Code Compliance Research Report
CCRR-0534

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DIVISION: 07 00 00 – Thermal and Moisture Protection
Section: 07 56 00 Fluid-Applied Roofing

REPORT HOLDER:
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REPORT SUBJECT:
Polyglass Roof Coating Systems

1.0 SCOPE OF EVALUATION

1.1 This Research Report addresses compliance with the following Codes:

- 2024, 2021 and 2018 *International Building Code®* (IBC)
- 2024, 2021 and 2018 *International Residential Code®* (IRC)
- 2023 *Florida Building Code* (FBC) (including High Velocity Hurricane Zone) (See Section 9)

NOTE: This report references the most recent Code editions noted. Section numbers in earlier editions may differ.

1.2 The Polyglass roof coating systems recognized in this report have been evaluated for the following properties (see Table 1):

- Physical properties
- Wind resistance
- Impact resistance
- Fire classification
- Thermal resistance (*R*-value)

1.3 The Polyglass roof coating systems recognized in this report have been evaluated for use as Class A roof assemblies (see Table 1).

2.0 STATEMENT OF COMPLIANCE

The Polyglass roof coating systems recognized in this report comply with the Codes listed in Section 1.1, for the properties stated in Section 1.2, and uses stated in Section 1.3, when installed as described in this report, including the Conditions of Use stated in Section 6.0.

3.0 DESCRIPTION

3.1 Polyglass Roof Coating System: The Polyglass roof coating system is a sprayed polyurethane foam roofing system complying with IBC Section 1507.13 and IRC Section R905.13. The system consists of acrylic roof coatings applied over spray-applied polyurethane foam plastic insulation. The system may be applied over combustible and noncombustible roof decks as described in Table 3.

3.2 Polyglass Roof Coatings: The roof coatings are water-based elastomeric coatings complying with ASTM D6083. The coatings are supplied in 4.75-gallon pails, 50-gallon drums and 275-gallon totes. The coatings have a shelf life of 18 months, when stored in unopened containers at temperatures between 40 and 100°F. The coatings recognized in this report include:
PolyBrite 70
PG700
PolyBrite 71
PolyBrite 71HS
PolyBrite 75
PolyBrite 35 CA
PolyBrite 60-FC

3.3 Sprayed Polyurethane Foam Insulation: PolyPUF H foam insulation consists of two components, "A" (isocyanate) and "B" (polyol resin), which are intended to be interacted in a one-to-one ratio, by volume, and spray-applied to form a closed cell rigid foam plastic roof covering/insulation material with a nominal density of 2.5, 2.7 or 3.0 pcf. The A and B components are available in 55-gallon drums and have a shelf life of 12 and 6 months respectively, when stored at temperatures between 50°F and 80°F.

4.0 PERFORMANCE CHARACTERISTICS

4.1 Physical Properties: The Polyglass roof coatings comply with ASTM D6083. PolyPUF H foam insulation complies with ASTM C1029, Type III or IV.

4.2 Wind Resistance: The wind resistance of the roofing system is limited to the wind resistance for the roof deck and structural framing to which it is applied.

4.3 Weathering: The roof coatings demonstrated physical integrity based on 2000 hours of weathering conducted in accordance with ASTM G155.

4.4 Fire Classification: The Polyglass roof coating systems have a Class A fire classification, when installed in accordance with this report. See Table 3.

4.5 Impact Resistance: When installed in accordance with this report, the Polyglass roof coating systems comply with FM 4470, Resistance to Foot Traffic Test, as referenced in IBC Section 1504.7.

4.6 Thermal Resistance: The Poly PUPH foam insulation has a thermal resistance (*R*-value) as shown in Table 2.

5.0 INSTALLATION

5.1 General: The materials must be installed in accordance with the Polyglass USA, Inc., published installation instructions, the applicable Code, and this Research Report. A copy of the manufacturer's instructions must be available on the jobsite during installation.

5.2 Substrates:

5.2.1 Combustible Substrates: Combustible substrates must be minimum 15/32 inch thick, code-complying, exterior grade or Exposure 1 plywood. All plywood edges must be supported by blocking or have tongue and groove joints as required by IBC Section 2603.4.1.5.

5.2.2 Noncombustible Substrates:

5.2.2.1 Cementitious Substrates: Structural concrete substrates must have a minimum compressive strength of 2500 psi.

5.2.2.2 Metal Substrates: Metal substrates must be a minimum No. 22 gauge galvanized steel [0.030 inch (0.76mm)] substrate.

5.3 Roof Slope: Minimum slope must be 1/4:12 (2 percent) and the maximum roof slope is as specified in Table 3.

5.4 Foam Application: The PolyPUF H roofing foam is applied in a 1:1 ratio by volume of the A and B components using foam spraying equipment recommended by Polyglass USA, Inc. Application of the spray foam must be performed when the substrate temperature is at least 50°F, the ambient temperature is at least 50°F, and the wind speed is equal to or less than 15 miles per hour. The spray foam must not be applied to wet or damp substrates, or when dew, condensation, precipitation, or freezing temperatures are expected prior to completion of the foam and coating application.

The roofing foam must be applied in uniform passes ranging from 1/2 to 1-1/2 inches, to reach the desired thickness as noted in Table 3. The total finished thickness must be achieved within the same day. The finished surface of the foam must be smooth and free of voids, pinholes, and crevices.

5.5 Coating Application: The surface of the foam plastic must be dry and free of all damaged foam, dirt, and foreign materials before application of the coating. If the insulation surface is damaged to the point where cracks, voids, or large depressions appear, additional insulation must be applied to create a satisfactory surface. After the insulation has developed sufficient strength to support foot traffic, but within 24 hours, the coating must be brush, roller, or spray-applied at the application rates noted in Table 3. The ambient temperature must be at least 50°F during coating application and above 32°F for the 24-hour period after application. The coating must not be applied when dew, condensation, precipitation, or freezing temperatures are anticipated prior to completion of the coating application.

5.6 Reroofing: Prior to installation of new roof coverings, inspection in accordance with IBC Section 1512 or IRC R908, as applicable, and approval from the Code Official having jurisdiction are required.

6.0 CONDITIONS OF USE

6.1 Installation must comply with this Research Report, the manufacturer's published installation instructions, and the applicable Code. In the event of a conflict, this report governs.

6.2 The Polyglass roof coating materials recognized in this report are manufactured under a quality control program with inspections by Intertek Testing Services NA, Inc.

7.0 SUPPORTING EVIDENCE

7.1 Reports of tests in accordance with ASTM D6083, ASTM C1029, ASTM G155, UL 1897, FM 4470 (Section 5.5) and ASTM E108.

7.2 Intertek Listing Report "Polyglass USA Inc. – Roof Coating Systems", on the Intertek Directory of Building Products.

8.0 IDENTIFICATION

The Polyglass roof coating system components are identified with the report holder's name (Polyglass USA, Inc.), the product name, the Intertek Mark as shown below, the Intertek Control Number and the Code Compliance Research Report number (CCRR-0534).

9.0 FLORIDA BUILDING CODE

The PolyBrite 70, PG700, PolyBrite 71, PolyBrite 71 HS, PolyBrite 75, PolyBrite 35 CA and PolyBrite 60-FC coatings, described in Sections 2.0 through 7.0 of this Research Report, comply with the *Florida Building Code – Building* and *Residential,* outside of the High Velocity Hurricane Zone, for the editions indicated in Section 1.1 of this report. The allowable wind resistance is as stated in Section 4.2 of this report.

The PolyBrite 70, PG700, PolyBrite 75 and PolyBrite 35 CA coatings, described in Sections 2.0 through 7.0 of this Research Report, comply with the *Florida Building Code – Building* and *Residential*, including use in the High Velocity Hurricane Zone, for the editions indicated in Section 1.1 of this report. The allowable wind resistance is as shown in Table 4.

Intertek is an approved evaluation entity and quality assurance entity pursuant to Florida Statute 553.842 – *Product Evaluation and Approval*.

10.0 CODE COMPLIANCE RESEARCH REPORT USE

10.1 Approval of building products and/or materials can only be granted by a building official having legal authority in the specific jurisdiction where approval is sought.

10.2 Code Compliance Research Reports shall not be used in any manner that implies an endorsement of the product by Intertek.

10.3 Reference to the https://bpdirectory.intertek.com is recommended to ascertain the current version and status of this report.

TABLE 1 - PROPERTIES EVALUATED

PROPERTY	2024 IBC SECTION	2024 IRC SECTION	2023 FBC – BUILDING SECTION	2023 FBC – RESIDENTIAL SECTION
Wind resistance	1504.4	R905.1	1504.3	R905.1
Physical properties	1507.13	R905.13	1507.14	R905.14
Impact resistance	1504.7	Not applicable	1504.7	Not applicable
Fire classification	1505	R902	1505	R902
High Velocity Hurricane Zone	Not applicable	Not applicable	1519 1520 1523	R4402

TABLE 2 – THERMAL RESISTANCE (*R*-VALUE) OF PolyPUF H ROOFING FOAM

Thickness (inch)	*R*-value @ Nominal Density of 3.0 lb/ft³ (°F·ft²·h/Btu)[1,2,3]
1	6.9
1.5	10
2	13
3.5	23
5.5	37
7.5	50
10	66

[1] *R*-values are based on tested K-values at 1- and 3.5-inch thicknesses
[2] *R*-values greater than 10 are rounded to the nearest whole number
[3] To determine R values for thickness not listed:
a. Between 1 inch and 3.5 inches can be determined through linear interpolation or
b. greater than 3.5 inches can be calculated based on R= 6.65/inch

TABLE 3 – FIRE CLASSIFICATION – COATED FOAM ROOF ASSEMBLIES

FIRE CLASSIFICATION	SUBSTRATE	MAXIMUM ROOF SLOPE	FOAM PLASTIC INSULATION - PolyPUF H	COATING		TOP SURFACING
			Maximum Thickness (in.)	Designation	Application Rate	
Class A	Non-combustible	1-1/2:12	10	PolyBrite 60-FC	Two coats at 1-1/2 gallons per 100 ft² each	Surfacing optional
Class A	Combustible deck, min. 15/32-in. wood structural panel, covered with a min. 1/4-in. DensDeck or SSECUROCK Roof Board or 1/2-in. gypsum board	1-1/2:12	10	PolyBrite 60-FC	Two coats at 1-1/2 gallons per 100 ft² each	Surfacing optional
Class A	Non-combustible	1:12	10	PolyBrite 60-FC PolyBrite 70 PG700 PolyBrite 71 PolyBrite 71 HS PolyBrite 75 PolyBrite 35 CA	Two coats at 1-1/2 gallons per 100 ft² each	Surfacing optional
Class A	Combustible deck, min. 15/32-in. wood structural panel, covered with a min. 1/4-in. DensDeck or SSECUROCK Roof Board or 1/2-in. gypsum board	1-1/2:12	10	PolyBrite 60-FC PolyBrite 70 PG700 PolyBrite 71 PolyBrite 71HS PolyBrite 75 PolyBrite 35 CA	Two coats at 1-1/2 gallons per 100 ft² each	Surfacing optional

NOTE 1: Joints in the noncombustible substrate must be staggered from joints in the combustible deck and must be aligned with framing members.

TABLE 4 – ALLOWABLE WIND LOADS FOR FLORIDA BUILDING CODE

Assembly No.	Roof Deck	Insulation	Coating	Allowable Negative Wind Resistance (psf)
1	Steel deck – 33 ksi, 22 ga., purlin support spacing of 72 in. oc; deck fastened with ITW #12 HWH Teks 5 with 3/4-in.washers, at 6 in. oc; side laps fastened with ITW #12 HWH Teks 1 at 24 in. oc	1.5-in ACFoam-II, ACFoam-III Polytherm or PolythermG, mechanically attached[1] followed by 1 to 6 in. PolyPUF H 3.0, spray applied	PolyBrite 70, PG700, PolyBrite 75 or PolyBrite 35 CA: Two coats at 1-1/2 gal./100 ft^2 each	-75 psf
2	Steel deck – 22 ga.	1 to 6 in. PolyPUF H, spray applied		-225 psf
3	Structural concrete (new)	1 to 6 in. PolyPUF H. spray applied		-495 psf

[1]48 x 96 in. by 1.5 in thick ACFoam-II, ACFoam-III, Polytherm, or Polytherm G mechanically attached with Altenloh, Brinck & Co., US, Inc. Trufast #12 DP, Trufast #14 HD, or Trufast #15 EHD fasteners with Trufast 3" Metal Insulation Plate or Trufast 3" Recessed Metal Plate, SFS Group USA, Inc. Dekfast DF-#12-PH3, Dekfast DF-#14-PH3, or Dekfast DF-#15-PH3 fasteners with Dekfast PLT-R-3, OMG #12 Standard Roofgrip, #14 Roofgrip, or #15 Roofgrip fasteners with 3 in. Ribbed Galvalume Plate (Flat), or Accutrac Flat Bottom plates applied at 2 ft^2 contributory area (16 fasteners per board)
OR
48 x 96 in. by 1.5 in. thick ACFoam-III or Polytherm G mechanically attached with SFS Group USA, Inc. Dekfast DF-#12-PH3, Dekfast DF-#14-PH3, or Dekfast DF-#15-PH3 fasteners with Dekfast PLT-H-2-7/8 or Polyglass #12 Polygrip, #14 Polygrip, or #15 Polygrip fasteners with 2-7/8 in. Polygrip Hex Plate (ISO) applied at 2ft^2 contributory area (16 fasteners per board)