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ENGINEER

EVALUATE

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EVALUATION REPORT

Gaco™, a Division of Firestone Building Products
1245 Chapman Drive
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(800) 331-0196

Evaluation Report 3m-FBP-20-FBCER.D-R0
FL27003-R5 (NON-HVHZ)
Date of Issuance: 09/13/2021

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 **7th Edition (2020) Florida Building Code** sections noted herein.

DESCRIPTION: GacoFlex™ Waterproofing Systems for use in FBC non-HVHZ jurisdictions

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 or production facility location(s) changes, or Code provisions that relate to the product(s) change. Acceptance of our Evaluation Reports by the named client constitutes agreement to notify NEMO ETC, LLC of any changes to the product(s), the Quality Assurance or the production facility location(s). NEMO ETC, LLC requires a complete review of its Evaluation Report relative to updated Code requirements with each Code Cycle.

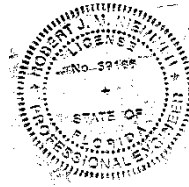
ADVERTISEMENT: The Florida Product Approval Number (FL#) preceded by the words **“NEMO Evaluated”** may be displayed in advertising literature. If any portion of the Evaluation Report is displayed, then it shall be done in its entirety.

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 2-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 09/13/2021. This does not serve as an electronically signed document.

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.

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

Sub-Category: Waterproofing

Compliance Statement: **GacoFlex™ Waterproofing Systems**, as produced by **Gaco™**, a Division of **Firestone Building Products**, have demonstrated compliance with the following sections of the **7th Edition (2020) 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 resistance	FM 4474	2011
1507.15.2	Material standard	ASTM C957	2015

3. REFERENCES:

<u>Entity</u>	<u>Examination</u>	<u>Reference</u>	<u>Date</u>
PRI (TST5878)	ASTM C957	GW-014-02-01	03/14/12
PRI (TST5878)	ASTM C957	GW-015-02-01	03/14/12
PRI (TST5878)	ASTM C957	GW-029-02-01	02/22/16
PRI (TST5878)	ASTM D7234	GW-050-02-01	05/22/18
PRI (TST5878)	ASTM D7234	GW-064-02-01	10/09/18
PRI (TST5878)	ASTM D7234	GW-066-02-01	11/29/18
PRI (TST5878)	FM 4474	GW-018-02-01	06/22/12
PRI (TST5878)	FM 4474	GW-019-02-01	06/22/12
PRI (TST5878)	FM 4474	GW-029-02-02	01/29/16
PRI (TST5878)	FM 4474	348T0035	02/18/20
UL, LLC. (QUA9625)	Quality Control	Service Confirmation	12/21/20

4. PRODUCT DESCRIPTION:

This Evaluation Report covers **GacoFlex™ Waterproofing Systems** applied to Approved substrates as outlined in the Limitations / Conditions of Use herein. The following products make up the subject systems.

TABLE 1: EVALUATED PRODUCTS			
<u>Product</u>	<u>Use</u>	<u>Material Standard</u>	<u>Plant(s)</u>
GacoFlex UB64	Base and intermediate coat	ASTM C957	Waukesha, WI
GacoFlex U64	Top coat (traffic)		
GacoFlex U66	Top coat (pedestrian)		
GacoFlex U91	Top coat (pedestrian/traffic)		
GacoFlex E5320	Primer		
GacoFlex E5691	Sealer / Primer		
GacoFlex E5990	Sealer		
GacoShell Granules	Aggregate		

5. LIMITATIONS:

- 5.1 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.
- 5.2 This Evaluation Report is not for use in FBC High Velocity Hurricane Zone jurisdictions (i.e., Broward and Miami-Dade Counties).
- 5.3 This Evaluation Report 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.
- 5.4 This Evaluation Report does not include evaluation of fire classification. Refer to **FBC 1505** for requirements and limitations regarding roof assembly fire classification. Refer to **FBC 2603** for requirements and limitations concerning the use of foam plastic insulation.
- 5.5 This Evaluation Report does not include evaluation of roof edge termination. Refer to **FBC 1504.5** for requirements and limitations regarding edge securement for low-slope roofs.
- 5.6 Refer to **FBC 1511** for requirements and limitations regarding recover installations.
- 5.6.1 For mechanically attached components 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 shall be in accordance with **ANSI/SPRI FX-1** or **Testing Application Standard TAS 105**.
- 5.6.2 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.
- 5.6.3 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**.
- 5.7 Refer to Appendix 1 for system attachment requirements for wind load resistance.
- 5.7.1 “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.
- 5.7.2 For mechanically attached components or partially-bonded insulation, the maximum design pressure for the selected assembly shall meet or exceed at least the Zone 1 PRIME design pressure determined in accordance with **FBC Chapter 16**. Elevated pressure zones 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 (February 2020)** for Zone 2/3 enhancements.
- 5.7.3 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.
- 5.8 All components in the roof assembly shall have quality assurance audit in accordance with **F.A.C. Rule 61G20-3**. Refer to the Product Approval of the component manufacturer for components listed in Appendix 1 that are produced by a Product Manufacturer other than the report holder on Page 1 of this Evaluation Report.

6. INSTALLATION:

GacoFlex™ Waterproofing Systems shall be installed in accordance with **Gaco™, a Division of Firestone Building Products** current, published installation instructions, subject to the Limitations / Conditions of Use noted herein. Flashing and detailing shall be in accordance with Gaco™, a Division of Firestone Building Products published installation instructions using Gaco™, a Division of Firestone Building Products specified materials to establish a watertight condition.

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. Refer to Section 4 herein for products and production locations having met codified material standards.

9. QUALITY ASSURANCE ENTITY:

UL, LLC. – QUA9625; (360) 817-5512; Vinycia.Seman@ul.com

- THE TWO (2)-PAGES THAT FOLLOW FORM PART OF THIS EVALUATION REPORT -

APPENDIX 1: ATTACHMENT REQUIREMENTS FOR WIND UPLIFT RESISTANCE

TABLE	DECK	APPLICATION	TYPE	DESCRIPTOIN	PAGE
1A	Structural concrete	New or Reroof (Tear-Off)	F	Non-Insulated, Bonded Waterproofing (Pedestrian)	2
1B	Structural concrete	New or Reroof (Tear-Off)	F	Non-Insulated, Bonded Waterproofing (Vehicular)	2

The following notes apply to the systems outlined herein:

- 1 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.
- 2 For assemblies with all components fully bonded, 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.
- 3 For components over existing substrates in a re-roof (tear off) installation, the existing deck shall be examined for compatibility with the components to be installed. If any surface conditions exist that bring system performance into question, field uplift testing in accordance shall be conducted on mock-ups of the proposed new roof assembly. Field uplift testing shall be in accordance with ASTM E907, FM Loss Prevention Data Sheet 1-52 or Testing Application Standard TAS 124.
- 4 Unless otherwise noted, refer to the following for product uses and application rates.

GACO™ WATERPROOFING COMPONENTS & APPLICATION RATES:		
PRODUCT	USE	RATE
GacoFlex U5677	Sealer	0.33 gal/square
GacoFlex E5990	Sealer	0.50 gal/square
GacoFlex E5320	Primer	0.40 gal/square
GacoFlex E5691	Sealer / Primer	0.33 gal/square
GacoFlex UB64	Base coat	1.25 gal/square
	Intermediate coat	1.00 gal/square with GacoShell Granules broadcast per tables below.
GacoFlex U64	Top coat (vehicular)	1.25 gal/square
GacoFlex U66	Top coat (pedestrian)	1.00 gal/square
GacoFlex U91	Base coat	0.75 gal/square
	Intermediate Coat	0.75 gal/square GacoShell Granules broadcast per tables below.
	Top coat (pedestrian or vehicular)	0.75 gal/square

- 5 Overburden of soil and plantings (for 'garden roofs'; root barriers, filter fabric, drainage components, EPS / XPS insulation, etc.) or concrete topping slabs, that are specified by the Designer of Record, acceptable to the Authority Having Jurisdiction and do not form part of the load path to the waterproofing system, are permissible over the assemblies noted herein with no adverse effect on the wind uplift performance of the waterproofing system. The Authority Having Jurisdiction may require integrity flood testing (ASTM D5957) or Electric Field Vector Mapping tests of all waterproofing systems prior to placement of overburden materials. Testing, if required by the Authority Having Jurisdiction, should be conducted by a qualified testing agency or professional.
- 6 "MDP" = Maximum Design Pressure is the result of testing for wind load resistance based on allowable wind loads. Refer to FBC 1609 for determination of design wind loads.

**TABLE 1A: STRUCTURAL CONCRETE DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF)
SYSTEM TYPE F: NON-INSULATED, BONDED WATERPROOFING (PEDESTRIAN)**

System No.	Designation	Deck (Note 1)	Sealer	Primer	Waterproofing (Note 15)			MDP (psf)
					Base Coat	Intermediate Coat	Top Coat	
C-1.	GW-14-U	Min. 2,500 psi structural concrete	GacoFlex U5677 or GacoFlex E5990	GacoFlex E5320	GacoFlex UB64	GacoFlex UB64 with GacoShell Granule at 6-8 lbs/square	GacoFlex U66	-438.5
C-2.	GW-14-U	Min. 2,500 psi structural concrete	(Optional) GacoFlex E5990	GacoFlex E5691	GacoFlex UB64	GacoFlex UB64 with GacoShell Granule at 6-8 lbs/square	GacoFlex U66	-438.5
C-3.	GW-14-U91	Min. 2,500 psi structural concrete	GacoFlex U5677 or GacoFlex E5990	GacoFlex E5320	GacoFlex U91	GacoFlex U91 with GacoShell Granule at 6-8 lbs/square	GacoFlex U91	-502.5
C-4.	GW-14-U91	Min. 2,500 psi structural concrete	(Optional) GacoFlex E5990	GacoFlex E5691	GacoFlex U91	GacoFlex U91 with GacoShell Granule at 6-8 lbs/square	GacoFlex U91	-502.5

**TABLE 1B: STRUCTURAL CONCRETE DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF)
SYSTEM TYPE F: NON-INSULATED, BONDED WATERPROOFING (VEHICULAR)**

System No.	Designation	Deck (Note 1)	Sealer	Primer	Waterproofing (Note 15)			MDP (psf)
					Base Coat	Intermediate Coat	Top Coat	
C-5.	GW-15-UBU	Min. 2,500 psi struct. concrete	GacoFlex U5677 or GacoFlex E5990	GacoFlex E5320	GacoFlex UB64	GacoFlex UB64 with GacoShell Granule at 3-5 lbs/square	GacoFlex U64	-441.5
C-6.	GW-15-UBU	Min. 2,500 psi struct. concrete	(Optional) GacoFlex E5990	GacoFlex E5691	GacoFlex UB64	GacoFlex UB64 with GacoShell Granule at 3-5 lbs/square	GacoFlex U64	-441.5
C-7.	GW-15-U91	Min. 2,500 psi structural concrete	GacoFlex U5677 or GacoFlex E5990	GacoFlex E5320	GacoFlex U91	GacoFlex U91 with GacoShell Granule at 6-8 lbs/square	GacoFlex U91	-502.5
C-8.	GW-15-U91	Min. 2,500 psi structural concrete	(Optional) GacoFlex E5990	GacoFlex E5691	GacoFlex U91	GacoFlex U91 with GacoShell Granule at 6-8 lbs/square	GacoFlex U91	-502.5