



EXTERIOR RESEARCH & DESIGN, LLC.

Certificate of Authorization #9503

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EVALUATION REPORT

Johns Manville Corporation

P.O. Box 5108

Denver, CO 80217

(303) 987-4879

Evaluation Report J9340.05.08-R4

FL1037-R7

Date of Issuance: 05/19/2008

Revision 4: 10/14/2017

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: JM Built-Up Roofing 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.

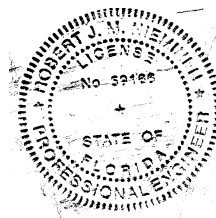
INSPECTION: Upon request, a copy of this entire Evaluation Report shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This Evaluation Report consists of pages 1 through 4, plus a 15-page Appendix.

Prepared by:

Robert J.M. Nieminen, P.E.

Florida Registration No. 59166, Florida DCA ANE1983



The facsimile seal appearing was authorized by Robert Nieminen, P.E. on 10/14/2017. 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: Built-Up Roofing Systems

Compliance Statement: **JM Built-Up Roofing Systems**, as produced by **Johns Manville Corporation**, have demonstrated compliance with the following sections of the 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
1507.10.2	Physical Properties	ASTM D2178	2004
1507.10.2	Physical Properties	ASTM D3909	2012
1507.10.2	Physical Properties	ASTM D4601	2012
1523.6.2	Wind	TAS 114	2011

3. REFERENCES:

<u>Entity</u>	<u>Examination</u>	<u>Reference</u>	<u>Date</u>
FM Approvals (TST1867)	FM 4470	3001629	09/10/1998
FM Approvals (TST1867)	FM 4470	3D4A4.AM	09/28/1998
FM Approvals (TST1867)	FM 4470	3000949	06/05/1998
FM Approvals (TST1867)	FM 4470	3001482	08/11/1998
FM Approvals (TST1867)	FM 4470	OZ8A9.AM	09/10/1998
FM Approvals (TST1867)	FM 4470	3007148	04/19/2000
FM Approvals (TST1867)	FM 4470	3006346	08/15/2000
FM Approvals (TST1867)	FM 4470	3009499	04/04/2001
FM Approvals (TST1867)	FM 4470	3011057	08/10/2001
FM Approvals (TST1867)	FM 4470	3012974	06/03/2002
FM Approvals (TST1867)	FM 4470	3014090	09/05/2002
FM Approvals (TST1867)	FM 4470	3011248	11/01/2002
FM Approvals (TST1867)	FM 4470	3015444	07/11/2003
FM Approvals (TST1867)	FM 4470/4474	3026130	04/26/2006
IRT (TST7408)	TAS 114	99001.1.20.99	01/20/1999
IRT (TST7408)	TAS 114	99002.1.20.99	01/20/1999
IRT (TST7408)	TAS 114	99003.1.20.99	01/20/1999
IRT (TST7408)	TAS 114	99006.1.20.99	01/20/1999
IRT (TST7408)	TAS 114	99007.1.20.99	01/20/1999
IRT (TST7408)	TAS 114	99008.1.20.99	01/20/1999
IRT (TST7408)	TAS 114	99016.1.20.99	01/20/1999
IRT (TST7408)	TAS 114	99009.2.10.99	02/10/1999
IRT (TST7408)	TAS 114	99010.2.10.99	02/10/1999
IRT (TST7408)	TAS 114	02-026	07/26/2002
IRT (TST7408)	TAS 114	02-011	02/06/2002
Miami-Dade (CER1592)	Physical Properties	Various NOAs	Current
UL LLC (QUA9625)	Quality Control	Service Confirmation	Exp. 06/23/2019

4. PRODUCT DESCRIPTION:

This Evaluation Report covers **Johns Manville Built-Up Roof Systems (BUR)** installed in accordance with **Johns Manville** published installation instructions and the Limitations / Conditions of Use herein. The following products make up the subject systems.

TABLE 1: ROLL-GOODS FOR JOHNS MANVILLE BUILT-UP ROOF SYSTEMS			
Type	Product	Specification	
		Reference	Type
Base Sheets	DynaBase	ASTM D6163	Type I
	GlasBase Plus	ASTM D4601	Type II
	Ventsulation Felt	ASTM D 4897	Type II
Ply Sheets	PermaPly 28	ASTM D4601	Type II
	GlasPly IV	ASTM D 4601	Type IV
	GlasPly Premier	ASTM D 2178	Type VI
Cap Sheets	GlasKap	ASTM D3909	N/A
	GlasKap CR	ASTM D3909	N/A
	GlasKap Plus	ASTM D5147	N/A

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 HVHZ jurisdictions.
- 5.3 Refer to a current UL 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** and **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 in accordance with **FAC Rule 61G20-3**.

6. INSTALLATION:

- 6.1 **Johns Manville Built-Up Roof Systems** shall be installed in accordance with **Johns Manville Corporation** published installation instructions, subject to the Limitations / Conditions of Use 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 loads.

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; (847) 664-3623; LeAnna.Gradecki@ul.com

- THE 15-PAGES THAT FOLLOW FORM PART OF THIS EVALUATION REPORT -