

EWP Product Guide

USPconnectors.com

For Use With Products Manufactured by



LIMIT
STATES
DESIGN



SKH2520R-2 ●



LSSH35 ●



THFI2514 ●



TFL25118 ●

MiTek

Canadian Specifiers Guide

Bradford • Thornhill • Surrey • Calgary • Edmonton • Laval • Dieppe

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

- See current USP Product Catalog for General Notes, Warranty, and installation information for hanger models, joist sizes, and header situations not shown.
- Loads listed address hanger/header/fastener limitations as well as joist/hanger limitations assuming header material is Douglas Fir-Larch (DF), LVL (SG \geq 0.50) or Spruce-Pine-Fir (S-P-F). Joist reaction should be checked by a qualified designer to ensure proper hanger selection.
- Uplift loads have been increased 15% for wind or seismic loads and no further increase shall be permitted. Reduce loads according to code for normal duration loading such as cantilever construction.
- If hanger height is less than 60% of joist height, joist rotation may occur, therefore supplemental lateral restraints are required, see page 3.
- The type and quantity of fasteners used to install USP products is critical to connector performance. To achieve the factored resistances shown in this document, install with the fasteners specified for that particular product. All specified fasteners must be properly installed prior to applying load of any kind to the connection.
- Throughout this document, dimensions are expressed in inches and loads in pounds, unless specifically noted otherwise.
- Load values for 10d and 16d designations in the fastener schedules throughout this document refer to common wire nails, unless noted otherwise.
- The factored resistances shown in this document are based on Limit States Design methodology.
- *Multiple 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 Joists:* Use slope seat hangers and beveled web stiffeners whenever the slope exceeds the following: $\frac{1}{2}$:12 for seat bearing lengths of $2\frac{1}{2}$ " or less; $\frac{3}{8}$:12 for bearing lengths between $2\frac{1}{2}$ " and $3\frac{1}{2}$ "; and $\frac{1}{4}$:12 for bearing lengths in excess of $3\frac{1}{2}$ ".

Backer Blocks – Pattern the nails used to install backer blocks or web stiffeners in wood Joists to avoid splitting the block. The nail pattern should be sufficiently spaced to avoid the same grain line, particularly with solid sawn backer blocks. Backer blocks must be installed on wood Joists

acting as the header, or supporting member. Install in accordance with the I-Joist manufacturer's installation guidelines. The nails used to install hangers mounted to a Joist header must penetrate through the web and into the backer block on the opposite side.

With top flange hangers, backer block required only for factored downward loads exceeding 360 lbs or for uplift conditions

Backer Block Installation:
Install tight to top flange Use (12) 3" nails, clinched when possible. Maximum factored resistance for hanger for this detail = 1620 lbs.

Filler Block Installation:
Attach per table to the right. Leave 1/8" gap between top flange and filler block

Backer Block required (both sides for face-mounted hangers)

Typical THO (top mount) backer block installation

Typical THF (face mount) backer block installation

Filler and Backer Block sizes

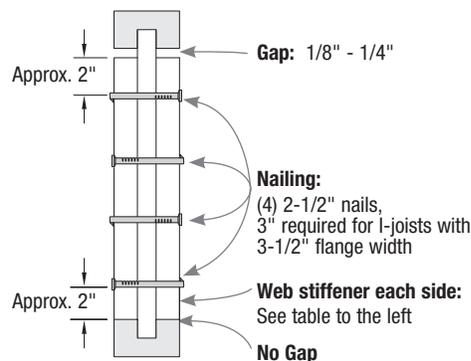
PKI Flange Width	Backer Block *		Filler Block	
	Material Thickness	Minimum Depth**	Joist Depth	Filler Block Size
2-1/2"	1"	5-1/2"	9-1/2"	2-1/8" x 6"
			11-7/8"	2-1/8" x 8"
			14"	2-1/8" x 10"
3-1/2"	1-1/2"	7-1/4"	9-1/2"	3" x 6"
			11-7/8"	3" x 8"
			14"	3" x 10"
			16"	3" x 12"

* Minimum grade for backer block material shall be Utility grade SPF (south) or better for solid sawn lumber and Rated Sheathing grade for wood structural panels.

** For face-mount hangers, use net joist depth minus 3-1/4" for joist with 1-1/2" thick flanges. For 1-5/16" thick flanges, use net depth minus 2-7/8".

Web Stiffener Attachment for Joists

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



Support Height & Lateral Stability

Hangers for joists **without web stiffeners** must support the 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.



(Top flange support requirements can be verified in *EWP Top Mount Hangers* charts under the *Web Stiffener Req.* column of USP's *Product Catalog*.)

Nailer Installations

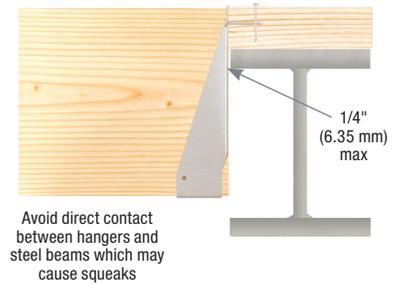
Correct Hanger Attachment to Nailer

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

Nailer Sized Correctly

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

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

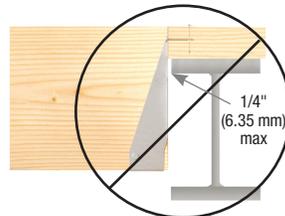


Wrong Nailer Size Causes Component Failure



⚠ 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 Wide

Loading can cause cross grain breaking of nailer. The recommended nailer overhang is 1/4" (6.35mm) maximum per side.



⚠ Too Thin

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

Top Flange Hangers

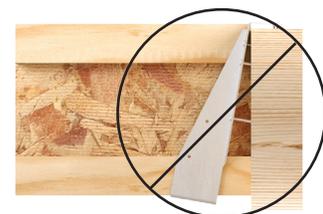
The thickness of the hanger metal and nail heads on top mount hangers must be evaluated for the effect on subsequent sheathing. Ensure the top mount hanger is installed so the flanges of the hanger are not *over-spread* which tends to elevate the supported I-Joist, causing uneven floor surfaces and squeaking.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



Flush framing



⚠ Hanger over-spread



⚠ Hanger not plumb

Single PKI Joist - Hanger Factored Resistance (Lbs)

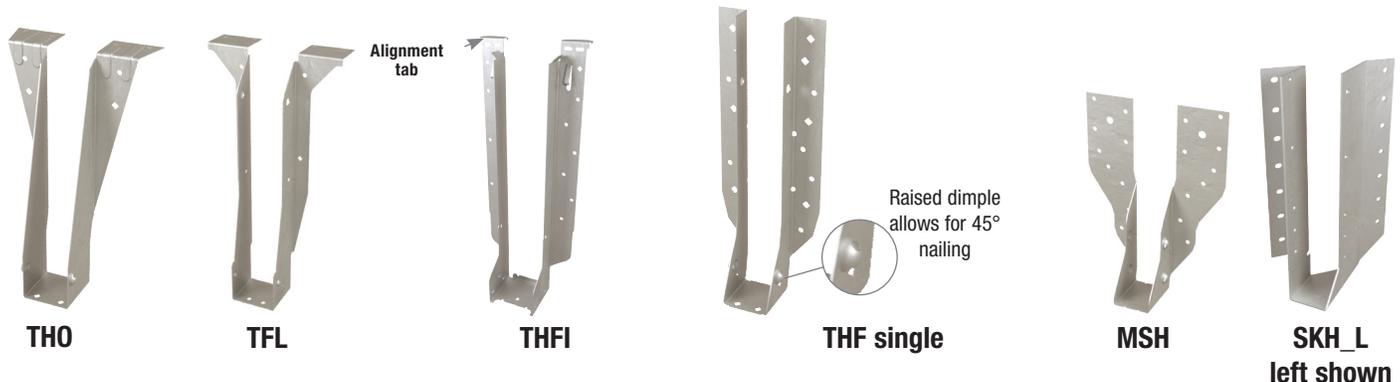


Joist Height	Top Mount Hangers ⁴										Face Mount Hangers									
	USP Stock No. ¹	Length of Hanger Seat (in)	Fastener Schedule ⁵				LVL		S-P-F		USP Stock No. ¹	Length of Hanger Seat (in)					DF		S-P-F	
			Header		Joist		Down ² 100%	Uplift ³ 115%	Down ² 100%	Uplift ³ 115%			Qty	Type	Qty	Type	Down ² 100%	Uplift ³ 115%	Down ² 100%	Uplift ³ 115%
			Qty	Type	Qty	Type														
PKI 10, 20, 23																				
Joist Width = 2-1/2"																				
9-1/2	TFL2595	2	6	10d	2	10d x 1-1/2	2370	265	1960	210	THFI2595	2	8	10d	--	--	2345	235	1845	185
11-7/8	TFL25118	2	6	10d	2	10d x 1-1/2	2370	265	1960	210	THFI25118	2	10	10d	--	--	2345	235	1845	185
14	TFL2514	2	6	10d	2	10d x 1-1/2	2370	265	1960	210	THFI2514	2	12	10d	--	--	4605	235	3615	185
16	TFL2516	2	6	10d	2	10d x 1-1/2	2370	265	1960	210	THF25160	2-1/2	22	10d	2	10d x 1-1/2	4405	690	3460	565
PKI 35 plus, 40, 50																				
Joist Width = 3-1/2"																				
9-1/2	THO35950	2-3/8	10	10d	2	10d x 1-1/2	2950	485	2620	380	THF35925	2-1/2	12	10d	2	10d x 1-1/2	5075	445	4115	365
11-7/8	THO35118	2-3/8	10	10d	2	10d x 1-1/2	2950	485	2620	380	THF35112	2-1/2	16	10d	2	10d x 1-1/2	5075	445	4115	365
14	THO35140	2-3/8	12	10d	2	10d x 1-1/2	3910	485	3385	380	THF35140	2-1/2	20	10d	2	10d x 1-1/2	6680	445	5245	365
16	THO35160	2-3/8	12	10d	2	10d x 1-1/2	3910	485	3385	380	THF35157	2-1/2	22	10d	2	10d x 1-1/2	6680	445	5245	365

- 1) Web stiffeners may be required for hangers by joist manufacturer.
- 2) Factored resistances are based on hanger attachment to a DF or S-P-F species solid sawn or LVL header.
- 3) Factored uplift resistances have been increased 15% for short-term loads such as wind and earthquake; reduce for other load durations in accordance with the code.
- 4) Top Mount Hangers assume supporting headers to have a minimum height of 5-1/2" and a minimum thickness of the length of the header nails or the depth of the top flange, whichever is greater. For wood nailer options or header materials not included in this table, refer to the current USP Product Catalog.
- 5) **NAILS:** 10d x 1-1/2 nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long.

Joist Height	Skewed 45° Hangers										Adjustable Height Hangers									
	USP Stock No. ¹	Length of Hanger Seat (in)	Fastener Schedule ⁶				DF		S-P-F		USP Stock No. ¹	Length of Hanger Seat (in)	Fastener Schedule ⁶				DF		S-P-F	
			Header		Joist		Down ² 100%	Uplift ³ 115%	Down ² 100%	Uplift ³ 115%			Qty	Type	Qty	Type	Down ² 100%	Uplift ³ 115%	Down ² 100%	Uplift ³ 115%
			Qty	Type	Qty	Type														
PKI 10, 20, 23																				
Joist Width = 2-1/2"																				
9-1/2	SKH2520L/R	1-7/8	14	10d	10	10d x 1-1/2	3440	2855	2700	2240	MSH322 ⁵	1-3/4	6	10d	4	10d x 1-1/2	3370	--	2750	--
11-7/8	SKH2520L/R	1-7/8	14	10d	10	10d x 1-1/2	3440	2855	2700	2240	MSH322 ⁵	1-3/4	6	10d	4	10d x 1-1/2	3370	--	2750	--
14	SKH2524L/R	1-7/8	16	10d	10	10d x 1-1/2	4640	2855	3645	2240	MSH322 ⁵	1-3/4	6	10d	4	10d x 1-1/2	3370	--	2750	--
16	SKH2524L/R	1-7/8	16	10d	10	10d x 1-1/2	4640	2855	3645	2240	MSH322 ⁵	1-3/4	6	10d	4	10d x 1-1/2	3370	--	2750	--
PKI 35 plus, 40, 50																				
Joist Width = 3-1/2"																				
9-1/2	SKH410L/R ⁴	2-1/2	16	16d	10	16d	4130	2855	3240	2240	MSH422 ⁵	1-3/4	6	10d	6	10d	3215	--	2525	--
11-7/8	SKH410L/R ⁴	2-1/2	16	16d	10	16d	4130	2855	3240	2240	MSH422 ⁵	1-3/4	6	10d	6	10d	3215	--	2525	--
14	SKH414L/R ⁴	2-1/2	22	16d	10	16d	8720	2855	6845	2240	MSH422 ⁵	1-3/4	6	10d	6	10d	3215	--	2525	--
16	SKH414L/R ⁴	2-1/2	22	16d	10	16d	8720	2855	6845	2240	MSH422 ⁵	1-3/4	6	10d	6	10d	3215	--	2525	--

- 1) Shaded hangers require web stiffeners at joist ends.
- 2) Factored resistances are based on hanger attachment to a DF or S-P-F species solid sawn or LVL header.
- 3) Factored uplift resistances have been increased 15% for short-term loads such as wind and earthquake; reduce for other load durations in accordance with the code.
- 4) Bevel cut required on end of joist to achieve design loads.
- 5) MSH factored resistances 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 USP Product Catalog.
- 6) **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, 16d nails are 0.162" dia. x 3-1/2" long.



Double PKI Joist - Hanger Factored Resistance (Lbs)

Joist Height	Top Mount Hangers ⁴										Face Mount Hangers									
	USP Stock No. ¹	Length of Hanger Seat (in)	Fastener Schedule ⁵				LVL		S-P-F		USP Stock No. ¹	Length of Hanger Seat (in)	Fastener Schedule ⁵				DF		S-P-F	
			Header		Joist		Down ² 100%	Uplift ³ 115%	Down ² 100%	Uplift ³ 115%			Header		Joist		Down ² 100%	Uplift ³ 115%	Down ² 100%	Uplift ³ 115%
			Qty	Type	Qty	Type							Qty	Type	Qty	Type				
Double PKI 10, 20, 23											Joist Width = 5"									
9-1/2	TH025950-2	3	10	16d	6	10d	5090	2140	4570	1680	THF25925-2	2-1/2	12	10d	6	10d	5075	3185	4115	2610
11-7/8	TH025118-2	3	10	16d	6	10d	5090	2140	4570	1680	THF25112-2	2-1/2	16	10d	6	10d	5075	3185	4115	2610
14	TH025140-2	3	12	16d	6	10d	5090	2140	5545	1680	THF25140-2	2-1/2	20	10d	6	10d	6680	3185	5245	2610
16	TH025160-2	3	12	16d	6	10d	5090	2140	5545	1680	THF25160-2	2-1/2	24	10d	6	10d	6680	3185	5245	2610
Double PKI 35 plus, 40, 50											Joist Width = 7"									
9-1/2	BPH7195	3	10	16d	6	10d	5300	2935	4340	2305	HD7100	2-1/2	12	16d	6	10d	4920	2685	3865	2105
11-7/8	BPH71118	3	10	16d	6	10d	5300	2935	4305	2305	HD7120	2-1/2	16	16d	6	10d	4675	2685	3670	2105
14	BPH7114	3	10	16d	6	10d	5300	2935	4305	2305	HD7140	2-1/2	20	16d	8	10d	7485	2685	5875	2105
16	BPH7116	3	10	16d	6	10d	5300	2935	4305	2305	HD7140	2-1/2	20	16d	8	10d	7485	2685	5875	2105

- 1) Shaded hangers require web stiffeners at joist ends.
- 2) Factored resistances are based on hanger attachment to a DF or S-P-F species solid sawn or LVL header.
- 3) Factored uplift resistances have been increased 15% for short-term loads such as wind and earthquake; reduce for other load durations in accordance with the code.
- 4) Top Mount Hangers assume supporting headers to have a minimum height of 5-1/2" and a minimum thickness of the length of the header nails or the depth of the top flange, whichever is greater. For wood nailer options or header materials not included in this table, refer to the current USP Product Catalog.
- 5) **NAILS:** 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 used where 10d commons are specified.

Joist Height	Skewed 45° Hangers										Adjustable Height Hangers									
	USP Stock No. ¹	Length of Hanger Seat (in)	Fastener Schedule ⁷				DF		S-P-F		USP Stock No. ⁶	Length of Hanger Seat (in)	Fastener Schedule ⁷				DF		S-P-F	
			Header		Joist		Down ² 100%	Uplift ³ 115%	Down ² 100%	Uplift ³ 115%			Header		Joist		Down ² 100%	Uplift ³ 115%	Down ² 100%	Uplift ³ 115%
			Qty	Type	Qty	Type							Qty	Type	Qty	Type				
Double PKI 10, 20, 23											Joist Width = 5"									
9-1/2	SKH2520L/R-2 ⁵	3-1/2	14	10d	10	10d	5320	3490	4175	2740	MSH2622-2 ⁶	1-3/4	6	10d	4	10d	3475	--	2830	--
11-7/8	SKH2520L/R-2 ⁵	3-1/2	14	10d	10	10d	5320	3490	4175	2740	MSH2622-2 ⁶	1-3/4	6	10d	4	10d	3475	--	2830	--
14	SKH2524L/R-2 ⁵	3-1/2	16	10d	10	10d	4950	3485	3885	2735	MSH2622-2 ⁶	1-3/4	6	10d	4	10d	3475	--	2830	--
16	SKH2524L/R-2 ⁵	3-1/2	16	10d	10	10d	4950	3485	3885	2735	MSH2622-2 ⁶	1-3/4	6	10d	4	10d	3475	--	2830	--
Double PKI 35 plus, 40, 50											Joist Width = 7"									
9-1/2	HD7100-SK45L/R_BV ^{4,5}	2-1/2	12	16d	6	10d	4920	2015	3865	1580	MSH422-2 ⁶	2	8	16d	6	16d	6665	--	5230	--
11-7/8	HD7120-SK45L/R_BV ^{4,5}	2-1/2	16	16d	6	10d	4675	2015	3670	1580	MSH422-2 ⁶	2	8	16d	6	16d	6665	--	5230	--
14	HD7140-SK45L/R_BV ^{4,5}	2-1/2	20	16d	8	10d	7485	2015	5875	1580	MSH422-2 ⁶	2	8	16d	6	16d	6665	--	5230	--
16	HD7140-SK45L/R_BV ^{4,5}	2-1/2	20	16d	8	10d	7485	2015	5875	1580	MSH422-2 ⁶	2	8	16d	6	16d	6665	--	5230	--

- 1) Shaded hangers require web stiffeners at joist ends.
- 2) Factored resistances are based on hanger attachment to a DF or S-P-F species solid sawn or LVL header.
- 3) Factored uplift resistances have been increased 15% for short-term loads such as wind and earthquake; reduce for other load durations in accordance with the code.
- 4) Hangers are special order. Consult USP for pricing and lead times.
- 5) Bevel cut required on end of joist to achieve design loads.
- 6) MSH factored resistances listed in this table assume Top-Min mounting condition. For MSH Face-Max and Top-Max mounting conditions not included in this table, refer to the current USP Product Catalog.
- 7) **NAILS:** 10d nails are 0.148" dia. x 3" long and 16d nails are 0.162" dia. x 3-1/2" long. 16d sinkers are 0.148" dia. x 3-1/4" long and may be used where 10d commons are specified.

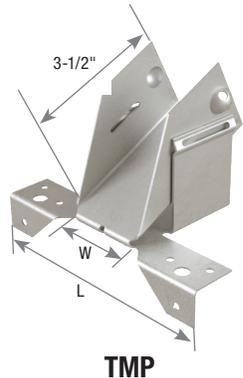
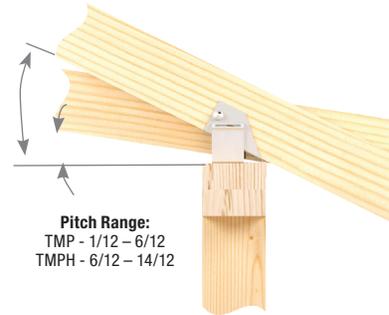


Variable Pitch Connectors

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

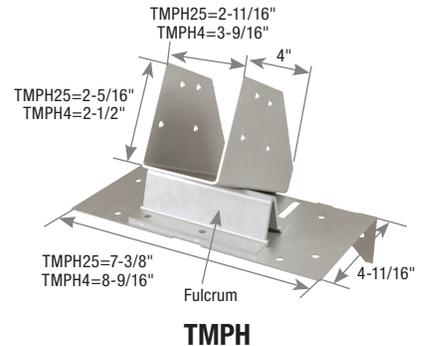
Installation:

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



TMP Hanger Factored Resistance (Lbs)

Joist Height	USP Stock No.	Dimensions (in)		Fastener Schedule ⁴				DF		S-P-F	
		W	L	Qty	Type	Qty	Type	Vertical ² 100%	Uplift ³ 115%	Vertical ² 100%	Uplift ³ 115%
PKI 10, 20, 23											
Joist Width = 2-1/2"											
All	TMP25	2-11/16	6-3/8	6	10d	4	10d x 1-1/2	2770	400	2175	315
PKI 35 plus, 40, 50											
Joist Width = 3-1/2"											
All	TMP4	3-9/16	7-5/16	6	10d	4	10d x 1-1/2	2770	400	2175	315



- 1) Web stiffeners may be required for hangers by joist manufacturer.
- 2) Factored resistances are based on hanger attachment to a DF or S-P-F species solid sawn or LVL header. Loads are governed by test results; no further increase shall be permitted.
- 3) Factored uplift resistances have been increased 15% for short-term loads such as wind and earthquake; reduce for other load durations in accordance with the code.
- 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 Hanger Factored Resistance (Lbs)

Joist Height	USP Stock No.	Fastener Schedule ⁴				DF										S-P-F									
		Plate		Rafter		According to Pitch ²										According to Pitch ²						Uplift ³ 115%			
Qty	Type	Qty	Type	6/12	7/12	8/12	9/12	10/12	11/12	12/12	13/12	14/12	Uplift ³ 115%	6/12	7/12	8/12	9/12	10/12	11/12	12/12	13/12		14/12		
PKI 10, 20, 23																									
Joist Width = 2-1/2"																									
All	TMPH25	10	10d	8	10d x 1-1/2	5220	5385	5540	5005	4470	4305	4120	3655	3185	330	4100	4225	4350	3930	3510	3380	3235	2870	2500	255
PKI 35 plus, 40, 50																									
Joist Width = 3-1/2"																									
All	TMPH4	10	10d	8	10d x 1-1/2	5220	5385	5540	5005	4470	4305	4120	3655	2605	330	4100	4225	4350	3930	3510	3380	3235	2870	2500	255

- 1) Web stiffeners are required for all Wood I-Joist installations.
- 2) Factored resistances are based on hanger attachment to a DF or S-P-F species solid sawn or LVL header. Loads are governed by test results; no further increase shall be permitted.
- 3) Factored uplift resistances have been increased 15% for short-term loads such as wind and earthquake; reduce for other load durations in accordance with the code.
- 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.

Field Slope/Skew Hangers

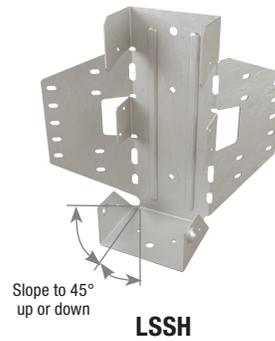
The LSSH series connects rafters to ridge beams in vaulted roof structures. This series is field adjustable to meet a variety of skew and/or slope applications. Slopes and skews 0° to 45°.

Installation:

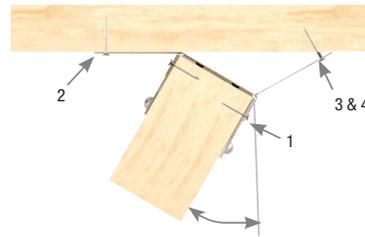
- Use all specified fasteners.

Steps:

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 LSSH179 installation



Skew to 45° maximum

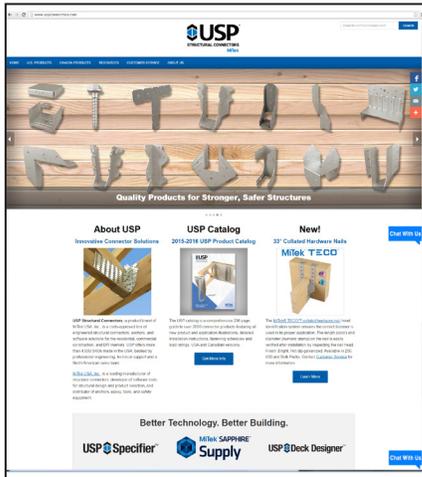
Hanger Factored Resistance (Lbs)

Joist Height	USP Stock No. ¹	Length of Hanger Seat (in)	Installation Type	Fastener Schedule ⁵				DF		S-P-F	
				Header		Joist		Vertical ² 100%	Uplift ³ 115%	Vertical ² 100%	Uplift ³ 115%
				Qty	Type	Qty	Type				
PKI 10, 20, 23				Joist Width = 2-1/2"							
9-1/2 – 16	LSSH25	3	Sloped Only	18	16d	12	10d x 1-1/2	4125	1895	3240	1490
			Skewed Only <u>or</u> Sloped & Skewed	14	16d	12	10d x 1-1/2	2895	1895	2270	1490
PKI 35 plus, 40, 50				Joist Width = 3-1/2"							
9-1/2 – 16	LSSH35	3	Sloped Only	18	16d	12	10d x 1-1/2	5065	2515	3980	1975
			Skewed Only <u>or</u> Sloped & Skewed	14	16d	12	10d x 1-1/2	3045	2515	2390	1975

- 1) Shaded hangers require web stiffeners at joist ends.
- 2) Factored resistances are based on hanger attachment to a DF or S-P-F species solid sawn or LVL header.
- 3) Factored uplift resistances have been increased 15% for short-term loads such as wind and earthquake; reduce for other load durations in accordance with the code.
- 4) Supplemental lateral support connection recommended when hanger height is less than 60% of joist height.
- 5) **NAILS:** 10d x 1-1/2 nails are 0.148" dia. x 1-1/2" long, 16d nails are 0.162" dia. x 3-1/2" long.

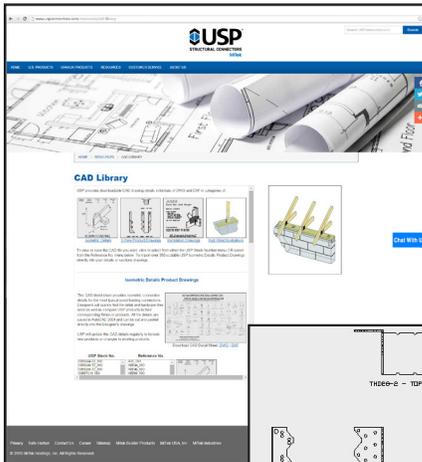
Specification Tools

All available on our Web Site
@ USPconnectors.com



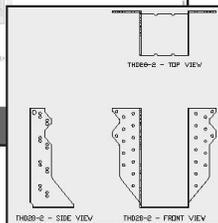
Comprehensive Web Site

- Contains all USP literature in a printable .pdf format
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