



**EVALUATION REPORT**

**FLORIDA BUILDING CODE, 6<sup>TH</sup> EDITION (2017)**

**Manufacturer:** GACO, A DIVISION FIRESTONE BUILDING PRODUCTS *Issued February 11, 2020*  
 1245 Chapman Drive  
 Waukesha, WI 53186  
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[www.gaco.com](http://www.gaco.com)

**Manufacturing Plant:** Waukesha, WI

**Quality Assurance:** UL LLC (QUA9625)

**SCOPE**

**Category:** Roofing  
**Subcategory:** Waterproofing  
**Code Sections:** 1507.15.2, 1515.1.1, 1519.16, 1523.6.2, 1523.6.3  
**Properties:** Wind Resistance, Physical Properties

**PRODUCT DESCRIPTION**

Use	Products	Description
Primers & Sealers	GacoFlex E-5320	Epoxy two-component general purpose primer
	GacoFlex E-5691	Epoxy two-component concrete primer/sealer
	GacoFlex E-5990	Epoxy two-component concrete sealer
Texture	GacoShell	Walnut shell aggregate
Coatings	GacoFlex UB-64	Polyurethane two-component base and intermediate coat for pedestrian/traffic decks
	GacoFlex U-64	Polyurethane two-component top coat for traffic decks
	GacoFlex U-66	Polyurethane two-component top coat for pedestrian decks
	GacoFlex U-91	Polyurethane one-component top coat for pedestrian/traffic decks

**REFERENCES**

Entity	Report No.	Standard	Year
Intertek Testing Services NA, Inc. (TST6781)	101151074MID-001	ASTM E 108	2011
Intertek Testing Services NA, Inc. (TST6781)	102270272MID-001A	ASTM E 108	2011
PRI Construction Materials Technologies (TST5878)	GW1-014-02-01	ASTM C 957	2010
PRI Construction Materials Technologies (TST5878)	GW1-015-02-01	ASTM C 957	2010
PRI Construction Materials Technologies (TST5878)	GW1-018-02-01	TAS 114(D)	1995
PRI Construction Materials Technologies (TST5878)	GW1-019-02-01	TAS 114(D)	1995
PRI Construction Materials Technologies (TST5878)	GW1-029-02-01	ASTM C 957	2010
PRI Construction Materials Technologies (TST5878)	GW1-029-02-02	TAS 114(D)	1995
PRI Construction Materials Technologies (TST5878)	GW1-050-02-01	ASTM D 7234	2012
PRI Construction Materials Technologies (TST5878)	GW1-063-02-01	ASTM D 1475	2013
		ASTM D 1644	2001(2017)
		ASTM D 2196	2001
PRI Construction Materials Technologies (TST5878)	GW1-064-02-01	ASTM D 7234	2012



## LIMITATIONS

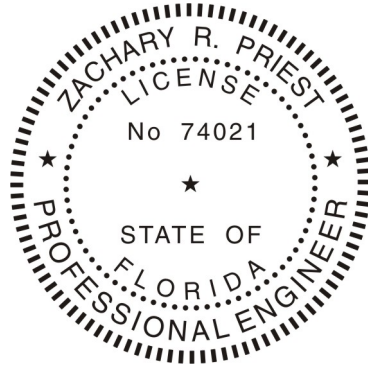
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1. Fire classification is not within the scope of this evaluation.
2. The roof deck and the roof deck attachment shall be designed by others to meet the minimum design loads established for components and cladding and in accordance with FBC requirements.
3. Foam plastic insulation shall be installed in accordance with the FBC Section 2603.4 and 2603.6.
4. In the HVHZ, fastener spacing for insulation attachment is determined using a Minimum Characteristic Force (F') of 275 lbf as demonstrated via testing to TAS 105. If the field tested fastener value is below 275 lbf, then insulation attachment shall not be acceptable.
5. In the HVHZ, fastener spacing for base sheets or membrane attachment shall meet the minimum fastener resistance value and the *MDP* for the specified roof system. It is permissible for a qualified professional to submit a revised fastener spacing utilizing the withdrawal resistance value obtained from TAS 105 testing and calculations performed in accordance with RAS 117 and/or RAS 137, when the fastener resistance is found less than required.
6. In the HVHZ, if mechanical attachment through the lightweight insulating concrete to the structural deck is proposed, a field fastener withdrawal test shall be conducted in compliance with TAS 105 to determine equivalent or increased attachment densities. Revised fastener densities shall be submitted utilizing the withdrawal resistance value obtained from TAS 105 testing and calculations performed in accordance with RAS 117 and/or RAS 137.
7. For assemblies containing mechanical attachment, the allowable uplift pressure for the selected roof system shall meet or exceed the minimum design loads as determined in accordance with the FBC Chapter 16. For perimeter and corner roof zones 2 and 3, the attachment density may be increased by a qualified design professional, as necessary, to meet the design pressure requirements in these areas. In the HVHZ, calculations shall be conducted in compliance with RAS 117 and/or RAS 137. Outside the HVHZ, commonly used standards include RAS 117, FM LPDS 1-29, or ANSI/SPRI WD-1.
8. Reroofing applications shall be examined in accordance with FBC Section 1511 outside of the HVHZ and FBC Section 1521 within the HVHZ. For mechanically fastened systems, a field withdrawal resistance test (TAS 105 in the HVHZ; ANSI/SPRI FX-1 or TAS 105 in the non-HVHZ) shall be conducted by a qualified professional to ensure the fastener meets the minimum design load requirements of the system. For adhered systems, a field uplift resistance test (TAS 124 in the HVHZ; ASTM E 907, FM LPDS 1-52, ANSI/SPRI IA-1, or TAS 124 in the non-HVHZ) shall be conducted to confirm conformance of the existing to the minimum design loads.
9. For assemblies containing fully adhered or ribbon adhered attachment, or where extrapolation of the roof system is not permitted, the *MDP* for the selected roof system shall meet or exceed the minimum design loads as determined in accordance with the FBC Chapter 16 without augmentation.
10. Installation of the evaluated products shall comply with this report, the FBC, and the manufacturer's published application instructions. Where discrepancies exist between these sources, the more restrictive and FBC compliant installation detail shall prevail.
11. The minimum roof slope shall be in accordance with the FBC.
12. The AHJ may require integrity flood testing (ASTM D 5957) or Electric Field Vector Mapping tests of all waterproofing systems prior to placement of the overburden material. Testing, if required, should be conducted by a qualified design professional. In the HVHZ, the waterproofing system shall be flood tested in accordance with Section 1519.16.6.
13. All products listed in this report shall be manufactured under a quality assurance programs in compliance with Rule 61G20-3.

## COMPLIANCE STATEMENT

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The products evaluated herein by Zachary R. Priest, P.E. have demonstrated compliance with the Florida Building Code, 6<sup>th</sup> Edition (2017) as evidenced in the referenced documents submitted by the named manufacturer.



Zachary R. Priest, P.E.  
Florida Registration No. 74021  
Organization No. ANE9641

## CERTIFICATION OF INDEPENDENCE

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CREEK Technical Services, LLC does not have, nor will it acquire, a financial interest in any company manufacturing or distributing products under this evaluation.

CREEK Technical Services, LLC is not owned, operated, or controlled by any company manufacturing or distributing products under this evaluation.

Zachary R. Priest, P.E. does not have, nor will acquire, a financial interest in any company manufacturing or distributing products under this evaluation.

Zachary R. Priest, P.E. does not have, nor will acquire, a financial interest in any other entity involved in the approval process of the product.

## APPENDICES

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- 1) [APPENDIX A](#) – Installation and Nomenclature (1 page)
- 2) [APPENDIX B](#) – Approved Assemblies (2 pages)

**INSTALLATION**

Note - Refer to the [APPROVED ASSEMBLIES](#) section of this report for specific installation details of a selected assembly.

Unless otherwise specified in this report the following installation details shall be met for the named products:

Surfaces must be thoroughly dry to ensure adhesion for all primers and coatings except those designed for moist surfaces. Remove dirt or dust that settles on surfaces before start of work or between coats. Sweeping or blowing may be sufficient, however, washing or damp-mopping is considered the best procedure. Clean substrate to remove all surface contaminants according to the manufacturer's current published application instructions. Refer to manufacturer's published installation instructions for additional application and flashing details.

Component	Product	Installation Detail
Sealer	GacoFlex E-5990	Applied at a minimum of 0.5 gal/100 ft <sup>2</sup> to areas vulnerable to a high vapor drive.
Primer	GacoFlex E-5320	Applied at a rate of 0.5 gal/100 ft <sup>2</sup> .
	GacoFlex E-5691	Applied at a rate of 0.33 gal/100 ft <sup>2</sup> .
Base Coat	GacoFlex UB-64	Applied at a rate of 1.25 gal/100 ft <sup>2</sup> .
	GacoFlex U-91	Applied at a rate of 1 gal/100 ft <sup>2</sup> .
Intermediate Coat	GacoFlex UB-64	Applied at a rate of 1 gal/100 ft <sup>2</sup> followed by a broadcast GacoShell over wet coating.
	GacoFlex U-91	Applied at a rate of 1 gal/100 ft <sup>2</sup> followed by a broadcast GacoShell over wet coating.
Top Coat	GacoFlex U-64	Applied at a rate of 1.25 gal/100 ft <sup>2</sup> fully encapsulating GacoShell granules.
	GacoFlex U-66	Applied at rate of 1gal/100 ft <sup>2</sup> fully encapsulating GacoShell granules.
	GacoFlex U-91	Applied at a rate of 0.75 gal/100 ft <sup>2</sup> fully encapsulating GacoShell granules.

**NOMENCLATURE**

The following naming conventions are utilized to specify products in the [APPROVED ASSEMBLIES](#) section of this report. Refer to the nomenclature below when deciphering the allowable products for use in the selected assembly. Installation requirements shall be as noted in the [APPROVED ASSEMBLIES](#) and [INSTALLATION](#) section of this report.

Name	Definition
<i>As Tested</i>	Information provided to the report user based on the as tested condition of the system
<i>Concrete Deck</i>	Designed by others in accordance with FBC requirements; Min. $f'_c = 2,500$ psi at 28 days
<i>E-5320</i>	GacoFlex E-5320
<i>E-5691</i>	GacoFlex E-5691
<i>E-5990</i>	GacoFlex E-5990
<i>MDP</i>	Maximum Design Pressure
<i>U-64</i>	GacoFlex U-64
<i>U-66</i>	GacoFlex U-66
<i>U-91</i>	GacoFlex U-91
<i>UB-64</i>	GacoFlex UB-64

**APPROVED ASSEMBLIES**

The following notes shall be observed when using the assembly tables below.

1. Allowable pressures (*MDP*) were calculated using a 2:1 margin of safety per FBC Section 1504.9.
2. Refer to [LIMITATIONS](#) and [NOMENCLATURE](#) sections of this evaluation when using the table(s) below.
3. Refer to [INSTALLATION](#) section of this report for installation detail when the information is not explicitly stated for the selected assembly.
4. As *Tested* information for roof deck construction is provided for information only. The addition of the *As Tested* deck information does not obviate the requirement for rational design of the roof deck and roof deck attachment in accordance with FBC requirements.

Assembly System Numbers and Definitions	
<a href="#">C-P-#</a>	Assemblies with Waterproofing over <i>Concrete Deck</i> for Pedestrian Decks (New or Existing)
<a href="#">C-V-#</a>	Assemblies with Waterproofing over <i>Concrete Deck</i> for Vehicular Decks (New or Existing)
<a href="#">C-VRT-#</a>	Assemblies with Waterproofing over <i>Concrete Deck</i> for Vehicular Decks with Ramps and Turn Areas (New or Existing)

Assemblies with Waterproofing over <i>Concrete Deck</i> for Pedestrian Decks (New or Existing)						
System Number	Sealer	Primer	Base Coat	Intermediate Coat	Top Coat	<i>MDP</i> (psf)
C-P-1	<i>E-5990</i>	<i>E-5320</i>	<i>UB-64</i>	<i>UB-64</i> with GacoShell 18/40 broadcast at a rate of 6-8 lbs./100 ft <sup>2</sup>	<i>U-66</i>	<b>-435 Lim. 9</b>
C-P-2	-	<i>E-5691</i>	<i>UB-64</i>	<i>UB-64</i> with GacoShell 18/40 broadcast at a rate of 6-8 lbs./100 ft <sup>2</sup>	<i>U-66</i>	<b>-435 Lim. 9</b>
C-P-3	<i>E-5990</i>	<i>E-5320</i>	<i>U-91</i>	<i>U-91</i> with GacoShell 18/40 broadcast at a rate of 6-8 lbs./100 ft <sup>2</sup>	<i>U-91</i>	<b>-502.5 Lim. 9</b>
C-P-4	-	<i>E-5691</i>	<i>U-91</i>	<i>U-91</i> with GacoShell 18/40 broadcast at a rate of 6-8 lbs./100 ft <sup>2</sup>	<i>U-91</i>	<b>-502.5 Lim. 9</b>

Assemblies with Waterproofing over <i>Concrete Deck</i> for Vehicular Decks (New or Existing)						
System Number	Sealer	Primer	Base Coat	Intermediate Coat	Top Coat	<i>MDP</i> (psf)
C-V-1	<i>E-5990</i>	<i>E-5320</i>	<i>UB-64</i>	<i>UB-64</i> with GacoShell 12/20 broadcast at a rate of 3-5 lbs./100 ft <sup>2</sup>	<i>U-64</i>	<b>-437.5 Lim. 9</b>
C-V-2	-	<i>E-5691</i>	<i>UB-64</i>	<i>UB-64</i> with GacoShell 12/20 broadcast at a rate of 3-5 lbs./100 ft <sup>2</sup>	<i>U-64</i>	<b>-437.5 Lim. 9</b>
C-V-3	<i>E-5990</i>	<i>E-5320</i>	<i>U-91</i>	<i>U-91</i> with GacoShell 12/20 broadcast at a rate of 4-6 lbs./100 ft <sup>2</sup>	<i>U-91</i>	<b>-502.5 Lim. 9</b>
C-V-4	-	<i>E-5691</i>	<i>U-91</i>	<i>U-91</i> with GacoShell 12/20 broadcast at a rate of 4-6 lbs./100 ft <sup>2</sup>	<i>U-91</i>	<b>-502.5 Lim. 9</b>

<b>Assemblies with Waterproofing over Concrete Deck for Vehicular Decks with Ramps and Turn Areas (New or Existing)</b>						
System Number	Sealer	Primer	Base Coat	Intermediate Coat	Top Coat	MDP (psf)
C-VRT-1	E-5990	E-5320	UB-64	1 <sup>st</sup> Coat: UB-64 applied to the RAMP AND TURN AREAS ONLY with GacoShell 12/20 broadcast at a rate of 4-6 lbs./100 ft <sup>2</sup> ; 2 <sup>nd</sup> Coat: UB-64 applied to ENTIRE DECK with GacoShell 12/20 broadcast EXCEPT IN THE RAMP AND TURN AREAS at a rate of 3-5 lbs./100 ft <sup>2</sup>	U-64	<b>-437.5</b> <b>Lim. 9</b>
C-VRT-2	-	E-5691	UB-64	1 <sup>st</sup> Coat: UB-64 applied to the RAMP AND TURN AREAS ONLY with GacoShell 12/20 broadcast at a rate of 4-6 lbs./100 ft <sup>2</sup> ; 2 <sup>nd</sup> Coat: UB-64 applied to ENTIRE DECK with GacoShell 12/20 broadcast EXCEPT IN THE RAMP AND TURN AREAS at a rate of 3-5 lbs./100 ft <sup>2</sup>	U-64	<b>-437.5</b> <b>Lim. 9</b>
C-VRT-3	E-5990	E-5320	U-91	1 <sup>st</sup> Coat: U-91 applied to the RAMP AND TURN AREAS ONLY with GacoShell 12/20 broadcast at a rate of 4-6 lbs./100 ft <sup>2</sup> ; 2 <sup>nd</sup> Coat: U-91 applied to ENTIRE DECK with GacoShell 12/20 broadcast EXCEPT IN THE RAMP AND TURN AREAS at a rate of 3-5 lbs./100 ft <sup>2</sup>	U-91	<b>-502.5</b> <b>Lim. 9</b>
C-VRT-4	-	E-5691	U-91	1 <sup>st</sup> Coat: U-91 applied to the RAMP AND TURN AREAS ONLY with GacoShell 12/20 broadcast at a rate of 4-6 lbs./100 ft <sup>2</sup> ; 2 <sup>nd</sup> Coat: U-91 applied to ENTIRE DECK with GacoShell 12/20 broadcast EXCEPT IN THE RAMP AND TURN AREAS at a rate of 3-5 lbs./100 ft <sup>2</sup>	U-91	<b>-502.5</b> <b>Lim. 9</b>

**END OF REPORT**