

JLD ARCHITECT CORPORATION

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Structural Comments Response Narrative for Permit #BL2022-1894

Group: ALL

Type: STRUCTURAL

Status: DENIED

Date

Submitted: 1/12/2023 & 7/8/2024

Date Due:

Date

Completed:

Reviewer: LEO LLANOS

Remarks:

Notes:

1/12/2023 11:24:41 AM 1. provide special inspector forms for reinf. masonry and soil compaction 2. provide NOA for all truss connectors and call them out on roof plans for typical trusses and girders 3. provide calcs for truss uplift, check unttly equation for combined uplift and lateral loads. 4. show on plans roof uplift for zones per ASCE 7-16 and provide sketch depicting the zone locations.

JLD Architect Corp. Response

All revision are identified as Revision "A" dated 5/15/2023

1. Acknowledged. Special inspector form now provided attached to this response narrative.
2. Please refer to response narrative from DSD, structural engineer of record.

7/8/2024 8:31:58 AM 1. prior comment #1 pending (SPECIAL INSPECTOR FORMS DIGITALLY SIGNED) for reinforced masonry and soil compaction

1. Acknowledged. Special inspector form now provided attached to this response narrative.

Mr. Llanos, please also note that following sheets have been revised as part of final coordination and zoning comments.

S-2.1.1_09012024.pdf

S-2.2.1_09012024.pdf

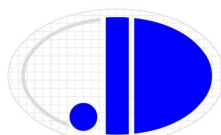
S-2.2.2_09012024.pdf

S-4.0_09012024.pdf

All revision are identified as Revision "A" dated 5/15/2023

Jose L. Diaz

JLD ARCHITECT CORPORATION



AA-26003440 / AR-0015547



VILLAGE OF PINECREST
Building & Planning Department

SPECIAL INSPECTOR

Date: 5/15/2024

To: Building Official
Village of Pinecrest
12645 Pinecrest Parkway
Pinecrest, Florida 33156

NOTICE TO VILLAGE OF PINECREST BUILDING OFFICIAL
EMPLOYMENT AS SPECIAL INSPECTOR UNDER
THE FLORIDA BUILDING CODE

I, (We) have been retained by Lisa Montero, to perform special inspection services under the Florida Building Code, at the project located at 6445 SW 107 St on the below listed items as of 5/15/2024. I am a registered engineer/architect licensed in the State of Florida.

Permit Numbers BL2022-1894

- ☐ Special Inspector for PILING (CMDC SECT 8-22)
- ☐ Special Inspector for TRUSSES OVER 35 FT LONG OR 6 FT HIGH (CMDC SECT 8-22)
- ☒ Special Inspector for REINFORCED MASONRY (CMDC SECT 8-22)
- ☐ Special Inspector for STEEL CONNECTIONS (CMDC SECT 8-22)
- ☒ Special Inspector for SOIL COMPACTION (CMDC SECT 8-22)
- ☐ Special Inspector for PRECAST UNITS & ATTACHMENTS (CMDC SECT 8-22)
- ☐ Special Inspector for _____

Note: Only the marked boxes apply.

The following individual(s) employed by me or this firm are authorized to perform inspections. *

1. Jose Diaz, RA
2. _____

**Special Inspectors utilizing authorized representatives shall insure the authorized representative is qualified by education or licensure to perform the duties assigned by the Special Inspector. The qualifications shall include licensure as a professional engineer or architect: graduation from an engineering education program in civil or structural engineering; graduation from an architectural education program; successful completion of the NCEES Fundamentals Examination; or registration as building inspector or general contractor.*

I (We) will notify the Village of Pinecrest Building Official of any changes regarding authorizing personnel performing inspection services.

I (We) understand that a Special Inspector's inspection log for each building must be displayed in a convenient location on the site for reference by the Building inspectors. All mandatory inspections, as required by the Florida Building Code, must be performed by the Village of Pinecrest. The inspections from the Building Department must be called for on all mandatory inspections. *Inspections performed by the Special Inspector hired by the Owner are in addition to the mandatory inspections performed by the Department.* Further, upon completion of the work under each building permit, I will submit the completed inspection log form and sealed Statement of Compliance to the building inspector at the time of final inspection and before making application for Certificate of Occupancy The Statement of Compliance shall state that to the best of my knowledge, belief and professional judgment that portions of the project outlined above meets with the intent of the Florida Building Code and in substantial accordance with the approved Plans.

Jose Diaz, RA

Engineer or Architect's signature
State Registration Number
Sign & Seal

BASED ON FBC 2020 – SEVENTH EDITION

Revised 9/23



DSD

DIVERSIFIED STRUCTURAL DESIGN, INC.

ANSWER TO COMMENTS

This cover sheet is provided as per Florida Statute 61G15-31 in lieu of signing and sealing each individual sheet. An index sheet is attached which is numbered.

FOR:
**LISA AND CHRIS MONTERO
RESIDENCE**

LOCATED AT:
**PINECREST,
FLORIDA**



Digitally signed by
Eduardo Gonzalez
DN: c=US, st=Florida,
l=Miami, o=Eduardo
Gonzalez, cn=Eduardo
Gonzalez,
email=eddyg@aol.co
m
Date: 2023.02.25
10:18:06 -05'00'

Office: 305 445 5100 / Fax: 305 445 6644
info@divsdesign.com
www.diversifiedstructuraldesign.com
3600 Red Road, Suite 603
Miramar, Florida, 33025
P.E. # 24927 State of FL CA-0006188



**Addition And Renovation
Lisa and Chris Montero
6445 SW 107 Street
Pinecrest Florida 33156**

ANSWER TO COMMENTS

Date 02-13-2023

1/12/2023 11:24:41 AM

1. Provide special inspector forms for reinf. masonry and soil compaction.

Acknowledge, see special inspector form attached.

2. Provide NOA for all truss connectors and call them out on roof plans for typical trusses and girders.

Acknowledge, all NOA for truss connector is provide and it is specified which connector corresponds to each truss and girder. Please see attached NOA and cloud in sheet S-2.2.1 and S-2.2.2

3. Provide calcs for truss uplift, check unity equation for combined uplift and lateral loads.

Acknowledge, unity equation for combined uplift and lateral loads is check for worst condition wood truss (T-1). Calculations for truss Uplift is provide, see attach calculations.

4. Show on plans roof uplift for zones per ASCE 7-16 and provide sketch depicting the zone locations.

Acknowledge, roof uplift zone per ASCE 7-16 with sketch depicting the zone locations is provide, see sketch in S-2.2.2

MecaWind v2404

Software Developer: Meca Enterprises Inc., www.meca.biz, Copyright © 2020

Calculations Prepared by:

Client: 0
Date: Feb 13, 2023
Designer: 0

Calculations Prepared For:

Project #: 0
Location: 0

File Location : X:\DWG\Year-2022\22-22\Calculations\roof\wind pressure at roof.wnd

Basic Wind Parameters

Wind Load Standard	= ASCE 7-16	Exposure Category	= C
Wind Design Speed	= 175.0 mph	Risk Category	= II
Structure Type	= Building	Building Type	= Enclosed

General Wind Settings

Incl_LF	= Include ASD Load Factor of 0.6 in Pressures	= True
DynType	= Dynamic Type of Structure	= Rigid
Zg	= Altitude (Ground Elevation) above Sea Level	= 0.000 ft
Bdist	= Base Elevation of Structure	= 0.000 ft
SDB	= Simple Diaphragm Building	= False
Reacs	= Show the Base Reactions in the output	= False
MWFRSType	= MWFRS Method Selected	= Ch 27 Pt 1

Topographic Factor per Fig 26.8-1

Topo	= Topographic Feature	= None
Kzt	= Topographic Factor	= 1.000

Building Inputs

RoofType:	Building Roof Type	= Gabled	W	: Width Perp to Ridge	= 60.000 ft
L	: Length Along Ridge	= 120.000 ft	Eht	: Eave Height	= 10.330 ft
RE	: Roof Entry Method	= Slope	Slope	: Slope of Roof	= 4.0 :12
Theta	: Roof Slope	= 18.43 Deg	Par	: Is there a Parapet	= False

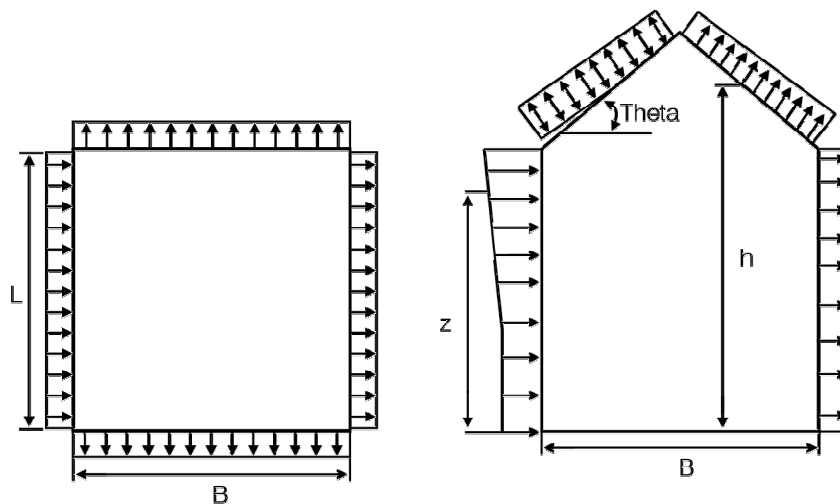
Exposure Constants per Table 26.11-1:

Alpha:	Table 26.11-1 Const	= 9.500	Zg:	Table 26.11-1 Const	= 900.000 ft
At:	Table 26.11-1 Const	= 0.105	Bt:	Table 26.11-1 Const	= 1.000
Am:	Table 26.11-1 Const	= 0.154	Bm:	Table 26.11-1 Const	= 0.650
C:	Table 26.11-1 Const	= 0.200	Eps:	Table 26.11-1 Const	= 0.200

Overhang Inputs:

Std	= Overhangs on all sides are the same	= True
OHType	= Type of Roof Wall Intersections	= Overhang
OH	= Overhang of Roof Beyond Wall	= 2.000 ft

Main Wind Force Resisting System (MWFRS) Calculations per Ch 27 Part 1:



h	= Mean Roof Height above grade	= 15.330 ft
Kh	= 15 ft [4.572 m] < Z < Zg --> (2.01*(Z/zg)^(2/Alpha)) {Table 26.10-1}	= 0.853
Kzt	= Topographic Factor is 1 since no Topographic feature specified	= 1.000
Kd	= Wind Directionality Factor per Table 26.6-1	= 0.85
Zg	= Elevation above Sea Level	= 0.000 ft
Ke	= Ground Elevation Factor: $Ke = e^{-(0.0000362 \cdot Zg)}$ {Table 26.9-1}	= 1.000
GCPI	= Ref Table 26.13-1 for Enclosed Building	= +/-0.18

RA = Roof Area = 8365.28 sq ft
 LF = Load Factor based upon ASD Design = 0.60
 qh = $(0.00256 * K_h * K_{zt} * K_d * K_e * V^2) * LF$ = 34.10 psf
 qin = For Negative Internal Pressure of Enclosed Building use qh*LF = 34.10 psf
 qip = For Positive Internal Pressure of Enclosed Building use qh*LF = 34.10 psf

Gust Factor Calculation:

Gust Factor Category I Rigid Structures - Simplified Method
 G1 = For Rigid Structures (Nat. Freq.>1 Hz) use 0.85 = 0.85
Gust Factor Category II Rigid Structures - Complete Analysis
 Zm = $\text{Max}(0.6 * H_t, Z_{min})$ = 15.000 ft
 Izm = $C_c * (33 / Z_m)^{0.167}$ = 0.228
 Lzm = $L * (Z_m / 33)^{Eps}$ = 427.057
 B = Structure Width Normal to Wind = 120.000 ft
 Q = $(1 / (1 + 0.63 * ((B + H_t) / Lzm)^{0.63}))^{0.5}$ = 0.875
 G2 = $0.925 * ((1 + 0.7 * Izm * 3.4 * Q) / (1 + 0.7 * 3.4 * Izm))$ = 0.859
Gust Factor Used in Analysis
 G = Lessor Of G1 Or G2 = 0.850

MWFRS Wind Normal to Ridge (Ref Fig 27.3-1)

h = Mean Roof Height Of Building = 15.330 ft
 RHt = Ridge Height Of Roof = 20.330 ft
 B = Horizontal Dimension Of Building Normal To Wind Direction = 120.000 ft
 L = Horizontal Dimension Of building Parallel To Wind Direction = 60.000 ft
 L/B = Ratio Of L/B used For Cp determination = 0.500
 h/L = Ratio Of h/L used For Cp determination = 0.255
 Slope = Slope of Roof = 18.43 Deg
 OH_Bot_-Y = Overhang Coefficient Bottom Surface (Windward Only) = 0.8, 0.8
 OH_Top_+X+Y = Overhang Coefficient Overhang +X+Y (Leeward) = -0.57, -0.57
 OH_Top_+X-Y = Overhang Coefficient Overhang +X-Y (Windward) = 0.13, -0.37
 OH_Top_+Y = Overhang Coefficient Top +Y (Leeward) = -0.57, -0.57
 OH_Top_-X+Y = Overhang Coefficient Overhang -X+Y (Leeward) = -0.57, -0.57
 OH_Top_-X-Y = Overhang Coefficient Overhang -X-Y (Windward) = 0.13, -0.37
 OH_Top_-Y = Overhang Coefficient Top Windward Edge = 0.13, -0.37
 Roof_LW = Roof Coefficient (Leeward) = -0.57, -0.57
 Roof_WW = Roof Coefficient (Windward) = 0.13, -0.37
 Cp_WW = Windward Wall Coefficient (All L/B Values) = 0.80
 Cp_LW = Leeward Wall Coefficient using L/B = -0.50
 Cp_SW = Side Wall Coefficient (All L/B values) = -0.70
 GCpn_WW = Parapet Combined Net Pressure Coefficient (Windward Parapet) = 1.50
 GCpn_LW = Parapet Combined Net Pressure Coefficient (Leeward Parapet) = -1.00

Wall Wind Pressures based On Positive Internal Pressure (+GCPi) - Normal to Ridge All wind pressures include a load factor of 0.6

Elev	Kz	Kzt	qz	GCPi	Windward Press	Leeward Press	Side Press	Total Press	Minimum Pressure*
ft			psf		psf	psf	psf	psf	psf
10.33	0.849	1.000	33.94	0.18	16.94	-20.63	-26.43	37.57	9.60

Wall Wind Pressures based on Negative Internal Pressure (-GCPi) - Normal to Ridge All wind pressures include a load factor of 0.6

Elev	Kz	Kzt	qz	GCPi	Windward Press	Leeward Press	Side Press	Total Press	Minimum Pressure*
ft			psf		psf	psf	psf	psf	psf
10.33	0.849	1.000	33.94	-0.18	29.22	-8.35	-14.15	37.57	9.60

Notes Wall Pressures:

Kz = Velocity Press Exp Coeff
 qz = $0.00256 * K_z * K_{zt} * K_d * V^2$
 Side = $q_h * G * Cp_{SW} - q_{ip} * +GCPi$
 Leeward = $q_h * G * Cp_{LW} - q_{ip} * +GCPi$
 * Minimum Pressure: Para 27.1.5 no less than 9.60 psf (Incl LF) applied to Walls
 + Pressures Acting TOWARD Surface
 Kzt = Topographical Factor
 GCPi = Internal Press Coefficient
 Windward = $q_z * G * Cp_{WW} - q_{ip} * +GCPi$
 Total = Windward Press - Leeward Press
 - Pressures Acting AWAY from Surface

Roof Wind Pressures for Positive & Negative Internal Pressure (+/- GCPi) - Normal to Ridge All wind pressures include a load factor of 0.6

Roof Var	Start Dist	End Dist	Cp_min	Cp_max	GCPi	Pressure Pn_min*	Pressure Pp_min*	Pressure Pn_max	Pressure Pp_max
	ft	ft				psf	psf	psf	psf
OH_Bot_-Y	N/A	N/A	0.800	0.800	0.000	23.19	23.19	23.19	23.19
OH_Top_+X+Y	N/A	N/A	-0.570	-0.570	0.000	-16.52	-16.52	-16.52	-16.52

OH_Top_+X-Y	N/A	N/A	0.130	-0.370	0.000	3.77	3.77	-10.72	-10.72
OH_Top_+Y	N/A	N/A	-0.570	-0.570	0.000	-16.52	-16.52	-16.52	-16.52
OH_Top_-X+Y	N/A	N/A	-0.570	-0.570	0.000	-16.52	-16.52	-16.52	-16.52
OH_Top_-X-Y	N/A	N/A	0.130	-0.370	0.000	3.77	3.77	-10.72	-10.72
OH_Top_-Y	N/A	N/A	0.130	-0.370	0.000	3.77	3.77	-10.72	-10.72
Roof_LW	N/A	N/A	-0.570	-0.570	0.180	-10.38	-22.66	-10.38	-22.66
Roof_WW	N/A	N/A	0.130	-0.370	0.180	9.91	-2.37	-4.59	-16.86

Notes Roof Pressures:

Start Dist = Start Dist from Windward Edge End Dist = End Dist from Windward Edge
Cp_Max = Largest Coefficient Magnitude Cp_Min = Smallest Coefficient Magnitude
Pp_max = qh*G*Cp_max - qip*(+GCpi) Pn_max = qh*G*Cp_max - qin*(-GCpi)
Pp_min = qh*G*Cp_min - qip*(+GCpi) Pn_min = qh*G*Cp_min - qin*(-GCpi)
OH = Overhang X = Dir along Ridge Y = Dir Perpendicular to Ridge Z = Vertical
* The smaller uplift pressures due to Cp_Min can become critical when wind is combined
with roof live load or snow load; load combinations are given in ASCE 7
+ Pressures Acting TOWARD Surface - Pressures Acting AWAY from Surface

MWFRS Wind Parallel to Ridge (Ref Fig 27.3-1)

h	= Mean Roof Height Of Building	= 15.330 ft
RHt	= Ridge Height Of Roof	= 20.330 ft
B	= Horizontal Dimension Of Building Normal To Wind Direction	= 60.000 ft
L	= Horizontal Dimension Of building Parallel To Wind Direction	= 120.000 ft
L/B	= Ratio Of L/B used For Cp determination	= 2.000
h/L	= Ratio Of h/L used For Cp determination	= 0.128
Slope	= Slope of Roof	= 18.43 Deg
OH_Bot	= Overhang Bottom (Windward Face Only)	= 0.8, 0.8
OH_Top	= Overhang Top Coeff (0 to h/2) (0.000 ft to 2.000 ft)	= -0.18, -0.9
OH_Top	= Overhang Top Coeff (0 to h/2) (2.000 ft to 7.665 ft)	= -0.18, -0.9
OH_Top	= Overhang Top Coeff (h/2 to h) (7.665 ft to 15.330 ft)	= -0.18, -0.9
OH_Top	= Overhang Top Coeff (h to 2h) (15.330 ft to 30.660 ft)	= -0.18, -0.5
OH_Top	= Overhang Top Coeff (>2h) (>30.660 ft)	= -0.18, -0.3
OH_Top	= Overhang Top Coeff (>2h) (>122.000 ft)	= -0.18, -0.3
Roof	= Roof Coeff (0 to h/2) (2.000 ft to 7.665 ft)	= -0.18, -0.9
Roof	= Roof Coeff (h/2 to h) (7.665 ft to 15.330 ft)	= -0.18, -0.9
Roof	= Roof Coeff (h to 2h) (15.330 ft to 30.660 ft)	= -0.18, -0.5
Roof	= Roof Coeff (>2h) (>30.660 ft)	= -0.18, -0.3
Cp_WW	= Windward Wall Coefficient (All L/B Values)	= 0.80
Cp_LW	= Leeward Wall Coefficient using L/B	= -0.30
Cp_SW	= Side Wall Coefficient (All L/B values)	= -0.70
GCpn_WW	= Parapet Combined Net Pressure Coefficient (Windward Parapet)	= 1.50
GCpn_LW	= Parapet Combined Net Pressure Coefficient (Leeward Parapet)	= -1.00

Wall Wind Pressures based On Positive Internal Pressure (+GCpi) - Parallel to Ridge
All wind pressures include a load factor of 0.6

Elev	Kz	Kzt	qz	GCpi	Windward Press	Leeward Press	Side Press	Total Press	Minimum Pressure*
ft			psf		psf	psf	psf	psf	psf
20.33	0.905	1.000	36.19	0.18	18.47	-14.83	-26.43	33.30	9.60
15.33	0.853	1.000	34.10	0.18	17.05	-14.83	-26.43	31.88	9.60
10.33	0.849	1.000	33.94	0.18	16.94	-14.83	-26.43	31.78	9.60

Wall Wind Pressures based on Negative Internal Pressure (-GCpi) - Parallel to Ridge
All wind pressures include a load factor of 0.6

Elev	Kz	Kzt	qz	GCpi	Windward Press	Leeward Press	Side Press	Total Press	Minimum Pressure*
ft			psf		psf	psf	psf	psf	psf
20.33	0.905	1.000	36.19	-0.18	30.74	-2.56	-14.15	33.30	9.60
15.33	0.853	1.000	34.10	-0.18	29.32	-2.56	-14.15	31.88	9.60
10.33	0.849	1.000	33.94	-0.18	29.22	-2.56	-14.15	31.78	9.60

Notes Wall Pressures:

Kz = Velocity Press Exp Coeff Kzt = Topographical Factor
qz = 0.00256*Kz*Kzt*Kd*V^2 GCpi = Internal Press Coefficient
Side = qh * G * Cp_SW - qip * +GCpi Windward = qz * G * Cp_WW - qip * +GCpi
Leeward = qh * G * Cp_LW - qip * +GCpi Total = Windward Press - Leeward Press
* Minimum Pressure: Para 27.1.5 no less than 9.60 psf (Incl LF) applied to Walls
+ Pressures Acting TOWARD Surface - Pressures Acting AWAY from Surface

Roof Wind Pressures for Positive & Negative Internal Pressure (+/- GCpi) - Parallel to Ridge
All wind pressures include a load factor of 0.6

Roof Var	Start Dist ft	End Dist ft	Cp_min	Cp_max	GCPi	Pressure Pn_min* psf	Pressure Pp_min* psf	Pressure Pn_max psf	Pressure Pp_max psf
OH_Bot	N/A	N/A	0.800	0.800	0.000	23.19	23.19	23.19	23.19
OH_Bot	N/A	N/A	0.800	0.800	0.000	23.19	23.19	23.19	23.19
OH_Top (-X+Y)	0.000	2.000	-0.180	-0.900	0.000	-5.22	-5.22	-26.08	-26.08
OH_Top (-X-Y)	0.000	2.000	-0.180	-0.900	0.000	-5.22	-5.22	-26.08	-26.08
OH_Top (-Y)	2.000	7.665	-0.180	-0.900	0.000	-5.22	-5.22	-26.08	-26.08
OH_Top (+Y)	2.000	7.665	-0.180	-0.900	0.000	-5.22	-5.22	-26.08	-26.08
OH_Top (-Y)	7.665	15.330	-0.180	-0.900	0.000	-5.22	-5.22	-26.08	-26.08
OH_Top (+Y)	7.665	15.330	-0.180	-0.900	0.000	-5.22	-5.22	-26.08	-26.08
OH_Top (-Y)	15.330	30.660	-0.180	-0.500	0.000	-5.22	-5.22	-14.49	-14.49
OH_Top (+Y)	15.330	30.660	-0.180	-0.500	0.000	-5.22	-5.22	-14.49	-14.49
OH_Top (-Y)	30.660	122.000	-0.180	-0.300	0.000	-5.22	-5.22	-8.69	-8.69
OH_Top (+Y)	30.660	122.000	-0.180	-0.300	0.000	-5.22	-5.22	-8.69	-8.69
OH_Top (+X+Y)	122.000	124.000	-0.180	-0.300	0.000	-5.22	-5.22	-8.69	-8.69
OH_Top (+X-Y)	122.000	124.000	-0.180	-0.300	0.000	-5.22	-5.22	-8.69	-8.69
Roof (+Y)	2.000	7.665	-0.180	-0.900	0.180	0.92	-11.35	-19.95	-32.22
Roof (-Y)	2.000	7.665	-0.180	-0.900	0.180	0.92	-11.35	-19.95	-32.22
Roof (+Y)	7.665	15.330	-0.180	-0.900	0.180	0.92	-11.35	-19.95	-32.22
Roof (-Y)	7.665	15.330	-0.180	-0.900	0.180	0.92	-11.35	-19.95	-32.22
Roof (+Y)	15.330	30.660	-0.180	-0.500	0.180	0.92	-11.35	-8.35	-20.63
Roof (-Y)	15.330	30.660	-0.180	-0.500	0.180	0.92	-11.35	-8.35	-20.63
Roof (+Y)	30.660	122.000	-0.180	-0.300	0.180	0.92	-11.35	-2.56	-14.83
Roof (-Y)	30.660	122.000	-0.180	-0.300	0.180	0.92	-11.35	-2.56	-14.83

Notes Roof Pressures:

Start Dist = Start Dist from Windward Edge End Dist = End Dist from Windward Edge

Cp_Max = Largest Coefficient Magnitude Cp_Min = Smallest Coefficient Magnitude

Pp_max = $q_h * G * Cp_{max} - q_{ip} * (+GCPi)$ Pn_max = $q_h * G * Cp_{max} - q_{in} * (-GCPi)$

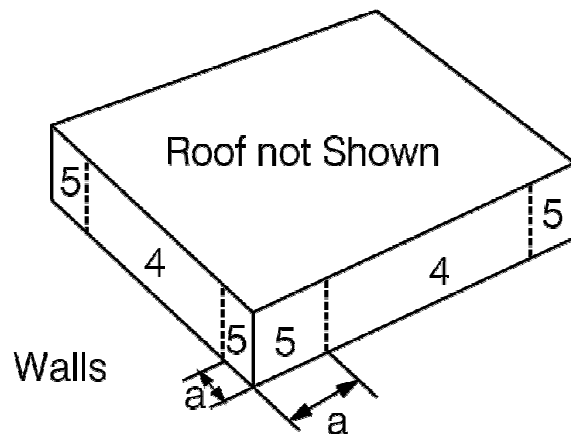
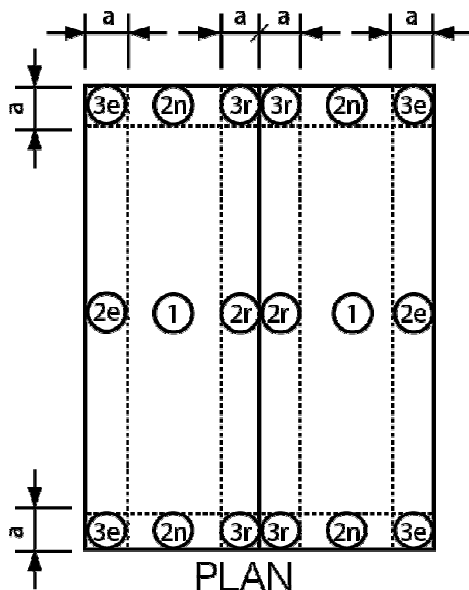
Pp_min* = $q_h * G * Cp_{min} - q_{ip} * (+GCPi)$ Pn_min* = $q_h * G * Cp_{min} - q_{in} * (-GCPi)$

OH = Overhang X = Dir along Ridge Y = Dir Perpendicular to Ridge Z = Vertical

* The smaller uplift pressures due to Cp_Min can become critical when wind is combined with roof live load or snow load; load combinations are given in ASCE 7

+ Pressures Acting TOWARD Surface - Pressures Acting AWAY from Surface

Components and Cladding (C&C) Calculations per Ch 30 Part 1:



h/W	= Ratio of mean roof height to building width	= 0.255
h/L	= Ratio of mean roof height to building length	= 0.128
h	= Mean Roof Height above grade	= 15.330 ft
Kh	= 15 ft [4.572 m] < Z < Zg --> $(2.01 * (Z/zg)^{(2/\alpha)})$ {Table 26.10-1}	= 0.853
Kzt	= Topographic Factor is 1 since no Topographic feature specified	= 1.000
Kd	= Wind Directionality Factor per Table 26.6-1	= 0.85
GCPi	= Ref Table 26.13-1 for Enclosed Building	= +/-0.18
LF	= Load Factor based upon ASD Design	= 0.60
qh	= $(0.00256 * Kh * Kzt * Kd * Ke * V^2) * LF$	= 34.10 psf
LHD	= Least Horizontal Dimension: Min(B, L)	= 60.000 ft
al	= Min(0.1 * LHD, 0.4 * h)	= 6.000 ft

a = Max(a1, 0.04 * LHD, 3 ft [0.9 m]) = 6.000 ft
h/B = Ratio of mean roof height to least hor dim: h / B = 0.255

Wind Pressures for C&C Ch 30 Pt 1
All wind pressures include a load factor of 0.6

Description	Zone	Width	Span	Area	1/3 Rule	Ref Fig	GCp Max	GCp Min	p Max psf	p Min psf
ft		ft	ft	sq ft						
truss	2r	2.000	20.000	133.33	Yes	30.3-2B	0.300	-1.391	16.37	-53.55
zone 1	1	2.000	5.000	10.00	No	30.3-2B	0.535	-2.000	24.39	-74.33
zone 2e	2e	2.000	5.000	10.00	No	30.3-2B	0.535	-2.000	24.39	-74.33
zone 2n	2n	2.000	5.000	10.00	No	30.3-2B	0.535	-3.000	24.39	-108.43
zone 2r	2r	2.000	5.000	10.00	No	30.3-2B	0.535	-3.000	24.39	-108.43
zone 3e	3e	2.000	5.000	10.00	No	30.3-2B	0.535	-3.000	24.39	-108.43
zone 3r	3r	2.000	5.000	10.00	No	30.3-2B	0.535	-3.600	24.39	-128.89

Area = Span Length x Effective Width
1/3 Rule = Effective width need not be less than 1/3 of the span length
GCp = External Pressure Coefficients taken from Figures 30.3-1 through 30.3-7
p = Wind Pressure: $q_h(GC_p - GC_{pi})$ [Eqn 30.3-1]*
* Per Para 30.2.2 the Minimum Pressure for C&C is 9.60 psf [0.460 kPa] {Includes LF}



DSD

DIVERSIFIED STRUCTURAL DESIGN, INC.

info@divsdesign.com
www.diversifiedstructuraldesign.com
Office: 305 445 5100 / Fax: 305 445 6644
3600 Red Road, Suite 603
Miramar, Florida 33025
P.E. # 24927 State of FL CA-0006188

JOB ADDITION AND RENOVATION RESIDENCE

SHEET No. _____ JOB No. 22-22

CALCULATE BY AR DATE 02-13-2023

CHECKED BY _____ DATE _____

SCALE _____

UNITY EQUATION CHECK FOR COMBINED UPLIFT AND LATERAL FORCE WOOD TRUSS

$$W1 := 9.91 \cdot \text{psf} \quad L1 := 10.38 \cdot \text{psf} \quad B := 60 \cdot \text{ft}$$

$$W2 := 16.94 \cdot \text{psf} \quad L2 := 20.63 \cdot \text{psf}$$

$$H2 := 10.33 \cdot \text{ft}$$

$$H3 := \frac{\frac{B}{2}}{\cos(18.43^\circ)} = 31.62 \cdot \text{ft}$$

REACTION LOADS

$$R3 := W1 \cdot H3 = 313.37 \cdot \text{plf}$$

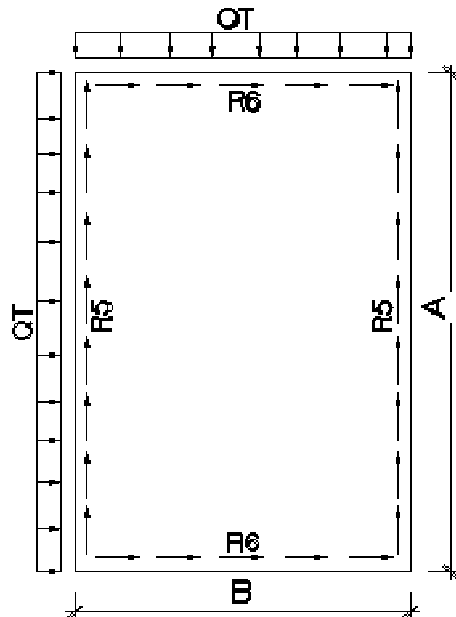
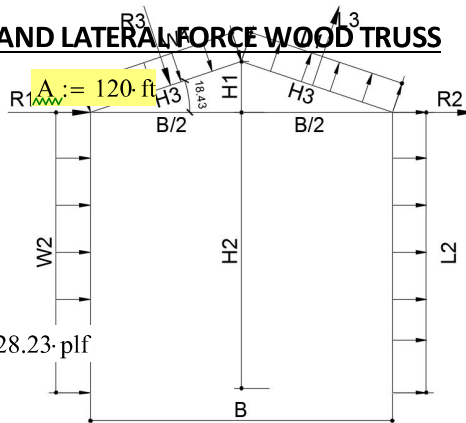
$$L3 := L1 \cdot H3 = 328.23 \cdot \text{plf}$$

$$R1 := R3 \cdot \sin(18.43^\circ) + W2 \cdot \frac{H2}{2} = 186.57 \cdot \text{plf}$$

$$R2 := L3 \cdot \sin(18.43^\circ) + L2 \cdot \frac{H2}{2} = 210.32 \cdot \text{plf}$$

$$QT := R1 + R2$$

$$QT = 396.89 \cdot \text{plf}$$



Unity Equation Check for combined Uplift and Lateral Force Wood Truss for worst condition T-1

$$B := 34.0 \cdot \text{ft}$$

$$A := 35.42 \cdot \text{ft}$$

$$\text{UpliftT1} := 1388 \cdot \text{lb}$$

$$R6 := QT \cdot \frac{\frac{A}{2}}{B} = 206.73 \cdot \text{plf}$$

$$\text{LateralF2} := R6 \cdot 2.0 \cdot \text{ft} = 413.47 \cdot \text{lb}$$

$$R5 := QT \cdot \frac{\frac{B}{2}}{A} = 190.49 \cdot \text{plf}$$

$$\text{LateralF1} := R5 \cdot 2.0 \cdot \text{ft} = 380.98 \cdot \text{lb}$$

For Connector HLPTA75

$$\text{ResistUplift} := 2125 \cdot \text{lb}$$

$$\text{ResistLateralF1} := 1860 \cdot \text{lb}$$

$$\text{ResistLateralF2} := 1715 \cdot \text{lb}$$

$$\text{UnityEquation} := \frac{\text{UpliftT1}}{\text{ResistUplift}} + \frac{\text{LateralF1}}{\text{ResistLateralF1}} + \frac{\text{LateralF2}}{\text{ResistLateralF2}} = 1$$

IS OK

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Product Approval
USER: Public User

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FL #	FL1247-R6						
Application Type	Editorial Change						
Code Version	2020						
Application Status	Approved						
Comments							
Archived	☐						
Product Manufacturer	MiTek Inc.						
Address/Phone/Email	16023 Swingley Ridge Road Chesterfield, MO 63017 (800) 328-5934 ewalden@mii.com						
Authorized Signature	Erin Walden ewalden@mii.com						
Technical Representative	Erin M. Walden						
Address/Phone/Email	16023 Swingley Ridge Road Chesterfield, MO 63017 (952) 898-8635 ewalden@mii.com						
Quality Assurance Representative	Erin M. Walden						
Address/Phone/Email	16023 Swingley Ridge Road Chesterfield, MO 63017 (952) 898-8635 ewalden@mii.com						
Category	Structural Components						
Subcategory	Wood Connectors						
Compliance Method	Evaluation Report from a Florida Registered Architect or a Licensed Florida Professional Engineer ☐ Evaluation Report - Hardcopy Received						
Florida Engineer or Architect Name who developed the Evaluation Report	Steven Brekke						
Florida License	PE-70432						
Quality Assurance Entity	ICC NTA						
Quality Assurance Contract Expiration Date	12/31/2023						
Validated By	Johnathan Green, P.E. ☒ Validation Checklist - Hardcopy Received						
Certificate of Independence	FL1247_R6_COI_Letter of Certification- MiTek, Inc. sealed.pdf						
Referenced Standard and Year (of Standard)	<table border="0"> <thead> <tr> <th>Standard</th> <th>Year</th> </tr> </thead> <tbody> <tr> <td>ANSI / AWC NDS</td> <td>2018</td> </tr> <tr> <td>ASTM D 7147</td> <td>2011</td> </tr> </tbody> </table>	Standard	Year	ANSI / AWC NDS	2018	ASTM D 7147	2011
Standard	Year						
ANSI / AWC NDS	2018						
ASTM D 7147	2011						
Equivalence of Product Standards Certified By	Florida Licensed Professional Engineer or Architect FL1247_R6_Equiv_ASTM D1761 to D7147 Comparison 2020.pdf						

Sections from the Code

Product Approval Method

Method 1 Option D

Date Submitted 12/14/2020

Date Validated 12/15/2020

Date Pending FBC Approval 12/26/2020

Date Approved 02/09/2021

Summary of Products

FL #	Model, Number or Name	Description
1247.1	HLPTA75	High Wind Truss Anchor
Limits of Use Approved for use in HVHZ: Yes Approved for use outside HVHZ: Yes Impact Resistant: N/A Design Pressure: N/A Other:		Installation Instructions FL1247_R6_II_FL1247_HLPTA75_2020_FBC_Sealed.pdf Verified By: Steven Brekke 70432 Created by Independent Third Party: No Evaluation Reports FL1247_R6_AE_FL1247_HLPTA75_2020_FBC_Sealed.pdf Created by Independent Third Party: No

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Product Approval Accepts:



Residential North America

Product Evaluation Report
MiTek® Inc.
HLPTA75 High Wind Truss Anchor

Florida Product Approval 1247.1 R5
Florida Building Code 2020
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

Engineering Evaluator:

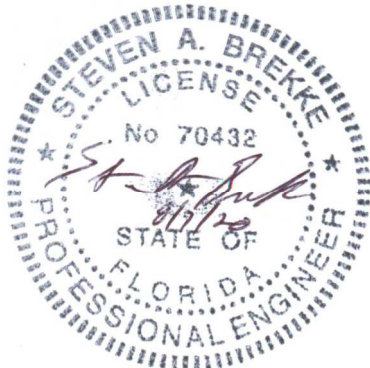
Steven Brekke P.E.
FL P.E. #70432

Validator:

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

Contents:

Evaluation Report Pages 1-4



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 2020, Sections 2304.10.3 and 2314.

Product Description:

The HLPTA75 is an embedded truss anchor designed to transfer lateral and uplift load between metal plated wooden trusses and masonry/concrete walls. It consists of a bent cold formed steel bracket that is partially embedded into a grouted bond beam (or concrete) and nailed to the truss with 10d x 1-1/2 nails.

Product Material:

18 Ga. Steel ASTM A653 Gr 40 G90

Materials:

Wood

Wood members must be Douglas Fir with a minimum specific gravity (G) of 0.50, or an approved member with an equivalent specific gravity (G) of 0.50 or greater. 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 Section 2304.10.5.

Nail

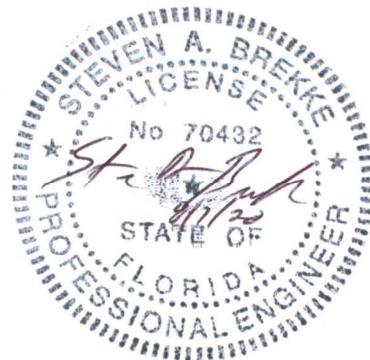
Nails shall meet the requirements in Table and the Requirements specified in ASTM F 1667.

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 2020. Minimum concrete or grout compressive strength shall be 2500 psi.



MiTek Inc.

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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 FBC 2020. Masonry constructions must be a minimum of C90, fully grouted, concrete CMU block designed by a registered design professional per FBC 2020.

Installation:

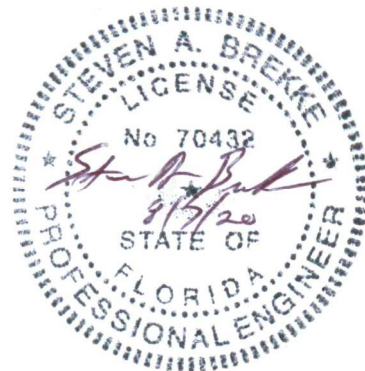
Install the anchor in accordance with this evaluation report and the manufacturer's installation instructions.

Testing and Specification:

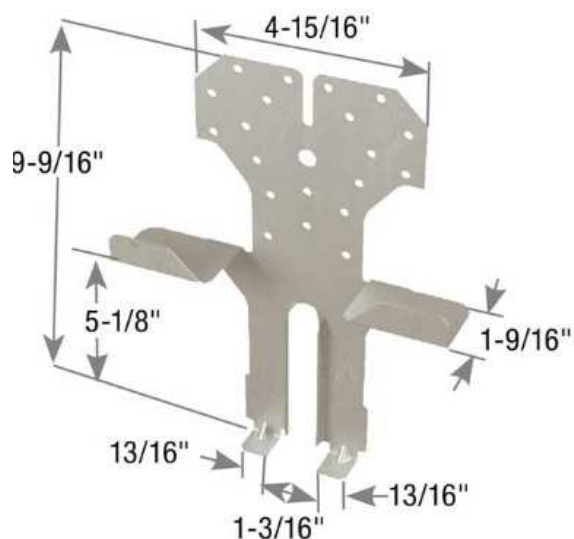
1. ASTM D1761-88(00) Standard Test Methods for Mechanical Fasteners in Wood. Project No. 033047 by Stork Twin City Testing Corporation.
2. ASTM D1761-88(00) Standard Test Methods for Mechanical Fasteners in Wood. Project No. 03-4383 by Product Testing, Inc.
3. ASTM D1761-88(00) Standard Test Methods for Mechanical Fasteners in Wood. Project No. 03-4383 by Product Testing, Inc.
4. ASTM D 1761 comparison letter, signed and sealed by Steven Brekke, P.E.
5. ANSI/AWC National Design Specifications for Wood Construction (NDS) 2018

Quality Assurance Entity:

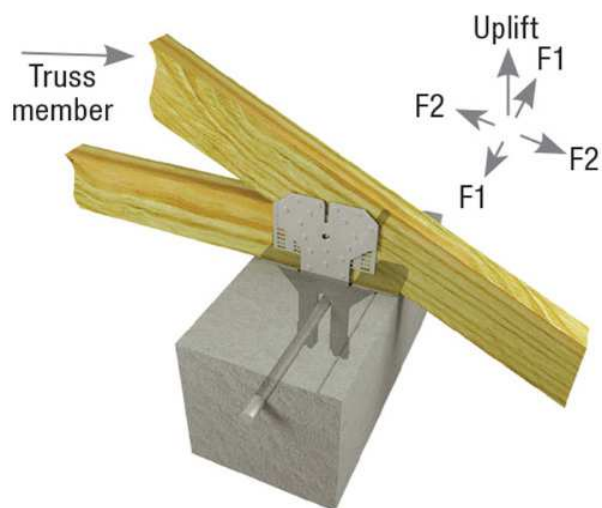
The manufacturer has established compliance of roof panel products in accordance with Florida Building Code and Rule 61G20-3.005 (3) for the manufacturing assurance program audited by an approved quality assurance entity.

**MiTek Inc.**

16023 Swingley Ridge Road
Chesterfield, MO 63017-5746
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1-800-328-5934



HLPTA75 Embedded Truss Anchor



Typical HLPTA75 Single Anchor Installation

STOCK NO.	INSTALLATION TYPE	STEEL GAUGE	PRODUCT DIMENSIONS FOR SINGLE PART				FASTENER SCHEDULE				ALLOWABLE LOADS (lbs)		
			W	L	H	H _{ef}	Seat Plate		Trusses/Rafter		F1	F2	Uplift
			(in.)	(in.)	(in.)	(in.)	Qty	Type	Qty	Type	CD = 1.60	CD = 1.60	CD = 1.60
HLPTA75	Single	18	1 9/16	4 15/16	4 7/16	5 1/8	2	10d x 1-1/2	20	10d x 1-1/2	1860	1715	2125
HLPTA75	Double	18	1 9/16	4 15/16	4 7/16	5 1/8	--	--	40	10d x 1-1/2	2040	2100	3500

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 and seismic loads; no further increase shall be permitted.
- 2) 10d x 1-1/2 nails are 0.148" dia. by 1-1/2" long.
- 3) Steel conforms to ASTM A653 Structural Grade 40 with a minimum galvanized coating of G90.
- 4) Install all specified fasteners.
- 5) Embed in concrete tie beam or masonry bond beam until the seat is resting on the surface.
- 6) Minimum of one #7 or two #5 rebars through the theoretical shear cone required.
- 7) Connector shall be installed to fully grouted and reinforced masonry units (CMU) type S or better mortar or reinforced concrete ($f'_c = 2,500$ psi at 28 days).
- 8) Minimum spacing between anchors is 10" to achieve full design load.
- 9) Verify grout is not in contact with truss member. Moisture barrier may be required.
- 10) When used in a double rebar installation, concrete tie beam stirrup should be sized to accommodate connector leg placement.



MiTek Inc. 16023 Swingley Ridge Road Chesterfield, MO 63017 800-328-5934 mittek-us.com	
Name: HLPTA75 HIGH WIND TRUSS ANCHOR	
Sheet 1	Steven Brekke P.E.
Date: Aug 1, 2020	PROFESSIONAL ENGINEER License #: 70432

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Product Approval
USER: Public User

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FL #	FL17680-R4						
Application Type	Editorial Change						
Code Version	2020						
Application Status	Approved						
Comments							
Archived	☐						
Product Manufacturer	MiTek Inc.						
Address/Phone/Email	16023 Swingley Ridge Road Chesterfield, MO 63017 (800) 328-5934 ewalden@mii.com						
Authorized Signature	Erin Walden ewalden@mii.com						
Technical Representative	Erin M. Walden						
Address/Phone/Email	16023 Swingley Ridge Road Chesterfield, MO 63017 (952) 898-8635 ewalden@mii.com						
Quality Assurance Representative	Erin M. Walden						
Address/Phone/Email	16023 Swingley Ridge Road Chesterfield, MO 63017 (952) 898-8635 ewalden@mii.com						
Category	Structural Components						
Subcategory	Wood Connectors						
Compliance Method	Evaluation Report from a Florida Registered Architect or a Licensed Florida Professional Engineer ☐ Evaluation Report - Hardcopy Received						
Florida Engineer or Architect Name who developed the Evaluation Report	Steven Brekke						
Florida License	PE-70432						
Quality Assurance Entity	ICC NTA						
Quality Assurance Contract Expiration Date	12/31/2023						
Validated By	Johnathan Green, P.E. ☒ Validation Checklist - Hardcopy Received						
Certificate of Independence	FL17680_R4_COI_Letter of Certification- MiTek, Inc. sealed.pdf						
Referenced Standard and Year (of Standard)	<table border="0"> <tr> <td>Standard</td> <td>Year</td> </tr> <tr> <td>ANSI/AWC NDS</td> <td>2018</td> </tr> <tr> <td>ASTM D7147</td> <td>2011</td> </tr> </table>	Standard	Year	ANSI/AWC NDS	2018	ASTM D7147	2011
Standard	Year						
ANSI/AWC NDS	2018						
ASTM D7147	2011						
Equivalence of Product Standards Certified By	Florida Licensed Professional Engineer or Architect FL17680_R4_Equiv_ASTM D1761 to D7147 Comparison 2020.pdf						

Sections from the Code

Product Approval Method

Method 1 Option D

Date Submitted

12/14/2020

Date Validated

12/15/2020

Date Pending FBC Approval

12/22/2020

Date Approved

02/09/2021

Summary of Products

FL #	Model, Number or Name	Description
17680.1	DHHTA16, DHHTA16-2, DHHTA20, DHHTA20-2	Embedded Truss Anchor
Limits of Use Approved for use in HVHZ: Yes Approved for use outside HVHZ: Yes Impact Resistant: N/A Design Pressure: N/A Other:		Installation Instructions FL17680_R4_II_FL17680 HTA HHTA DHTA DHHTA LPTA FBC 2020.pdf Verified By: Steven Brekke 70432 Created by Independent Third Party: No Evaluation Reports FL17680_R4_AE_FL17680 HTA HHTA DHTA DHHTA LPTA FBC 2020.pdf Created by Independent Third Party: No
17680.2	DHTA16-18, DHTA16-18-2, DHTA20-18, DHTA20-18-2, DHTA24-18, DHTA24-18-2, DHTA12, DHTA12-2, DHTA16, DHTA16-2, DHTA20, DHTA20-2, DHTA24, DHTA24-2, DHTA48, DHTA48-2	Embedded Truss Anchor
Limits of Use Approved for use in HVHZ: Yes Approved for use outside HVHZ: Yes Impact Resistant: N/A Design Pressure: N/A Other:		Installation Instructions FL17680_R4_II_FL17680 HTA HHTA DHTA DHHTA LPTA FBC 2020.pdf Verified By: Steven Brekke 70432 Created by Independent Third Party: No Evaluation Reports FL17680_R4_AE_FL17680 HTA HHTA DHTA DHHTA LPTA FBC 2020.pdf Created by Independent Third Party: No
17680.3	HHTA16, HHTA16R, HHTA16-2R, HHTA20, HHTA20R, HHTA20-2R	Embedded Truss Anchor
Limits of Use Approved for use in HVHZ: Yes Approved for use outside HVHZ: Yes Impact Resistant: N/A Design Pressure: N/A Other:		Installation Instructions FL17680_R4_II_FL17680 HTA HHTA DHTA DHHTA LPTA FBC 2020.pdf Verified By: Steven Brekke 70432 Created by Independent Third Party: No Evaluation Reports FL17680_R4_AE_FL17680 HTA HHTA DHTA DHHTA LPTA FBC 2020.pdf Created by Independent Third Party: No
17680.4	HTA16-18, HTA16-18R, HTA20-18, HTA20-18R, HTA24-18, HTA24-18R, HTA12, HTA12R, HTA12-2R, HTA16, HTA16R, HTA16-2R, HTA20, HTA20R, HTA20-2R, HTA24, HTA24R, HTA24-2R, HTA48, HTA48R, HTA48-2R	Embedded Truss Anchor
Limits of Use Approved for use in HVHZ: Yes Approved for use outside HVHZ: Yes Impact Resistant: N/A Design Pressure: N/A Other:		Installation Instructions FL17680_R4_II_FL17680 HTA HHTA DHTA DHHTA LPTA FBC 2020.pdf Verified By: Steven Brekke 70432 Created by Independent Third Party: No Evaluation Reports FL17680_R4_AE_FL17680 HTA HHTA DHTA DHHTA LPTA FBC 2020.pdf Created by Independent Third Party: No
17680.5	LPTA Parallel, LPTA Perp	Embedded Truss Anchor
Limits of Use Approved for use in HVHZ: Yes Approved for use outside HVHZ: Yes		Installation Instructions FL17680_R4_II_FL17680 HTA HHTA DHTA DHHTA LPTA FBC 2020.pdf

Impact Resistant: N/A
Design Pressure: N/A
Other:

Verified By: Steven Brekke 70432
Created by Independent Third Party: No
Evaluation Reports
[FL17680_R4_AE_FL17680 HTA HHTA DHTA DHHTA LPTA FBC 2020.pdf](#)
Created by Independent Third Party: No

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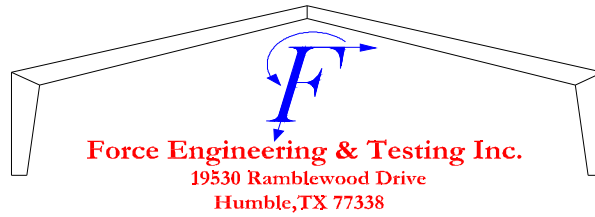
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Product Approval Accepts:





Product Evaluation Report
USP Structural Connectors, a MiTek® Company

HTA, HHTA, DHTA, DHHTA, LPTA Embedded Truss Anchors

Florida Product Approval # FL 17680-R2

Florida Building Code 2017

Per Rule 61G20-3

Method: 1 –d

Category: Structural Components

Subcategory: Wood Connector

Compliance Method: 61G20-3.005(1)(d)

HVHZ

Product Manufacturer:

USP Structural Connectors, a MiTek® Company

14305 Southcross Drive, Suite 200

Burnsville, Minnesota 55306

Engineer Evaluator:

Terrence E. Wolfe, P.E. # 44923

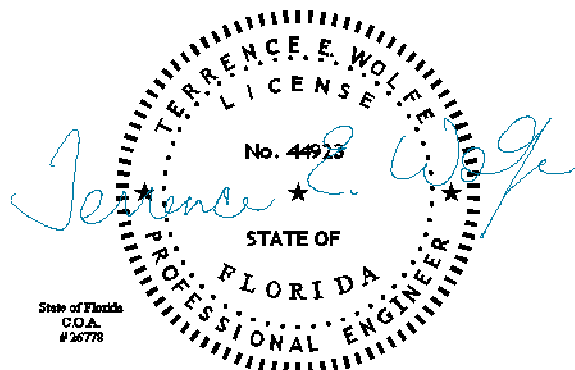
Florida Evaluation ANE ID: 1920

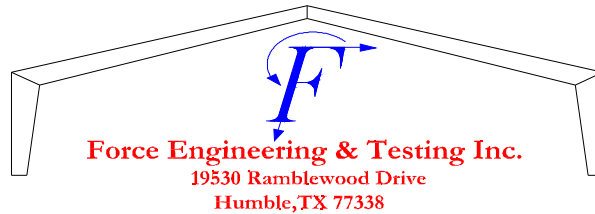
Validator:

Brian Jaks P.E. #70159

Contents:

Evaluation Report Pages 1 – 4





Compliance Statement:

The product as described in this report has demonstrated compliance with the Florida Building Code 2017, Sections 2303.5, 2304.10.3, 2321.5, and 2321.7.

Product Description:

The HTA, HHTA, DHTA, DHHTA, LPTA 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.

Product Dimensions:

STOCK NUMBER	STEEL GAUGE	STEEL GRADE (ksi)	DIMENSIONS (in.)		
			W	D	H
HTAxx-18 & HTAxx-18R	18	50	1 1/4	1 1/2	Varies
HTAxx, HTAxxR, HTAxx-2R	16	50	1 1/4	1 1/2	Varies
HHTAxx, HHTAxxR & HHTAxx-2R	14	50	1 1/4	1 1/2	Varies
DHTAxx-18 & DHTAxx-18-2	18	50	1 1/4	1 1/2	Varies
DHTAxx & DHTAxx-2	16	50	1 1/4	1 1/2	Varies
DHHTAxx & DHHTAxx-2	14	50	1 1/4	1 1/2	Varies
LPTA	18	40	5	5	4 1/4

Material: ASTM A 653 Steel G90 Galvanized.

Materials:

Wood

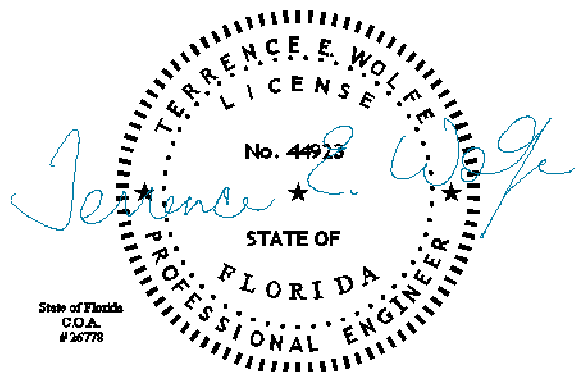
Wood members must be SP lumber with a minimum specific gravity (G) of 0.55, or an approved member with a minimum equivalent specific gravity (G) of 0.55. Wood members shall have a moisture content not exceeding 19 percent (16 percent for structural engineered lumber). Wood members must be used under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

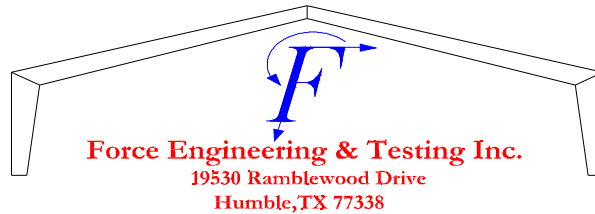
Preservative and Fire-Retardant-treated Wood

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

Nails

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





Fasteners

Required fastener types and sizes are specified in Table.

Masonry

Materials and quality of masonry construction must comply with the applicable sections of FBC 2017. Minimum concrete strength shall be 2500 psi.

Design Procedure:

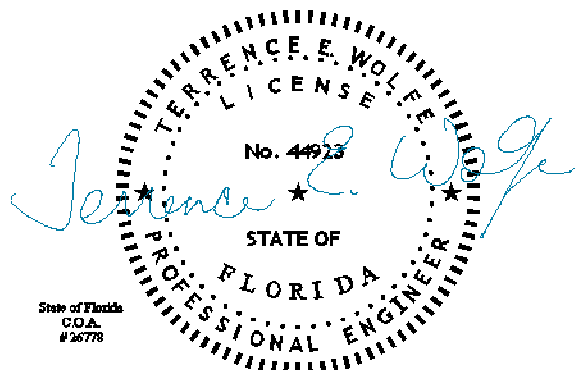
The allowable loads shown in Table are based on allowable stress design and include a 60% increase for wind and seismic load conditions per Section 11.3.2 of the NDS 2015. No further increases are permitted.

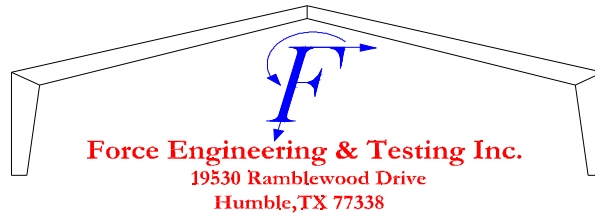
The allowable loads are based on wood members with a moisture content not exceeding 19 percent (16 percent for structural engineered lumber). If moisture content exceeds this value, a wet service factor, C_m , must be applied per Section 11.3.3 of the NDS 2015. The allowable loads are based on wood members 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 2015.

Wood members to which the strap is attached must be designed by a registered design professional per FBC 2017. Masonry construction must be minimum hollow C90 concrete block and designed by a registered design professional per FBC 2017.

Installation:

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



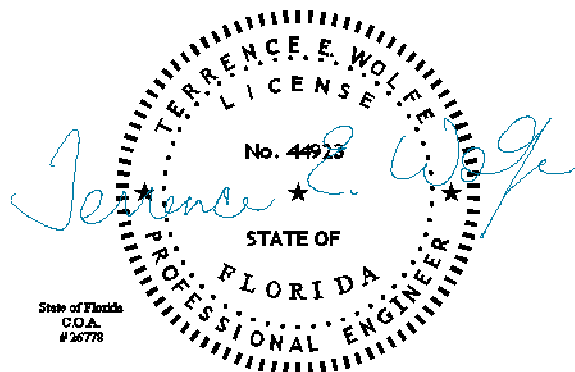


Testing and Specifications:

1. ASTM D7147-05 Standard Specifications for Establishing Allowable Loads of Joist Hangers.
Test Reports by Intertek/ATI: E3186.01-201.47, E1110.01-201.47, E6803.01-201-47, G5359.01-201.47
Test Reports by Element Technology: ESP014081P, ESP016578P.16, ESP016578P.17, ESP0168578P.18, ESP016578P.19.
2. ANSI/AWC National Design Specifications for Wood Construction (NDS) 2015

Quality Assurance Entity:

The manufacturer has established compliance of roof panel products 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.



HTA_DHTA_LPTA_HHTA_DHHTA EMBEDDED TRUSS ANCHOR ALLOWABLE LOADS

STOCK NUMBER ¹	STEEL		DIMENSIONS (in.)				FASTENER SCHEDULE PER ANCHOR ^{3,4,5,12}		SP ALLOWABLE LOADS FOR CATEGORIES A AND B (lbs) ^{6,7,8,9,10,11}						
	Gauge	Grade	W	D	H ²	H _E	Qty	Type	Uplift Masonry		Uplift Concrete		Lateral Loads Concrete/Masonry		
									1-ply C _D = 1.6	2-ply C _D = 1.6	1-ply C _D = 1.6	2-ply C _D = 1.6	F1 C _D = 1.6	F2 C _D = 1.6	F3 C _D = 1.6
HTA16-18	18	50	1 1/4	1 1/2	12	4	9	10d x 1 1/2	1625	1625	1625	1625	250	570	835
HTA16-18R															
HTA20-18	18	50	1 1/4	1 1/2	16	4	9	10d x 1 1/2	1625	1625	1625	1625	250	570	835
HTA20-18R															
HTA24-18	18	50	1 1/4	1 1/2	20	4	9	10d x 1 1/2	1625	1625	1625	1625	250	570	835
HTA24-18R															
HTA12	16	50	1 1/4	1 1/2	8	4	9	10d x 1 1/2	1870	1870	1870	1870	270	710	945
HTA12R															
HTA12-2R															
HTA16	16	50	1 1/4	1 1/2	12	4	9	10d x 1 1/2	1870	1870	1870	1870	270	710	945
HTA16R															
HTA16-2R															
HTA20	16	50	1 1/4	1 1/2	16	4	9	10d x 1 1/2	1870	1870	1870	1870	270	710	945
HTA20R															
HTA20-2R															
HTA24	16	50	1 1/4	1 1/2	20	4	9	10d x 1 1/2	1870	1870	1870	1870	270	710	945
HTA24R															
HTA24-2R															
HTA48	16	50	1 1/4	1 1/2	42 1/2	4	9	10d x 1 1/2	1870	1870	1870	1870	240	470	680
HTA48R															
HTA48-2R															
DHTA16-18	18	50	1 1/4	1 1/2	12	4	8	10d x 1 1/2	2430	—	2430	—	1085	1140	1085
DHTA16-18-2	18	50	1 1/4	1 1/2	12	4	8	10d x 1 1/2	—	2430	—	2770	1085	1140	1085
DHTA20-18	18	50	1 1/4	1 1/2	16	4	8	10d x 1 1/2	2430	—	2430	—	1085	1140	1085
DHTA20-18-2	18	50	1 1/4	1 1/2	16	4	8	10d x 1 1/2	—	2430	—	2770	1085	1140	1085
DHTA24-18	18	50	1 1/4	1 1/2	20	4	8	10d x 1 1/2	2430	—	2430	—	1085	1140	1085
DHTA24-18-2	18	50	1 1/4	1 1/2	20	4	8	10d x 1 1/2	—	2430	—	2770	1085	1140	1085
DHTA12	16	50	1 1/4	1 1/2	8	4	8	10d x 1 1/2	2430	—	2430	—	1215	1310	1215
DHTA12-2	16	50	1 1/4	1 1/2	8	4	8	10d x 1 1/2	—	2430	—	2770	1215	1310	1215
DHTA16	16	50	1 1/4	1 1/2	12	4	8	10d x 1 1/2	2430	—	2430	—	1215	1310	1215
DHTA16-2	16	50	1 1/4	1 1/2	12	4	8	10d x 1 1/2	—	2430	—	2770	1215	1310	1215
DHTA20	16	50	1 1/4	1 1/2	16	4	8	10d x 1 1/2	2430	—	2430	—	1215	1310	1215
DHTA20-2	16	50	1 1/4	1 1/2	16	4	8	10d x 1 1/2	—	2430	—	2770	1215	1310	1215
DHTA24	16	50	1 1/4	1 1/2	20	4	8	10d x 1 1/2	2430	—	2430	—	1215	1310	1215
DHTA24-2	16	50	1 1/4	1 1/2	20	4	8	10d x 1 1/2	—	2430	—	2770	1215	1310	1215
DHTA48	16	50	1 1/4	1 1/2	42 1/2	4	8	10d x 1 1/2	2430	—	2430	—	955	940	955
DHTA48-2	16	50	1 1/4	1 1/2	42 1/2	4	8	10d x 1 1/2	—	2430	—	2430	955	940	955
LPTA Parallel	18	40	5	5	4 1/4	8 1/4	10	10d x 1 1/2	1375	1375	1375	1375	750	1165	335
LPTA Perp	18	40	5	5	4 1/4	8 1/4	10	10d x 1 1/2	1510	1510	1510	1510	335	745	370
HHTA16	14	50	1 1/4	1 1/2	12	4	11	10d x 1 1/2	2375	2375	2375	2375	270	710	945
HHTA16R															
HHTA16-2R															
HHTA20	14	50	1 1/4	1 1/2	16	4	11	10d x 1 1/2	2375	2375	2375	2375	270	710	945
HHTA20R															
HHTA20-2R															
DHHTA16	14	50	1 1/4	1 1/2	12	4	8	10d x 1 1/2	2650	—	2650	—	1215	1310	1215
DHHTA16-2	14	50	1 1/4	1 1/2	12	4	8	10d x 1 1/2	—	2650	—	2770	1215	1310	1215
DHHTA20	14	50	1 1/4	1 1/2	16	4	8	10d x 1 1/2	2650	—	2650	—	1215	1310	1215
DHHTA20-2	14	50	1 1/4	1 1/2	16	4	8	10d x 1 1/2	—	2650	—	2770	1215	1310	1215

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

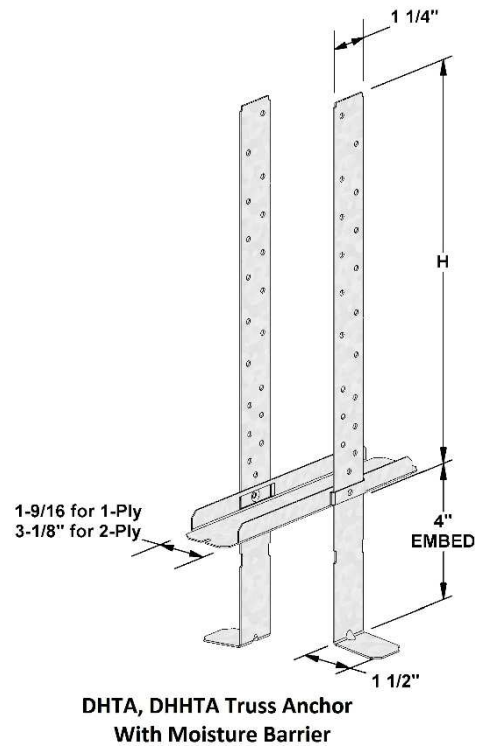
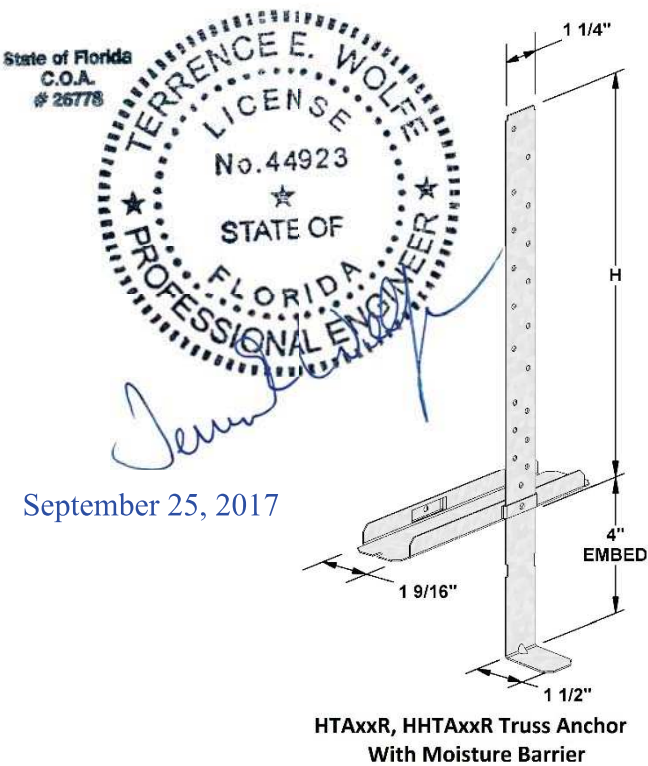
¹For optional attachment of moisture barrier to HTA/HHTA add R after model name. Ex: HTA12R. For 2-ply moisture barrier add -2R after model name. Ex: HHTA16-2R.²Height H is the distance that part extends from the concrete or masonry³A 10d x 1-1/2" nail has a diameter of 0.148 inch and a length of 1 1/2 inches⁴Minimum nail penetration shall be 1-1/2" for 10d nails.⁵Minimum quantity of fasteners to be installed. Product may have additional nail holes not needed to be filled to achieve table loads.⁶Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.⁷Allowable loads are based on anchorage to masonry/uncracked concrete⁸Allowable Uplift, F1, F2, and F3 loads are based on allowable stress design (ASD) and include the load duration factor (C_D) corresponding with wind and earthquake loading in accordance with the NDS (C_D = 1.6)

No further increase is allowed.

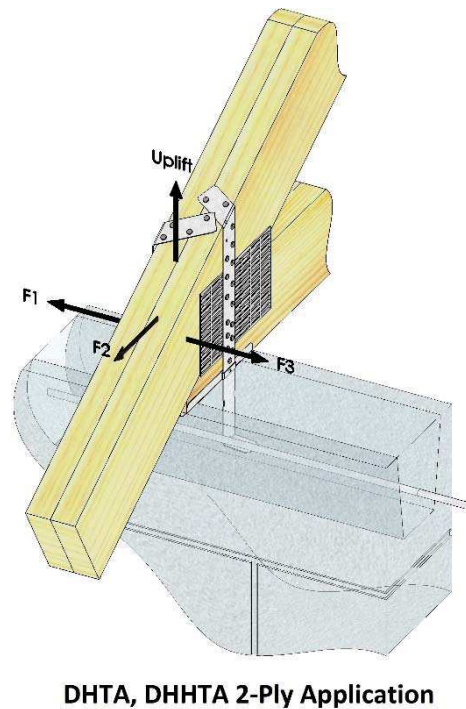
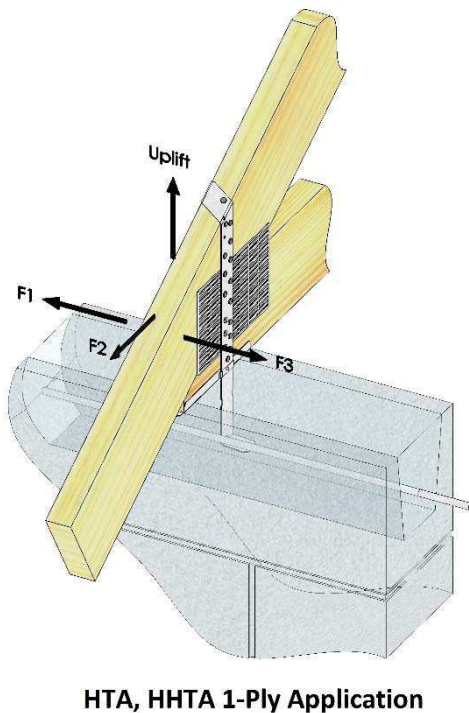
⁹Allowable loads are for SP lumber with a specific gravity of 0.55¹⁰Minimum specified masonry or concrete compressive strength, f_m is 1500 psi and f_c is 2,500 psi at 28 days respectively.¹¹The five nail holes nearest the embedment line must be filled to achieve the lateral loads listed in the table.¹²Install 8 nails into each strap for the DHTA & DHHTA installations.

October 17, 2017

HTA, HHTA, DHTA, DHHTA EMBEDDED TRUSS ANCHOR DETAIL:



HTA, HHTA, DHTA, DHHTA EMBEDDED TRUSS ANCHOR INSTALLATION DETAIL:




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Product Approval
 USER: Public User

[Product Approval Menu](#) > [Product or Application Search](#) > [Application List](#) > **Application Detail**

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FL #	FL17232-R8						
Application Type	Revision						
Code Version	2020						
Application Status	Approved						
	*Approved by DBPR. Approvals by DBPR shall be reviewed and ratified by the POC and/or the Commission if necessary.						
Comments							
Archived	☐						
Product Manufacturer	MiTek Inc.						
Address/Phone/Email	16023 Swingley Ridge Road Chesterfield, MO 63017 (800) 328-5934 ewalden@mii.com						
Authorized Signature	Erin Walden ewalden@mii.com						
Technical Representative	Erin M. Walden						
Address/Phone/Email	16023 Swingley Ridge Road Chesterfield, MO 63017 (952) 898-8635 ewalden@mii.com						
Quality Assurance Representative	Erin M. Walden						
Address/Phone/Email	16023 Swingley Ridge Road Chesterfield, MO 63017 (952) 898-8635 ewalden@mii.com						
Category	Structural Components						
Subcategory	Wood Connectors						
Compliance Method	Evaluation Report from a Product Evaluation Entity						
Evaluation Entity	ICC Evaluation Service, LLC						
Quality Assurance Entity	ICC-ES Evaluation Service, LLC						
Quality Assurance Contract Expiration Date	10/31/2024						
Validated By	ICC Evaluation Service, LLC.						
Certificate of Independence	FL17232_R8_COI_Certification of Independence for Evaluation.pdf						
Referenced Standard and Year (of Standard)	<table> <thead> <tr> <th>Standard</th><th>Year</th></tr> </thead> <tbody> <tr> <td>ANSI/AWC NDS</td><td>2018</td></tr> <tr> <td>ASTM D7147</td><td>2011</td></tr> </tbody> </table>	Standard	Year	ANSI/AWC NDS	2018	ASTM D7147	2011
Standard	Year						
ANSI/AWC NDS	2018						
ASTM D7147	2011						
Equivalence of Product Standards Certified By							
Sections from the Code							

Product Approval Method

Method 1 Option C

Date Submitted

12/15/2022

Date Validated

12/15/2022

Date Pending FBC Approval

Date Approved

12/18/2022

Summary of Products

Go to Page



Page 1 / 2

FL #	Model, Number or Name	Description
17232.1	CLPBF	Butterfly Hanger
Limits of Use Approved for use in HVHZ: No Approved for use outside HVHZ: Yes Impact Resistant: N/A Design Pressure: N/A Other:		Installation Instructions FL17232_R8_II_ESR-3445_Oct2022.pdf Verified By: ICC Evaluation Service, LLC Created by Independent Third Party: Evaluation Reports FL17232_R8_AE_ESR-3445_Oct2022.pdf
17232.2	HD26, HD24-2, HD34, HD44	Face Mount Hanger
Limits of Use Approved for use in HVHZ: No Approved for use outside HVHZ: Yes Impact Resistant: N/A Design Pressure: N/A Other:		Installation Instructions FL17232_R8_II_ESR-3445_Oct2022.pdf Verified By: ICC Evaluation Service, LLC Created by Independent Third Party: Evaluation Reports FL17232_R8_AE_ESR-3445_Oct2022.pdf
17232.3	HD28, HD210, HD212, HD214, HD216, HD26-2, HD28-2, HD210-2, HD212-2, HD214-2, HD216-2, HD26-3, HD28-3, HD210-3, HD212-3, HD214-3, HD216-3, HD28-4, HD210-4, HD36, HD38, HD310, HD312, HD314, HD316, HD38-2, HD310-2, HD312-2, HD46, HD48	Face Mount Hanger
Limits of Use Approved for use in HVHZ: Yes Approved for use outside HVHZ: Yes Impact Resistant: N/A Design Pressure: N/A Other:		Installation Instructions FL17232_R8_II_ESR-3445_Oct2022.pdf Verified By: ICC Evaluation Service, LLC Created by Independent Third Party: Evaluation Reports FL17232_R8_AE_ESR-3445_Oct2022.pdf
17232.4	HD410, HD412, HD414, HD416, HD418, HD66, HD68, HD610, HD612, HD614, HD616, HD86, HD88, HD810, HD812, HD814, HD816, HD1770, HD17925, HD17112, HD1714, HD27925, HD27112, HD2714, HD32105, HD3212, HD5112, HD51135	Face Mount Hanger
Limits of Use Approved for use in HVHZ: Yes Approved for use outside HVHZ: Yes Impact Resistant: N/A Design Pressure: N/A Other:		Installation Instructions FL17232_R8_II_ESR-3445_Oct2022.pdf Verified By: ICC Evaluation Service, LLC Created by Independent Third Party: Evaluation Reports FL17232_R8_AE_ESR-3445_Oct2022.pdf
17232.5	HD5210, HD5212, HD5214, HD5216, HD62117, Hd71117, HD7100, HD7120, HD7140, HD7160, HD7180, HD77117, HD83117, HD95117	Face Mount Hanger
Limits of Use Approved for use in HVHZ: Yes Approved for use outside HVHZ: Yes Impact Resistant: N/A Design Pressure: N/A Other:		Installation Instructions FL17232_R8_II_ESR-3445_Oct2022.pdf Verified By: ICC Evaluation Service, LLC Created by Independent Third Party: Evaluation Reports FL17232_R8_AE_ESR-3445_Oct2022.pdf

17232.6	HUS26, HUS28, HUS210, HUS175, HUS177, HUS179, HUS24-2, HUS26-2, HUS28-2, HUS210-2, HUS212-2, HUS46, HUS48, HUS410, HUS412	Slant Nail Joist Hanger
Limits of Use Approved for use in HVHZ: Yes Approved for use outside HVHZ: Yes Impact Resistant: N/A Design Pressure: N/A Other:		Installation Instructions FL17232_R8_II_ESR-3445_Oct2022.pdf Verified By: ICC Evaluation Service, LLC Created by Independent Third Party: Evaluation Reports FL17232_R8_AE_ESR-3445_Oct2022.pdf
17232.7	IHF15925, IHF15112, IHF1514, IHF16925, IHF16112, IHF1614, IHF17925, IHF17112, IHF1714, IHF1716, IHF20925, IHF20112, IHF2014, IHF23925, IHF23112, IHF2314, IHF2316, IHF2318, IHF25925, IHF25112, IHF2514, IHF2516, IHF26925, IHF26112, IHF2614, IHF2616	Joist Hanger
Limits of Use Approved for use in HVHZ: No Approved for use outside HVHZ: Yes Impact Resistant: N/A Design Pressure: N/A Other:		Installation Instructions FL17232_R8_II_ESR-3445_Oct2022.pdf Verified By: ICC Evaluation Service, LLC Created by Independent Third Party: Evaluation Reports FL17232_R8_AE_ESR-3445_Oct2022.pdf
17232.8	IHF15925-2, IHF15112-2, IHF16925-2, IHF16112-2, IHF35925, IHF35112, IHF3514, IHF3516, IHF3518, IHF20925-2, IHF20112-2, IHF2014-2, IHF23925-2, IHF25925-2, IHF25112-2	Joist Hanger
Limits of Use Approved for use in HVHZ: No Approved for use outside HVHZ: Yes Impact Resistant: N/A Design Pressure: N/A Other:		Installation Instructions FL17232_R8_II_ESR-3445_Oct2022.pdf Verified By: ICC Evaluation Service, LLC Created by Independent Third Party: Evaluation Reports FL17232_R8_AE_ESR-3445_Oct2022.pdf
17232.9	IHFL15925, IHFL15112, IHFL17925, IHFL17112, IHFL1714, IHFL1716, IHFL20925, IHFL20112, IHFL2014, IHFL2016, IHFL23925, IHFL23112, IHFL2314, IHFL2316, IHFL25925, IHFL25112, IHFL2514, IHFL2516, IHFL35925, IHFL35112, IHFL3514, IHFL3516	Joist Hanger
Limits of Use Approved for use in HVHZ: No Approved for use outside HVHZ: Yes Impact Resistant: N/A Design Pressure: N/A Other:		Installation Instructions FL17232_R8_II_ESR-3445_Oct2022.pdf Verified By: ICC Evaluation Service, LLC Created by Independent Third Party: Evaluation Reports FL17232_R8_AE_ESR-3445_Oct2022.pdf
17232.10	JL24, JL26	Standard Joist Hangers
Limits of Use Approved for use in HVHZ: No Approved for use outside HVHZ: Yes Impact Resistant: N/A Design Pressure: N/A Other:		Installation Instructions FL17232_R8_II_ESR-3445_Oct2022.pdf Verified By: ICC Evaluation Service, LLC Created by Independent Third Party: Evaluation Reports FL17232_R8_AE_ESR-3445_Oct2022.pdf
17232.11	JL28, JL210	Standard Joist Hangers
Limits of Use Approved for use in HVHZ: Yes Approved for use outside HVHZ: Yes Impact Resistant: N/A Design Pressure: N/A Other:		Installation Instructions FL17232_R8_II_ESR-3445_Oct2022.pdf Verified By: ICC Evaluation Service, LLC Created by Independent Third Party: Evaluation Reports FL17232_R8_AE_ESR-3445_Oct2022.pdf
17232.12	JN26-2, JN28-2, JN26E, JN28E, JN210E	Power Nail Hangers
Limits of Use Approved for use in HVHZ: No		Installation Instructions FL17232_R8_II_ESR-3445_Oct2022.pdf

Approved for use outside HVHZ: Yes Impact Resistant: N/A Design Pressure: N/A Other:		Verified By: ICC Evaluation Service, LLC Created by Independent Third Party: Evaluation Reports FL17232_R8_AE_ESR-3445_Oct2022.pdf
17232.13	JUS24, JUS24-2, JUS24-3, JUS44	Slant Nail Joist Hanger
Limits of Use Approved for use in HVHZ: No Approved for use outside HVHZ: Yes Impact Resistant: N/A Design Pressure: N/A Other:		Installation Instructions FL17232_R8_II_ESR-3445_Oct2022.pdf Verified By: ICC Evaluation Service, LLC Created by Independent Third Party: Evaluation Reports FL17232_R8_AE_ESR-3445_Oct2022.pdf
17232.14	JUS26, JUS28, JUS210, JUS36, JUS38, JUS310, JUS26-2, JUS28-2, JUS210-2, JUS214-2, JUS46, JUS48, JUS410, JUS412, JUS414, JUS26-3, JUS28-3, JUS210-3, JUS212-3, JUS214-3	Slant Nail Joist Hanger
Limits of Use Approved for use in HVHZ: Yes Approved for use outside HVHZ: Yes Impact Resistant: N/A Design Pressure: N/A Other:		Installation Instructions FL17232_R8_II_ESR-3445_Oct2022.pdf Verified By: ICC Evaluation Service, LLC Created by Independent Third Party: Evaluation Reports FL17232_R8_AE_ESR-3445_Oct2022.pdf
17232.15	LGU325, LGU363, LGU525, MGU363, MGU525, MGU550, MGU562, MGU700, HGU363, HGU525, HGU550, HGU562, HGU700, HGU725, HGU900	Girder Hanger
Limits of Use Approved for use in HVHZ: Yes Approved for use outside HVHZ: Yes Impact Resistant: N/A Design Pressure: N/A Other:		Installation Instructions FL17232_R8_II_ESR-3445_Oct2022.pdf Verified By: ICC Evaluation Service, LLC Created by Independent Third Party: Evaluation Reports FL17232_R8_AE_ESR-3445_Oct2022.pdf
17232.16	SUH24, SUH24R, SUH34, SUH24-2, SUH44, SUH44R, SUH26-3	Joist Hanger
Limits of Use Approved for use in HVHZ: No Approved for use outside HVHZ: Yes Impact Resistant: N/A Design Pressure: N/A Other:		Installation Instructions FL17232_R8_II_ESR-3445_Oct2022.pdf Verified By: ICC Evaluation Service, LLC Created by Independent Third Party: Evaluation Reports FL17232_R8_AE_ESR-3445_Oct2022.pdf
17232.17	SUH26, SUH28, SUH210, SUH214, SUH1710, SUH1714, SUH26R, SUR28R, SUH210R, SUH214R, SUH2310, SUH2314, SUH36, SUH310, SUH314, SUH2610, SUH2614, SUH26-2, SUH28-2, SUH210-2, SUH214-2	Joist Hanger
Limits of Use Approved for use in HVHZ: Yes Approved for use outside HVHZ: Yes Impact Resistant: N/A Design Pressure: N/A Other:		Installation Instructions FL17232_R8_II_ESR-3445_Oct2022.pdf Verified By: ICC Evaluation Service, LLC Created by Independent Third Party: Evaluation Reports FL17232_R8_AE_ESR-3445_Oct2022.pdf
17232.18	SUH46, SUH48, SUH410, SUH414, SUH46R, SUH410R, SUH28-3, SUH210-3, SUH2310-2, SUH2314-2, SUH310-2, SUH66, SUH610, SUH66R, SUH610R	Joist Hanger
Limits of Use Approved for use in HVHZ: Yes Approved for use outside HVHZ: Yes Impact Resistant: N/A Design Pressure: N/A Other:		Installation Instructions FL17232_R8_II_ESR-3445_Oct2022.pdf Verified By: ICC Evaluation Service, LLC Created by Independent Third Party: Evaluation Reports FL17232_R8_AE_ESR-3445_Oct2022.pdf
17232.19	THD26, THD28, THD210, THD175, THD177, THD179, THD26-2, THD28-2, THD210-2, THD210-3, THD210-4, THD46, THD48, THD410, THD412,	Face Mount Hanger

	THD414, THD610, THD612, THD614, THD7210	
Limits of Use Approved for use in HVHZ: Yes Approved for use outside HVHZ: Yes Impact Resistant: N/A Design Pressure: N/A Other:		Installation Instructions FL17232_R8_II_ESR-3445_Oct2022.pdf Verified By: ICC Evaluation Service, LLC Created by Independent Third Party: Evaluation Reports FL17232_R8_AE_ESR-3445_Oct2022.pdf
17232.20	THDH26, THDH28, THDH210, THDH27925, THDH27112, THDH2714, THDH26-2, THDH28-2, THDH210-2, THDH212-2, THDH214-2, THDH3210, THDH3212, THDH46, THDH48, THDH410, THDH412, THDH414	Face Mount Hanger
Limits of Use Approved for use in HVHZ: Yes Approved for use outside HVHZ: Yes Impact Resistant: N/A Design Pressure: N/A Other:		Installation Instructions FL17232_R8_II_ESR-3445_Oct2022.pdf Verified By: ICC Evaluation Service, LLC Created by Independent Third Party: Evaluation Reports FL17232_R8_AE_ESR-3445_Oct2022.pdf

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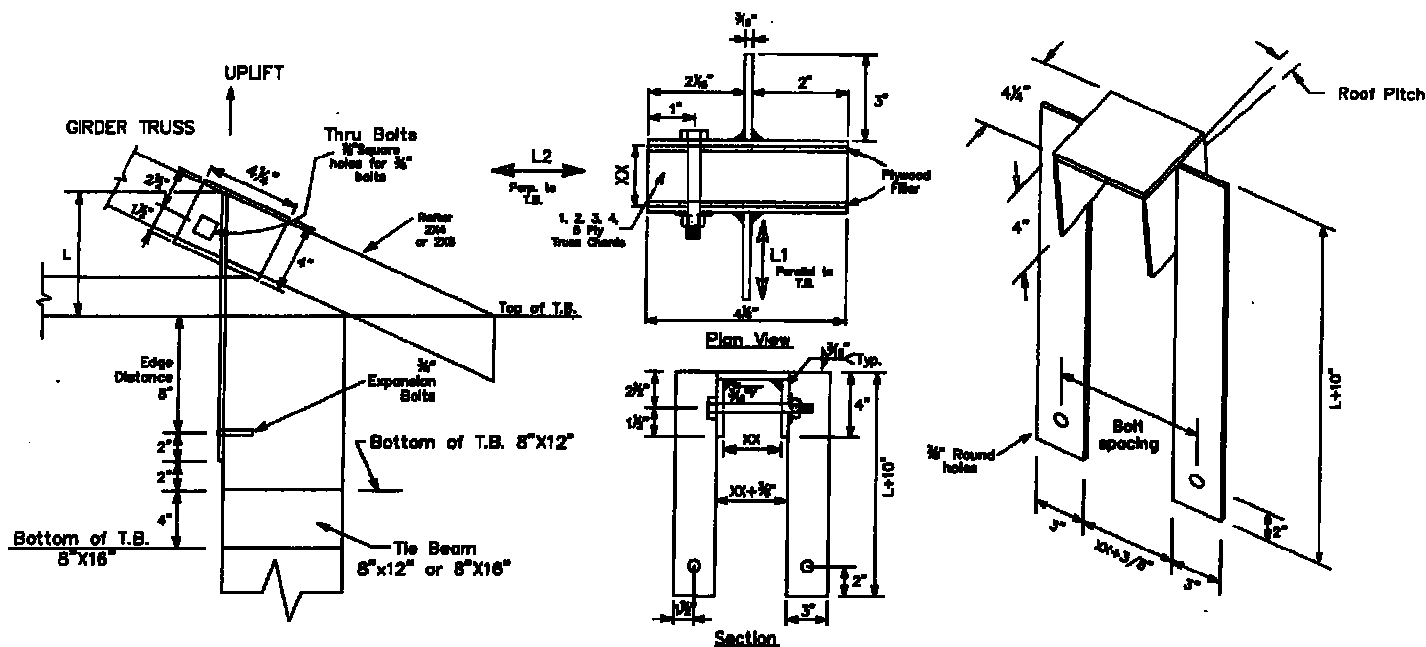
Product Approval Accepts:

Uplift Strap Connector NVUCB

3/4" Power Fastener Wedge Bolts

Heavy Welded Connectors

Wood to Concrete



Product Code	PLYS	XX (in)	Allowable Loads (lbs.)		
			Uplift	Lateral Loads	
				L1	L2
NVUCB - 1	1	2	4800	3350	2770
NVUCB - 2	2	4	9600	4250	4900
NVUCB - 3	3	6	10040	4250	5200
NVUCB - 4	4	7	10040	4250	5200
NVUCB - 5	5	8 1/2"	10040	4250	5200

Roof Slope	Values of L (in.)	
	Rafter 2x4	Rafter 2x6
3/12	5.6	7.7
4/12	6.4	8.5
5/12	7.1	9.3
6/12	7.9	10.2
7/12	8.7	11.0
8/12	9.5	11.9

Structural Notes:

- Design conforms to FBC 2014, IBC/IRC 2015/2012 and NDS 2012.
- 3/16" thick Structural steel shall conform to ASTM A36, yield strength 36000 psi. Load values shown are based on Steel Stress without 33% increase.
- All welding shall be minimum 3/16" with E70 electrodes and shall conform to latest AISC/AWS codes. All contact areas shall be fully fillet welded.
- All 3/4" diameter bolts through wood shall be per ANSI/ASME Standard B18.2.1.
- The Lateral loads shall not exceed the Truss Chord Capacity.
- Lateral loads combined with uplift loads, shall satisfy the following equation:
$$\frac{\text{Actual Uplift}}{\text{Allowable Uplift}} + \frac{\text{Actual L1}}{\text{Allowable L1}} + \frac{\text{Actual L2}}{\text{Allowable L2}} \leq 1.0$$
- All Power Fasteners wedge bolt anchors shall be per Power Fasteners Catalog. Minimum anchor embedment shall be 6". Minimum normal weight concrete shall be 2000 psi. Anchor diameter is 3/4". Bolt values are without 33% increase.
- Uplift and Lateral values shown are reduced for bolt spacing and edge distance per Power Fasteners Catalog. Uplift loads shall not exceed Truss chord capacity.
- Uplift values are also controlled by compression perpendicular to grain of 565 psi for Southern Pine per NDS. For other species, contact Engineer for values.
- Provide plywood shims to close the gap between truss chords to obtain full bearing and prevent bending of thru bolts.
- All products are painted Royal Blue for easy identification.

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