



EXTERIOR RESEARCH & DESIGN, LLC.

Certificate of Authorization #9503

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EVALUATION REPORT

Firestone Building Products Company, LLC.

250 West 96th Street
Indianapolis, IN 46260

(317) 575-7017

Evaluation Report F8970.02.08-1-R9

FL10284-R9

Date of Issuance: 02/11/2008

Revision 9: 09/30/2017

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** sections noted herein.

DESCRIPTION: Firestone RubberGard EPDM Single Ply Roof Systems

LABELING: Labeling shall be in accordance with the requirements the Accredited Quality Assurance Agency noted herein.

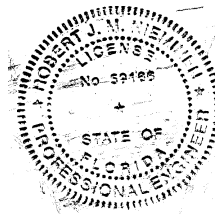
CONTINUED COMPLIANCE: This Evaluation Report is valid until such time as the named product(s) changes, the referenced Quality Assurance documentation changes, or provisions of the Code that relate to the product change. Acceptance of this Evaluation Report by the named client constitutes agreement to notify Robert Nieminen, P.E. if the product changes or the referenced Quality Assurance documentation changes. Trinity|ERD 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 "Trinity | ERD 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 4, plus a 50-page Appendix.

Prepared by:



Robert J.M. Nieminen, P.E.

Florida Registration No. 59186, Florida DCA ANE1983

The facsimile seal appearing was authorized by Robert Nieminen, P.E. on 09/30/2017. This does not serve as an electronically signed document.

CERTIFICATION OF INDEPENDENCE:

1. Exterior Research & Design, LLC. d/b/a Trinity | ERD 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. Exterior Research & Design, LLC. d/b/a Trinity | ERD 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 Trinity|ERD 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.

ROOFING SYSTEMS EVALUATION:
1. SCOPE:
Product Category: Roofing

Sub-Category: Single Ply Roof Systems

Compliance Statement: Firestone RubberGard EPDM Single Ply Roof Systems, as produced by Firestone Building Products Company, LLC, have demonstrated compliance with the following sections of the 6th Edition (2017) Florida Building Code through testing in accordance with the following Standards. Compliance is subject to the Installation Requirements and Limitations / Conditions of Use set forth herein.

2. STANDARDS:

<u>Section</u>	<u>Property</u>	<u>Standard</u>	<u>Year</u>
1504.3.1	Wind	FM 4474	2011
1504.7	Impact	FM 4470	2012
1507.12.2	Physical Properties	ASTM D4637	2013
1504.3.1	Wind	UL 1897	2012

3. REFERENCES:

<u>Entity</u>	<u>Examination</u>	<u>Reference</u>	<u>Date</u>
ERD (TST1867)	FM 4470/4474	F12260.02.09-2	02/04/2009
ERD (TST1867)	Physical Properties	F9240.07.08-R2	07/10/2009
ERD (TST1867)	Physical Properties	F9240.11.08-R1	07/10/2009
ERD (TST1867)	Physical Properties	F9240.03.09-R2	07/30/2009
ERD (TST1867)	Physical Properties	F13260.08.09-1	08/07/2009
ERD (TST1867)	Physical Properties	F31910.04.10	04/08/2010
ERD (TST1867)	FM 4470/4474	F13950.05.10	05/05/2010
ERD (TST1867)	Physical Properties	F45950.05.14	05/13/2014
ERD (TST1867)	Physical Properties	F45950.07.14-1	03/30/2015
ERD (TST1867)	Physical Properties	F45950.03.15-4	04/08/2015
FM Approvals (TST1867)	FM 4470	1V1A7.AM	06/25/1992
FM Approvals (TST1867)	FM 4470	1W3A4.AM	12/01/1992
FM Approvals (TST1867)	FM 4470	1T7A3.AM	01/18/1992
FM Approvals (TST1867)	FM 4470	1V6A9.AM	02/27/1992
FM Approvals (TST1867)	FM 4470	2W6A2.AM	06/25/1993
FM Approvals (TST1867)	FM 4470	2X9A8.AM	06/14/1994
FM Approvals (TST1867)	FM 4470	3010822	07/31/2002
FM Approvals (TST1867)	FM 4470	3011282	08/08/2002
FM Approvals (TST1867)	FM 4470	3014031	07/22/2002
FM Approvals (TST1867)	FM 4470/4474	3014538	05/27/2004
FM Approvals (TST1867)	FM 4470/4474	3014826	10/07/2002
FM Approvals (TST1867)	FM 4470/4474	3014874	08/16/2004
FM Approvals (TST1867)	FM 4470/4474	3015479	06/04/2004
FM Approvals (TST1867)	FM 4470/4474	3031944	08/12/2008
FM Approvals (TST1867)	FM 4470/4474	3033218	08/12/2008
FM Approvals (TST1867)	FM 4470/4474	3034561	12/08/2008
FM Approvals (TST1867)	FM 4470/4474	3033921	01/12/2009
FM Approvals (TST1867)	FM 4470/4474	3035774	03/05/2009
FM Approvals (TST1867)	FM 4470/4474	3035017	04/15/2009
FM Approvals (TST1867)	FM 4470/4474	3036256	04/27/2009
FM Approvals (TST1867)	FM 4470/4474	797-04929-267	09/25/2009
FM Approvals (TST1867)	FM 4470/4474	797-05257-267	02/16/2010
FM Approvals (TST1867)	FM 4470/4474	3036586	02/22/2010
FM Approvals (TST1867)	FM 4470/4474	797-05416-267	04/05/2010
FM Approvals (TST1867)	FM 4470/4474	797-05839-267	09/08/2010
FM Approvals (TST1867)	FM 4470/4474	797-05838-267	09/24/2010

<u>Entity</u>	<u>Examination</u>	<u>Reference</u>	<u>Date</u>
FM Approvals (TST1867)	FM 4470/4474	3038442	11/18/2010
FM Approvals (TST1867)	FM 4470/4474	3038546	12/17/2010
FM Approvals (TST1867)	FM 4470/4474	3036183	12/23/2010
FM Approvals (TST1867)	FM 4470/4474	3041535	06/08/2011
FM Approvals (TST1867)	FM 4470/4474	3041949	06/10/2011
FM Approvals (TST1867)	FM 4470/4474	3042909	08/03/2011
FM Approvals (TST1867)	FM 4470/4474	3038191	08/04/2011
FM Approvals (TST1867)	FM 4470/4474	3038770	08/04/2011
FM Approvals (TST1867)	FM 4470/4474	797-06739-267	9/13/2011
FM Approvals (TST1867)	FM 4470/4474	797-06758-267	9/21/2011
FM Approvals (TST1867)	FM 4470/4474	3036639	11/22/2011
FM Approvals (TST1867)	FM 4470/4474	3043994	2/15/2012
FM Approvals (TST1867)	FM 4470/4474	797-07104-267	3/19/2012
FM Approvals (TST1867)	FM 4470/4474	3044429	4/12/2012
FM Approvals (TST1867)	FM 4470/4474	3044047	5/17/2012
FM Approvals (TST1867)	FM 4470/4474	3045334	6/11/2012
FM Approvals (TST1867)	FM 4470/4474	3041939	8/14/2012
FM Approvals (TST1867)	FM 4470/4474	797-07749-267	10/4/2012
FM Approvals (TST1867)	FM 4470/4474	3044008	12/19/2012
FM Approvals (TST1867)	FM 4470/4474	3046870	3/22/2013
FM Approvals (TST1867)	FM 4470/4474	797-08294-267	4/26/2013
FM Approvals (TST1867)	FM 4470/4474	797-08339-267	5/10/2013
FM Approvals (TST1867)	FM 4470/4474	3049316	5/30/2013
FM Approvals (TST1867)	FM 4470/4474	3047398	8/15/2013
FM Approvals (TST1867)	FM 4470/4474	797-09105-267	1/22/2014
UL (TST1740)	UL 1897	10CA20078	11/20/2010
UL LLC (QUA 9625)	Quality Control	Service Confirmation	Exp.09/11/2020

4. PRODUCT DESCRIPTION:

The following roof covers are mechanically attached or fully adhered to Approved substrates using fasteners, stress plates and adhesives, as outlined in the Limitations / Conditions of Use herein.

- 4.1 **STANDARD RUBBERGARD, FIRE-RETARDANT RUBBERGARD AND RUBBERGARD LS-FR** are a nominal 45-mil (1.1 mm) or 60-mil (1.5 mm) thick, non-reinforced Ethylene Propylene Diene Monomer based roof membranes.
- 4.2 **RUBBERGARD LS-FR PT** is a nominal 60-mil (1.5 mm) thick, non-reinforced Ethylene Propylene Diene Monomer based roof membrane with a 3-inch wide tape, factory-applied seam tape.
- 4.3 **RUBBERGARD PLATINUM** is a nominal 90-mil (2.2 mm) thick, non-reinforced, Ethylene Propylene Diene Monomer based roof membrane.
- 4.4 **RUBBERGARD MAX AND RUBBERGARD MAX FR** are a nominal 45-mil (1.1 mm), 60-mil (1.5 mm) or 75-mil (1.9 mm) thick, internally-reinforced Ethylene Propylene Diene Monomer based roof membranes.
- 4.5 **RUBBERGARD MAX PT** are nominal 45-mil (1.1 mm) or 60-mil (1.5 mm) thick, internally-reinforced Ethylene Propylene Diene Monomer based roof membranes with a 3-inch wide tape, factory-applied seam tape.
- 4.6 **RUBBERGARD ECOWHITE™** is a nominal 60-mil (1.5 mm) or 90-mil (2.2 mm) thick, non-reinforced, bi-laminate, white-on-black, cured roof membrane.
- 4.6 **RUBBERGARD ECOWHITE™ PT** is a nominal 60-mil (1.5 mm) or 90-mil (2.2 mm) thick, non-reinforced, bi-laminate, white-on-black, cured roof membrane with a 3-inch wide tape, factory-applied seam tape.

5. LIMITATIONS:

- 5.1 This is a building code evaluation. Neither Trinity|ERD 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.
- 5.2 This Evaluation Report is not for use in FBC HVHZ jurisdictions.
- 5.3 Fire classification does not form part of this Evaluation Report. Refer to a current Roofing Materials Directory for fire ratings of this product.
- 5.4 For steel deck installations, foam plastic insulation shall be separated from the building interior in accordance with **FBC 2603.4** unless the exceptions stated in **FBC 2603.4.1** or **2603.6** apply.
- 5.5 The roof system evaluation herein pertains to above-deck roof components. Roof decks and structural members shall be in accordance with FBC requirements to the satisfaction of the Authority Having Jurisdiction. Load resistance of the roof deck shall be documented through proper codified and/or FBC Approval documentation.
- 5.6 For recover installations, the existing roof shall be examined in accordance with **FBC 1511**.
- 5.7 For mechanically attached insulation or membrane or strip-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 WD1, FM Loss Prevention Data Sheet 1-29, Roofing Application Standard RAS 117** and **Roofing Application Standard RAS 137**. 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.
- 5.8 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**. No rational analysis is permitted for these systems.
- 5.9 For mechanically attached insulation or membrane over existing roof 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**.
- 5.10 For bonded insulation or membrane over existing substrates in a re-roof (tear off) or recover installation, the existing deck or existing roof surface shall be examined for compatibility with the adhesive to be installed. If any surface conditions exist that bring system performance into question, 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** shall be conducted on mock-ups of the proposed new roof assembly.
- 5.11 For bonded insulation or membrane over existing substrates in a recover installation, the existing roof system 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 **ASTM E907, FM Loss Prevention Data Sheet 1-52** or **Testing Application Standard TAS 124**.
- 5.12 Metal edge attachment (except gutters), shall be designed and installed for wind loads in accordance with FBC Chapter 16 and tested for resistance in accordance with **ANSI/SPRI ES-1** or **Roofing Application Standard RAS 111**, except the basic wind speed shall be determined from **FBC Figure 1609.3(1), 1609.3(2)** or **1609.3(3)**.
- 5.13 All products in the roof assembly shall have quality assurance audit in accordance with the **F.A.C. Rule 61G20-3**.

6. INSTALLATION:

- 6.1 **Firestone RubberGard EPDM** shall be installed in accordance with **Firestone Building Products Company, LLC** published installation instructions, subject to the Limitations / Conditions of Use noted herein.
- 6.2 System attachment requirements for wind load resistance are set forth in Appendix 1. “MDP” = Maximum Design Pressure is the result of testing for wind load resistance based on allowable wind loads, and reflects the ultimate passing pressure divided by 2 (the 2 to 1 margin of safety per **FBC 1504.9** has already been applied). Refer to **FBC 1609** for determination of design wind pressures.
- 6.3 For mechanically fastened membrane systems (Type D) over profiled steel deck, membrane shall be installed running perpendicular to steel deck flutes.

7. BUILDING PERMIT REQUIREMENTS:

As required by the Building Official or Authority Having Jurisdiction in order to properly evaluate the installation of this product

8. MANUFACTURING PLANTS:

Contact the named QA entity for manufacturing facilities covered by **F.A.C. Rule 61G20-3** QA requirements.

9. QUALITY ASSURANCE ENTITY:

UL LLC– QUA9625; (414) 248-6409; karen.buchmann@us.ul.com

- THE 50-PAGES THAT FOLLOW FORM PART OF THIS EVALUATION REPORT -