114       10       16d       6       10d       1275       3075       HD7140       Min       20       8       12       16d       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         224       BPH7120       10       16d       6       10d       1275       3075       HD7180        24       16d       8       10d       1560       3695         224       BPH7118       10       16d       6       10d       1275       3075       HD7120       Min       16       8       16d       1845       3300         11778       BPH7116       10       16d	11-110	Diffinitio	10	Tou	0	Tod	1275	5075	1107120	Max	22	Tou	8	Tod	1845	3390
Image: Constraint of the section of the secting the section of the section of the section of the sectin	14	BPH7114	10	16d	6	10d	1275	3075	HD7140	Min	20	16d	8	16d	1845	3080
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        24       16d       8       10d       1560       3695         24       BPH7118       10       16d       6       10d       1275       3075       HD7120       Min       16       Ma       1305       2465         11-78       BPH7118       10       16d       6       10d       1275       3075       HD7160        24       16d       8       10d       1560       3695         16       BPH7116       10       16d       6       <	10	DDUTIO	4.0	101	•	10.1	1075	0075	1157100	Max	26	10.1	12	10.1	2765	4005
10       10       10       10       10       10       10       10       10       10       10       100       1275       3075       HD7160        24       16d       5       10d       1560       3095         20       BPH7120       10       16d       6       10d       1275       3075       HD7160        24       16d       8       10d       1560       3695         24       BPH7122       10       16d       6       10d       1275       3075       HD7180        24       16d       8       10d       1560       3695         0       Delt       11-76       BPH7118       10       16d       6       10d       1275       3075       HD7120       Min       16       7       6       16d       8       16d       1850       3980         11-778       BPH7116       10       16d       6       10d       1275       3075       HD7160        24       16d       8       10d       1560       3980         16       BPH7116       10       16d       6       10d       1275       3075       HD7160        24	16	BPH/116 BDH7110	10	16d	6	10d	1275	3075	HD7160		24	16d	8	10d	1560	3695
24       BPH7122       10       16d       6       10d       1275       3075       HD7180       -       24       16d       6       10d       1060       0000         Double LPI 52Plus       Joist Width = 7"         11-7/8       BPH71118       10       16d       6       10d       1275       3075       HD7120       Min       16d       8       16d       1305       2465         14       BPH7118       10       16d       6       10d       1275       3075       HD7120       Min       16d       8       16d       1305       2465         14       BPH7114       10       16d       6       10d       1275       3075       HD7140       Min       16d       8       16d       1845       3380         16       BPH7116       10       16d       6       10d       1275       3075       HD7160        24       16d       8       10d       1560       3595         Double LPI 56       Joist Width = 7"         11-7/8       BPH71118       10       16d       6       10d       1275       3075       HD7160        24       16d       8	20	BPH7120	10	16d	6	10d	1275	3075	HD7160		24	16d	0 8	10d	1560	3695
Double LPI 52Plus         Joist Width = 7"         Min         16         6         16d         1305         2465           11-7/8         BPH71118         10         16d         6         10d         1275         3075         HD7120         Min         16d         6         16d         1845         3390           14         BPH7114         10         16d         6         10d         1275         3075         HD7140         Min         20         16d         8         16d         1845         3390           16         BPH7116         10         16d         6         10d         1275         3075         HD7160          24         16d         8         16d         1845         3080           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         8         16d         8	24	BPH7122	10	16d	6	10d	1275	3075	HD7180		28	16d	8	10d	1560	4310
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Double	EPI 52Plus			Ű			Joist Wi	dth = 7"							
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	11 7/0		10	164	e	104	1075	2075		Min	16	164	6	164	1305	2465
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	11-//ð		10	100	0	iua	12/0	3075	10/120	Max	22	100	8	100	1845	3390
11       10       10       10       10       10       10       10       10       10       10       10       127       3075       HD7160        24       16d       8       10d       1560       3695         10       10       16d       6       10d       1275       3075       HD7160        24       16d       8       10d       1560       3695         11-7/8       BPH71118       10       16d       6       10d       1275       3075       HD7120       Min       16       6       16d       8       10d       1305       2465         11-7/8       BPH71118       10       16d       6       10d       1275       3075       HD7120       Min       16       6       16d       8       16d       1845       3390         14       BPH7114       10       16d       6       10d       1275       3075       HD7140       Min       20       8       16d       1845       3080         16       BPH7116       10       16d       6       10d       1275       3075       HD7140        24       16d       8       10ddddddddddddddddddddddddddddd	14	BPH7114	10	16d	6	10d	1275	3075	HD7140	Min	20	16d	8	16d	1845	3080
16       BPH7116       10       16d       6       10d       1275       3075       HD7160        24       16d       8       10d       1560       3695         Double LPI 56       Joint Width = 7"         11-7/8       BPH71118       10       16d       6       10d       1275       3075       HD7120       Min       16       6       16d       8       10d       1305       2465         11-7/8       BPH7118       10       16d       6       10d       1275       3075       HD7120       Min       16       6       16d       8       16d       1845       3390         14       BPH7114       10       16d       6       10d       1275       3075       HD7140       Min       20       16d       8       16d       1845       3080         16       BPH7116       10       16d       6       10d       1275       3075       HD7140       Min       20       16d       8       10d       1560       3695         16       BPH7116       10       16d       6       10d       1275       3075       HD7160        24       16d       8<	177	5111114	10	iou	0	iu	1210	5075		Max	26	iou	12	100	2765	4005
Bouble LP1 56         Joist Width = 7"           11-7/8         BPH71118         10         16d         6         10d         1275         3075         HD7120         Min         16         6         16d         1845         3390           14         BPH7114         10         16d         6         10d         1275         3075         HD7140         Min         20         16d         8         16d         1845         3080           16         BPH7116         10         16d         6         10d         1275         3075         HD7140         Min         20         16d         1845         3080           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           18         BPH7118         10         16d         6         10d         1275         3075         HD7160 <td>16</td> <td>BPH7116</td> <td>10</td> <td>16d</td> <td>6</td> <td>10d</td> <td>1275</td> <td>3075</td> <td>HD7160</td> <td></td> <td>24</td> <td>16d</td> <td>8</td> <td>10d</td> <td>1560</td> <td>3695</td>	16	BPH7116	10	16d	6	10d	1275	3075	HD7160		24	16d	8	10d	1560	3695
11-7/8       BPH71118       10       16d       6       10d       1275       3075       HD7120       Min       16       6       16d       6       16d       6       1305       2465         14       BPH7114       10       16d       6       10d       1275       3075       HD7140       Min       20       16d       8       16d       1845       3390         16       BPH7116       10       16d       6       10d       1275       3075       HD7140       Min       20       16d       8       10d       1845       3080         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         18       BPH7118       10       16d       6       10d       1275       3075       HD7160        24       16d       8       10d       1560       3695       3695       3695	Double	EPI 56						Joist Wi	dth = 7"							
Image: Problem in the intervention of the interventence of the intervention of the intervention of the	11-7/8	BPH71118	10	16d	6	10d	1275	3075	HD7120	Min	16	16d	6	16d	1305	2465
14         BPH7114         10         16d         6         10d         1275         3075         HD7140         Min         20         16d         8         16d         1845         3080           16         BPH7116         10         16d         6         10d         1275         3075         HD7140         Max         26         16d         8         16d         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           18         BPH7118         10         16d         6         10d         1275         3075         HD7160          24         16d         8         10d         1560         3695										Max	22		8		1845	3390
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	14	BPH7114	10	16d	6	10d	1275	3075	HD7140	Max	20	16d	0 12	16d	2765	3080
18         BPH7118         10         16d         6         10d         1275         3075         HD7160          24         16d         8         10d         1560         3695	16	BPH7116	10	16d	6	10d	1275	3075	HD7160	ividX	20	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	24	BPH7124	10	16d	6	10d	1275	3075	HD7180		28	16d	8	10d	1560	4310



O Double





IF Double



IHF



Footnotes on page 9

### **DOUBLE I-JOISTS**

	Adjustable Height Hangers						Skewed 45° Hangers							
		Fastener Schedule <sup>4</sup> Header Joist			edule <sup>4</sup>			Fa	isten	er Scł	nedu	le <sup>4</sup>		
	MiTak	He	ader	J	oist	_ 2	MiTak	<b></b> ,	He	ader	J	oist		- 2
Joist	Stock No <sup>1,5,6,9</sup>	Otv	Type	Otv	Type	Down <sup>-</sup>	Stock No. 1,5,6	Min/	Otv	Type	Otv	Type	Uplift <sup>®</sup>	Down <sup>-</sup>
Double	e LPI 450	QLY	Type	QLY	Type	100 %	Joist Width = 3-1/2"	Wax	QLy	Type	QLY	Type	100 %	100 %
Boasi								Min	14		6		880	2155
11-7/8	MSH422	6	10d	6	10d	2530	HD410_SK45L/R_BV 7,8	Max	20	16d	10	10d	1465	3080
								Min	18		8		1135	2770
14	MSH422	6	10d	6	10d	2530	HD414_SK45L/R_BV ',°	Max	26	16d	12	10d	1755	4005
Double	e LPI 530						Joist Width = 4-1/8"							
9-1/2							SKH2020L/R-2 7		14	10d	10	10d	1645	1710
11-7/8	See curre	ent M	iTek P	roduc	ct Catal	og	SKH2020L/R-2 7		14	10d	10	10d	1645	1710
14	for sp	ecial	ty hang	ger o	ptions		SKH2024L/R-2 7		16	10d	10	10d	1680	1950
16							SKH2024L/R-2 7		16	10d	10	10d	1680	1950
Double	e 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	e 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	e LPI 20Plus, 32	2Plus	5				Joist Width = 5"				_			
9-1/2	MSH2622-2	6	10d	4	10d	2530	SKH2520L/R-2		14	10d	10	10d	1645	1710
11-7/8	MSH2622-2	6	10d	4	10d	2530	SKH2524L/R-2		16	10d	10	10d	1645	1710
14	MSH2622-2	6	10d	4	10d	2530	SKH2524L/R-2		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	e 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
10	MOLIADD D	0	164	6	164	2740		мах	26	164	12	104	2075	4005
10	MSH422-2	0	100	0	100	3740	HD7160_SK45L/R_BV		24	100	0	100	1170	3095
20	MSH422-2	0	164	6	164	3740	HD7160_SK45L/R_BV		24	164	0	100	1170	3095
20	MSH422-2	0	164	6	164	3740	HD7160_SK45L/R_BV		24	164	0	100	1170	4210
Z4 Double	a I PI 52Plus	0	Tou	0	Tou	3740	$HD/180_SK45L/R_BV$		20	Tou	0	TUU	1170	4310
Doubl	e El 1 321 lus							Min	16		6		980	2465
11-7/8	MSH422-2	8	16d	6	16d	3740	HD7120_SK45L/R_BV 7,	Max	22	16d	8	16d	1385	3390
								Min	20		8		1385	3080
14	MSH422-2	8	16d	6	16d	3740	HD7140_SK45L/R_BV 7,	Max	26	16d	12	16d	2075	4005
16	MSH422-2	8	16d	6	16d	3740			24	16d	8	10d	1170	3695
Double	e I PI 56	0	Tou	0	Tou	3740	$HD7100_3R43E/R_BV$		24	Tou	0	Tou	1170	3035
Boasi								Min	16		6		980	2465
11-7/8	MSH422-2	8	16d	6	16d	3740	HD7120_SK45L/R_BV ',	Max	22	16d	8	16d	1385	3390
								Min	20		8		1385	3080
14	MSH422-2	8	16d	6	16d	3740	HD7140_SK45L/R_BV 7,	Max	26	16d	12	16d	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 <sup>7,</sup>		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

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**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. Page 9

### LP<sup>®</sup> LVL BEAMS & HEADERS

Брн	Г тно	<b>I</b> PH
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РНХИ

HD



			То	р Мо	ount Hangers	<b>s</b> <sup>3</sup>		Face Mount Hangers							
		Fastener Header		Sche	dule <sup>4</sup>					Fast	ener S	Schee	dule <sup>4</sup>		
loist	MiTek		Header		Joist	Unlift <sup>2</sup>	Down <sup>1</sup>	MiTok	Min/	He	ader		Joist	Unlift <sup>2</sup>	Down <sup>1</sup>
Height	Stock No. <sup>6</sup>	Qty	Type	Qty	Type	160%	100%	Stock No.	Max	Qty	Туре	Qty	Type	160%	100%
1-3/4"	LP <sup>®</sup> SOLIDST	ART®	LVL & LSL												
7 1/4		0	164	6	$10d \times 1 \frac{1}{2}$	020	4250		Min	12	16d	4	10d x 1-1/2	760	1850
7-1/4	FHX017723	0	Tou	0	100 X 1-1/2	930	4350		Max	16	16d	8	10d x 1-1/2	1190	2465
	BPH17925	10	16d	4	10d x 1-1/2	850	2970	HD17925	Min	18	16d	6	10d x 1-1/2	1170	2770
9-1/4	BITTITOLO	10	log	·	100 X 1 1/2	000	2010		Max	24	16d	10	10d x 1-1/2	1900	3695
	PHXU17925	8	16d	6	10d x 1-1/2	930	4350	HUS179 <sup>5</sup>		30	16d	10	16d	4110	5580
	THO17950	6	10d	2	10d x 1-1/2	230	1235	HD17925	Min	18	16d	6	10d x 1-1/2	1170	2770
9-1/2				_				5	Max	24	16d	10	10d x 1-1/2	1900	3695
	PHXU1795	8	16d	6	10d x 1-1/2	930	4350	HUS179 <sup>3</sup>		30	16d	10	16d	4110	5580
44 4/4	BPH17112	10	16d	4	10d x 1-1/2	850	2970	HD17112	Min	22	16d	6	10d x 1-1/2	1170	3390
11-1/4	DUVUATAO	0	40-1	0	40-1 4 4/0	000	4050		Max	30	16d	12	10d x 1-1/2	1900	4320
	PHX017112	8	160	6	10d x 1-1/2	930	4350	HUS179 °		30	160	10	160	4110	5580
11 7/0	THO17118	6	10d	2	10d x 1-1/2	230	1235	HD17112	IVIIN	22	100	0	10d x 1-1/2	1000	3390
11-770		0	164	6	$10d \times 1 \frac{1}{2}$	020	4250	11104705	wax	30	160	12	100 X 1-1/2	1900	4320
	FHAUI/110	0	Tou	0	100 X 1-1/2	930	4330	HUS179	Min	28	16d	10 Q	10d x 1 1/2	1510	3700
14	BPH1714	10	16d	4	10d x 1-1/2	850	2970	HD1714	Max	20	16d	0	$100 \times 1 - 1/2$	1000	4580
14	PHXI 1714	8	16d	6	10d x 1-1/2	930	4350	HUS170 <sup>5</sup>	IVIAX	30	16d	10	16d	4110	5580
	111/01/14	0	Tod	0	100 X 1-1/2	500	4000	1103179	Min	28	16d	8	10d x 1-1/2	1510	3790
16	BPH1716	10	16d	4	10d x 1-1/2	850	2970	HD1714	Max	36	16d	14	10d x 1-1/2	1900	4580
									Min	28	16d	8	10d x 1-1/2	1510	3790
18								HD1714	Max	36	16d	14	10d x 1-1/2	1900	4580
2 Ply 1	-3/4" or 1 Ply 3	-1/2"		STAF	T <sup>®</sup> LVL & L	SL									
7-1/4	PHXU35725	8	16d	6	10d	1120	5910	THD48	5910	28	16d	16	10d	2595	4310
0.1/4	HBPH35925	22	16d	10	16d	2705	6310	THD410	6310	38	16d	20	10d	3905	5850
9-1/4	HLBH35925	15	NA16D-RS	6	16d	1420	10045	THDH410 5	10045	46	16d	12	16d	4345	9020
0.1/2	HBPH3595	22	16d	10	16d	2705	6310	THD410	6310	38	16d	20	10d	3905	5850
9-1/2	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
11-1/4	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
11 110	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 <sup>5</sup>	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 <sup>5</sup>	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 <sup>5</sup>	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<sup>®</sup> LVL BEAMS & HEADERS

V.	HBPH
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1

THD

📕 тндн

			Тор М	loun	t Hang	gers <sup>3</sup>		Face Mount Hangers							
		Fastener Sch Header		nedu	le <sup>4</sup>				Fa	sten	er Sch	edu	le <sup>4</sup>		
loist	MiTok		Header	J	oist	Linlift <sup>2</sup>	Down <sup>1</sup>	MiTek	Min/	He	ader	J	oist	Linlift <sup>2</sup>	Down <sup>1</sup>
Height	Stock No.	Qty	Type	Qty	Туре	160%	100%	Stock No. <sup>6</sup>	Max	Qty	Type	Qty	Type	160%	100%
3 Ply	1-3/4" LP <sup>®</sup> SO	LIDS	TART <sup>®</sup> LVL	& LS	L										
7 4 / 4	DDUGGZQG	40	40-1	~	40-1	050	2005		Min	10	40-1	4	40-1	920	1540
7-1/4	BPH55725	10	160	6	100	850	3065	HD68	Max	14	160	6	160	1305	2155
0.1/4	HBPH55925	22	16d	10	16d	2705	6185	THD610		38	16d	20	10d	4035	6535
9-1/4	HLBH55925	15	NA16D-RS	6	16d	1580	10045	THDH610 <sup>5</sup>		46	16d	16	16d	5290	9020
0.1/2	HBPH5595	22	16d	10	16d	2705	6185	THD610		38	16d	20	10d	4035	6535
9-1/2	HLBH5595	15	NA16D-RS	6	16d	1580	10045	THDH610 <sup>5</sup>		46	16d	16	16d	5290	9020
11 1/4	HBPH55112	22	16d	10	16d	2705	6185	THD610		38	16d	20	10d	4035	6535
11-1/4	HLBH55112	15	NA16D-RS	6	16d	1580	10045	THDH612 <sup>5</sup>		56	16d	20	16d	5290	9530
11 7/8	HBPH55118	22	16d	10	16d	2705	6185	THD610		38	16d	20	10d	4035	6535
11-770	HLBH55118	15	NA16D-RS	6	16d	1580	10045	THDH612 <sup>5</sup>		56	16d	20	16d	5290	9530
14	HBPH5514	22	16d	10	16d	2705	6185	THD610		38	16d	20	10d	4035	6535
14	HLBH5514	15	NA16D-RS	6	16d	1580	10045	THDH614 <sup>5</sup>		66	16d	22	16d	5305	11325
16	HBPH5516	22	16d	10	16d	2705	6185	THD612		48	16d	20	10d	4035	8255
10	HLBH5516	15	NA16D-RS	6	16d	1580	10045	THDH614 <sup>5</sup>		66	16d	22	16d	5305	11325
18	HBPH5518	22	16d	10	16d	2705	6185	THD612		48	16d	20	10d	4035	8255
10	HLBH5518	15	NA16D-RS	6	16d	1580	10045	THDH614 <sup>5</sup>		66	16d	22	16d	5305	11325
4 Ply	1-3/4" or 2 Ply	3-1/	2" LP <sup>®</sup> SOLI	DST/	ART <sup>®</sup> L	.VL & L	SL								
Q_1//	HBPH71925	22	16d	10	16d	2705	6185	THD7210		38	16d	20	10d	4035	6535
5-174	HLBH71925	15	NA16D-RS	6	16d	1580	10045	THDH7210 <sup>5</sup>		46	16d	12	16d	4345	9020
9-1/2	HBPH7195	22	16d	10	16d	2705	6185	THD7210		38	16d	20	10d	4035	6535
0 172	HLBH7195	15	NA16D-RS	6	16d	1580	10045	THDH7210 <sup>5</sup>		46	16d	12	16d	4345	9020
11_1//	HBPH71112	22	16d	10	16d	2705	6185	THD7210		38	16d	20	10d	4035	6535
11 1/4	HLBH71112	15	NA16D-RS	6	16d	1580	10045	THDH7212 <sup>5</sup>		56	16d	14	16d	5290	9020
11-7/8	HBPH71118	22	16d	10	16d	2705	6185	THD7210		38	16d	20	10d	4035	6535
11 //0	HLBH71118	15	NA16D-RS	6	16d	1580	10045	THDH7212 <sup>5</sup>		56	16d	14	16d	5290	9020
14	HBPH7114	22	16d	10	16d	2705	6185	THD7210		38	16d	20	10d	4035	6535
14	HLBH7114	15	NA16D-RS	6	16d	1580	10045	THDH7214 <sup>5</sup>		66	16d	16	16d	5305	11325
	HBPH7116	22	16d	10	16d	2705	6185	HD7120	Min	16	16d	6	16d	1305	2465
16		22	Tod	10	Tou	2100	0100	1107 120	Max	22	16d	8	16d	1845	3390
	HLBH7116	15	NA16D-RS	6	16d	1580	10045	THDH7214 <sup>5</sup>		66	16d	16	16d	5305	11325
	HBPH7118	22	16d	10	16d	2705	6185	HD7140	Min	20	16d	8	16d	1845	3080
18	1.5117110	~~	iuu	10	iou	2100	0100		Max	26	16d	12	16d	2765	4005
	HLBH7118	15	NA16D-RS	6	16d	1580	10045	THDH7214 <sup>5</sup>		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)

- 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.
- 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.

			F	astener	Sche	dule <sup>4,6,7</sup>	D	F
			He	ader		Joist		
Joist Height	MiTek Stock No. <sup>1,4</sup>	Installation Type	Qty	Туре	Qty	Туре	Uplift <sup>3</sup> 160%	Down <sup>2</sup> 100%
LPI 450		Joi	st Wic	ith = 1-3	3/4"			
		Sloped Only	10	10d	7	10d x 1-1/2	880	1200
11-7/8_ 14	LSSH179-TZ	Skewed Only <u>or</u> Sloped & Skewed	10	10d	7	10d x 1-1/2	880	1200
LPI 530		Jois	st Wid	th = 2-1	/16"			
		Sloped Only	10	10d	7	10d x 1-1/2	795	1200
9-1/2- 16	LSSH20-TZ	Skewed Only <u>or</u> Sloped & Skewed	10	10d	7	10d x 1-1/2	795	1200
LPI 36		Joi	st Wic	ith = 2-1	/4"			
		Sloped Only	10	10d	7	10d x 1-1/2	795	1200
11-7/8_ 18	LSSH23-TZ	Skewed Only <u>or</u> Sloped & Skewed	10	10d	7	10d x 1-1/2	795	1200
LPI 18, 20P	lus, 32Plus	Joi	st Wic	ith = 2-1	/2"			
		Sloped Only	18	16d	12	10d x 1-1/2	945	2095
9-1/2_ 16	LSSH25-TZ	Skewed Only <u>or</u> Sloped & Skewed	14	16d	12	10d x 1-1/2	945	1610
LPI 42Plus,	52Plus, LPI 56	Joi	st Wic	ith = 3-1	/2"			
		Sloped Only	18	16d	12	10d x 1-1/2	1310	2645
9-1/2_ 24	LSSH35-TZ	Skewed Only <u>or</u> 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.
- 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.





#### **TMP Chart**

Joist			Faster	er Se	chedule <sup>4</sup>	D	)F
	MiTek	Р	late		Rafter	Uplift <sup>3</sup>	Down <sup>2</sup>
LPI	Stock No. <sup>1</sup>	Qty	Туре	Qty	Туре	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**

			Fas	stener	Sch	edule <sup>4</sup>	DF									
			Plate	)		Rafter				Acco	ording t	o Pitch	2			
Joist Height	MiTek Stock No. <sup>1</sup>	Top Qty	Side Qty	Туре	Qty	Туре	6/12	7/12	8/12	9/12	10/12	11/12	12/12	13/12	14/12	Uplift <sup>3</sup> 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:**

- $\rightarrow$  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.

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

#### WSWH WASHER HEAD INTERIOR STRUCTURAL WOOD SCREW APPLICATIONS

#### Fastener Size Selection by Assembly Type



#### **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.

	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 (Ibs/lineal ft) (See Graphics) <sup>1,2,3,4,5</sup>													
Length				EWP Wood Specific Gravity G ≥ 0.50							EWP Wood Specific Gravity G ≥ 0.42						
(in)				Α	в	С	D	Е	F	A	в	С	D	Е	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					
	WSWH634		24				380	715	380				290	730	290		
		2	19.2				475	895	475		-		365	910	365		
			16				570	1075	570				435	1090	435		
6-3/4			12				765	1430	765				580	1455	580		
		3	24				570	1075	570		-		435	1090	435		
			19.2				/15	1345	/15				545	1365	545		
			16				860	1610	860				655	1640	655		
			12	1.00			1145	2150	1145		4.07		870	2185	870		
Head Side Multiplier <sup>6</sup>		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<sub>D</sub>=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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