

Finding Product Approvals in a Haystack

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For many roofing contractors, finding a product approval for the commercial roof assembly they intend to install can be like trying to find a needle in a haystack: overwhelming, tedious, arduous. My intention with this article is to help you find what you need quickly and efficiently.

First, it is imperative to understand that the “product approval” requirements apply not only to individual roofing components but also to the roof systems themselves. So, when you are looking for a “product approval” to confirm your intended roof system complies with the Florida Building Code or to submit with your permit application, you are looking for an approval for the entire roof assembly, including the deck.

Both Miami-Dade County and the State of Florida maintain web-searchable databases of tested roof assemblies approved for Florida, including the High Velocity Hurricane Zone (HVHZ). These databases typically include actual test results from certified independent testing laboratories along with “Installation Instructions” that provide specifications for roof system installation. This article will focus on how to navigate the State of Florida’s website, which can be found at: https://www.floridabuilding.org/pr/pr_app_srch.aspx.

Once you arrive at the “Product or Application Search Page,” you can search for your system by FL number or by any search criteria listed in the drop down menus. Each criterion selected will narrow the scope. Note that the default code version is the 2017 Florida Building Code and if you are looking for an Approved system, you will need to select “Approved” in the “Application Status” drop down.

Another feature on the search page is the ability to filter for systems “Approved for use in HVHZ.” Remember, while you may be able to use HVHZ Approvals outside of the High Velocity Hurricane Zone, NON-HVHZ Approvals are not accepted in Miami-Dade or Broward County.

Like Miami-Dade NOA, the roofing Product Approvals found on this website are both manufacturer and technology specific. Thus, assuming you have already determined your desired manufacturer and technology (listed in the “Subcategory” drop down), your search may look something like this:



Search Criteria

Application

Generate Output: ☒ HTML ☐ Crystal Report

Code Version: 2017

FL #:

(Application: ##### or Product: #####,#)

Application Type: (Select All)

Product Manufacturer: GAF

Category: Roofing

Subcategory: Single Ply Roof Systems

Application Status: Approved

Compliance Method: (Select All)

Quality Assurance Entity Contract Expired: ☐

Product

Product Model, Number or Name:

Product Description:

Approved for use in HVHZ: Yes

Approved for use outside HVHZ: (Select All)

Impact Resistant: (Select All)

Design Pressure: + / - ☐ N/A

Other:

Screenshot #1

This search resulted in two options (see screenshot #2).

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Search Criteria

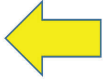
Code Version	2017	FL#	ALL
Application Type	ALL	Product Manufacturer	GAF
Category	Roofing	Subcategory	Single Ply Roof Systems
Application Status	Approved	Compliance Method	ALL
Quality Assurance Entity	ALL	Quality Assurance Entity Contract Expired	ALL
Product Model, Number or Name	ALL	Product Description	ALL
Approved for use in HVHZ	Yes	Approved for use outside HVHZ	ALL
Impact Resistant	ALL	Design Pressure	ALL
Other	ALL		

Search Results - Applications


FL#	Type	Manufacturer	Validated By	Status
FL16730-R24 History	Revision	GAF Category: Roofing Subcategory: Single Ply Roof Systems	John W. Knezevich, PE (954) 772-6224	Approved
FL16739-R19 History	Revision	GAF Category: Roofing Subcategory: Single Ply Roof Systems	John W. Knezevich, PE (954) 772-6224	Approved

*Approved by DBPR. Approvals by DBPR shall be reviewed and ratified by the POC and/or the Commission if necessary.

Screenshot #2

Summary of Products			
FL #	Model, Number or Name	Description	Screenshot #3
16730.1	EverGuard TPO Single Ply Roof Systems	Thermoplastic polyolefin single ply roof systems	
Limits of Use Approved for use in HVHZ: Yes Approved for use outside HVHZ: No Impact Resistant: N/A Design Pressure: +N/A/-502.5 Other: 1.) The design pressure herein pertains to one system. Refer to ER Appendix for all systems and maximum design pressures. 2.) Refer to ER Section 5 for Limits of Use.		Installation Instructions FL16730_R24_II_2019_10_FINAL_A1_ER_FL16730-R24.pdf Verified By: Robert Nieminen PE-59166 Created by Independent Third Party: Yes Evaluation Reports FL16730_R24_AE_2019_10_FINAL_ER_FL16730-R24.pdf Created by Independent Third Party: Yes	

Clicking on each hyperlink in the left-hand column (FL#), you will see that one is for TPO assemblies and the other is for PVC. Moving forward with the TPO system approval (the first of these two options), you will land on the “Application Detail” page. At the bottom of this page, click on the “Evaluation Report” (see screenshot #3). You are now inside the Evaluation Report, which includes approved assemblies and installation instructions (see screenshot #4).

EVALUATION REPORT
 1 Campus Drive
 Parsippany, NJ 07054
 (800) 766-3411
SCOPE:
 This Evaluation Report is issued under Rule 61G20-3 and the applicable rules and regulations governing the use of construction materials in the State of Florida. The documentation submitted has been reviewed by Robert Nieminen, P.E. for use of the product under the Florida Building Code. The product described herein has been evaluated for compliance with the 6th Edition (2017) Florida Building Code, High Velocity Hurricane Zone (HVHZ) sections noted herein.
DESCRIPTION: EverGuard® TPO Single-Ply Roof Membrane Systems
LABELING: Labeling shall be in accordance with the requirements of the Accredited Quality Assurance Agency noted herein.
CONTINUED COMPLIANCE: This Evaluation Report is valid until such time as the named product(s) changes, the referenced Quality Assurance documentation changes, or provisions of the Code that relate to the product change. Acceptance of this Evaluation Report by the named client constitutes agreement to notify Robert Nieminen, P.E. of any changes to the product(s), the Quality Assurance or the production facility location(s). NEMO ETC. requires a complete review of this Evaluation Report relative to updated Code requirements with each Code Cycle.
ADVERTISEMENT: The Evaluation Report number preceded by the words “NEMO ETC. Evaluated” may be displayed in advertising literature. If any portion of the Evaluation Report is displayed, then it shall be done in its entirety.
INSPECTION: Upon request, a copy of this entire Evaluation Report shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.
 This Evaluation Report consists of pages 1 through 6, plus a 103-page Appendix.
Prepared by:

 Robert J.M. Nieminen, P.E.
 Florida Registration No. 59166, Florida DCA ANE1983
CERTIFICATION OF INDEPENDENCE:
 1. NEMO ETC, LLC does not have, nor does it intend to acquire or will it acquire, a financial interest in any company manufacturing or distributing products it evaluates.
 2. NEMO ETC, LLC is not owned, operated or controlled by any company manufacturing or distributing products it evaluates.
 3. Robert Nieminen, P.E. does not have nor will acquire, a financial interest in any company manufacturing or distributing products for which the evaluation reports are being issued.
 4. Robert Nieminen, P.E. does not have, nor will acquire, a financial interest in any other entity involved in the approval process of the product.
 5. This is a building code evaluation. Neither NEMO ETC, LLC nor Robert Nieminen, P.E. are, in any way, the Designer of Record for any project on which this Evaluation Report, or previous versions thereof, is/was used for permitting or design guidance unless retained specifically for that purpose.
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Evaluation Report 01506.12.13-1-R25
 FL16730-R24
 Date of Issuance: 12/17/2013
 Revision 25: 10/17/2019
Screenshot #4


As stated earlier, the purpose of this article is to help you learn how to locate approvals for specific roof

assemblies; so, a discussion here of all the valuable and necessary information found in the initial pages of the Evaluation Reports would go beyond my intended scope. However, familiarity with the “Limitations” set forth in the Evaluation Reports is extremely important. Additionally, contractors who pull permits with Miami-Dade NOA know they generally need to provide the first and last pages, along with the page(s) matching the installation details of the desired roof assembly of the NOA, with their permit application. Likewise, when using an approved system from this document, many municipalities require inclusion of the initial pages of the Evaluation Report (all the pages preceding the “Appendix” section), along with the page where your approved assembly is located, in the permit packet.

Moving into the “Appendix” section of the report, the next page contains a table (basically a table of contents) that can make your search for an approval matching your desired installation much faster. Note that the table/appendix is organized – first by deck type (for example, all options over a wood deck are grouped together, followed by options over steel deck, etc). Each acceptable deck type has a section. One caveat to this: the mechanically attached options for assemblies with steel or concrete decks, are grouped together (see screenshot #5).

Next, consider the “Application” column of the table. Is the project new construction, a reroof (tear-off), or a recover? While there is a separate section dedicated to “Recover” options at the end of the document, some of the systems in the earlier sections of the document can also be used for recover projects. (Generally these will involve mechanical attachment of some component in the system – see screenshot #6.)

Screenshot #5



NEMO | etc.

APPENDIX 1: ATTACHMENT REQUIREMENTS FOR WIND UPLIFT RESISTANCE

TABLE	DECK	APPLICATION	TYPE	DESCRIPTION	PAGE
1A	Wood	New or Reroof (Tear-Off)	A-2	Mech. Attached Anchor Sheet, Bonded Insulation, Bonded Roof Cover	6-8
1B	Wood	New, Reroof (Tear-Off) or Recover	A-2	Mech. Attached Anchor Sheet, Bonded Insulation, Bonded Roof Cover	9-10
1C	Wood	New, Reroof (Tear-Off) or Recover	B-1	Mech. Attached Base Insulation, Bonded Top Insulation, Bonded Roof Cover	11
1D	Wood	New, Reroof (Tear-Off) or Recover	C-1	Mechanically Attached Insulation, Bonded Roof Cover	12-13
1E	Wood	New, Reroof (Tear-Off) or Recover	C-2	Plate-Bonded Roof Cover	14
1F	Wood	New, Reroof (Tear-Off) or Recover	D-1	Insulated, Mechanically Attached Roof Cover	15
1G	Wood	New, Reroof (Tear-Off) or Recover	D-2	Insulated, Mechanically Attached Base Sheet, Bonded Roof Cover	16
1H	Wood	New, Reroof (Tear-Off) or Recover	E-1	Non-Insulated, Mechanically Attached Roof Cover	16
1I	Wood	New, Reroof (Tear-Off) or Recover	E-2	Non-Insulated, Mechanically Attached Base Sheet, Bonded Roof Cover	17-19
2A	Steel	New or Reroof (Tear-Off)	A-1	Bonded Insulation, Bonded Roof Cover	20
2B	Steel or Structural concrete	New, Reroof (Tear-Off) or Recover	B-1	Mech. Attached Base Insulation, Bonded Top Insulation, Bonded Roof Cover	20-25
2C	Steel or Structural concrete	New, Reroof (Tear-Off) or Recover	B-1	Mech. Attached Base Insulation, Bonded Top Insulation, Bonded Base and Cap Ply	25-28
2D	Steel	New or Reroof (Tear-Off)	B-2	Mech. Attached Thermal Barrier, Bonded Temp Roof, Bonded Insulation, Bonded Roof Cover	29-32
2E	Steel	New or Reroof (Tear-Off)	B-2	Mech. Attached Thermal Barrier, Bonded Temp Roof, Bonded Insulation, Bonded Base and Cap Ply	33
2F	Steel or Structural concrete	New, Reroof (Tear-Off) or Recover	C-1	Mechanically Attached Insulation, Bonded Roof Cover	34-42
2G	Steel or Structural concrete	New, Reroof (Tear-Off) or Recover	C-1	Mechanically Attached Insulation, Bonded Base and Cap Ply	43-46
2H	Steel or Structural concrete	New, Reroof (Tear-Off) or Recover	C-1A	Thermal Barrier with Vapor Barrier, Mechanically Attached Insulation, Bonded Roof Cover	46-50
2I	Steel or Structural concrete	New, Reroof (Tear-Off) or Recover	C-2	Mechanically Attached Insulation, Plate-Bonded Roof Cover	50-52
2J	Steel or Structural concrete	New, Reroof (Tear-Off) or Recover	D-1	Insulated, Mechanically Attached Roof Cover	53-55
2K	Steel or Structural concrete	New, Reroof (Tear-Off) or Recover	D-2	Insulated, Mechanically Attached Base Sheet, Bonded Roof Cover	55
3A	Structural concrete	New or Reroof (Tear-Off)	A-1	Bonded Insulation, Bonded Roof Cover	56-64

APPENDIX 1: ATTACHMENT REQUIREMENTS FOR WIND UPLIFT RESISTANCE						
TABLE	DECK	APPLICATION	TYPE	DESCRIPTION	PAGE	
1A	Wood	New or Reroof (Tear-Off)	A-2	Mech. Attached Anchor Sheet, Bonded Insulation, Bonded Roof Cover	6-8	
1B	Wood	New, Reroof (Tear-Off) or Recover	A-2	Mech. Attached Anchor Sheet, Bonded Insulation, Bonded Roof Cover	9-10	
1C	Wood	New, Reroof (Tear-Off) or Recover	B-1	Mech. Attached Base Insulation, Bonded Top Insulation, Bonded Roof Cover	11	
1D	Wood	New, Reroof (Tear-Off) or Recover	C-1	Mechanically Attached Insulation, Bonded Roof Cover	12-13	
6E	Existing gypsum	Reroof (Tear-Off)	E-2	Non-Insulated, Mechanically Attached Base Sheet, Bonded Roof Cover	86	
6F	Existing gypsum	Reroof (Tear-Off)	F	Non-Insulated, Bonded Roof Cover	86	
7A	Various	Recover	A-1	Bonded Insulation, Bonded Roof Cover	87-100	
7B	Wood or Steel	Recover	C-2	Plate-Bonded Roof Cover	101	
7C	Steel	Recover	D-1	Insulated, Mechanically Attached Roof Cover	102	
7D	Various	Recover	F	Non-Insulated, Bonded Roof Cover	103	

Let's start to put all this together. Say you have a reroof project with a steel deck, the building is 30' high with no parapet walls and you desire to go back with an insulated TPO roof system.

At this point, you need to determine how you want to install the system: do you want to do a mechanically fastened TPO or adhered TPO? Will there be a single layer of insulation or will you also install a top insulation layer? If you decide on two layers of insulation, do you want to adhere the top layer or simultaneously attach both layers of insulation into the metal deck? Once you have an idea of what you may want to do, direct your attention to the "Description" column. Note that this column is organized by how each component of the system is installed. Once you find the description matching what you want to do, the last column gives you the page of the document outlining those options.

Going back to our example, let's say you have decided to mechanically attach 3.5" flat polyiso (hereafter referred to as "ISO") to the metal deck (there's sufficient slope in the structural deck), then adhere smooth TPO to the ISO with a solvent based adhesive. Locate that option in the "Description" column and note that these assemblies are found on pages 34-42 (see screen shot #7).

Double-checking at the top of page 34, we see this is "Table 2F: Steel or Concrete Decks – New Construction, Reroof (Tear-Off), or Recovery; System Type C-1: Mechanically Attached Insulation, Bonded Roof Cover." This matches the desired roof installation (see screen shot #8).

As you scroll through this section, you will note the systems are organized by the "Roof Cover" column (which includes a further grouping by adhesive type), then by the "MDP" (maximum design pressure) column. Let's focus first on the "Roof Cover" column. You've already determined you want to adhere smooth TPO to the ISO. Therefore, the first section of this table will not apply since it is for a self-adhered TPO.

The second section of the table lists smooth TPO and gives two adhesive options, one of which, in this

example, is your adhesive of choice; so, you know your system is found in this section of this table (see screen shot #9).

Next, you need to locate a system that allows for a single layer of 3.5" ISO. Note that many of the systems provide for an optional base layer of insulation. Scroll through the table until you find one with an "Optional" base layer and ISO as the top layer with a minimum thickness of 3.5" or less. (Remember your insulation thickness can exceed, but not be less than, the stated minimum.) The first one is S-143 (see screen shot #10).

At this point, you need to know the maximum design pressure (hereafter referred to as "MDP") required for this project (and you have to understand "roof zones" and "extrapolation"). This information may have been provided to you in a specification, by an engineer or design professional, or perhaps you referred to RAS 128. In any event, let's assume, in this example, the MDP for Zone 1 needs to be -52.5 and you will need to extrapolate, or enhance your fastening pattern, to meet your required pressures in Zones 2 and 3. Looking at the "MDP" column for S-143, you will see the MDP is -45*. Therefore, this system will not work because it does not meet your MDP for Zone 1.

Continue to scroll through the table until you find an option that meets -52.5 or greater and in this case, has NO ASTERISK (*) after the number. (I will explain why the asterisk matters in a bit – keep reading.) The first system that meets -52.5 is S-145 but that calls for a base insulation layer (min. 1.5") and Dens Deck Prime as a top layer (min .25"). S-146 calls for a base insulation layer (min 1") and SECURACK (min .25"). S-147, however, does not require a base insulation layer and the specified top (only) layer is minimum 2" ISO (which will work since 3.5" exceeds the stated minimum) and the MDP of -60 exceeds the required -52.5. This may therefore be the one you choose to use (see screen shot #11).

If you decide to proceed with S-147, note that column "Attach" specifies the fastening pattern at 1 fastener per 1.78 square feet. So, there's your pattern, but, with what fastener? The "Fasten" column refers

TABLE	DECK	APPLICATION	TYPE	DESCRIPTION	PAGE
2F	Steel or Structural concrete	New, Reroof (Tear-Off) or Recover	C-1	Mechanically Attached Insulation, Bonded Roof Cover	34-42

TABLE 2F: STEEL OR STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER						
SYSTEM TYPE C-1: MECHANICALLY ATTACHED INSULATION, BONDED ROOF COVER						
System No.	Deck† (Note 1)	Base Insulation Layer	Top Insulation Layer			Roof Cover (Note 16)
			Type	Fasten	Attach	MDP (psf)

TABLE 2F: STEEL OR STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE C-1: MECHANICALLY ATTACHED INSULATION, BONDED ROOF COVER							
System No.	Deck† (Note 1)	Base Insulation Layer	Top Insulation Layer			Roof Cover (Note 16)	MDP (psf)
			Type	Fasten	Attach		
EVERGUARD FREEDOM TPO:							
S-122.	Min. 22 ga., Type B, Grade 33 steel or structural concrete	(Optional) One or more layers, any combination	Min. 2-inch EnergyGuard RA, EnergyGuard RN	Note 2	1 per 3.2 ft²	EverGuard Freedom TPO / self adhered	-45.0*
S-123.	Min. 22 ga., Type B, Grade 33 steel or structural concrete	One or more layers, any combination, min. 1.5-inch	Min. 0.5-inch EnergyGuard RH HD Polyiso Insulation, EnergyGuard HD Polyiso Insulation, EnergyGuard HD Plus Polyiso Insulation	Note 2	1 per 2 ft²	EverGuard Freedom TPO / self adhered	-45.0*
S-124.	Min. 22 ga., Type B, Grade 33 steel or structural concrete	(Optional) One or more layers, any combination	Min. 1.5-inch EnergyGuard Polyiso Insulation, EnergyGuard Ultra	Note 2	1 per 2 ft²	EverGuard Freedom TPO / self adhered	-45.0*
S-125.	Min. 22 ga., Type B, Grade 33 steel or structural concrete	(Optional) One or more layers, any combination	Min. 2-inch EnergyGuard Polyiso Insulation, EnergyGuard Ultra	Note 2	1 per 2.9 ft²	EverGuard Freedom TPO / self adhered	-45.0*
S-126.	Min. 22 ga., Type B, Grade 33 steel; 6' spans, Traxx/5 screw 6" o.c. or structural concrete	(Optional) One or more layers, any combination	Min. 2-inch EnergyGuard RA, EnergyGuard RN	Note 2	1 per 1.3 ft²	EverGuard Freedom TPO / self adhered	-52.5
S-127.	Min. 22 ga., Type B, Grade 33 steel; 6' spans, Traxx/5 screw 6" o.c. or structural concrete	(Optional) One or more layers, any combination	Min. 2-inch EnergyGuard RA, EnergyGuard RN	Note 2 (#14 only)	1 per 2 ft²	EverGuard Freedom TPO / self adhered	-52.5
S-128.	Min. 22 ga., Type B, Grade 33 steel; 6' spans, 5/8" puddle welds 6" o.c. or structural concrete	(Optional for Recover) One or more layers, any combination, min. 1-inch	Min. 0.25-inch Dens Deck Prime	Drill-Tec #12 (steel only) or Drill-Tec #14 Fastener with Drill-Tec 3 in Ribbed Galvalume Plate (Flat)	1 per 1.45 ft²	EverGuard Freedom TPO / self adhered	-60.0
S-129.	Min. 20 ga., Type B, Grade 33 steel; 7' spans, 5/8" puddle weld 6" o.c. or structural concrete	(Optional for Recover) One or more layers, any combination, min. 1-inch	Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	Drill-Tec #12 (steel only) or Drill-Tec #14 Fastener with Drill-Tec 3 in Ribbed Galvalume Plate (Flat)	1 per 1.33 ft²	EverGuard Freedom TPO / self adhered	-60.0
S-130.	Min. 20 ga., Type B, Grade 33 steel; 7' spans, 5/8" puddle weld 6" o.c. or structural concrete	(Optional for Recover) One or more layers, any combination, min. 1-inch	Min. 0.375-inch SECUROCK Gypsum-Fiber Roof Board	Drill-Tec #12 (steel only) or Drill-Tec #14 Fastener with Drill-Tec 3 in Ribbed Galvalume Plate (Flat)	1 per 1.45 ft²	EverGuard Freedom TPO / self adhered	-75.0
EVERGUARD TPO / EVERGUARD TPO #1121 or EVERGUARD TPO 3-SQUARE LOW VOC BONDING ADHESIVE:							
S-131.	Min. 22 ga., Type B, Grade 33 steel or structural concrete	(Optional) One or more layers, any combination	Min. 0.25-inch Dens Deck Prime	Note 2 (Drill-Tec 3" Standard Steel Plate only)	1 per 2.67 ft²	EverGuard TPO / #1121, TPO 3-Square	-45.0*
S-132.	Min. 22 ga., Type B, Grade 33 steel or structural concrete	(Optional) One or more layers, any combination	Min. 0.25-inch Dens Deck Prime	Note 2 (Drill-Tec 3" Steel Plate only)	1 per 2.13 ft²	EverGuard TPO / #1121, TPO 3-Square	-45.0*
S-133.	Min. 22 ga., Type B, Grade 33 steel or structural concrete	(Optional) One or more layers, any combination	Min. 0.25-inch Dens Deck Prime	Note 2	1 per 2 ft²	EverGuard TPO / #1121, TPO 3-Square	-45.0*
S-134.	Min. 22 ga., Type B, Grade 33 steel or structural concrete	(Optional) One or more layers, any combination	Min. 0.5-inch Dens Deck or Dens Deck Prime	Note 2	1 per 3.2 ft²	EverGuard TPO / #1121, TPO 3-Square	-45.0*
S-135.	Min. 22 ga., Type B, Grade 33 steel or structural concrete	(Optional) One or more layers, any combination	Min. 0.625-inch Dens Deck or Dens Deck Prime	Note 2	1 per 4 ft²	EverGuard TPO / #1121, TPO 3-Square	-45.0*

EMO ETC, LLC
Certificate of Authorization #32455
2018 NEMO ETC, LLC

6th EDITION (2017) FBC HVHZ EVALUATION
EverGuard TPO Single-Ply Roof Membrane Systems; (800) 766-3411

Evaluation Report 01506.12.13-1-R25 for FL16730-R2
Revision 25: 10/17/201
Appendix 1, Page 34 of 10

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Certificate of Authorization #32455

2018 NEMO ETC, LLC


6th EDITION (2017) FBC HVHZ EVALUATION

EverGuard TPO Single-Ply Roof Membrane Systems; (800) 766-3411

Evaluation Report 01506.12.13-1-R25 for FL16730-R24

Revision 25: 10/17/2019

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	S-142.	Min. 22 ga., Type B, Grade 33 steel, 5/8" puddle welds, 6" o.c. or structural concrete	(Optional) One or more layers, any combination	Min. 2.5-inch EnergyGuard Polyiso Insulation, EnergyGuard Ultra	Note 2	1 per 2.3 ft ² (14 parts per 4x8 ft board)	EverGuard TPO / #1121, TPO 3-Square	-45.0
	S-143.	Min. 22 ga., Type B, Grade 33 steel or structural concrete	(Optional) One or more layers, any combination	Min. 2-inch EnergyGuard Polyiso Insulation, EnergyGuard Ultra	Note 2	1 per 2.9 ft ²	EverGuard TPO / #1121, TPO 3-Square	-45.0*
	S-144.	Min. 22 ga., Type B, Grade 33 steel or structural concrete	(Optional) One or more layers, any combination	Min. 2-inch EnergyGuard RA, EnergyGuard RN	Note 2	1 per 1.3 ft ²	EverGuard TPO / #1121, TPO 3-Square	-45.0*

you to Note 2, which leads us to the next feature of this document – the “Notes” Section.

Before we move to that section of the document, however, note the “Base Insulation” column which, in this particular table, mainly specifies “One or more layers, any combination.” The insulation options that can be used for those layers are also outlined in the “Notes” Section (see screen shot #12).

Moving back to Page 2 of the Appendix, you will find the “Notes” Section. You need to become familiar with the notes as these provide specific guidelines for installation, as well as a measure of flexibility. For

example, Note 2 outlines which specific fasteners can be used for each deck type. Note 3 outlines insulation options that can be used when no specific insulation is otherwise noted. Note 6 provides for adhesive application rates when no application rate is otherwise noted (see screen shot #13).

Now let’s talk about Note 9 and the asterisk (*). Earlier we discussed that there are Florida Product Approvals for use in the HVHZ and Approvals that are suitable for use outside the HVHZ (NON-HVHZ). When it comes to some Florida Product Approvals, the asterisk found in the “MDP” column of the systems pages

Screenshot #11


	S-147.	Min. 22 ga., Type B, Grade 33 steel; 6' spans, 5/8" puddle weld 6" o.c.	(Optional) One or more layers, any combination	Min. 2-inch EnergyGuard Polyiso Insulation	Note 2	1 per 1.78 ft ²	EverGuard TPO / #1121, TPO 3-Square	-60.0

TABLE 2F: STEEL OR STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE C-1: MECHANICALLY ATTACHED INSULATION, BONDED ROOF COVER							
System No.	Deck† (Note 1)	Base Insulation Layer	Top Insulation Layer			Roof Cover (Note 16)	MDP (psf)
			Type	Fasten	Attach		
S-147.	Min. 22 ga., Type B, Grade 33 steel; 6' spans, 5/8" puddle weld 6" o.c.	(Optional) One or more layers, any combination	Min. 2-inch EnergyGuard Polyiso Insulation	Note 2	1 per 1.78 ft ²	EverGuard TPO / #1121, TPO 3-Square	-60.0

Screenshot #12


means something different depending on if you are looking at an HVHZ Approval/Report or a NON-HVHZ Approval/Report.

In HVHZ Approvals/Reports for the manufacturer shown, the asterisk means that the system cannot be extrapolated/enhanced (equivalent to a Miami-Dade NOA General Limitation #9); thus, the MDP for the system chosen in the Approval must meet or exceed the maximum design pressure determined for this project in all relevant zones. Systems without an asterisk can be extrapolated (equivalent to a Miami-Dade NOA General Limitation #7); so, the MDP for the system

chosen needs to meet or exceed the MDP determined for Zone 1 of this project (see screen shot #14).

In NON-HVHZ Approvals, the asterisk means that the system carries the limitations set forth in Section 2.2.10.1 of FM Loss Prevention Data Sheet 1-29 (January 2016) for extrapolation/enhancement in Zones 2 and 3 (see screen shot #15).

If you are unsure which Evaluation Report you are looking at, HVHZ or the NON-HVHZ, check the bottom center of any page of the Appendix (see screen shots 14 and 15).

	<p>8. Bonded polyisocyanurate insulation boards shall be maximum 4 x 4 ft.</p>
	<p>9. Perimeter and corner areas shall comply with the enhanced uplift pressure requirements of these areas. Fastener densities shall be increased, as calculated in compliance with RAS 117 and/or RAS 137 by a qualified design professional. <i>*This extrapolation is not permitted for systems marked with an asterisk.*</i></p>
	<p>10. For assemblies marked with an asterisk*, the maximum design pressure (MDP) limitation listed shall be applicable to all roof pressure zones (i.e., field, perimeters and corners). Neither rational analysis, nor extrapolation</p>
	<p>8. Bonded polyisocyanurate insulation boards shall be maximum 4 x 4 ft.</p> <p>9. For mechanically attached components or partially bonded insulation, the maximum design pressure for the selected assembly shall meet or exceed the Zone 1 design pressure determined in accordance with FBC Chapter 16. Zones 2 and 3 shall employ an attachment density designed by a qualified design professional to resist the elevated pressure criteria. Commonly used methods are ANSI/SPRI WD-1, FM Loss Prevention Data Sheet 1-29, Roofing Application Standard RAS 117 and Roofing Application Standard RAS 137. <i>Assemblies marked with an asterisk* carry the limitations set forth in Section 2.2.10.1 of FM Loss Prevention Data Sheet 1-29 (January 2016) for Zone 2/3 enhancements.</i></p>
	<p>10. For assemblies with all components fully bonded in place, the maximum design pressure for the selected assembly shall meet or exceed critical design pressure determined in accordance with FBC Chapter 16, and no rational analysis is permitted.</p>
	<p>11. For mechanically attached components over existing decks, fasteners shall be tested in the existing deck for withdrawal resistance. A qualified design professional shall review the data for comparison to the minimum requirements for the system. Testing and analysis shall be in accordance with ANSI/SPRI FX-1 or Testing Application Standard TAS 105.</p>
	<p>12. For existing substrates in a bonded recover or re-roof installation, the existing roof surface or existing roof deck shall be examined for compatibility and bond performance with the selected adhesive, and the existing roof system (for recover) shall be capable of resisting project design pressures on its own merit to the satisfaction of the Authority Having Jurisdiction, as documented through field uplift testing in accordance with ANSI/SPRI IA-1, ASTM E907, FM Loss Prevention Data Sheet 1-52 or Testing Application Standard TAS 124.</p>
	<p>13. For System Type D, steel deck applications, the roof membrane shall be run with its length perpendicular to the steel deck flutes.</p>
	<p>14. For Recover Applications using System Type C-2 or System Type D, the insulation is optional. Alternatively, a separator board may be installed prior to roof cover installation when using System Type C-2 or System Type D, or a separator sheet may be installed prior to roof cover installation when using System Type D. The existing roof system shall be suitable for a recover application. The separator component shall be documented as meeting FBC 1505.1 and, for foam plastic, FBC Chapter 26, when installed with the roof cover in Recover applications.</p> <ul style="list-style-type: none"> ➤ <i>Separator Board Options for Recover System Type C-2 or System Type D:</i> Min. 0.5-inch EnergyGuard Polyiso Insulation, EnergyGuard NH Polyiso Insulation, EnergyGuard RA, EnergyGuard RN, EnergyGuard Ultra Polyiso Insulation, EnergyGuard NH Ultra Polyiso Insulation, Structodeck High Density Fiberboard Roof Insulation, EnergyGuard RH HD Polyiso Insulation, EnergyGuard HD Polyiso Insulation, EnergyGuard HD Plus Polyiso Insulation or EnergyGuard NH HD Plus Polyiso Insulation or min. 0.25-inch Dens Deck, Dens Deck Prime, SECURROCK Gypsum-Fiber Roof Board or SECURROCK Glass-Mat Roof Board. ➤ <i>Separator Sheet Options for Recover System Type D:</i> EverGuard Polymat Separation Layer (3 oz/yd²) or EverGuard Polymat Cushioning Layer (6 oz/yd²).
	<p>15. Lightweight insulating concrete (LWIC) shall be cast in accordance with FBC Section 1917 to the satisfaction of the Authority Having Jurisdiction. For systems where specific LWIC is referenced, refer to current LWIC Product Approval for specific deck construction and limitations. Unless otherwise noted, for systems where specific LWIC is not referenced, the minimum design mix shall be 300 psi. In all cases, the minimum top-coat thickness is 2-inches. For LWIC over structural concrete, reference is made to FBC Section 1917.4.1, Point 1. For "pre-existent" LWC references, listings were established through testing over lightweight concrete cast using only foaming agent (ASTM C896), water and Portland cement (ASTM C150), with no proprietary additives, in accordance with procedures adopted by Miami-Dade BCCO (FBC CER1592). Unless otherwise noted, use of these listings in new construction or re-roof (tear-off) applications is at the discretion of the Designer or Record and Authority Having Jurisdiction.</p>
<p>NEMO ETC, LLC Certificate of Authorization #32455 ©2018 NEMO ETC, LLC</p>	<p>6th Edition (2017) FBC NON-HVHZ EVALUATION GAF EverGuard TPO Single-Ply Roof Membrane Systems; (800) 766-4411</p> <p>Evaluation Report 01506.09.05-R37 for FL5293-R36 Revision 37: 08/14/2019 Appendix 1, Page 3 of 115</p>

A few more things to help you maneuver through the Florida Product Approvals with confidence:

1. When looking for an Approval, be familiar with the manufacturer and the names of their products. Remember both Miami-Dade NOA and the Florida Product Approvals specifically name the components that make up the approved systems. You will need to know the names of the products you want to use.
2. There may be differences from manufacturer to manufacturer in the way the Evaluation Report is laid out. For example, some manufacturers list General Limitation #7 or #9 in the “MDP” column, rather than having an asterisk or no asterisk. Some manufacturers have all of their systems available in one document and note the systems that can be used (or not used) in the HVHZ in the “MDP” column.
3. Read and understand the “Limitations” section of the Evaluation Report and the Appendix Notes!
4. When it comes to roofing, the systems listed in the Miami-Dade NOA and Florida Product Approvals have been tested for wind load resistance. The existence of a product approval does not mean the system meets any particular fire

classification nor manufacturer requirements for any particular length of guarantee.

As you can see, finding an approval to match the commercial roof system you want to install is a process and there was no way to cover every aspect of an Evaluation Report in this article. But, together we’ve hit the highlights and hopefully this has made your search for “the needle in the haystack” a little easier.

FRM

Mary Beth Reed is a Commercial Territory Manager for GAF in South Florida. Prior to GAF she worked for a commercial roofing company in Pompano Beach where she gained her experience and understanding of the Florida Building Code specific to commercial roofing in the High-Velocity Hurricane Zone. Today she serves as the President of the South Florida Council of National Women in Roofing, is a 2019 Nominee for the National Women in Roofing World Award, was awarded the 2019 Extra Mile Award for GAF Commercial – Southeast, and provides educational support to the ABCI Roofing Apprenticeship Program.

What's Wrong with These Pictures?

