



Project Number: U5263.014.231
January 3, 2024

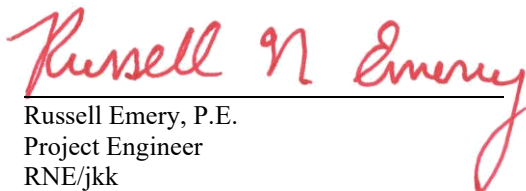
Product Approval Administrator
Building Codes & Standards Section
Department of Business & Professional Regulations
1940 North Monroe Street, Suite 90
Tallahassee, FL 32399-2100

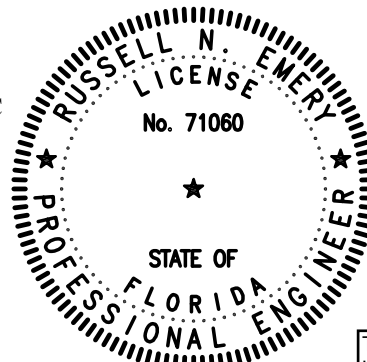
REFERENCE: **Florida Product Approval of ATAS Roof Panel: ScanRoof [FL 3162]**
Product Approval Evaluation

Manufacturer: ATAS International, Inc.
Manufacturer Address: 6612 Snowdrift Rd., Allentown, PA 18106
Model Name: ATAS Roof Panel: ScanRoof [FL 3162]
Maximum Design Load: See Attached Calculations per Configuration

Testing Summary					
TEST	DESCRIPTION	TEST LOCATION	TEST REPORT DATE	TEST REPORT #	TEST SEALED BY
UL 580	Uplift Resistance of Metal Roof Deck Panels	Underwriters Laboratories Inc.	08/13/1990	89NK24556	Greg Rezek
TAS 125-03	Test Protocol for High Velocity Hurricane Zone	Architectural Testing Inc.	07/10/2007	66446.01-109-18	Michael D. Stremmel, P.E.
This product complies with the High Velocity Hurricane Zone (HVHZ) testing requirements.					
For maximum sizes, spans, loads and anchor types, refer to the installation drawings.					
This product is UL listed in accordance with UL580 per Underwriters Laboratories Inc. report 89NK24556.					
Referenced test reports were reviewed against the most recent version and have been found to be compliant and having no impact on the performance report.					
To the best of my knowledge, the above product conforms to the requirements of the 2023 Florida Building Code when installed in accordance with the instructions and limitations outlined in the attached installation drawings.					

Sincerely,
VECTOR STRUCTURAL ENGINEERING, LLC


Russell Emery, P.E.
Project Engineer
RNE/jkk



01/03/2024
Russell N. Emery
No. 71060

Russell N Emery
2024.01.04
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This item has been digitally signed and sealed by Russell N. Emery on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.



JOB NO.: U5263.014.231

PROJECT: ATAS FBC PRODUCT APPROVAL

PRODUCT: ScanRoof

Design Assumptions

5/8" plywood roof sheathing for new construction, 1/2" sheathing for reroofing

#14-13 or #10-16 screws from panel into plywood

#12-14 or 1/4-14 stitch screws

24-gauge (0.0225" minimum delivered thickness) steel

Allowable fastener loads from manufacturer test data and AISI Cold-Formed Steel Design Manual 2012.

No stress increase for wind applied

ASTM A653 Grade 33, SS37 steel sheet ($F_y = 37$ ksi, $F_u = 52$ ksi, 0.0225" thick)

Sloped roof from 3:12 to 12:12

Factor of Safety on panel = 2.0 (FBC 1504.9)

Factor of Safety on fastener = 3.0

Fastener Strengths

Pull-out

#14-13 DP1

5/8" plywood

Ultimate Pullout (lbs) = 483 (based on manufacturer test data)
F.S. = 3

$$P'_{\text{not}}/\Omega = 161 \text{ lbs}$$

#14-13 DP1

5/8" plywood

Ultimate Pullout (lbs) = 407 (based on manufacturer test data)
F.S. = 3

$$P'_{\text{not}}/\Omega = 136 \text{ lbs}$$

Pull-Out -- 24 gage steel (per AISI)

#12-14 screw

t_2 (in) = 0.0225

d (in) = 0.218

F_{tu2} (ksi) = 52

F.S. = 3

$$P_{\text{nov}}/\Omega = 72 \text{ lbs}$$

Pull-Over -- 24 gage steel (per AISI)

#12-14 screw

t_1 (in) = 0.0225

F_{tu1} (ksi) = 52

F.S. = 3

D_{ws} (in) = 0.5

$$P_{\text{nov}}/\Omega = 293 \text{ lbs}$$

For evaluation of UL 580 test results (not applicable to TAS 125/HVHZ evaluation):

Allowable Pressure Based on Fastener Failure					
Panel	Controlling Fastener Strength (lbs)	Screw Spacing (in)	Panel Exposure Width (in)	Tributary Area per Screw (ft ²)	Allowable Pressure (psf)
Stitch	72	7.875	16.5	0.9	79.8
Stitch	72	15.75	16.5	1.8	39.9
5/8" Plywood	161	16	16.5	1.83	87.8
5/8" Plywood	161	24	16.5	2.75	58.5
5/8" Plywood	161	36	16.5	4.13	39
5/8" Plywood	161	48	16.5	5.5	29.3
1/2" Plywood	136	16	16.5	1.83	74.2
1/2" Plywood	136	24	16.5	2.75	49.5
1/2" Plywood	136	36	16.5	4.13	33
1/2" Plywood	136	48	16.5	5.5	24.7

Allowable Pressure Based on Panel Failure								
Panel Material	Thickness (in)	Test	Report No.	Stitch Screw Spacing (in)	Purlin Screw Spacing (in)	Maximum Pressure (psf)	Panel F.S.	Allowable Pressure (psf)
Steel	0.0225	UL 580	R121123	7.875	48	105	2	52.5
Steel	0.0225	TAS125-03	66446.01-109-18	7.875	8	195	2	97.5
Steel	0.0225	TAS125-03	66446.01-109-18	7.875	8	210	2	105
Steel	0.0225	TAS125-03	66446.01-109-18	7.875	4	240	2	120

The maximum UL test pressure given is assumed to be at failure. However, the panels had not failed at 105 psf. Therefore, the failure pressure was at least 105 psf and the given maximum pressure is conservative.

Evaluation of UL 580 Test Results

If purlin screw spacing is decreased, assume bending of integral purlin between screws controls failure load.

$$M_{\text{allow}} = w l^2 / 8 = 52.5 \text{ psf } (48")^2 / 8 = 15120 \text{ lb-in}^2 / \text{ft}^2$$

$$w_{36"} = 8 M_{\text{allow}} / l^2 = 8 (15120 \text{ lb-in}^2 / \text{ft}^2) / (36")^2 = 93.3 \text{ psf}$$

$$w_{24"} = 8 M_{\text{allow}} / l^2 = 8 (15120 \text{ lb-in}^2 / \text{ft}^2) / (24")^2 = 210 \text{ psf}$$

$$w_{16"} = 8 M_{\text{allow}} / l^2 = 8 (15120 \text{ lb-in}^2 / \text{ft}^2) / (16")^2 = 472 \text{ psf}$$

Evaluation of TAS 125-03 Test Results

Per TAS 125, allowable pressure is based on a factor of safety of 2.0. For the two specimens related to field areas, the average ultimate value shall be used to determine the allowable. Further evaluation of individual components (screw pull-out, screw pull-over, panel, etc.) is not required.

TAS 125 average ultimate for field areas = 202 psf

Allowable pressure for field areas = 101 psf

TAS 125 ultimate for perimeter areas = 240 psf

Allowable pressure for perimeter areas = 120 psf

Screw Pattern vs. Allowable Wind Pressure Summary

Maximum Allowable Wind Pressures

Based on UL 580

The smaller pressure based on stitch and purlin screw failure loads controls. By inspection the built-in purlin (panel) will not fail prior to either screw.

7.875" stitch screw spacing:	79.8 psf	(pull-out controls)
15.75" stitch screw spacing:	39.9 psf	(pull-out controls)
16" spacing to 5/8" plywood:	87.8 psf	(pull-out controls)
24" spacing to 5/8" plywood:	58.5 psf	(pull-out controls)
36" spacing to 5/8" plywood:	39 psf	(pull-out controls)
48" spacing to 5/8" plywood:	29.3 psf	(pull-out controls)
16" spacing to 1/2" plywood:	74.2 psf	(pull-out controls)
24" spacing to 1/2" plywood:	49.5 psf	(pull-out controls)
36" spacing to 1/2" plywood:	33 psf	(pull-out controls)
48" spacing to 1/2" plywood:	24.7 psf	(pull-out controls)

Based on TAS 125-03

7.875" stitch spacing, 8" purlin screw spacing:	101 psf	(pull-out controls)
7.875" stitch spacing, 4" purlin screw spacing:	120 psf	(pull-out controls)

Allowable Uplift Pressures					
Pattern	Plywood Thickness (in)	Stitch Screw	Purlin Screw	Allowable Uplift (psf)	
1	5/8	#12-14 @ 7.875"	#14-13 @ 16"	79.8	Non-HVHZ only
2	5/8	#12-14 @ 7.875"	#14-13 @ 24"	58.5	
3	5/8	#12-14 @ 15.75"	#14-13 @ 36"	39	
4	5/8	#12-14 @ 15.75"	#14-13 @ 48"	29.3	
5	1/2	#12-14 @ 7.875"	#14-13 @ 16"	74.2	
6	1/2	#12-14 @ 7.875"	#14-13 @ 24"	49.5	
7	1/2	#12-14 @ 15.75"	#14-13 @ 36"	33	
8	1/2	#12-14 @ 15.75"	#14-13 @ 48"	24.7	
9	1/2, 5/8	1/4-14 @ 7.875"	#10-16 @ 8"	101	HVHZ & Non-HVHZ
10	1/2, 5/8	1/4-14 @ 7.875"	#10-16 @ 4"	120	

Test Report References

Standard	Report Number	Laboratory	Laboratory Location
UL 580 (issued 8/13/90)	89NK24556	Underwriter Laboratories	Northbrook, IL
TAS 125- 03	66446.01-109-18	Architectural Testing	York, PA