Evaluation Report

"Solar Attic Fans"
Self-Flashing Series
with Inclined Remote Mounted Solar Panel

Manufacturer

Attic Breeze, LLC.
1370 FM 116
Gatesville, Texas 76528
(877) 288-4234

for

Florida Product Approval

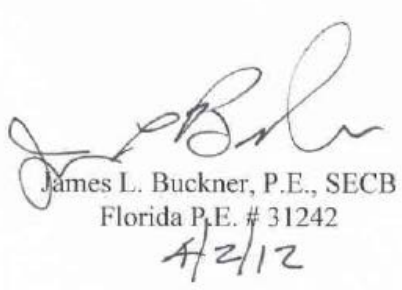
 # FL 13339.3 R1

Florida Building Code 2010
Per Rule 9N-3

Method:	**2 - B**
Category:	**Roofing**
Sub - Category:	**Roofing Accessories that are an Integral Part of the Roofing System**
Product:	*Solar Attic Fans*
Product Description:	*Self-Flashing Series with Inclined Remote Mounted Solar Panel*

Prepared by:

James L. Buckner, P.E., SECB
Florida Professional Engineer # 31242
Florida Evaluation ANE ID: 1916
Project Manager: Youry Demosthenes
Report No. 11-195- SPAF-RemInc-S4W-ER
Date: 3 / 15 / 12



Contents:

Manufacturer: **Attic Breeze, LLC.**

Product Name: **Solar Attic Fans**

Product Category: Roofing

Product Sub-Category Roofing Accessories that are an Integral part of the Roofing System

Compliance Method: State Product Approval Rule 9N-3.005 (2) (b)

Product Description: The Solar Attic Fans are roof mounted system powered by one or two solar panels. The unit consists of a 14 inch diameter fan, enclosed in a self-flashing fan house base vent, with corrosion resistant zincalume alloy steel housing, including a thermal switch, and a rodent guard. solar panel is remotely attached from the fan house unit shroud/dome.

Product Assembly as Evaluated: Self-flashing solar attic fan with inclined remote mounted solar panel

- Fan house base unit component mechanically attached to deck with wood screws
- Solar panel remotely attached to one (1) universal mounting bracket with machine bolts
- Inclined universal mounting bracket attached through roof deck to roof rafter/truss top chord with lag screws

Model:

Name	No./Designation	No. of Solar Panel
Zephyr™ SFD Model	AB-201D	1 Solar Panel
Zephyr™ SFD Model	AB-202D	1 Solar Panel
Zephyr™ SFD Model	AB-251D	1 Solar Panel
Zephyr™ SFD Model	AB-252D	1 Solar Panel
Grande™ SFD Model	AB-401	2 Solar Panels
Grande™ SFD Model	AB-402	2 Solar Panels

Fan Unit Base Support:

Type:
Wood Deck
(Design of support system is outside the scope of this evaluation)

Description:

- 15/32" or greater Plywood , or
- Wood plank deck (based on minimum density/specific gravity of 0.42)

Solar Panel Support: Roof Rafter/Truss Top Chord

Type:	Dimensional Lumber (Designed by Others)
Density/Specific Gravity:	0.42 Minimum
Nominal Size:	2 × 4 Minimum

Roof Slope: Slope shall be in compliance with FBC 2010, Chapter 15 based on the type of roof covering.

Performance: Wind Resistance:

- Positive Design Pressure: **+ 115 PSF**
- Negative Design Pressure: **- 115 PSF**

Performance Standards:

Test protocol, **ASTM E330-02 –** *Standard Test Method for Structural Performance by Uniform Static Air Pressure Difference* was performed to demonstrate compliance with the intent of the code as this product is not addressed specifically in the code.

Code Compliance:

The product described herein has demonstrated compliance with the Florida Building Code 2010, Section 1714.2.

Evaluation Report Scope:

This product evaluation demonstrates compliance of this product with the structural wind load requirements of the Florida Building Code, as related to Florida Product Approval Rule 9N-3.001.

Limits of Use:

- The Solar Attic Fan including solar panel(s) and electrical wiring shall be installed in compliance with Attic Breeze's installation instructions and in accordance with applicable Building Codes
- <u>Scope of "Limitations and Conditions of Use" for this evaluation:</u>
  This evaluation report for "Optional Statewide Approval" contains technical documentation, specifications and installation method(s) which include "Limitations and Conditions of Use" throughout the report in accordance with Rule 9N-3.005. Per Rule 9N-3.004, the Florida Building Commission is the authority to approve products under "Optional Statewide Approval".
- <u>Option for application outside "Limitations and Conditions of Use"</u>
  Rule 9N-3.005(1)(e) allows engineering analysis for "project specific approval by the local authorities having jurisdiction in accordance with the alternate methods and materials authorized in the Code". Any modification of the product as evaluated in this report and approved by the Florida Building Commission is outside the scope of this evaluation and will be the responsibility of others.
- Fire Classification is outside the scope of Rule 9N-3, and is therefore not included in this evaluation.
- This evaluation report does not evaluate the use of this product for use in the High Velocity Hurricane Zone code section. (Dade & Broward Counties)

Quality Assurance:

The manufacturer has demonstrated compliance of roof panel products in accordance with the Florida Building Code and Rule 9N-3.0005 (3)for manufacturing under a quality assurance program audited by an approved quality assurance entity through **Keystone Certification, Inc.** (FBC Organization #: QUA 1824)

Component(s)
Material Standards:

Fan Unit

- Nominal Dimensions

Fan House Base:	28" × 28"
Fan House Shroud/ Dome:	21-1/2" × 21-1/2"
Overall Height:	10-3/4"

- Fan House Base & Shroud/Dome Material:

Type:	Steel
Thickness:	24 ga.
Yield Strength:	33 ksi Minimum
Corrosion Resistance:	Material shall comply with the Florida Building Code (FBC), 2010 Section 1507.4.3.

Solar Panel

Nominal Dimension:	19-1/4" Long × 16-1/4" Wide × 1" High
Frame Material:	Aluminum
Frame Alloy	5052-H32

Universal Mounting Bracket *(One per Panel)*

Material:	Aluminum
Alloy:	5052-H32
Thickness:	0.090 in

Fastener (A) *(Fan House Base to Roof Deck)*

Type:	Pancake Head Wood Screw
Size:	#10 × 1 in. Minimum
Standard:	Per ANSI/ASME B18.6.1
Corrosion Resistance:	Per FBC Section 1506.6

Fastener (B) *(Panel to Bracket)*

Type:	Hex-Head Machine Bolts and Nuts
Size	1/4 in. – 20 × 3/4 in. Minimum
Washer:	1/4 in. Flat Washer & Lock Washer
Material:	18-8 Stainless Steel

Fastener (C) *(Mounting Bracket to Dimensional Lumber)*

Type:	Hex-Head Lag Screw
Size	1/4 in.
Embedment	1-1/2 in.
Standard:	Per ANSI/ASME B18.6.1
Corrosion Resistance:	Per FBC Section 1506.6 AND 1507.4.4

Installation:

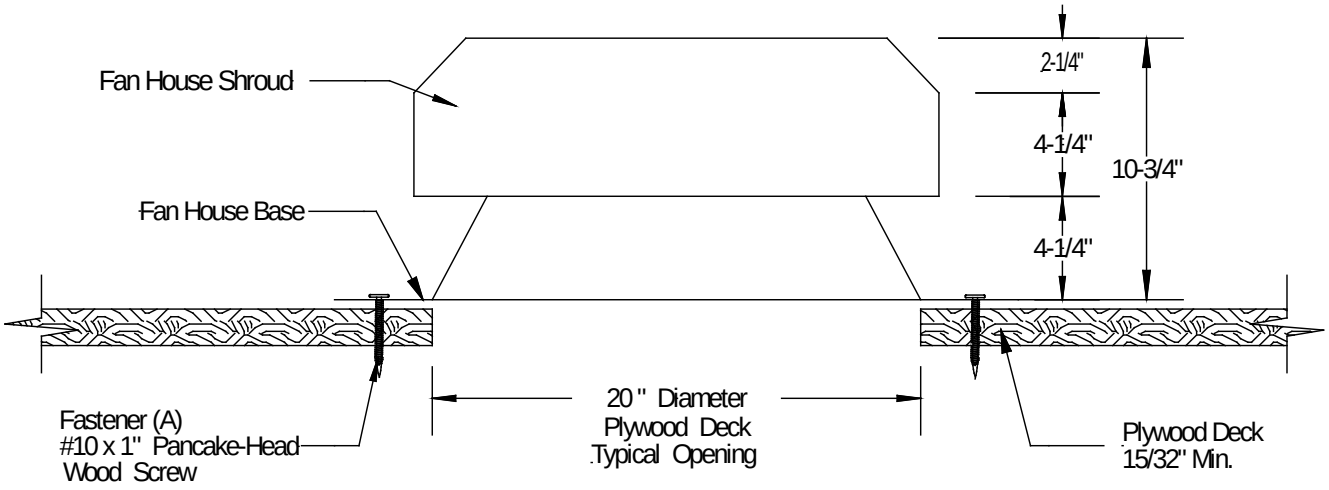
Installation Method:
(Refer to Pages 6 through 8 of this evaluation report.)

"The Solar Attic Fans" shall be installed in compliance with the installation method listed in this report. The installation method described herein is in accordance with the scope of this evaluation report. Refer to manufacturer's installation instructions as a supplemental guide for attachment.

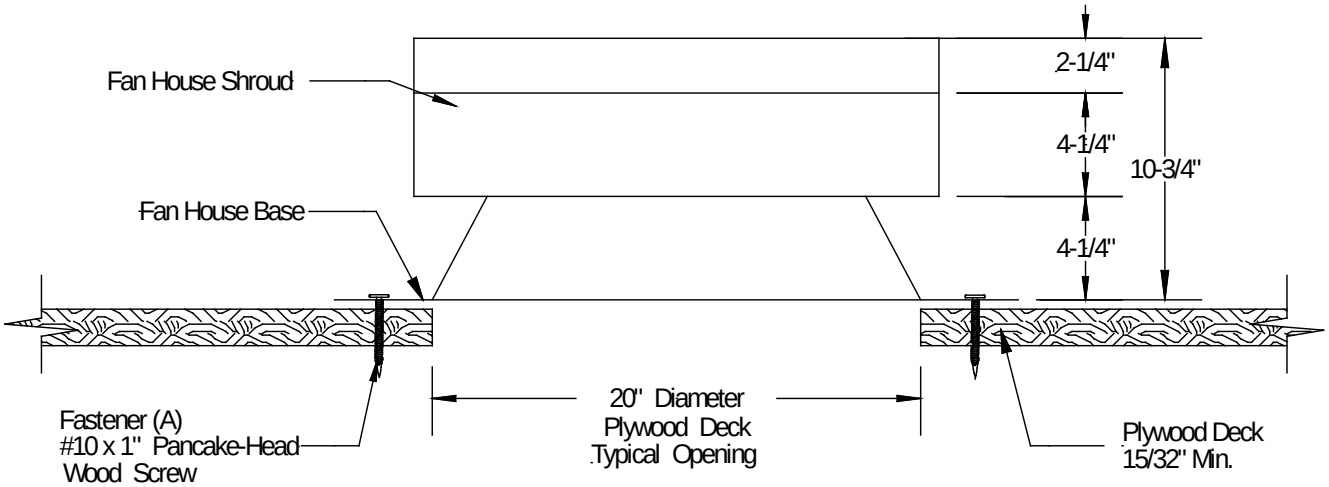
Evaluated Referenced Data:

1. ASTM E330-02 Uniform Static Air Pressure Difference Test
   By Certified Testing Laboratories, Inc. (FBC Organization ID# TST 1577)
   Project #: CTLA 2002W, Dated: 11 / 20 / 09
2. Quality Assurance
   By Keystone Certification, Inc. (FBC Organization ID# QUA 1824)
   Attic Breeze, LLC. Licensee #740
3. Certification of Independence
   By James L. Buckner, P.E. @ CBUCK Engineering
   (FBC Organization # ANE 1916)
4. Engineering Analysis
   By CBUCK Engineering
   Report #C09-194, Dated: 12 / 1 / 09

Installation Method
Attic Breeze, LLC.
Solar Attic Fan Attachment Assembly

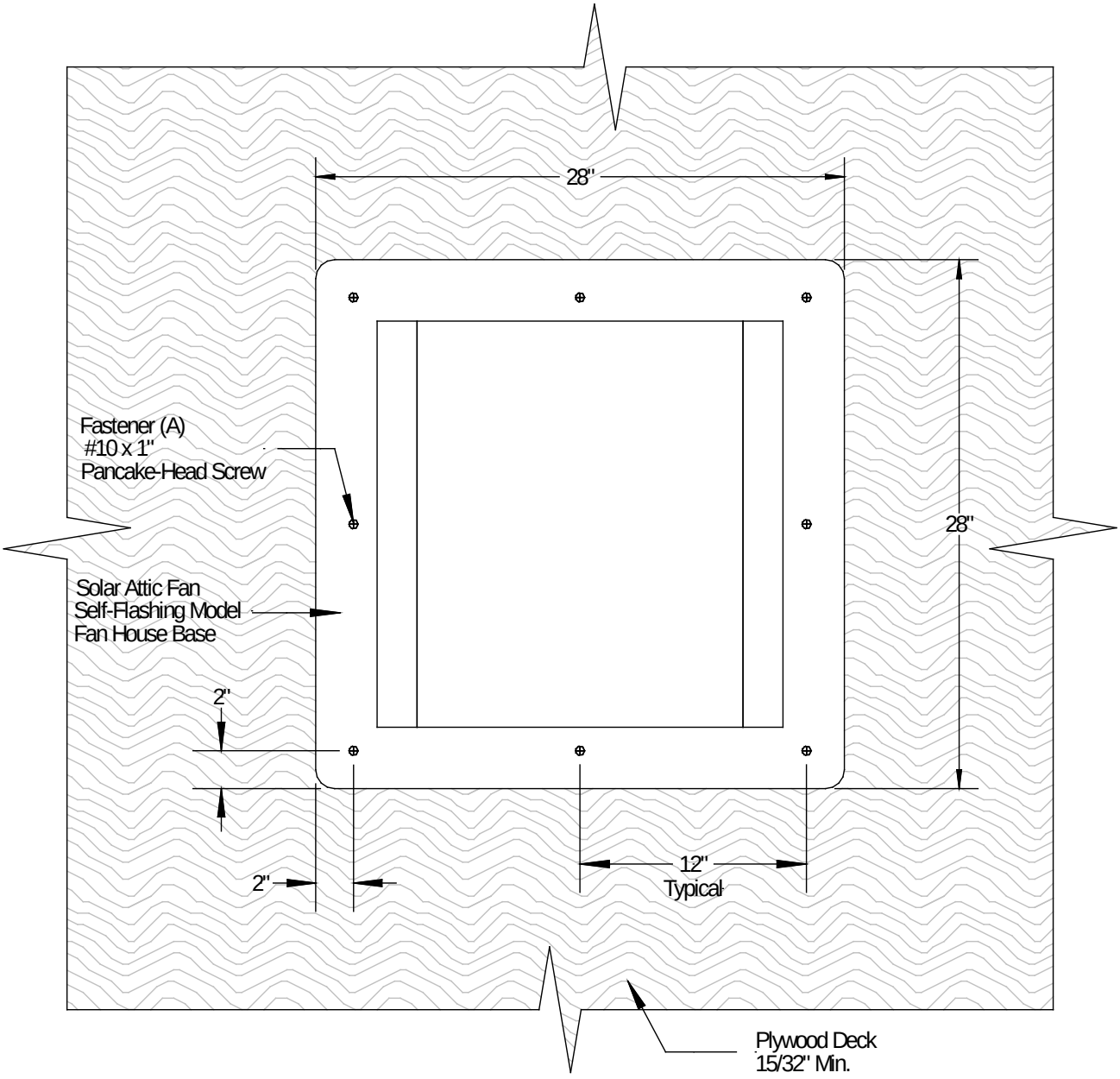


Assembly Front Section View



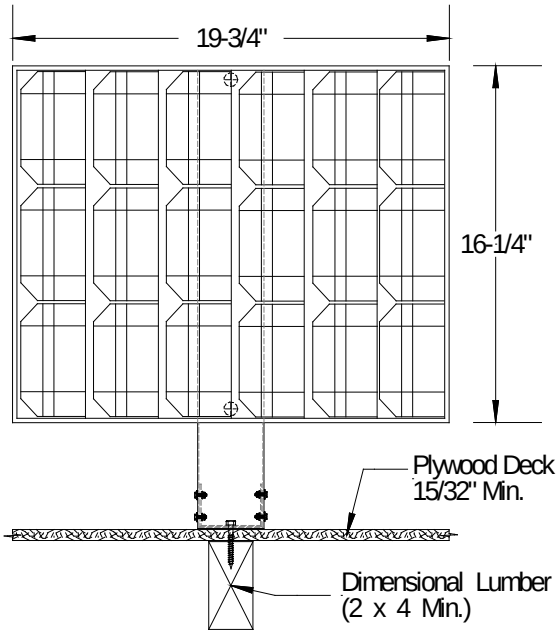
Assembly Side Section View

Installation Method
Attic Breeze, LLC.
Solar Attic Fan Attachment Assembly



Assembly Top Plan View

Installation Method
Attic Breeze, LLC.
Inclined Remote Mounted Solar Panel Attached Assembly



Front View

Model Name	Model No.	No. of Panels per Unit
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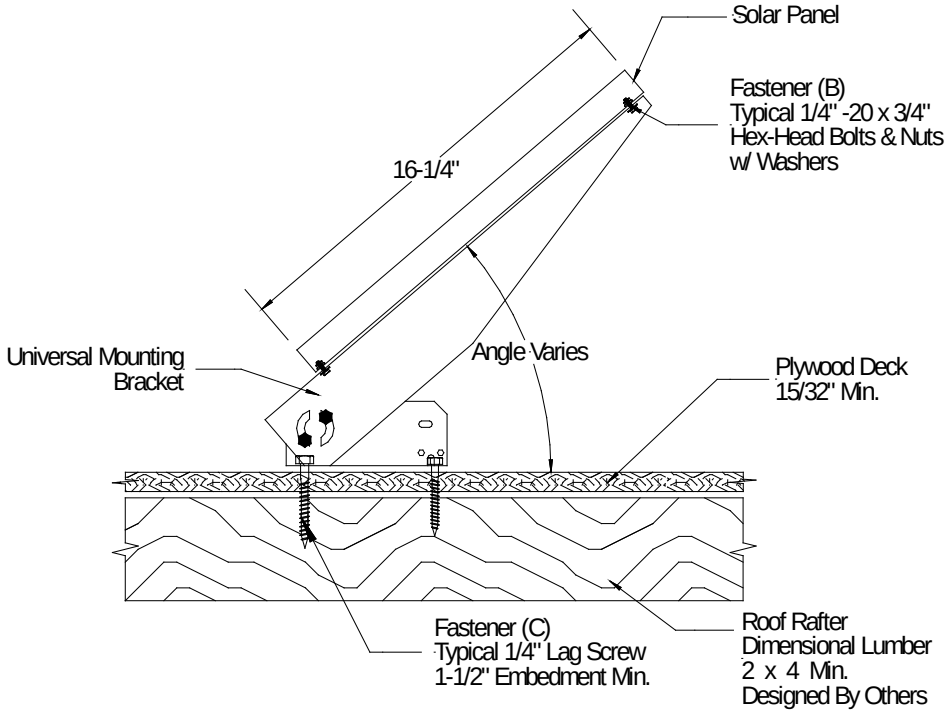

Section View & Attachment Detail