



Residential North America

Product Evaluation Report

MiTek Inc.

DTC, NFM, NFMU

Florida Product Approval # FL 578

Florida Building Code

Per Rule 61G20-3

Method 2-b

Category: Structural Components

Subcategory: Wood Connector

Compliance Method: 61G20-3.005(2)(b)

HVHZ

Product Manufacturer:

MiTek Inc.

16023 Swingley Ridge Rd

Chesterfield, MO 63017

Engineer Evaluator:

Steven Brekke

FL P.E. #70432

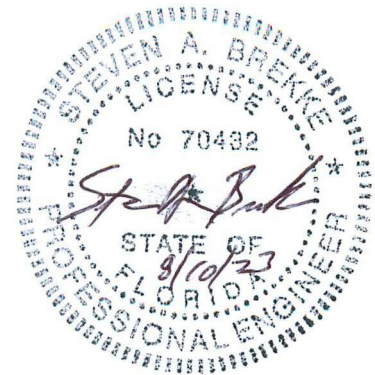
Validator:

Johnathan Green, P.E.

FL P.E. #88223

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MiTek Inc.

16023 Swingley Ridge Road

Chesterfield, MO 63017-5746

uspcustomerservice@mii.com

1-800-328-5934



Compliance Statement:

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

Product Description:

DTC Embedded Truss Anchor: The DTC embedded truss anchor consists of a steel strap to connect a wood member to a masonry wall. The straps are used to transfer load between wood members and masonry walls.

NFM Narrow Flange Masonry Hanger: The Narrow Flange Masonry Hanger series (NFM) consists of a steel hanger to connect wood member(s) to a masonry wall. The hangers are used to transfer load between wood members and masonry walls.

NFMU Narrow Flange Masonry Hanger: The Narrow Flange Masonry Hanger series with uplift bolt connection (NFMU) consists of a steel hanger to connect a wood member to a masonry wall. The hangers are used to transfer load between wood members and masonry walls.

Product Material:

DTC:

Strap: 16 Ga. steel ASTM A653 Gr50 G90 Galvanized
Seat: 20 Ga. steel ASTM A653 Gr40 G90 Galvanized

NFM and NFMU:

Angle: 6"x4"x3/8" thick steel ASTM A36
U-Strap: 7 Ga. steel ASTM A1011 Gr40

Materials:

Wood

Wood members must be Southern Pine with a minimum specific gravity (G) of 0.55, or an approved member with an equivalent specific gravity (G) of 0.55. Wood members shall have a moisture content not exceeding 19 percent (16 percent for structural engineered lumber). Wood members must be used under continuously dry conditions and where sustained temperatures are limited to 100° F.

Preservative and Fire-Retardant-treated Wood

Connectors or fasteners used in contact with preservative-treated and fire-retardant-treated wood shall be in accordance with FBC Section 2304.10.5.

Nail

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

Fasteners

Required fastener types and sizes are specified in the Table.

Masonry

Material and quality of masonry construction must comply with the applicable sections of FBC. Minimum concrete or grout compressive strength shall be 2500 psi.

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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.

The allowable loads are based on wood members with a moisture content not exceeding 19 percent (16 percent for structural engineered lumber). If moisture content exceeds this value, a wet service factor, C_m , must be applied per Section 11.3.3 of the NDS. The allowable loads are based on wood members under continuously dry conditions and where sustained temperatures are limited to 100° F. Wood members that will experience sustained exposure to temperatures exceeding 100°F shall be adjusted by the temperature factor, C_t , per Section 11.3.4 of the NDS.

Wood members to which the anchor is attached must be designed by a registered design professional per the FBC. Masonry constructions must be a minimum of fully grouted and reinforced masonry units (CMU) type S or better mortar or reinforced concrete ($f'_c = 2,500$ psi at 28 days), designed by a registered design professional per the FBC.

Installation:

Install the connector in accordance with this evaluation report and the manufacturer's installation instructions.

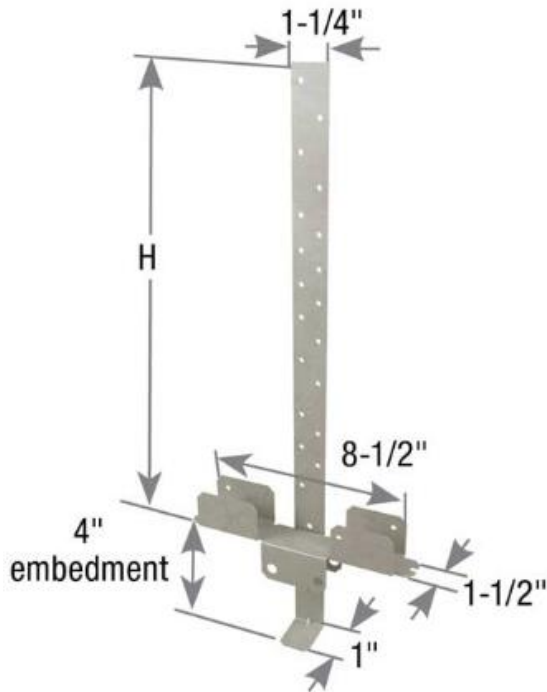
Testing and Specification:

1. ASTM D1761-88 Standard Test Methods for Mechanical Fasteners in Wood.
2. ASTM D 1761 to ASTM D7147-11 comparison letter, sealed by Steven A. Brekke, P.E.
3. ANSI/AWC National Design Specifications for Wood Construction (NDS) 2018
4. Test Report No.07-6300 dated 08/27/2007 by Product Testing Inc.
5. Test Report No.07-6319 dated 09/24/2007 by Product Testing Inc.

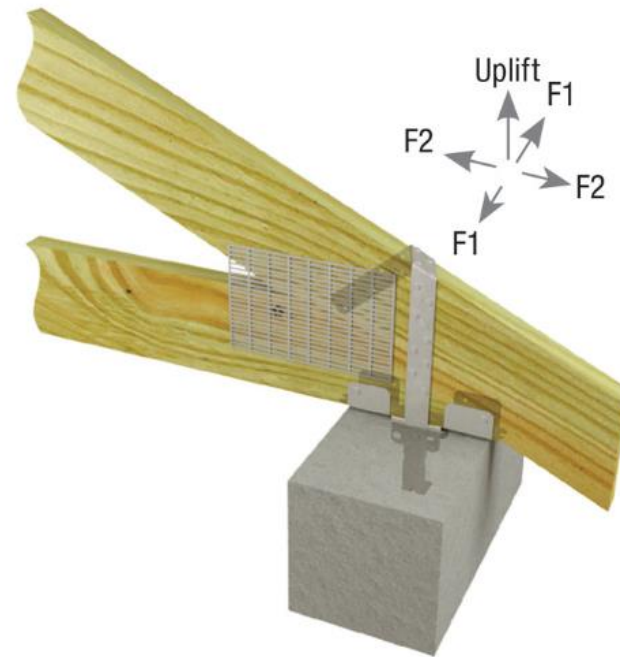
Quality Assurance Entity:

The manufacturer has established compliance in accordance with the 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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DTC Embedded Truss Anchor



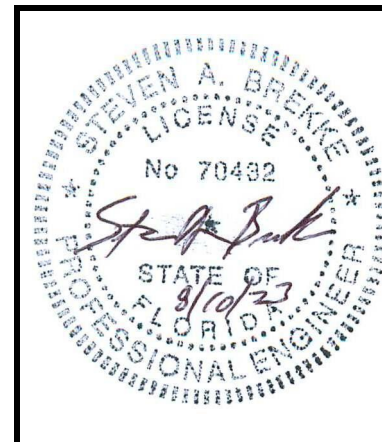
Typical DTC installation

STOCK NO.	STEEL GAGE ^{1,2}		H (in) (Out of Concrete)	FASTENER SCHEDULE ³				SP ALLOWABLE LOADS (lbs.) ^{4,5,6,7,8}			
				Strap		Seat		Uplift	F1		F2
	Nails			Nails		Toward Strap	Away from Strap				
	Strap	Seat		Qty	Size	Qty	Size		160%	160%	
DTC	16	20	16	9	10d x 1-1/2	4	10d x 1-1/2	1825	840	1200	1290

- 1) Strap steel conforms to ASTM A653 Gr50 standards.
- 2) Seat steel conforms to ASTM A653 Gr40 standards.
- 3) A 10d x 1-1/2 nail is 0.148" dia. X 1-1/2" long.
- 4) Allowable loads have been increased 60% for wind and seismic loads.

No further increase is permitted.

- 5) Embed connector 4" into concrete tie beam or masonry bond beam.
- 6) Connector shall be installed to fully grouted and reinforced concrete masonry units (CMU) type S or better mortar or reinforced concrete ($f'_c = 2,500$ psi at 28 days).
- 7) Installations should be spaced no closer together than 8" center-to-center to achieve tabulated allowable loads.
- 8) Straps may be installed straight or wrapped over truss to achieve table loads.



MiTek Inc.

16023 Swingley Ridge Road
Chesterfield, MO 63017
mittek-us.com
800-328-5934

Name: DTC Embedded Truss Anchor

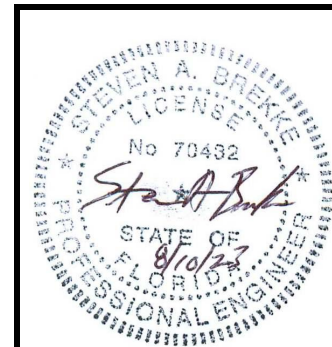
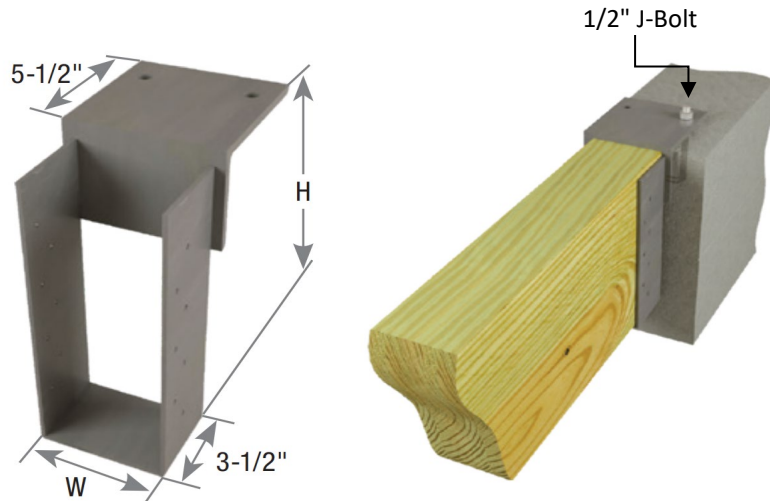
Date: 8/9/2023	Steven Brekke, PE PROFESSIONAL ENGINEER License #: 70432
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NFM Narrow Flange Masonry Hanger Allowable Loads

STOCK NUMBER	STEEL GAUGE		DIMENSIONS (inches)			FASTENER SCHEDULE ^{3,4,5}				DF/SP	
	TOP FLANGE	U-STRAP				Top Flange		Joist		ALLOWABLE LOADS (lbs) ^{1,2,6}	
						Qty	Bolt	Qty	Type	Download	Uplift
			100%, 115%, 125%	160%							
NFM3X8	3/8"	7	3-1/8	7-1/4	3-1/2	1	1/2" J-Bolt	10	10d Common	6720	1415
NFM3X10			3-1/8	9-1/4	3-1/2			12	10d Common	6720	1415
NFM3X12			3-1/8	11-1/4	3-1/2			14	10d Common	6720	1415
NFM3			3-3/8	11-3/4	3-1/2			14	10d Common	7510	1415
NFM35X8			3-5/8	7-1/4	3-1/2			10	10d Common	7510	1415
NFM35X10			3-5/8	9-1/4	3-1/2			12	10d Common	7510	1415
NFM35X12			3-5/8	11-1/4	3-1/2			14	10d Common	7510	1415
NFM35X1178			3-5/8	11-7/8	3-1/2			14	10d Common	7510	1415
NFM35X16			3-5/8	16	3-1/2			14	10d Common	7510	1415
NFM35X18			3-5/8	18	3-1/2			14	10d Common	7510	1415
NFM45			4-3/4	11-3/4	3-1/2			14	10d Common	7510	1415
NFM6X1178			5-5/8	11-7/8	3-1/2			14	10d Common	7510	1415
NFM6X16			5-5/8	16	3-1/2			14	10d Common	7510	1415
NFM6X18			5-5/8	18	3-1/2			14	10d Common	7510	1415

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

- 1) Allowable loads are based on 2,500 psi concrete or masonry.
- 2) Design loads are governed by test ultimate loads with a safety factor of three.
- 3) J-Bolts are 1/2" diameter ASTM A307 or better.
- 4) J-Bolt shall be cast-in-place and have a minimum 6" embedment and spaced not less than 4" from the edge of the concrete.
- 5) 10d Common nails are 0.148" dia. X 3" long.
- 6) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.



MiTek Inc.
16023 Swingley Ridge Road
Chesterfield, MO 63017 800-328-5934
mittek-us.com

Name: NFM NARROW FLANGE
MASONRY HANGER

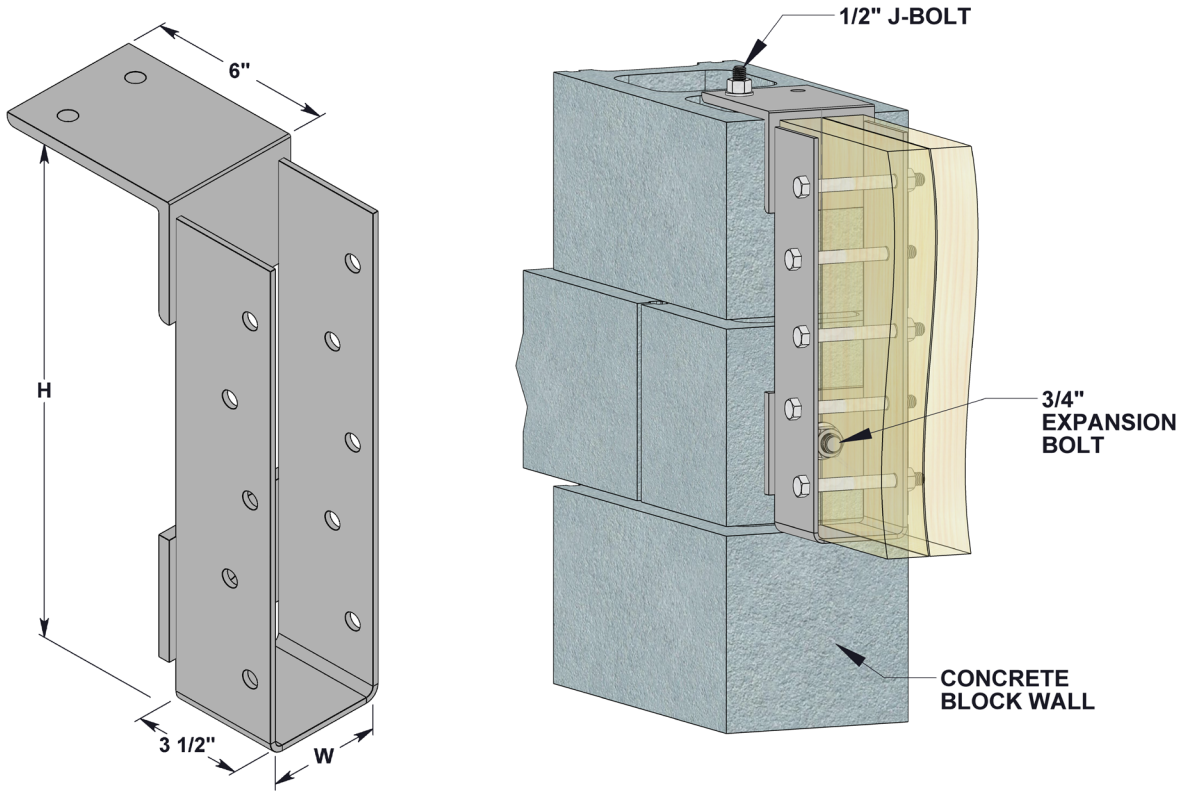
Date:
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Steven Brekke PE
PROFESSIONAL ENGINEER
License #: 70432

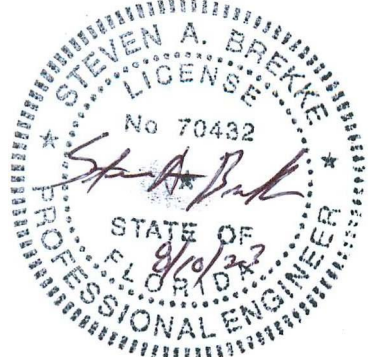
NFMU NARROW FLANGE HIGH UPLIFT MASONRY HANGER ALLOWABLE LOADS

STOCK NUMBER	STEEL GAUGE		DIMENSIONS (inches)			FASTENER SCHEDULE ^{3,4,5}						DF/SP ALLOWABLE LOADS (lbs) 1,2,6	
	TOP FLANGE	U-STRAP				Top Flange		Back Plate		Joist		Download	Uplift
			W	H	D	Qty	Bolt	Qty	Bolt	Qty	Type	100%, 115%, 125%	160%
NFM3X8U	3/8"	7	3 1/8	7 1/4	3 1/2	1	1/2" J-Bolt	1	3/4" Expansion Bolt	3	1/2" Bolt	7130	2580
NFM3X10U			3 1/8	9 1/4	3 1/2					5	1/2" Bolt	7130	2580
NFM3X12U			3 1/8	11 1/4	3 1/2					5	1/2" Bolt	7130	2580
NFM3U			3 3/8	11 3/4	3 1/2					5	1/2" Bolt	7130	3170
NFM35X8U			3 5/8	7 1/4	3 1/2					3	1/2" Bolt	7130	2580
NFM35X10U			3 5/8	9 1/4	3 1/2					5	1/2" Bolt	7130	2580
NFM35X12U			3 5/8	11 1/4	3 1/2					5	1/2" Bolt	7130	2580
NFM35X1178U			3 5/8	11 7/8	3 1/2					5	1/2" Bolt	7130	2580
NFM35X14U			3 5/8	14	3 1/2					5	1/2" Bolt	7130	2580
NFM35X16U			3 5/8	16	3 1/2					5	1/2" Bolt	7130	2580
NFM35X18U			3 5/8	18	3 1/2					5	1/2" Bolt	7130	2580
NFM45U			4 3/4	11 3/4	3 1/2					5	1/2" Bolt	10310	3070
NFM6X8U			5 5/8	7 1/4	3 1/2					3	1/2" Bolt	10310	2580
NFM6X10U			5 5/8	9 1/4	3 1/2					5	1/2" Bolt	10310	2580
NFM6X12U			5 5/8	11 1/4	3 1/2					5	1/2" Bolt	10310	2580
NFM6X1178U			5 5/8	11 7/8	3 1/2					5	1/2" Bolt	10310	2580
NFM6X14U			5 5/8	14	3 1/2					5	1/2" Bolt	10310	2580
NFM6X16U			5 5/8	16	3 1/2					5	1/2" Bolt	10310	2580
NFM6X18U			5 5/8	18	3 1/2					5	1/2" Bolt	10310	2580

- 1) Allowable loads are based on 2,500 psi concrete or masonry.
- 2) Design loads are governed by test ultimate loads with a safety factor of three.
- 3) J-Bolts are 1/2" diameter ASTM A307 or better.
- 4) J-Bolt shall be cast-in-place and have a minimum 6" embedment and spaced not less than 4" from the edge of the concrete.
- 5) A 3/4" ITW Ramset/Redhead Dyna Bolt sleeve anchor or equal with minimum 5" embedment depth installed in the face. Bolt shall be installed in accordance with the installation specifications provided by ITW Ramset.
- 6) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.



TYPICAL NFMU INSTALLATION



MiTek Inc. 16023 Swingley Ridge Road Chesterfield, MO 63017 800-328-5934 mittek-us.com	
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