



Residential North America

Product Evaluation Report
MiTek® Inc.
GWTS, HTWM, HUGT, RFUS, and RUSC

Florida Product Approval FL 6223
Florida Building Code
Per Rule 61G20-3
Method 1-d

Category: Structural Components
Subcategory: Wood Connector
Compliance Method: 61G20-3.005(1)(d)
HVHZ

Product Manufacturer:

MiTek Inc.
16023 Swingley Ridge Rd
Chesterfield, MO 63017

Engineer Evaluator:

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FL P.E. #88918

Validator:

Johnathan Green, P.E.
FL P.E. #88223

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Compliance Statement:

The product as described in this report has demonstrated compliance with the 2026 Florida Building Code, Sections 2303.5, 2304.10.3, 2321.5, 2321.6 and 2321.7.

Product Description:

GTWS Girder Truss Connector: The GTWS girder-to-girder hangers are designed to hang a girder truss off the face of another girder truss or wood support member. The hanger is cold formed from 10 gage G90 steel and prepunched for installation with MiTek's WS3 wood screws, which are included with the hanger.

HTWM Strap Tie Connector: The HTWM Strap tie is designed to secure trusses to a grout filled reinforced masonry bond beam. The strap shall be fastened to the bond beam with 1/4" diameter Wedge bolts® and to the truss top chord with 10D common nails. The strap is cold-formed from 14ga steel and is pre-punched to accept the 1/4" diameter Wedge Bolts® and the 10D common Nails.

HUGT Girder Tie-down: The HUGT girder tie-down is designed to secure a girder truss to the top of a wall system. The HUGT is fabricated from No. 7 gage steel plate that is primer coated. Holes are pre-punched for 16D common nails or wood screws to secure the truss in the top bracket. Roof Slopes are limited to 3:12 up to 8:12.

RUSC Retrofit Strap Connectors: The RUSC Retro Uplift Strap Connector provides a wood-to-wood uplift connection attaching trusses with a 2 x 4 bottom chord to a double stud in the wall below. WS3 Wood Screws are utilized for fast installation. The connector can be installed after roof sheathing has been installed. The RUSC is fabricated from No. 10 gage steel plate that is prime coated. Holes are prepunched for 1/4" diameter wood screws to secure the truss to the top bracket and to the wall studs. The RUSC must be installed in pairs.

RFUS Uplift Girder Ties: The RFUS is a multi-purpose engineered solution for attaching trusses to concrete or masonry walls. Wedgebolt™ fastening eliminates mis-located cast-in-place anchor bolts and allows retrofit installations. This will work with heel heights up to 14". WS3 Wood Screws are utilized for fast installation to truss bottom chord. The RFUS is fabricated from No. 10 gage steel plate that is prime coated. Holes are pre-punched for 1/4" diameter wood screws to secure the truss to the top bracket and 13/16" holes to secure the bracket to the CMU wall. The RFUS must be installed in pairs.

Product Material:

GTWS: 10 gage ASTM A653 GR40, G90 finish
HTWM: 14 gage ASTM A653 GR40, G90 finish
HUGT: 7 gage ASTM A1011 GR40, primer finish
RUSC: 10 gage ASTM A1011 GR40, primer finish
RFUS: 10 gage ASTM A1011 GR40, primer finish

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Materials:

Wood

Wood members must be sawn lumber or structural glued laminated timber with a minimum specific gravity of 0.50, or approved structural engineered lumber (structural composite lumber, alternative strand lumber, or prefabricated wood I-joists) with a minimum equivalent specific gravity of 0.50, unless otherwise noted in the applicable table within this report. Wood members must have a moisture content not exceeding 19 percent (16 percent for structural engineered lumber), except as noted in Limitations of Use. For connectors installed with nails or wood screws, the thickness of the wood member must be sufficient such that the specified fasteners do not protrude through the opposite side of the member, unless otherwise permitted in the applicable table within this report. Wood members that are structural engineered lumber must be recognized in, and used in accordance with, a current evaluation report. See below for issues related to treated wood.

Fasteners

Required fastener types and sizes for use with the connectors as described in this report are specified in each of the connector load tables.

Bolts

At a minimum, bolts must comply with ASTM A 306, Grade A, and must have a minimum bending yield strength, F_{yb} , of 45,000 lbf/in² (310 MPa). Required bolt diameters are specified, in inches, within the applicable tables of this report.

Preservative and Fire-Retardant-treated Wood

Connectors and fasteners used in contact with preservative-treated or fire-retardant-treated wood must comply with the 2026 FBC Section 2304.10.5. The lumber "treater" or MiTek, or both, should be contacted for recommendations on the appropriate level of corrosion resistance to specify for the connectors and fasteners as well as the connections capacities of the fasteners used with the specific proprietary preservative-treated or fire-retardant-treated lumber.

Nails

Nails shall meet the requirements in table and the requirements specified in ASTM F 1667.

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Design Procedure:

The allowable loads shown in the Table are based on allowable stress design and include a 60% increase for wind and seismic load conditions per Section 11.3.2 of the NDS. No further increases are permitted.

Tabulated allowable loads are for connections in wood seasoned to a maximum moisture content of 19 percent (16 percent for engineered wood products) or less, used under continuously dry conditions and where sustained temperatures are limited to 100°F (37.8° C) or less. When connectors are installed in wood having a moisture content greater than 19 percent (16 percent for engineered wood products), or where the in-service moisture content is expected to exceed this value, the applicable wet service factor, C_M , is as specified in the NDS for lateral loading of dowel-type fasteners. When connectors are installed in wood that will experience sustained exposure to temperatures exceeding 100°(37.8°C), the allowable loads in this evaluation report must be adjusted by the temperature factor, C_t , specified in Section 11.3.4 of the NDS. The group action factor, C_g , has been accounted for, in accordance with Section 11.3.6 of the NDS, in the tabulated allowable loads, where applicable. For connectors installed with bolts, minimum edge distances and end distances within the wood members must be met, such that the geometry factor, C_{Δ} , is 1.0 in accordance with NDS Section 12.5.1, unless otherwise noted in this report. Connected wood members must be checked for load-carrying capacity at the connection in accordance with NDS Section 11.1.2.

For connectors with anchors intended to transmit loads into concrete or masonry, adequate embedment length and anchorage details, including edge and end distances, must be determined by a registered design professional in accordance with Chapter 19 or 21 of the 2026 FBC, as applicable, for design of anchorage to concrete and masonry structural members.

Wood members to which the anchor is attached must be designed by a registered design professional per the 2026 FBC. Masonry constructions must be a minimum of hollow C90, CMU block designed by a registered design professional per the 2026 FBC.

Installation:

Installation of the connectors must be in accordance with this evaluation report and the manufacturer's published installation instruction. Mechanical fasteners must be installed in wood members in accordance with NDS Section 12.1.

For use within 3,000 feet of a saltwater coastline, fasteners and connectors must comply with Section 1711 and Table 1711.1 of the 2026 Florida Building Code - Building or Section R332 and Table R332.1 of the 2026 Florida Building Code - Residential, as applicable.

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Testing and Specification:

1. ASTM D1761-88, By Stork Twin City Testing Project Number 30160 04-61766, Dated August 16th, 2004.
2. ASTM D1761-00, By Stork Twin City Testing Project Number 324039, Dated December 23, 2004.
3. ASTM D1761-88, By Stork Twin City Testing Project Number 30160 04-59032, Dated March 19th, 2004.
4. ASTM D1761-00, By Stork Twin City Testing Project Number 031205, Dated April 18th, 2002.
5. ANSI/AWC National Design Specifications for Wood Construction (NDS) 2024

The 2026 Florida Building Code refers to ASTM D1761-06, ASTM D7147-21, and ANSI / AWC NDS 2024.

Based on my previous experience with these standards, a careful review of the existing literature, and a review of the revisions between ASTM D1761-20 and its previous editions, as well as ASTM D7147-21 and its previous editions, I can state that the results gathered from testing conducted in accordance with ASTM D1761-88(2000), ASTM D1761-06, ASTM D7147-05, and ASTM D7147-11 remain applicable to evaluations performed in accordance with ASTM D1761-20 and ASTM D7147-21.

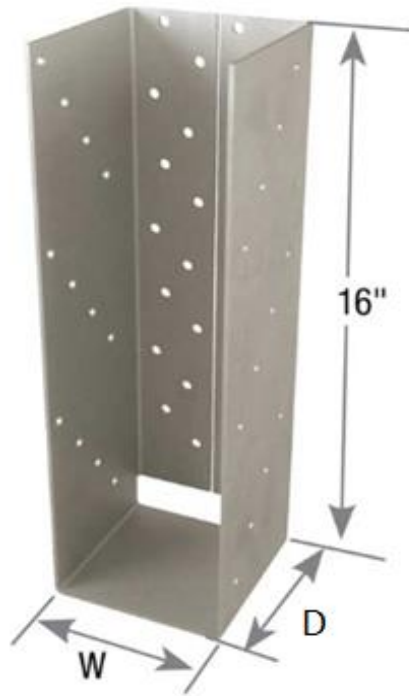
As such, the results gathered from testing to ASTM D1761-88(2000), ASTM D1761-06, ASTM D7147-05, and ASTM D7147-11 can be applied to the analysis described in ASTM D1761-20 and ASTM D7147-21 when determining the allowable load capacity for the products covered by this evaluation.

ASTM D1761-88(2000), "Standard Test Methods for Mechanical Fasteners in Wood," was updated in 2006 by removing the portion pertaining to joist hanger tests and using that as a basis for a separate ASTM standard, ASTM D7147-05, "Standard Specification for Testing and Establishing Allowable Loads of Joist Hangers." The remainder of ASTM D1761-88(2000) was reissued as ASTM D1761-06, with subsequent revisions published as ASTM D1761-12 and ASTM D1761-20.

Quality Assurance Entity:

The manufacturer has established compliance in accordance with the 2026 Florida Building Code and Rule 61G20-3.005 (3) for manufacturing under a quality assurance program audited by an approved quality assurance entity.

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GTWS High Uplift Girder Truss Hanger



Typical GTWS Installation

MiTek Stock No.	Steel Gauge	Dimensions (in)			Fastener Schedule ^{2,3,4}				No. of Plies	DF/SP			
		W	H	D	Supporting Truss		Supported Truss			Allowable Loads (Lbs.) ^{5,6,7}			
					Qty	Wood Screws	Qty	Wood Screws		100%	115%	125%	Uplift ¹
													160%
GTWS2T	10	3-1/4	16	4	22	WS3	16	WS3	2 Ply	8720	10030	10900	9300
GTWS3T	10	4-7/8	16	5	28	WS3	24	WS3	3 Ply	11100	12470	12470	12490
GTWS4T	10	6-1/2	16	5	28	WS3	24	WS3	4 Ply	11100	12470	12470	12490

For SI: 1 inch = 25.4 mm, 1 psi = 6.89 kPa, 1 lbf = 4.45 N

- 1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
- 2) WS3 wood screws require a minimum 3" wood penetration.
- 3) WS3 wood screws are 1/4" x 3" long and are included with the GTWS hangers.
- 4) WS3 wood screws may be installed in both vertical and horizontal members.
- 5) GTWS2T shall be installed to a minimum 2x4 vertical member of a girder truss with no restriction on the size of the bottom chord.
- 6) GTWS2T shall be installed to a minimum 2x6 vertical member of a girder truss with no restriction on the size of the bottom chord.
- 7) GTWS2T shall be installed to a minimum 2x8 vertical member of a girder truss with no restriction on the size of the bottom chord.

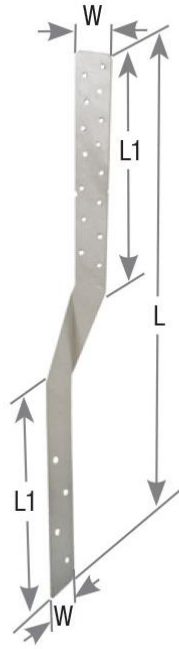


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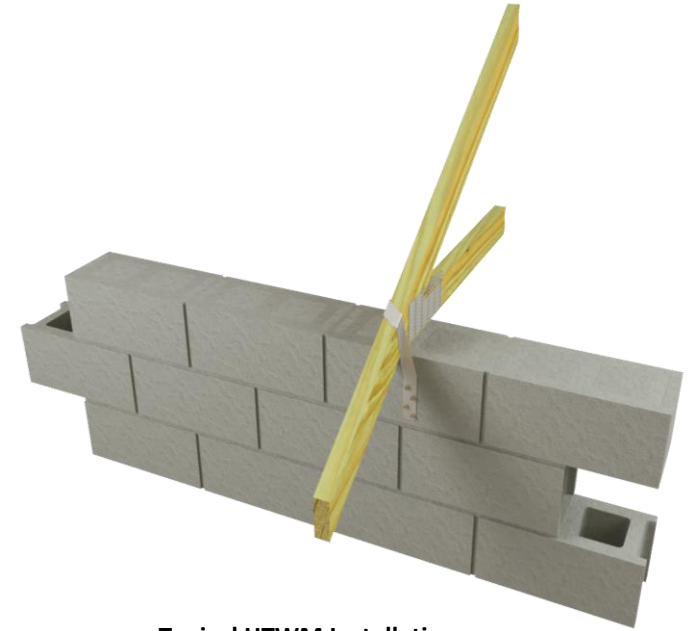
Name: GTWS High Uplift Girder Truss
Hanger

Sheet 1
Date:
09/04/2026

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HTWM Masonry Twist Strap

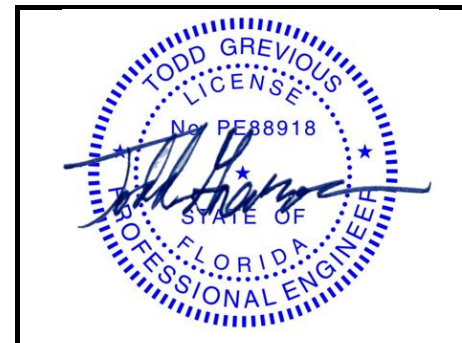


Typical HTWM Installation

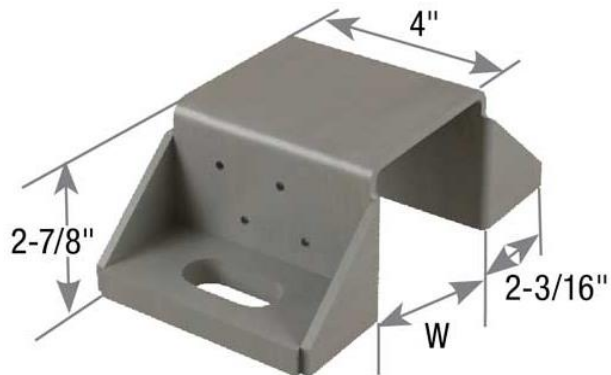
MiTek Stock No.	Steel Gauge	Dimensions (in)			Fastener Schedule				DF/SP Allowable Loads (Lbs.) ¹
		W	L	L1	CMU/Concrete Wall ²		Truss/Rafter ³		
					Qty	Wedge Bolts	Qty	Nail Type	Uplift 160%
HTWM16	14	1-1/4	16	5-3/4	4	1/4" x 1-3/4"	8	10d x 1-1/2	1225
HTWM20	14	1-1/4	20	7-3/4	4	1/4" x 1-3/4"	8	10d x 1-1/2	1225

For SI: 1 inch = 25.4 mm, 1 psi = 6.89 kPa, 1 lbf = 4.45 N

- 1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
- 2) Use DeWalt 1/4" x 1-3/4" Screw-Bolt™+; or equal, installed in accordance with manufacturer's specification.
- 3) **NAILS:** 10d x 1-1/2 nails are 0.148" dia. x 1-1/2" long.



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Name: HTWM Masonry Twist Strap	
Sheet 1 Date: 09/04/2026	Todd Grevious, P.E. PROFESSIONAL ENGINEER License #: 88918



HUGT Girder Tie-down



Typical HUGT Lumber Installation

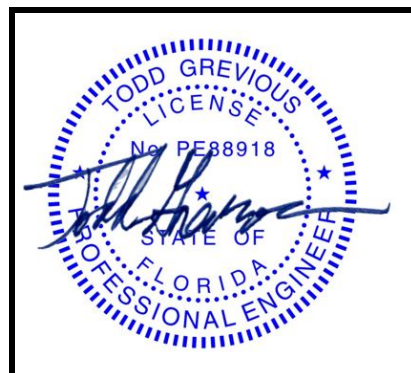


Typical HUGT Masonry Installation

MiTek Stock No.	Steel Gauge	W (in)	O.C. Dim Between Anchors (in)	Installation Type	Fastener Schedule ^{3,6}						DF/SP Allowable Uplift Loads (Lbs.) ^{1,2}
					Anchor Washers		Threaded Rod		Girder ⁴		
					Qty	Type	Qty	Bolt Dia.	Qty	Type	
					160%						
HUGT2	7	3 5/16	5 3/4	Wood	4	LBP58-TZ	2	5/8	8	10d	9575
				Concrete	-- --	-- --	2	3/4			
HUGT3	7	4 15/16	7 3/8	Wood	4	LBP58-TZ	2	5/8	8	10d	9860
				Concrete	-- --	-- --	2	3/4			
HUGT4	7	6 7/8	9	Wood	4	LBP58-TZ	2	5/8	8	10d	9860
				Concrete	-- --	-- --	2	3/4			

For SI: 1 inch = 25.4 mm, 1 psi = 6.89 kPa, 1 lbf = 4.45 N

- 1) Allowable loads have been increased 60% for wind or seismic loads;
no further increase shall be permitted.
- 2) Listed loads apply where roof pitch is between 3:12 and 8:12.
- 3) Additional anchorage products to be designed by others.
- 4) Minimum nail penetration shall be 1-1/2" for 10d nails.
- 5) Designer must specify anchor bolt type, length, and embedment.
- 6) **NAILS:** 10d nails are 0.148" dia. x 3" long.



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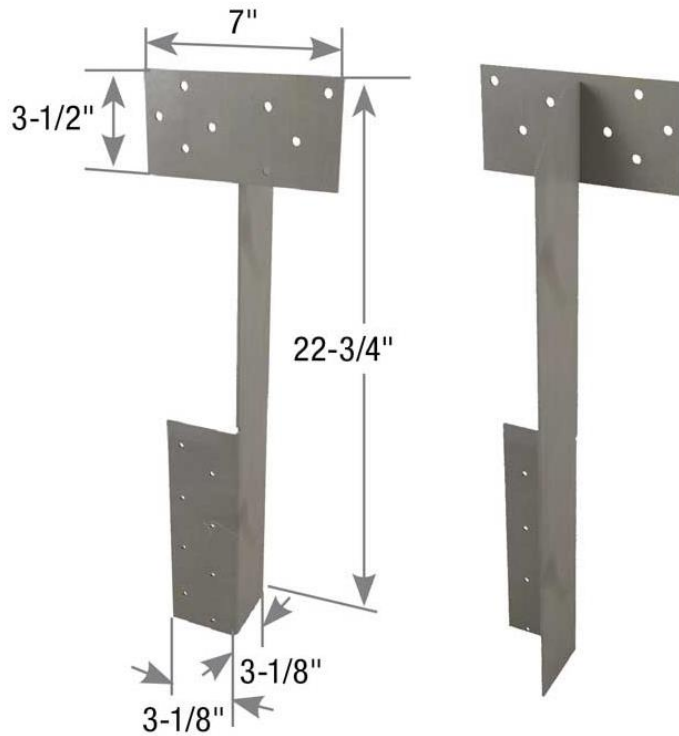
Name: HUGT Girder Tie-down

Sheet 1

Date:

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RUSC Retrofit Strap Connectors

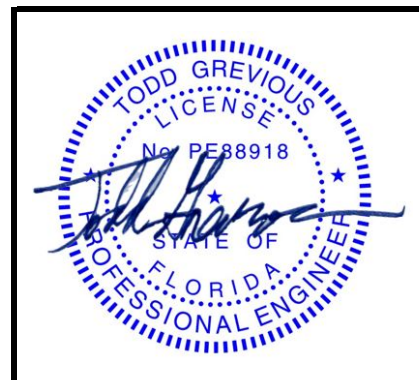


Typical RUSC Installation

MiTek Stock No.	Steel Gauge	No. of Plies ⁶	Fastener Schedule ^{4,5}				DF/SP
			Qty	Rafter/ Truss	Qty	Stud	Allowable Uplift Loads (Lbs.)
							160%
RUSC	10	≥ 2 Ply	16	WS3	16	WS3	6040

For SI: 1 inch = 25.4 mm, 1 psi = 6.89 kPa, 1 lbf = 4.45 N

- 1) Allowable loads are for a pair of RUSC devices.
- 2) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
- 3) Designer must specify stud or post to resist published load values.
- 4) WS3 Wood Screws are 1/4" x 3" long and are included with RUSC connectors.
- 5) Fastener schedule is for two straps used together. The RUSC shall be installed in pairs with a minimum 2 ply truss and wall stud attachment.
- 6) Truss plies shall be fastened together to act as a unit.

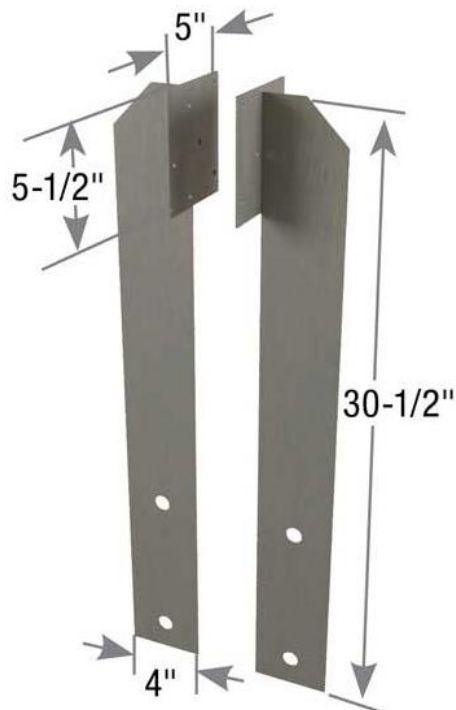


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Name: RUSC Retrofit Strap Connectors

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RFUS Uplift Girder Ties

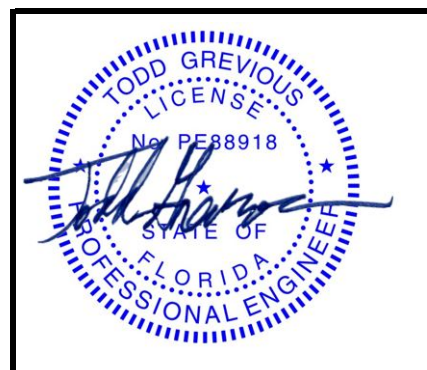


Typical RFUS Installation

MiTek Stock No.	Steel Gauge	No. of Plies ⁶	Fastener Schedule ^{3,5}				DF/SP Allowable Uplift Loads (Lbs.)
			Rafter/Truss ⁷		Concrete/Masonry ^{2,4}		
			Qty	Type	Qty	Type	160%
RFUS	10	≥ 2 Ply	12	WS3	4	3/4" x 6" Wedge Bolt	7100

For SI: 1 inch = 25.4 mm, 1 psi = 6.89 kPa, 1 lbf = 4.45 N

- 1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
- 2) Use DeWalt 3/4" x 6" Screw-Bolt™+; or equal, installed in accordance with manufacturer's specifications.
- 3) Fasteners shall be installed to fully grouted and reinforced concrete masonry or reinforced concrete (f'c = 2500 psi at 28 days).
- 4) Bolts shall conform to ASTM A 307 or better.
- 5) Fastener schedule is for two straps used together. The straps shall be installed in pairs.
- 6) Truss plies shall be fastened together to act as a single unit.
- 7) MiTek WS3 structural wood screws are 1/4" x 3" long and are supplied with the RFUS connector.



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Name: RFUS Uplift Girder Ties

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