



STRUCTURAL CONNECTORS

2015-2016 Product Catalog



EXCLUSIVELY FROM MITEK
FWH Fire Wall Hanger

USPconnectors.com
1-800-328-5934

MiTek[®]
Better Technology. Better Building.[™]

Columbia EX2046
Simpson Strong-Tie Company Inc. v. Columbia Insurance Company
PGR2024-00050
USP Structural Connectors 2015-2016 Product Catalog

NEW PRODUCTS



Fasteners



MiTek® TECO™ Collated Hanger Nails

MiTek has reintroduced MiTek® TECO™ nails with the introduction of 33° collated pneumatically driven nails. The color coded head-ID stamp system makes it easy to verify the proper nail has been used. The 33° collated nails can serve as an alternate to hand-driven nails and may be used with many USP products.

See [Page 23](#) for more information.



HDG Hex Head Wood Screws

The WS Structural Wood Screws in Hot-Dip Galvanized finish are designed for installation with our Triple-Zinc G-185 and hot-dip galvanized connector products as well as wood-to-wood installations. They are recommended for outdoor applications and with treated wood.

See [Page 25](#) for more information.

Concrete & Masonry

Adhesive Anchoring Systems

A complete line of high performance epoxy for heavy industrial seismic and wind applications to household projects.

See [Pages 30-31](#) for more information.



Available in 5 formulas and 2 sizes



ATR All Thread Rods

ATR All Thread Rod is a continuously threaded low carbon steel rod that may be used for anchoring USP's holdowns, tension ties and wood structural panel shear walls to concrete. They can also be used for many other general purpose tension transfer fastening needs. RW Round Washers and HN Hex Nuts are also available for assembly of threaded rods.

See [Pages 37-39](#) for more information.



CNW Coupler Nuts

The USP CNW coupler nut is designed to join threaded rods to embedded anchor rods. The coupler nut has an inspection hole with internal positive stop that allows easy verification that the ends of both rods have been fully threaded.

See [Page 38](#) for more information.



FA4 Foundation Anchor

Changes to the building codes have resulted in 5/8" diameter anchor bolts being more commonly specified on design plans for anchoring the structure to the foundation. The FA4 foundation anchors can be installed as a replacement for these anchor bolts while achieving the same load capacity. They can also be used to replace 1/2" diameter anchor bolts.

See [Page 41](#) for more information.



FWAN-TZ Foundation Wall Anchor

The FWAN-TZ Foundation Wall Anchor is designed to transfer in-plane and out-of-plane foundation wall loads through the joist/blocking into the floor diaphragm. The unique design allows for installations that straddle the joist/blocking eliminating bending stresses in the rim board that result from offset installations.

See [Page 43](#) for more information.

NEW PRODUCTS



Concrete & Masonry



SRCP Sill Retrofit Connector Plate

The SRCP Sill Retrofit Connector Plate is designed as a retrofit sill-to-foundation connection that can be installed where there is minimal space between the floor framing and top of the foundation wall. The economical design is targeted for use in seismic regions and yet is also suitable for use as a supplementary connection in high wind areas. The SRCP Sill Retrofit Connector Plate can be installed without shims anywhere the face of the sill plate is within 1/2" of the face of the foundation wall.

See [Page 44](#) for more information.



SRC Sill Retro Fit Connector

The SRC Sill Retrofit Connector has been engineered as a ductile retrofit for older buildings in high seismic zone regions that require additional reinforcement. The two-piece design easily adjusts to foundations of varying thickness and can also be used where the sill plate may not be parallel to the face of the foundation wall. The SRC can also be used to reinforce buildings in high velocity wind zones.

See [Page 45](#) for more information.

Holdowns



HTT45 Tension Ties

The newest addition to our line of Tension Ties is the HTT45 which provides an increased load carrying capacity by utilizing the diamond hole nailing pattern. Tested to ICC-ES AC155, the HTT45's high load carrying capacity exceeds the requirements of the 2012 IRC Section R602.10.6.1 for Method ABW braced wall construction. Easily installs with 10d or 16d nails, the 16d Max nailing can be used when lower deflections are required by design.

See [Page 52](#) for more information.

Caps & Bases



EPB44T-TZ Elevated Post Bases

The EPB44T-TZ Elevated Post Base is an economical solution for supporting 4x4 posts at the minimum 1 inch above the concrete foundation as required by the building code. For applications where uplift loads are not present, the EPB44T-TZ can be installed directly into a hole pre-drilled in a pier block or concrete foundation. To resist uplift loading, the EPB44T-TZ must be cast into concrete or epoxied into place.

See [Page 66](#) for more information.

Hangers



FWH Fire Wall Hangers

The FWH Fire Wall Hanger series is the best solution for attaching floor framing to fire rated walls in wood frame construction. The advanced design allows the installation of the FWH before the drywall is attached and permits the building project to be completely framed-up, and weather-tight before the drywall sheathing work starts.

See [Pages 121-122](#) for more information.

NEW PRODUCTS



EWP Hangers



THFI Face Mount I-Joist Hangers

The THFI is a face mount hanger designed to attach EWP I-joist members to wood headers. The unique design of the THFI combines the installation ease of a top mount hanger with the installation flexibility of a face mount hanger. Because the side flanges extend to the top chord of the I-joist, web stiffeners are not required. The THFI hangers also feature strategically placed Seat Cleats® which lock the bottom flange of the I-joist to the hanger eliminating the need for joist nails to be installed.

See [Pages 141, 145-146](#) for more information.



HBPH Top Mount Hangers

HBPH Top Mount Hangers are designed to support LVL, LSL and PSL beams and purlins in heavy capacity load conditions.

See [Pages 150, 155-160](#) for more information.

Truss & Rafter



RT7AT Reverside/Universal Hurricane/Seismic Anchor

The RT7AT Hurricane/Seismic Anchor universal design connects a wide variety of roof framing members to a double top plate. The RT7AT is also designed to attach to a 2x4 or larger truss bottom chord on one leg while fastening to the double top plate on the opposite leg. The reversible design simplifies installation eliminating the left and right connector versions and confusion in the field.

See [Pages 184-185](#) for more information.

Plated Truss



MSHA Adjustable Strap Skewed Hangers

The MSHA Series hanger offers the most flexible field solution for truss-to-truss connections accommodating a range of skews and challenging web-chord geometry often found in truss framing. Eliminating the need for special order hangers, the MSHA Series provides economical solutions for 2x and 4x trusses skewed between 22-1/2° to 75° and can be used in top mount, face mount or combination installation.

See [Pages 196-197](#) for more information.



THDHQ Girder Truss Hangers

The THDHQ hangers are designed to attach multi-ply girder trusses together using USP's WS Wood Screws for high load capacity. THDHQ hangers can also be used to attach structural composite lumber (SCL) to other framing members.

See [Page 190](#) for more information.

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STRUCTURAL CONNECTORS
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WARRANTY

MiTek USA, Inc. ("MiTek") warrants its USP catalog Products to be free from material defects in manufacture and design, and further warrants that they will perform within the design limitations of its published building code approvals for the applications described, when properly installed and maintained. These warranties do not cover Product deterioration due to environmental conditions, Products that have been modified or damaged, improperly installed or used outside of published design limitations or for other applications. In the event any Product is shown to not conform to these warranties, USP's sole obligation, and Customer's sole and exclusive remedy, shall be, at USP's option, to replace the non-conforming product or refund the full purchase price paid by Customer to USP therefor. USP MAKES NO OTHER PRODUCT WARRANTIES, EXPRESS OR IMPLIED, OF ANY KIND, AND

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Beam/ Joist Size	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)					Fastener Schedule ⁵					DF/SP Allowable Loads (Lbs.) ^{2,3}				Code Ref.		
				W	H	D	L	TF	Header		Joist		Floor	Roof		Uplift ¹				
									Qty	Face	Type	Qty		Type	100%		115%		125%	160%
8 x 6	KHW86	HW86	3/10	7-1/2	5-3/8	2-1/2	10	2-1/2	4	---	NA20D	2	10d	5535	5535	5535	145	2, R12, F1		
8 x 8	KHW88	HW88	3/10	7-1/2	7-1/8	2-1/2	10	2-1/2	4	---	NA20D	2	10d	5535	5535	5535	145			
8 x 10	KHW810	HW810	3/10	7-1/2	9-1/8	2-1/2	10	2-1/2	4	---	NA20D	2	10d	5535	5535	5535	145			
8 x 12	KHW812	HHB812, HW812	3/10	7-1/2	11-1/8	2-1/2	10	2-1/2	4	---	NA20D	2	10d	5535	5535	5535	145			
8 x 14	KHW814	HHB814, HW814	3/10	7-1/2	13-1/8	2-1/2	10	2-1/2	4	---	NA20D	2	10d	5535	5535	5535	145			
8 x 16	KHW816	HHB816, HW816	3/10	7-1/2	15-1/8	2-1/2	10	2-1/2	4	---	NA20D	2	10d	5535	5535	5535	145			
Glulam Sizes ⁴																				
2-1/2 glulam	KHW26	-- --	3/10	2-11/16	specify	4	10	2-1/2	4	---	NA20D	2	10d x 1-1/2	5295	5295	5295	145	2,		
3-1/8 glulam	KHW3	HW3.25	3/10	3-1/4	specify	3	10	2-1/2	4	---	NA20D	2	10d	5535	5535	5535	145	R12,		
5-1/8 glulam	KHW5	HW5.25	3/10	5-1/4	specify	2-1/2	10	2-1/2	4	---	NA20D	2	10d	5535	5535	5535	145	F1		

1) Uplift Loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.

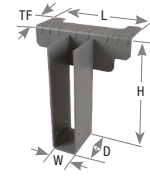
2) KHW Glulam load values are based on 560 psi perpendicular to grain loading.

3) Refer to the respective Nail Options chart on page 118 for hangers installed on wood nailers.

4) Consult USP for additional Glulam sizes.

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, 16d nails are 0.162" dia. x 3-1/2" long, NA20D nails are 0.192" dia. x 2-1/2" long and are included with KHW hangers.

New products or updated product information are designated in **blue font**.



FWH Fire Wall Hangers

The Fire Wall Hanger is designed for attaching truss, I-joist, solid sawn lumber, or engineered wood floor framing members to double wall top plates or minimum 2-ply 2x solid sawn header fire rated wood frame walls. The advanced design allows the installation of the FWH **before** the 5/8" gypsum wallboard (drywall) is attached and permits the building project to be completely framed-up, and weather-tight before the gypsum wallboard sheathing work starts.

Materials: 14 gauge

Finish: G90 galvanizing

Options: See Specialty Options chart on page 122

Codes: See page 11 for Code Reference Chart

Patents: Pending

Installation:

- Install the face of hanger flanges tight to stud wall framing.
- For wall framing, hangers do NOT need to be installed at stud locations for full design values.
- The end of the truss/joist should measure 1-5/8" from the face of the supporting wall. See Figure 1.
- The truss/joist should bear fully on the FWH seat with a gap no greater than 1/8" between the end of the supported member and the hanger. See Figure 1.
- **Gypsum Wallboard Installation** - Use the FWH-T template to slot cut the gypsum wallboard. See FWH-T Template Sequence. Slide the gypsum wallboard into position and fasten to the framing members meeting the minimum requirements specified by code.

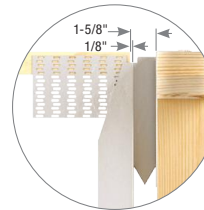
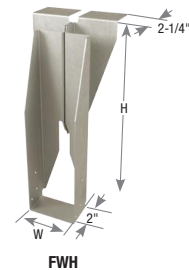
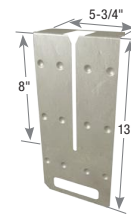


Figure 1

Typical FWH
Side View

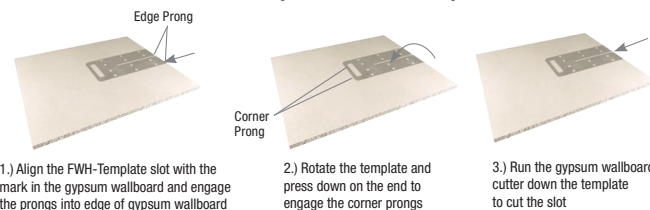


FWH



FWH-T template

FWH-T Template Installation Sequence



2 Hour Fire-Rating

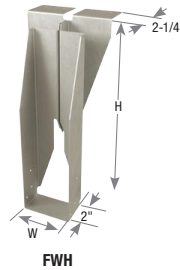
FWH hangers are tested per ASTM E814 standards. When installed on one side of a maximum 2 hour fire-rated wall assembly, the penetration of the USP FWH Fire Wall Hanger through the gypsum wallboard will not reduce the fire resistive rating of the 2 hour fire resistive assembly.

Continued on next page

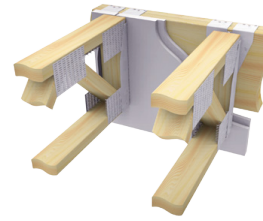
Geometry Table

Joist Size	USP Stock No.	Ref. No.	Dimensions (in)	
			W	H
2 x 8	FWH28	-- --	1-9/16	7-1/8
2 x 10	FWH210	DHU210TF	1-9/16	9-1/8
2 x 12	FWH212	DHU212TF	1-9/16	11-1/8
1-3/4 x 9-1/2	FWH1795	DHU1.81/9.5TF	1-13/16	9-7/16
1-3/4 x 11-7/8	FWH17118	DHU1.81/11.88TF	1-13/16	11-13/16
1-3/4 x 14	FWH1714	DHU1.81/14TF	1-13/16	13-15/16
1-3/4 x 16	FWH1716	DHU1.81/16TF	1-13/16	15-15/16
2 - 2-1/8 x 9-1/2	FWH2095	DHU2.1/9.5TF	2-1/8	9-7/16
2 - 2-1/8 x 11-7/8	FWH20118	DHU2.1/11.88TF	2-1/8	11-13/16
2 - 2-1/8 x 14	FWH2014	DHU2.1/14TF	2-1/8	13-15/16
2 - 2-1/8 x 16	FWH2016	DHU2.1/16TF	2-1/8	15-15/16
2-5/16 x 9-1/2	FWH2395	DHU2.37/9.5TF	2-3/8	9-7/16
2-5/16 x 11-7/8	FWH23118	DHU2.37/11.88TF	2-3/8	11-13/16
2-5/16 x 14	FWH2314	DHU2.37/14TF	2-3/8	13-15/16
2-5/16 x 16	FWH2316	DHU2.37/16TF	2-3/8	15-15/16
2-5/16 x 18	FWH2318	DHU2.37/18TF	2-3/8	17-15/16
2-5/16 x 20	FWH2320	DHU2.37/20TF	2-3/8	19-15/16
2-1/2 x 9-1/2	FWH2595	DHU2.56/9.5TF	2-9/16	9-7/16
2-1/2 x 11-7/8	FWH25118	DHU2.56/11.88TF	2-9/16	11-13/16
2-1/2 x 14	FWH2514	DHU2.56/14TF	2-9/16	13-15/16
2-1/2 x 16	FWH2516	DHU2.56/16TF	2-9/16	15-15/16
2-1/2 x 18	FWH2518	DHU2.56/18TF	2-9/16	17-15/16
2-1/2 x 20	FWH2520	DHU2.56/20TF	2-9/16	19-15/16
3-1/2 x 9-1/2	FWH3595	DHU3.56/9.5TF	3-9/16	9-7/16
3-1/2 x 11-7/8	FWH35118	DHU3.56/11.88TF	3-9/16	11-13/16
3-1/2 x 14	FWH3514	DHU3.56/14TF	3-9/16	13-15/16
3-1/2 x 16	FWH3516	DHU3.56/16TF	3-9/16	15-15/16
3-1/2 x 18	FWH3518	DHU3.56/18TF	3-9/16	17-15/16
3-1/2 x 20	FWH3520	DHU3.56/20TF	3-9/16	19-15/16
3-1/2 x 22	FWH3522	DHU3.56/22TF	3-9/16	21-15/16
3-1/2 x 24	FWH3524	DHU3.56/24TF	3-9/16	23-15/16
-- --	FWH-T	-- --	5-3/4	13

New products are designated in **blue font**.



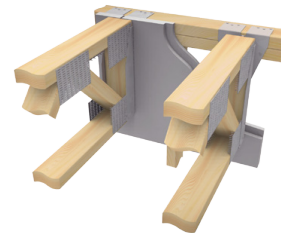
FWH



Typical FWH solid sawn header installation



Typical FWH stud wall installation



Typical FWH stud wall with (2) layers of 5/8-in gypsum wallboard installation

2 Hour Fire-Rating
FWH hangers are tested per ASTM E814 standards. When installed on one side of a maximum 2 hour fire-rated wall assembly, the penetration of the USP FWH Fire Wall Hanger through the gypsum wallboard will not reduce the fire resistive rating of the 2 hour fire resistive assembly.

Fastener / Allowable Load Table

Installation Type	Fastener Schedule ²					DF Allowable Loads (Lbs.)								Code Ref.
	Header		Joist			Solid Sawn Header				2-Ply, 2x Wall Top Plate				
	Top Qty	Face Qty	Type	Qty	Type	Download			Uplift ¹	Download			Uplift ¹	
						100%	115%	125%		160%	100%	115%		
Without 5/8-in gypsum wallboard or structural sheathing	6	-- 2	10d	6	10d x 1-1/2	2240	2240	2240	180 380	2045	2045	2045	180 380	2, R12 F1
After (1) layer of 5/8-in gypsum wallboard is installed	6	-- 2	10d	6	10d x 1-1/2	2400	2400	2400	180 380	2400	2400	2400	180 380	130
After (2) layers of 5/8-in gypsum wallboard are installed	6	-- 2	10d	6	10d x 1-1/2	2400	2400	2400	180 380	2400	2400	2400	180 380	
Two-sided after (2) layers of 5/8-in gypsum wallboard are installed (min. 2x6 wall)	6	-- 2	10d	6	10d x 1-1/2	2400	2400	2400	180 380	2400	2400	2400	180 380	
After (1) layer of structural sheathing & (1) layer of 5/8-in gypsum wallboard is installed	6	-- 2	10d	6	10d x 1-1/2	2400	2400	2400	180 380	2400	2400	2400	180 380	

1) Uplift Loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) **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
Updated product information are designated in **blue font**.

Specialty Options Chart - Refer to Specialty Options pages 228 and 230 for additional details.

Option	Skewed ¹
Range	1° to 45°
Allowable Loads	80% of table load
Ordering	Add SK, angle required, right (R) or left (L), and square cut (SQ) to product number. Ex. FWH3514_SK45R_SQ

1) Skewed hangers with skews greater than 15° may have all joist nailing on outside flange.



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