

# MANUFACTURED HOUSING GUIDE



MiTek®

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MiTek-US.com

## General Notes

- 1) This catalog reflects the most current information regarding MiTek® product line. However, product revisions and new product additions occur on an on going basis. MiTek reserves the right to change specifications, designs, and models at any time without notice and liability for such changes. This catalog may not be reproduced in whole or in part without the prior written approval of MiTek.
- 2) This catalog reflects design changes and design load adjustments to some MiTek USP products. The information presented in this publication replaces all information published in previous documents.
- 3) This catalog was designed as a general reference for the MiTek Product Line. Product load values may vary from one publication to another due to recent product testing, changes in regulatory criteria, or code evaluation updates. The most current product information is available on MiTek's Web Site.
- 4) The type and quantity of fasteners used to install MiTek products is critical to connector performance. To achieve the allowable loads presented in this catalog, all specified fasteners must be used and proper installation procedures observed. Verify that the dimensions of supporting members are sufficient to receive specified fasteners. Any product modifications void the warranty unless prior written permission of MiTek is obtained.
- 5) Some connector models are listed more than once to indicate additional installation and/or fastener options.
- 6) Throughout this catalog, dimensions are expressed in inches and loads in pounds unless specifically noted otherwise.
- 7) Load values for 8d and 16d designations in the fastener schedules throughout this catalog refer to common wire nails unless noted otherwise. Nails shall conform to a recognized national standard, such as ASTM F1667, as prescribed by the applicable building codes.
- 8) Fastener installation may cause wood to split and reduce a fastener's ability to carry a load. If wood splitting occurs, consider pre-drilling holes not exceeding 75% of the nail diameter (per the 2018 ANSI/AWC National Design Specification for Wood Construction).

- 9) MiTek connectors listed in this catalog are manufactured for specific sizes of standard lumber, plated trusses, or composite lumber. For applications involving unusual supporting conditions and/or environments, contact MiTek. Wood shrinkage or expansion, caused by lack of moisture or excessive moisture, may adversely affect connector installation. Evaluate potential shrinking or expanding to ensure proper connector installation and performance.
- 10) The load values listed in this catalog are based on installation to wood with a moisture content of less than 19%, and used in dry service conditions. Load reductions, in accordance with the code, shall be taken where wood moisture content is greater than 19% at the time of installation or where used in wet service conditions.
- 11) Unless otherwise noted, MiTek products may not be bent or cut in the field to facilitate installation. Field alterations may weaken steel and cause connector failure at lower than published allowable loads.

## Code Evaluation

Most MiTek structural products listed in this catalog have been evaluated or are in the submittal stage for evaluation from ICC-ES, IAPMO-ES, City of Los Angeles, California, and State of Florida.

Other code agencies may require specific reductions and limitations and may have different load values than those presented in this catalog. MiTek recommends consulting specific code evaluation or product acceptance criteria reports that govern in the applicable area. Any questions about current code listings should be directed to the Technical Assistance staff. MiTek continuously updates code reports to reflect new standards and requirements. Visit MiTek's Web Site, [MiTek-US.com/resources/code-reports](http://MiTek-US.com/resources/code-reports), or specific code agencies web sites for current listings.

### WARRANTY

MiTek USA, Inc. ("MiTek") warrants its MiTek 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, MiTek'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 MiTek therefor. MiTek MAKES NO OTHER PRODUCT WARRANTIES, EXPRESS OR IMPLIED,

OF ANY KIND, AND PARTICULARLY EXCLUDES ANY IMPLIED WARRANTY OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL USP BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES, REGARDLESS OF THE LEGAL THEORY OF RECOVERY, EVEN IF IT WAS AWARE OF THE POSSIBILITY OF SUCH DAMAGES. IN ANY CASE, USP'S MAXIMUM LIABILITY SHALL NOT EXCEED THE PURCHASE PRICE PAID BY CUSTOMER FOR THE NON-CONFORMING PRODUCT. Some states restrict consequential or other liability damage limitations, so some of the above limitations may not apply to you. MiTek reserves the right to change this warranty periodically. Consult MiTek's website [MiTek-US.com](http://MiTek-US.com) or contact MiTek for a current warranty statement.

Catalog installation notes should be followed when installing pneumatic nail hangers using alternative nails. All fasteners should be installed into nailing zones and maintain minimum 1" center-to-center spacing. Alternative nail quantity required for installation of pneumatic nail hangers can be determined using the table below.

**Alternative Nails for Installation of Pneumatic Nail Hangers**

Fastener Description	Dimensions (in)		DF/SP Allowable Shear per Nail (Lbs.) <sup>1,2,3,4,5</sup>			S-P-F Allowable Shear per Nail (Lbs.) <sup>1,2,3,4,5</sup>		
	Diameter	Length	Steel Gauge			Steel Gauge		
			14	18	20	14	18	20
0.099 x 1-1/2"	0.099	1-1/2	67	58	56	58	50	48
0.100 x 1-3/8"	0.100	1-3/8	68	60	57	59	51	49
0.105 x 1-1/2"	0.105	1-1/2	74	65	63	64	56	54
0.113 x 2-3/8"	0.113	2-3/8	83	75	72	72	64	62
0.131 x 1-1/2"	0.131	1-1/2	107	98	96	92	85	83
0.131 x 3"		3						
0.148 x 1-1/2"	0.148	1-1/2	127	118	116	110	102	100

- 1) Nail allowable load values were calculated as specified by the 2018 NDS; Sections 11 & 12, and Appendix I and L.
- 2) The nail lateral loads are adjusted by the Penetration depth factors,  $C_d$ , based on the length of the nails and thickness of the steel side members. However, this assumes sufficient wood thickness to receive the full length of the nail or at least ten times the diameter of the nail, whichever is less.
- 3) Adjustment factors for duration of load, service conditions and installation shall be applied to the nail values in accordance with the provisions of the NDS delineated in Sections 2, 11 and 12.
- 4) The allowable load for any connector shall not exceed the catalog value.
- 5) Fastener bending yield strength based on ASTM F1667-05 Table S1.1.
- 6) Quantity of fasteners must be used symmetrically in header flanges and into each side of joist.
- 7) Installation guidelines in MiTek's Product Catalog regarding pneumatic nail hangers must be followed.

**Example:**

JN28E (20 gauge) using .105 x 1-1/2" fasteners Header material: S-P-F  
 JN28E downward load at 115% = 1055 lbs. Joist material: S-P-F  
 JN28E uplift load at 160% = 245 lbs.

**Nail Quantity Required for Downward Load:**

Allowable shear capacity at 100% load duration = 54 lbs.

$$54 \left( \frac{\text{lbs}}{\text{nail}} \right) \times 1.15 = 62.1 \left( \frac{\text{lbs}}{\text{nail}} \right)$$

$$\frac{1055 \text{ lbs}}{62.1 \left( \frac{\text{lbs}}{\text{nail}} \right)} = 17 \text{ nails}$$

Use equal amount of fasteners in each side so use 9 nails in each flange for a total of 18.

**Nail Quantity Required for Uplift:**

$$54 \left( \frac{\text{lbs}}{\text{nail}} \right) \times 1.60 = 86.4 \left( \frac{\text{lbs}}{\text{nail}} \right)$$

$$\frac{245 \text{ lbs}}{86.4 \left( \frac{\text{lbs}}{\text{nail}} \right)} = 3 \text{ nails}$$

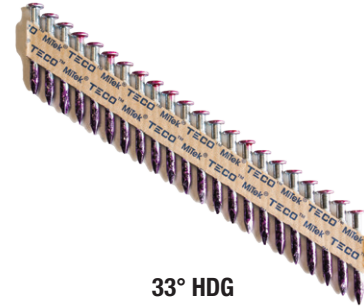
Use equal amount of fasteners per side of joist so use 2 in each side for a total of 4. Also make sure there are as many or more fasteners in the hanger to header connection. 18 nails in header ≥ 4 nails in joist.

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

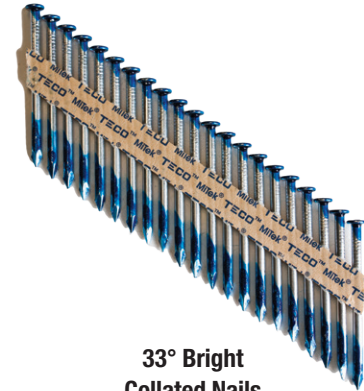
**Materials:** ASTM A580 (Bright) and ASTM A153 (HDG).  
**Finish:** Bright, Hot-dip galvanized  
**Codes:** IBC, FL

**Installation:**

- Can be used in a wide variety of pneumatic nail guns with nail locating ability.
- Follow manufacturer’s instructions for proper use of gun and proper safety equipment.
- Install all specified fasteners per catalog.
- Do not overdrive nails.



33° HDG Collated Nails



33° Bright Collated Nails

**Specification Table**

Finish <sup>1</sup>	Size	MiTek USP Stock No.	Ref. No.	Head ID	Dimensions (in)	
					Nail Diameter	Length
HDG	8d x 1-1/2	NA8DHDGPT	N8HDGPT	A3	0.131	1-1/2
	8d Common	N8CHDGPT	--	E3	0.131	2-1/2
	10d x 1-1/2	NA10DHDGPT	--	A4	0.148	1-1/2
	10d Common	N10CHDGPT	N10DHDGPT	E4	0.148	2-1/2
	16d x 2-1/2	NA16DHDGPT	N16HDGPT	E6	0.162	2-1/2
Bright	8d x 1-1/2	NA8DRPT	--	3H	0.131	1-1/2
	8d Common	N8CRPT	--	3H	0.131	2-1/2
	10d x 1-1/2	NA10DRPT	--	4H	0.148	1-1/2
	10d Common	N10CRPT	--	4H	0.148	2-1/2
	16d x 2-1/2	NA16DRPT	--	6H	0.162	2-1/2



Typical MiTek hanger installation using TECO 33° Collated Nails

1) HDG = Hot-Dip Galvanized; Bright = No Finish.



Available in packs of 250, 800 & Bulk Packs

**Packaging Table**

Finish	Size	250-count Pack		800-count Pack		Bulk Offering	
		MiTek USP Stock No.	Box/Ctn Qty	MiTek USP Stock No.	Box/Ctn Qty	MiTek USP Stock No.	Box Qty
HDG	8d x 1-1/2	NA8DHDGPT250	4-pack/250-ea	NA8DHDGPT800	2-pack/800-ea	NA8DHDGPT4000	4000-ea
	8d Common	N8CHDGPT250	4-pack/250-ea	N8CHDGPT800	2-pack/800-ea	N8CHDGPT2500	2500-ea
	10d x 1-1/2	NA10DHDGPT250	4-pack/250-ea	NA10DHDGPT800	2-pack/800-ea	NA10DHDGPT3000	3000-ea
	10d Common	N10CHDGPT250	4-pack/250-ea	N10CHDGPT800	2-pack/800-ea	N10CHDGPT2500	2500-ea
	16d x 2-1/2	NA16DHDGPT250	4-pack/250-ea	NA16DHDGPT800	2-pack/800-ea	NA16DHDGPT2000	2000-ea
Bright	8d x 1-1/2	NA8DRPT250	4-pack/250-ea	NA8DRPT800	2-pack/800-ea	NA8DRPT4000	4000-ea
	8d Common	N8CRPT250	4-pack/250-ea	N8CRPT800	2-pack/800-ea	N8CRPT2500	2500-ea
	10d x 1-1/2	NA10DRPT250	4-pack/250-ea	NA10DRPT800	2-pack/800-ea	NA10DRPT3000	3000-ea
	10d Common	N10CRPT250	4-pack/250-ea	N10CRPT800	2-pack/800-ea	N10CRPT2500	2500-ea
	16d x 2-1/2	NA16DRPT250	4-pack/250-ea	NA16DRPT800	2-pack/800-ea	NA16DRPT2000	2000-ea

MiTek WS Wood Screw is a self-drilling screw used for numerous interior framing applications. For use in wood-to-wood and steel-to-wood applications. Head stamped to indicate length for easy inspection.

### Features and Benefits:

- 1/4" diameter
- No predrilling
- Type 17 point reduces installation torque and splitting
- 3/8" Hex Drive
- Length identification stamps on all WS heads

**Materials:** 1/4" diameter Grade 5 steel

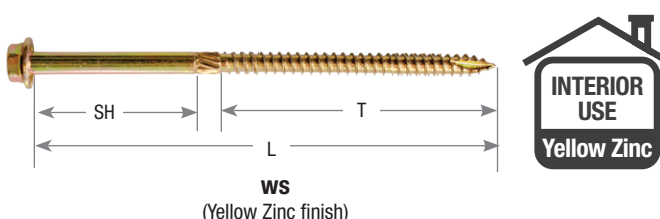
**Finish:** Yellow Zinc

**Codes:** IBC, FL, LA



### Installation:

- Screws are self-drilling.
- Install using a low speed clutch drill with 3/8" hex head driver. The washer head should be flat to the surface and the serrations will oppose turning and release the clutch. Do not over-tighten the screws.
- Care should be given to ensure the fastener is installed perpendicular to the plane of the side plate.



### Specification Table

Size (in)	MiTek USP Stock No.	Ref. No.	Dimensions (in)			Finish <sup>1</sup>	DF/SP Allowable Loads (Lbs.) <sup>2,4</sup>						S-P-F Allowable Loads (Lbs.) <sup>2,4</sup>							
			L	SH	T		Shear (100%)				Withdrawal Capacity (Lbs./in of thread) 100%	Steel-to-Wood Withdrawal Capacity (Lbs.) <sup>5</sup> 100%	Shear (100%)				Withdrawal Capacity (Lbs./in. of thread) 100%	Steel-to-Wood Withdrawal Capacity (Lbs.) <sup>5</sup> 100%		
							Steel-to-Wood						Steel-to-Wood							
							Gauge						Gauge							
Wood-to-Wood <sup>3</sup>	14	10	7	3	Wood-to-Wood <sup>3</sup>	14	10	7	3											
1/4 x 1-1/2	WS15	SDS1/4X1.5, SDS1/4X11/2	1-1/2	1/4	1-1/4	Zinc	--	230	261	259	266	164	206	--	188	211	190	217	103	129
1/4 x 2	WS2	SDS1/4X2	2	1/4	1-3/4	Zinc	--	306	307	289	316	160	281	--	215	244	249	248	117	204
1/4 x 2-1/2	WS25	SDS1/4X2.5	2-1/2	1/4	2	Zinc	--	362	352	338	369	199	398	--	256	292	286	294	141	281
1/4 x 3	WS3	SDS1/4X3	3	3/4	2	Zinc	268	418	396	387	457	199	398	227	297	340	322	365	141	281
1/4 x 3-1/2	WS35	SDS1/4X3.5, SDS1/4X31/2	3-1/2	3/4	2-1/2	Zinc	<b>398</b>	451	460	454	481	208	520	311	338	380	356	370	154	385
1/4 x 4-1/2	WS45	SDS1/4X4.5, SDS1/4X41/2	4-1/2	1-1/4	3	Zinc	415	516	588	589	531	214	642	364	421	460	425	379	163	489
1/4 x 5	WS5	--	5	1-3/4	3	Zinc	415	516	588	589	531	214	642	364	421	460	425	379	163	489
1/4 x 6	WS6	SDS1/4X6	6	1-3/4	4	Zinc	415	516	588	589	531	214	642	364	421	460	425	379	163	489
1/4 x 8	WS8	--	8	4-3/4	3	Zinc	415	516	588	589	531	214	642	364	421	460	425	379	163	489

1) Zinc = Yellow Zinc Dichromate.

2) Allowable shear loads assume a side plate tensile strength of 45 ksi for 14 gauge and 10 gauge, 52 ksi for 7 gauge and 58 ksi for 3 gauge.

3) Shear loads for wood-to-wood connections assume a side member thickness of 1-1/2".

4) Loads are for 100% duration of load factors, and may be increased for other duration factors in accordance with the NDS.

5) Withdrawal loads for steel-to-wood connections assume a side plate thickness of 1/4" or less.

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

### Packaging Table

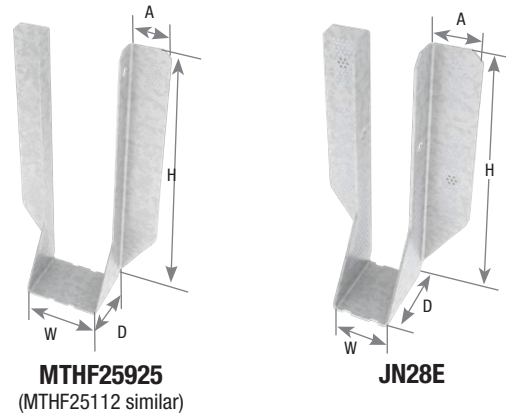
Use	Size (in)	Retail Box Offering		Mini Bulk Offering		Bulk Offering	
		MiTek USP Stock No.	Box/Ctn Qty	MiTek USP Stock No.	Box/Ctn Qty	MiTek USP Stock No.	Box/Ctn Qty
Interior for wood-to-wood connections	1/4 x 1-1/2	WS15-R25	12-pack/25-ea	WS15-MB	3-box/300-ea	WS15-BP	1500-ea
	1/4 x 2	WS2-R25	12-pack/25-ea	WS2-MB	3-box/250-ea	WS2-BP	1300-ea
	1/4 x 2-1/2	WS25-R25	12-pack/25-ea	WS25-MB	3-box/200-ea	WS25-BP	1100-ea
	1/4 x 3	WS3-R25	12-pack/25-ea	WS3-MB	3-box/150-ea	WS3-BP	950-ea
	1/4 x 3-1/2	WS35-R10	12-pack/10-ea	WS35-MB	3-box/125-ea	WS35-BP	900-ea
	1/4 x 4-1/2	WS45-R10	12-pack/10-ea	WS45-MB	3-box/100-ea	WS45-BP	800-ea
	1/4 x 5	WS5-R10	12-pack/10-ea	WS5-MB	3-box/100-ea	WS5-BP	500-ea
	1/4 x 6	WS6-R10	12-pack/10-ea	WS6-MB	3-box/100-ea	WS6-BP	600-ea
1/4 x 8	WS8-R10	12-pack/10-ea	--	--	WS8-BP	400-ea	

MiTek's "no hole" connectors are engineered for wood frame structures built in a factory environment. These connectors feature embossed "nailing zones" for faster and safer fastener installation.

**Materials:** 18 or 20 gauge  
**Finish:** G90 galvanizing  
**Codes:** IBC, FL, LA (JN/JNE series)

**Installation:**

- Install all specified fasteners using a pneumatic nailer.
- Nailing zones are distinguished by embossed pattern.
- Install fasteners with care not to overdrive fastener causing indentation of connector.
- Fastener quantities shall be installed symmetrically on both sides of connector.
- Installer should reduce risk of injury from rebounding fasteners by using personal eye protection during fastener installation.
- Minimum center to center fastener spacing is 1".



Joist Size	MiTek USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)				Fastener Schedule <sup>1,2,3</sup>			DF/SP Allowable Loads (Lbs.)				S-P-F Allowable Loads (Lbs.)			
				W	H	D	A	Header Qty	Joist Qty	Type	Allowable Loads (Lbs.)				Allowable Loads (Lbs.)			
											Floor	Roof	Uplift <sup>4</sup>		Floor	Roof	Uplift <sup>4</sup>	
100%	115%	125%	160%	100%	115%	125%	160%											
2 x 6-8	JN26E	MMLU26	20	1-9/16	4-13/16	2	1-1/4	10	4	"P" nails	600	690	750	305	530	610	640	245
								16	4	"P" nails	960	1105	1200	305	845	975	1000	245
								20	4	"P" nails	1200	1325	1325	305	1055	1055	1055	245
2 x 8-10	JN28E	MMLU28	20	1-9/16	6-11/16	2	1-3/16	10	4	"P" nails	600	690	750	305	530	610	640	245
								16	4	"P" nails	960	1105	1200	305	845	975	1000	245
								20	4	"P" nails	1200	1325	1325	305	1055	1055	1055	245
2 x 10-12	JN210E	MMLU210	20	1-9/16	7-15/16	2	1-5/16	10	4	"P" nails	600	690	750	305	530	610	640	245
								16	4	"P" nails	960	1105	1200	305	845	975	1000	245
								20	4	"P" nails	1200	1325	1325	305	1055	1055	1055	245
(2) 2 x 6-8	JN26-2	MMLU26-2	18	3-1/8	5-3/8	2-1/8	1-1/4	10	6	"P" nails	610	700	765	585	540	610	610	515
								16	6	"P" nails	975	1120	1220	585	860	990	1075	515
								24	6	"P" nails	1465	1685	1830	585	1290	1485	1615	515
(2) 2 x 8-10	JN28-2	MMLU28-2	18	3-1/8	7-1/8	2-1/8	1-1/4	10	6	"P" nails	610	700	765	585	540	610	610	515
								16	6	"P" nails	975	1120	1220	585	860	990	1075	515
								24	6	"P" nails	1465	1685	1830	585	1290	1485	1615	515
2-1/2 x 9-1/4 - 9-1/2	MTHF25925	MMLUI39	20	2-9/16	9-1/8	2	1-1/4	10	4	"P" nails	600	690	750	305	530	610	635	245
								16	4	"P" nails	960	1105	1200	305	845	975	995	245
2-1/2 x 11-7/8	MTHF25112	MMLUI311	20	2-9/16	11-1/8	2	1-1/4	10	4	"P" nails	600	690	750	305	530	610	635	245
								16	4	"P" nails	960	1105	1200	305	845	975	995	245

1) "P" nails denotes fasteners designed specifically to be installed with a pneumatic-powered nailer. The fasteners shall be either of a type with round heads, 0.105" diameter and 1-3/8" long; or a "T" shaped head, 0.097" diameter, 1-1/4" long and hardened; or a similar but larger fastener.  
 2) Fasteners shall be pneumatically driven in such a way as firmly seats the nail head against the hanger steel, without embedding the nail head completely through the plane of the metal surface, or otherwise punching through.  
 3) The quantity of nails installed shall be equally distributed to both sides of the hanger. The nails shall be located at 1" spacing in a row, with the vertical rows spaced at 3/8"; also no less than 5/16" from a sheared edge and no less than 5/16" from a formed edge.  
 4) Uplift loads have been increased 60% for wind or seismic load conditions; no further increase shall be permitted.

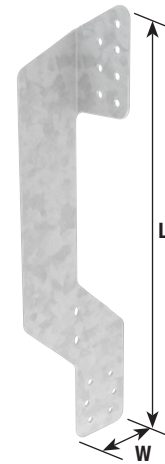
The RST3 rafter tie is designed to anchor trusses and rafters directly to the stud below. The ability to field-bend the RST3 permits fastening to either the wide or narrow face of the stud.

**Materials:** 18 gauge

**Finish:** G90 galvanizing

**Installation:**

- Use all specified fasteners.
- If necessary, field bend the lower tab of the RST3 at 90° at the two bend slots.
- Not all fastener holes need to be filled.
- Fasteners in truss do not need to penetrate a nailing plate to achieve the uplift loads listed below.
- The RST3 can be installed in pairs (on opposite sides of the wall, to achieve twice the uplift load capacity.)



RST3

Figure 1



Figure 2



Figure 3

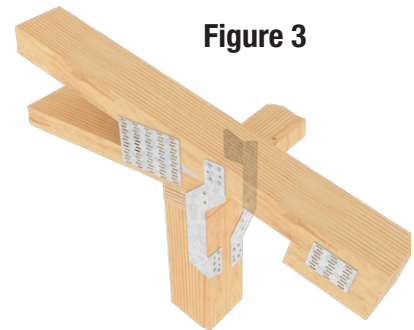


Figure 4



Figure 5



Figure 6



MiTek USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)		Installation Type	Qty of RST3's	Fastener Schedule				DF/SP Allowable Loads (Lbs.) <sup>1</sup>		S-P-F Allowable Loads (Lbs.) <sup>1</sup>	
			W	L			Rafter/Truss		Stud		Uplift 160%	Uplift 160%		
							Qty <sup>3</sup>	Type <sup>2</sup>	Qty <sup>3</sup>	Type <sup>2</sup>				
RST3	RST-3	18	1-1/2	10-5/16	Figure 1	1	4	#8 x 1-1/2	4	#8 x 1-1/2	555	465		
					Figure 2	1	4	#8 x 1-1/2	4	#8 x 1-1/2	555	465		
					Figure 3	2	8	#8 x 1-1/2	8	#8 x 1-1/2	1110	930		
					Figure 4	2	8	#8 x 1-1/2	8	#8 x 1-1/2	1110	930		
					Figure 5	2	8	#8 x 1-1/2	8	#8 x 1-1/2	1110	930		
					Figure 6	2	8	#8 x 1-1/2	8	#8 x 1-1/2	1110	930		

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

2) The #8 x 1-1/2 Wood Screw has a diameter of 0.164" and a length of 1-1/2".

3) Fastener quantities shown are the total number installed in (1) or (2) RST3 connectors.

The MRT7 Rafter Tie is engineered for wood frame structures built in a factory environment. These connectors feature embossed "nailing zones" for faster and safer fastener installation.

**Materials:** 14 gauge  
**Finish:** G90 galvanizing

**Installation:**

- Install all specified fasteners using a pneumatic nailer.
- Nailing zones are distinguished by embossed pattern.
- Install fasteners with care not to overdrive fastener causing indentation of connector.
- Fastener quantities shall be installed symmetrically on both sides of connector.
- Installer should reduce risk of injury from rebounding fasteners by using personal eye protection during fastener installation.
- Minimum center-to-center fastener spacing is 1".



Typical MRT7 installation



Typical Knee Wall Set with MRT7 installation



MRT7

MiTek USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)		Fastener Schedule <sup>1,2,3</sup>			DF/SP Allowable Loads (Lbs.)			S-P-F Allowable Loads (Lbs.)		
			W	L	Header Qty	Joist Qty	Type	Uplift <sup>4</sup> 160%	F1 160%	F2 160%	Uplift <sup>4</sup> 160%	F1 160%	F2 160%
MRT7	MMH8	18	1-1/4	7-13/16	3	3	P or "T" nails	295	135	135	255	85	85
					4	4	P or "T" nails	390	180	180	340	115	115
					5	5	P or "T" nails	490	195	195	425	145	145
					6	6	P or "T" nails	585	195	195	510	175	175

- 1) "P" nails denotes fasteners designed specifically to be installed with a pneumatic-powered nailer. The fasteners shall be either of a type with round heads, 0.105" diameter and 1-3/8" long; or a "T" shaped head, 0.097" diameter, 1-1/4" long and hardened; or a similar but larger fastener.
- 2) Fasteners shall be pneumatically driven in such a way as firmly seats the nail head against the hanger steel, without embedding the nail head completely through the plane of the metal surface, or otherwise punching through.
- 3) The quantity of nails installed shall be equally distributed to both sides of the hanger. The nails shall be located at 1" spacing in a row, with the vertical rows spaced at 3/8"; also no less than 5/16" from a sheared edge and no less than 5/16" from a formed edge.
- 4) Uplift loads have been increased 60% for wind or seismic load conditions; no further increase shall be permitted.

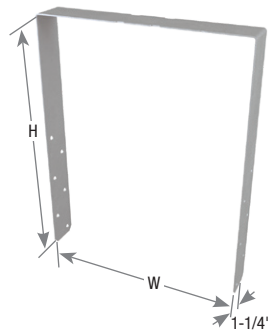
**SPTHW Stud Plate Ties**

MiTek's SPTHW is a Stud Plate Tie that can be installed on the top and bottom of each stud at the component plant to stiffen for shipping and handling. Designed to be installed over 1/2" structural sheathing.

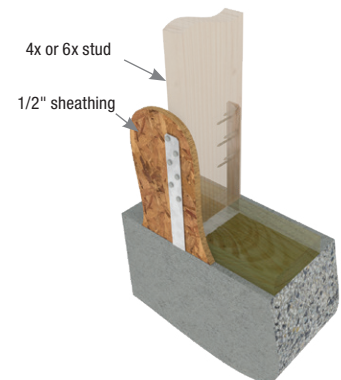
**Materials:** 18 gauge  
**Finish:** G90 galvanizing  
**Codes:** IBC, FL, LA

**Installation:**

- Install all specified fasteners.



SPTHW



Typical SPTHW installation

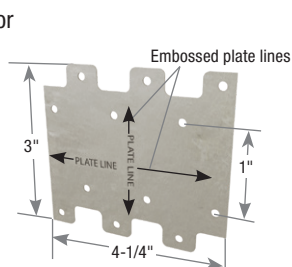
Stud Size	MiTek USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)		Fastener Schedule <sup>2</sup>		DF/SP Allowable Loads (Lbs.)
				W	H	Qty	Type	Uplift 160% <sup>1</sup>
4x	SPTHW4	SPH4R	18	4-1/16	8-3/8	12	10d x 1-1/2	2195
6x	SPTHW6	SPH6R	18	6-1/16	9-1/8	12	10d x 1-1/2	2195

- 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.



Connects 2x framing with floor sheathing up to 5/8".

**Materials:** 20 gauge  
**Finish:** G90 galvanizing  
**Codes:** IBC, FL, LA



MP4F



Typical MP4F installation



Type 1



Type 2

MiTek USP Stock No.	Ref. No.	Steel Gauge	Installation Type <sup>2,4</sup>	Fastener Schedule <sup>4,5</sup>				Direction of Load <sup>2</sup>	DF/SP Allowable Loads (Lbs.) <sup>1,3</sup>				S-P-F Allowable Loads (Lbs.) <sup>1,3</sup>				Corrosion Finish	Code Ref.
				Header or Stud		Joist or Plate			100%	115%	125%	160%	100%	115%	125%	160%		
				Qty	Type	Qty	Type											
MP4F	LTP4	20	Type 1	6	8d x 1-1/2	6	8d x 1-1/2	V	590	670	720	750	505	575	615	645	IBC, FL, LA	
				6	8d x 1-1/2	6	8d x 1-1/2	H	590	670	720	750	505	575	615	645		
			Type 2	6	8d x 1-1/2	6	8d x 1-1/2	V	590	670	720	750	505	575	615	645		
				6	8d x 1-1/2	6	8d x 1-1/2	H	585	585	585	585	505	575	615	645		

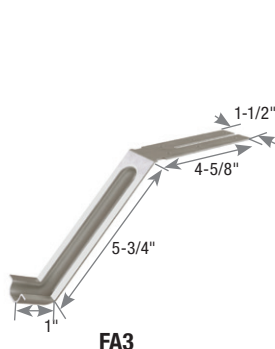
- 1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
- 2) Refer to drawings for installation type and definition of the various load directions.
- 3) If installing over plywood, use 8d common nails for 100% of table load.

- 4) 8d common (0.131" dia. x 2-1/2" long) nails may be substituted for 8d x 1-1/2" nails with no allowable load reduction.
- 5) **NAILS:** 8d x 1-1/2 nails are 0.131" dia. x 1-1/2" long.

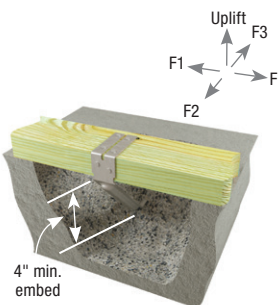
## FA Foundation Anchor

For installation into concrete slabs. The FA3 features a split flange for nailing to both mudsill and stud for greater framing versatility.

**Materials:** 16 gauge  
**Finish:** G90 galvanizing  
**Codes:** IBC, FL, LA



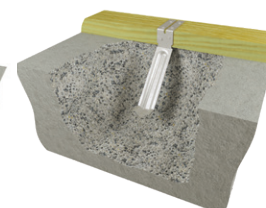
FA3



Typical FA3 standard installation in concrete



Typical FA3 one-tab-up installation



Alternate FA3 installation

MiTek USP Stock No.	Ref. No.	Steel Gauge	Plate Size	Fastener Schedule <sup>1,8</sup>				Min Stemwall Thickness (in)	Installation Type	Concrete <sup>7</sup>	DF/SP Allowable Loads (Lbs.) <sup>2,3,5</sup>		
				Sill Plate		Stud Qty	Type				Uplift 160%	F1 160%	F2 160%
				Side Qty	Top Qty								
<b>Wind and SDC A &amp; B</b>													
FA3	--	16	Single 2x	2	4	--	10d x 1-1/2	6	Standard	Uncracked	<b>1350</b>	<b>750</b>	<b>1015</b>
				2	2	2				Cracked	<b>945</b>	<b>525</b>	<b>710</b>
			Single 3x	2	4	--	10d x 1-1/2	6	Standard	Uncracked	--	515	--
				2	4	--				Cracked	--	475	--
<b>SDC C-F</b>													
FA3	--	16	Single 2x	2	4	--	10d x 1-1/2	6	Standard	Uncracked	<b>1120</b>	<b>550</b>	<b>890</b>
				2	2	2				Cracked	<b>830</b>	<b>460</b>	<b>625</b>
			Single 3x	2	4	--	10d x 1-1/2	6	Standard	Uncracked	--	515	--
				2	4	--				Cracked	--	405	--

- 1) Predrilled holes are not required.
  - 2) Allowable Stress Design (ASD) values have been adjusted for a load duration factor, C<sub>D</sub>, of 1.6 corresponding to a ten-minute load duration (i.e. wind or earthquake loading) in accordance with the NDS. The ASD loads do not apply to loads of other durations.
  - 3) Allowable loads are based on a minimum stemwall thickness of 6", minimum distance from the end of the concrete wall of 4" and minimum anchor spacing of 8".
  - 4) Uplift deformation based on wood connection strength.
  - 5) Minimum concrete strength f'c = 2,500 psi.
  - 6) **NAILS:** 10d x 1-1/2 nails are 0.148" dia. x 1-1/2" long.
- New products or updated product information are designated in **blue font**.

Porch design for any structure must account for the wind exposure. Porches present lots of sail area to catch the wind and can develop very high wind uplift in ordinary wind events. They must be securely tied to the foundation. MiTek engineers and manufactures products intended to provide a load path from the porch components to the foundation.

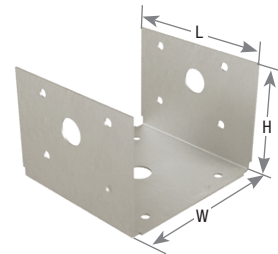
**Materials:** 18 gauge  
**Finish:** G-185 galvanizing  
**Codes:** IBC, FL, LA

**Installation:**

- Use all specified fasteners.
- **Not recommended for fence posts or other unrestrained (not fixed or fastened at top) applications. These anchors are not designed to resist overturning (moment) loads.**
- D44-TZ offers lateral and uplift resistance: they are not recommended as a primary means of anchorage for posts in railings.



Typical D44-TZ installation



D44-TZ

Post Size	MiTek USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)			Fastener Schedule <sup>2</sup>				DF/SP			S-P-F		
				W	H	L	Post		Beam		Allowable Loads (Lbs.) <sup>1</sup>			Allowable Loads (Lbs.) <sup>1</sup>		
							Qty	Type	Qty	Type	Uplift 160%	F1 160%	F2 160%	Uplift 160%	F1 160%	F2 160%
4 x 4	D44-TZ	BC40, BC40Z	18	3-9/16	2-1/2	3-3/8	8	16d HDG	4	16d HDG	<b>700</b>	<b>885</b>	<b>885</b>	565	<b>760</b>	760

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

2) **NAILS:** 16d nails are 0.162" dia. x 3-1/2" long.

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

The NP Nail Plates are an ideal economical solution for attaching wooden members together in a non-structural connection. Also may be used as a prescriptive top plate splice per the 2018 International Residential Code (IRC). They are pre-punched for 8d common nails.

**Materials:** 20 gauge  
**Finish:** G90 galvanizing  
**Codes:** IRC R602.3.2

**Installation:**

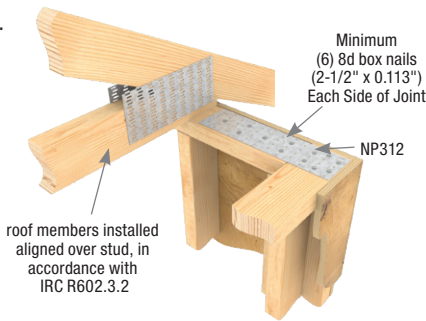
- Use nails appropriate for intended use. Holes are sized for 8d common (0.131" dia. x 2-1/2" long) or 8d (0.131" dia.) x 1-1/2" nails.
- The designer shall determine appropriate load values.



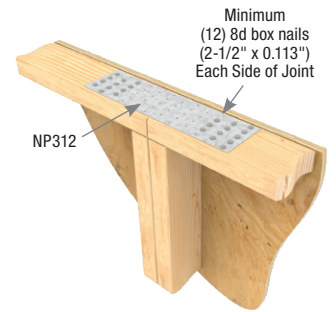
**NP**



**Typical NP312 prescriptive top plate splice installation**



**Typical NP312 prescriptive top-plate wall corner connection**



**Typical NP312 prescriptive top-plate butt joint straight wall connection**

MiTek USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)		Number of Nail Holes
			W	L	
NP15	TP15	20	1-13/16	5	12
NP35	TP35	20	3-1/8	5	22
NP37	TP37	20	3-1/8	7	31
NP39	TP39	20	3-1/8	9	40
NP311	TP311	20	3-1/8	11	49
NP312	TP312	20	3-1/8	12	54
NP315	TP316	20	3-1/8	15	67
NP45	TP45	20	4-1/8	5	30
NP47	TP47	20	4-1/8	7	42
NP49	TP49	20	4-1/8	9	54
NP411	TP411	20	4-1/8	11	66
NP57	TP57	20	5-3/4	7	59

Easy-to-install plates protect plumbing and power/communication wiring from nail or screw penetration.

**ICPL58** – Installs with nails

**KNS1 / PL4** – Prongs allow for quick installation

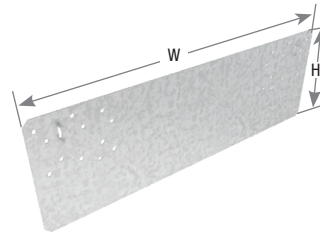
**Materials:** 16 gauge

**Finish:** ICPL516-TZ – G-185 galvanizing;  
All other – G90 galvanizing.

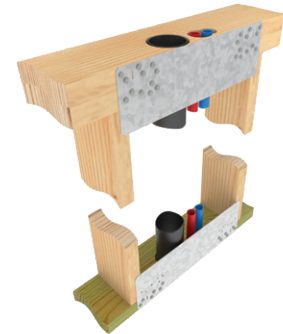
**Options:** ICPL58 is available in Triple Zinc.  
To order, add TZ, to stock number,  
as in ICPL58-TZ.

**Installation:**

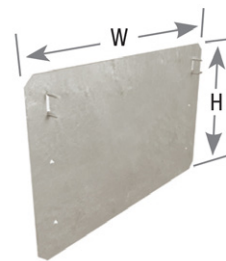
- Use all specified fasteners.
- 16 gauge steel conforms to protection shield plate requirements of the National Electrical Code and International Plumbing Code.



**ICPL516-TZ**



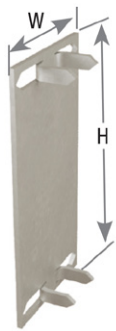
**Typical ICPL516-TZ installation**



**ICPL58**



**Typical ICPL58 installation**



**KNS1**



**Typical KNS1 installation**



**PL4**



**Typical PL4 installation**

MiTek USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)		Installation Type	Fastener Schedule <sup>2</sup>		DF/SP Allowable Loads (Lbs.) <sup>1</sup>	S-P-F Allowable Loads (Lbs.) <sup>1</sup>
			W	H		Qty	Type		
			Tension 160%			Tension 160%			
ICPL58	--	16	8-1/16	5	--	4	8d or prongs	--	--
PL4	NS2	16	2	5	--	--	prongs	--	--
KNS1	NS1	16	1-1/2	3	--	--	prongs	--	--
ICPL516-TZ	PSPN516Z	16	16-1/4	5	Sill Plate	12	16d HDG + prongs	1355	1160
					Double Top Plate	16	16d HDG + prongs	1805	1550

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.  
2) **NAILS:** 8d nails are 0.131" dia. x 2-1/2" long, 16d nails are 0.162" dia. x 3-1/2" long.

## Hardy Frame® Code Evaluation

Hardy Frames has been leading the pre-manufactured shear wall industry from its beginning. Hardy Frames were the first to be recognized by ICBO-ES and LA City, first to gain approval for multi-story applications, first Balloon Wall application and first to be recognized to comply with the 2003 and 2006 IBC and IRC Building Codes. Today we are the first and only to offer a 9" Panel width and a Balloon Wall application that is fully assembled in the manufacturing plant and ships as a one piece unit.

All Hardy Frame® Shear Walls are code listed under the 2018 IBC and IRC codes and include installations on concrete, raised floor and upper floor systems.

## Hardy Frame® Panels

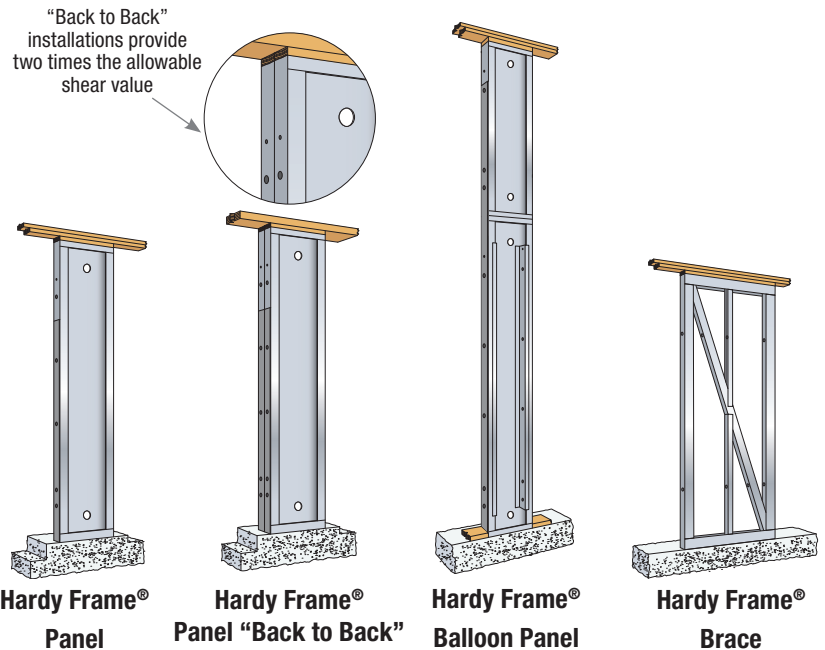
ICC-Evaluation Service ESR-2089

- Panels are available in 9, 12, 15, 18, 21 and 24" widths
- Standard Heights range from 78" for portal applications to 20' for Balloon Walls
- Custom heights are manufactured routinely
- R Value for design = 6.5, Cd = 4.0
- "Back to Back" installations provide two times the allowable shear value without increasing the wall length

## Hardy Frame® Brace

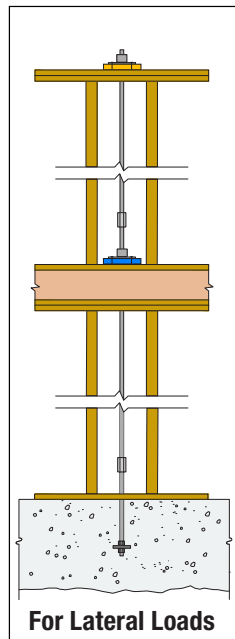
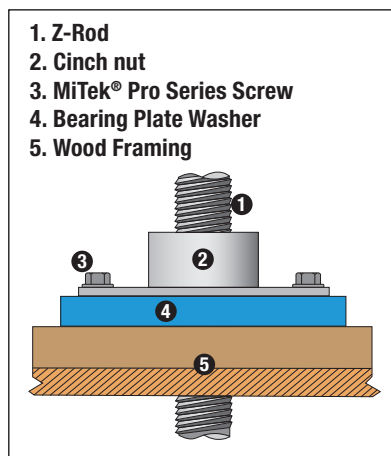
ICC-Evaluation Service ESR-2089

- Available in 32 and 44" widths
- Standard Heights range from nominal 8 to 13 feet
- Custom heights are manufactured routinely
- R Value for design = 6.5, Cd = 4.0
- For a given shear load, installing a wider shear wall results in reduced overturning



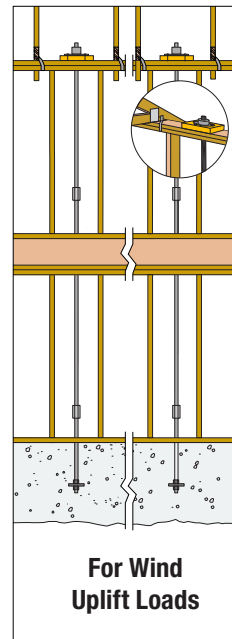
## Tie-Down Systems

MiTek® Z4 Tie-Down Systems utilize CNX-Series Cinch Nuts to compensate for wood shrinkage and building settlement that cause connections to loosen over time. The Cinch Nut uses a self-ratcheting action that permits the cinch nut to move (the rod doesn't move) or "travel" perpetually in one direction only down the rod. Available for installation with threaded rods that are 3/8" through 1-1/2" diameter in 1/8" increments, the CNX Cinch Nut has been code evaluated and published in ESR-2190.



### MiTek® Z4 Tie-Down System for Lateral Load

To resist tension loads due to overturning moments in multi-story buildings the CNX Cinch Nut is installed over a Bearing Plate Washer at each level in a fast and easy application. At the upper-most level a Cinch Nut is installed over a Bearing Plate Washer above the top plates. At walls below that bear on wood floor systems, the Cinch Nut and Bearing Plate Washer are installed over the bottom plate. Tension loads are gathered at each level and transferred into the foundation through a continuous system of Cinch Nuts, Bearing Plate Washers, Z-Rods / ATRs and Couplers, all available through MiTek®.



### MiTek® Z4 Tie-Down System for Wind Uplift

For resisting roof uplift loads resulting from wind the Z4 Cinch Nut is installed over a Bearing Plate Washer above the top plates with roof framing above to create a tie-down system. Uplift forces are transferred into a continuous system of Z-Rods / ATRs and Couplers that form a load path to the foundation.

**CONTACT US:**

1-800-325-8075, Mon - Fri, 7:00 am - 5:00 pm (CST)  
Email Customer Service at: [CustomerService@mii.com](mailto:CustomerService@mii.com)

**WEBSITE:** [MiTek-US.com](http://MiTek-US.com)

**MiTek**<sup>®</sup>