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ENGINEER

EVALUATE

TEST

CONSULT

**P.E. EVALUATION REPORT (PEER)
FOR HURRICANE SHELTER PERFORMANCE**

Polyglass USA, Inc.

1111 West Newport Center Drive
Deerfield Beach, FL 33442
(954) 233-1330

PEER-PLYG-003.A

Date of Issuance: 05/23/2023

SCOPE:

The documentation submitted has been reviewed by Robert Nieminen, P.E. for use of the product under [2020 ICC 500](#) ICC/NSSA Standard for the Design and Construction of Storm Shelters.

DESCRIPTION: Elastoflex and Polyflex Modified Bitumen Roof Systems for use on Hurricane Shelters

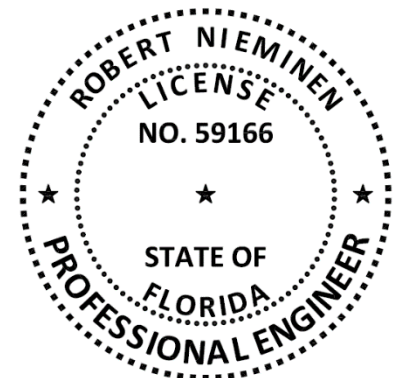
LABELING: Labeling shall be in accordance with the requirements of the Accredited Quality Assurance Agency noted herein.

CONTINUED COMPLIANCE: This PEER 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 PEERs 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).

ADVERTISEMENT: "NEMO P.E. Evaluated" may be displayed in advertising literature. If any portion of the PEER is displayed, then it shall be done in its entirety.

INSPECTION: Upon request, a copy of this entire PEER 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.

Prepared by:



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 PEERs are being issued.
4. This is an evaluation of specific products to a specific standard. Neither NEMO ETC, LLC nor Robert Nieminen, P.E. are, in any way, the Designer of Record for any project on which this PEER, or previous versions thereof, is/was used for permitting or design guidance unless retained specifically for that purpose.

ROOFING SYSTEMS EVALUATION:
1. SCOPE:

NEMO Product Category: Modified Bitumen

NEMO Format: Roll Goods

Compliance Statement: **Elastoflex and Polyflex Modified Bitumen Roof Systems**, as produced by **Polyglass USA, Inc.**, have demonstrated compliance with [2020 ICC 500](#) ICC/NSSA Standard for the Design and Construction of Storm Shelters requirements for use on hurricane shelters. Compliance is subject to the [Installation Requirements](#) and [Limitations of Use](#) set forth herein.

2. STANDARDS:

<u>CODE</u>	<u>SECTION</u>	<u>PROPERTY</u>	<u>STANDARD</u>	<u>YEAR</u>
2021 International Building Code®	202, 423.1	Impact resistance	ICC 500	2020
2020 Florida Building Code	202, 423.1, 453.25.4	Impact resistance	ICC 500	2020

3. REFERENCES:

<u>ENTITY</u>	<u>EXAMINATION</u>	<u>REFERENCE</u>	<u>DATE</u>
NEMO etc. (IAS TL199)	ASTM E1886 per ICC-500	4g-PLYG-23-LSIMP-01	05/23/2023
UL, LLC. (IAS AA-668)	Quality Assurance	Service Confirmation	08/16/2022

4. PRODUCT DESCRIPTION:

- 4.1 This PEER covers **Elastoflex and Polyflex Modified Bitumen Roof Systems** installed in accordance with **Polyglass'** published installation instructions, subject to the [Limitations of Use](#) herein.

TABLE 1: EVALUATED MEMBRANES

TYPE	PRODUCT	MATERIAL STANDARD			PLANT(s)
		REFERENCE	TYPE	GRADE	
BASE PLY AND PLY MEMBRANES	Elastoflex SA V Plus	ASTM D6163	I	S	Winter Haven, FL
	Elastoflex S6	ASTM D6164	I	S	Winter Haven, FL
	Elastoflex S6 HP	ASTM D6164	II	S	Fernley, NV
	Polyflex	ASTM D6222	I	S	Winter Haven, FL
CAP PLY MEMBRANES	Elastoflex S6 G FR	ASTM D6164	I	G	Winter Haven, FL
	Polyfresko G SBS FR	ASTM D6164	I	G	Fernley, NV
	Polyflex G FR	ASTM D6222	I	G	Winter Haven, FL
	Polyfresko G FR	ASTM D6222	I	G	Fernley, NV

5. LIMITATIONS:

- 5.1 This is an evaluation of specific products to a specific standard. Neither NEMO ETC, LLC nor Robert Nieminen, P.E. are, in any way, the Designer of Record for any project on which this PEER, or previous versions thereof, is/was used for permitting or design guidance. NEMO PEERs are not to be construed as representing any attributes not specifically listed, nor are NEMO PEERs to be construed as an endorsement of the subject of the report or a recommendation for its use. There is no warranty by Robert Nieminen, P.E. or NEMO ETC, LLC, express or implied, as to any finding or other matter in this report, or as to any product covered by the report.
- 5.2 This PEER covers use of the subject product on Hurricane Storm Shelters, and does not purport to evaluate for use on Tornado Storm Shelters or Emergency Shelters.
- 5.3 This PEER does not include evaluation of wind resistance. Refer to research reports or certification listings from approved sources, such as Florida Product Approval P.E. Evaluation Reports, Miami-Dade NOAs, FM RoofNav Listings or UL TGIK Listings.
- 5.3.1 Roof assemblies shall be designed using design wind speeds set forth in ICC-500, and be tested to minimum 1.2 times design pressure.
- 5.4 This PEER does not include evaluation of fire classification. Refer to UL [TGFU.R14571](#) certification listings for external fire classifications.
- 5.5 Refer to [Table 3](#) for systems having met ICC 500 impact resistance requirements for use on Hurricane Storm Shelters.
- 5.6 The products in [Section 4](#) are produced under an in-house quality control program which is under surveillance by a third-party quality assurance entity in accordance with [IBC Section 104.4 and 110.4](#). For components listed in [Table 3](#) produced by a Manufacturer other than the report holder, refer to the approvals held by the component manufacturer.

6. INSTALLATION:

- 6.1 **Elastoflex and Polyflex Modified Bitumen Roof Systems for use on Hurricane Shelters** shall be installed in accordance with **Polyglass'** published installation instructions, subject to the [Limitations of Use](#) herein.
- 6.1.1 Unless otherwise noted, sub-assembly components may be adhered or mechanically attached.

TABLE 2: MEMBRANE / ADHESIVE COMBINATIONS			
REFERENCE	LAYER	MATERIALS	APPLICATION
APP-SA	Cap Ply:	Polyflex SA P FR	Self-Adhering
APP-TA	Base Ply or Ply:	Polyflex	Torch-Applied, Full Bond
	Cap Ply:	Polyflex G FR or Polyfresko G FR	
SBS-AA	Base Ply or Ply:	Elastoflex S6 or Elastoflex S6 HP	Asphalt-Applied at 20-40 lbs/square
	Cap Ply:	Elastoflex S6 G FR	
SBS-SA	Base Ply:	Elastoflex SA V Plus	Self-Adhering
SBS-TA	Base Ply or Ply:	Elastoflex S6 or Elastoflex S6 HP	Torch-Applied, Full Bond
	Cap Ply:	Elastoflex S6 G FR or Polyfresko G SBS FR	

TABLE 3: IMPACT RESISTANT ASSEMBLIES PER ICC-500

SHELTER TYPE:		Hurricane						
SURFACE TYPE:		Horizontal (roof)						
Missile size:		9 lb 2x4						
Design Wind Speed:		250 mph						
Missile speed:		0.10 x design wind speed = 25 mph						
Criteria #1:		No missile penetration through deck, per ICC-500						
Criteria #2:		No missile penetration through roof cover						
SYSTEM NO.	DECK	INSULATION (NOTE 6.1.1)	COVERBOARD (NOTE 6.1.1)	ROOF COVER (TABLE 2)			CRITERIA	
				BASE PLY	PLY	CAP PLY	#1 (DECK PENETRATION)	#2 (ROOF COVER PENETRATION)
1	Min. 22 ga., Type B, Grade 40 steel at min. 6 ft span or structural concrete	Min. 1.5-inch Polytherm, Polytherm G, Polytherm-H, Polytherm CG, ACFoam II, ACFoam III, H-Shield or H-Shield CG	Min. 0.5-inch G-P Gypsum "DensDeck Prime" or USG "SECUROCK Gypsum-Fiber Roof Board"	APP-TA	(Optional) APP-TA	APP-TA	Pass	Pass
2	Min. 22 ga., Type B, Grade 40 steel at min. 6 ft span or structural concrete	Min. 1.5-inch Polytherm, Polytherm G, Polytherm-H, Polytherm CG, ACFoam II, ACFoam III, H-Shield or H-Shield CG	Min. 0.5-inch G-P Gypsum "DensDeck Prime" or USG "SECUROCK Gypsum-Fiber Roof Board"	SBS-AA or SBS-TA	(Optional) SBS-AA or SBS-TA	SBS-AA or SBS-TA	Pass	Pass
3	Min. 22 ga., Type B, Grade 40 steel at min. 6 ft span or structural concrete	Min. 1.5-inch Polytherm, Polytherm G, Polytherm-H, Polytherm CG, ACFoam II, ACFoam III, H-Shield or H-Shield CG	Min. 0.5-inch G-P Gypsum "DensDeck Prime" or USG "SECUROCK Gypsum-Fiber Roof Board"	SBS-SA	None	APP-SA or APP-TA	Pass	Fail

7. BUILDING PERMIT REQUIREMENTS:

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

8. MANUFACTURING PLANTS:

Refer to [Section 4](#) herein for products and production locations having met codified material standards.

- END OF PEER -