

DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES (RER) BOARD AND CODE ADMINISTRATION DIVISION MIAMI-DADE COUNTY PRODUCT CONTROL SECTION 11805 SW 26 Street, Room 208 Miami, Florida 33175-2474 T (786) 315-2590 F (786) 315-2599

www.miamidade.gov/economy

# **NOTICE OF ACCEPTANCE (NOA)**

Exolon Group Inc. 203 N LaSalle Street-Suite 2550 Chicago, IL 60601

### SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed and accepted by Miami-Dade County RER- Product Control Section to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Section (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. RER reserves the right to revoke this acceptance if it is determined by Miami-Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein and has been designed to comply with the High Velocity Hurricane Zone of the Florida Building Code.

# **DESCRIPTION: 16MM Polycarbonate Storm Panel Shutter**

**APPROVAL DOCUMENT:** Drawing No. **EXN0001**, titled "**16MM Polycarbonate Storm Panels-HVHZ**", sheets 1 through 3 of 3, prepared by PTC Product Design Group, LLC, dated January 13, 2023, last revision #A dated 06/18/24, signed and sealed by Robert J. Amoruso, P.E., on 06/18/24, bearing the Miami-Dade County Product Control Revision stamp with the Notice of Acceptance number and the expiration date by the Miami-Dade County Product Control Section.

# MISSILE IMPACT RATING: Large and Small Missile Impact Resistant

**LABELING:** Each panel shall bear a permanent label with the manufacturer's name or logo, city, state, the following statement: "Miami-Dade County Product Control Approved", and NOA number, per TAS-201, TAS-202, and TAS-203, unless otherwise noted herein.

**RENEWAL** of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

**TERMINATION** of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

**ADVERTISEMENT:** The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

**INSPECTION:** A copy of this entire NOA 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 NOA revises NOA #23-0615.01 and consists of this page 1, evidence submitted pages E-1 and E-2 as well as approval document mentioned above.

The submitted documentation was reviewed by Helmy A. Makar, P.E., M.S.



Hel A. M. In 06/27/24

NOA No. 23-1207.05 Expiration Date: 09/07/2028 Approval Date: 06/27/2024 Page 1

### NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

# 1. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL # 23-0615.01

#### A. DRAWINGS

1. Drawing No. **EXN0001**, titled "**16MM Polycarbonate Storm Panels-HVHZ**", sheets 1 through 3 of 3, prepared by PTC Product Design Group, LLC, dated January 13, 2023, signed and sealed by Robert J. Amoruso, P.E., on August 02, 2023.

#### **B. TESTS**

- 1. Test reports on 1)Uniform Static Air Pressure Test, Loading per TAS 202-94
  - 2) Cyclic Wind Pressure Loading per TAS 203-94

3) Large Missile Impact Test per TAS 201-94

along with marked-up drawings and installation diagram of a polycarbonate Storm Panel Shutter, prepared by QAI Laboratories, Test Report No. 13219, dated 10/21/2022, signed & sealed by Idalmis Ortega, P.E., on 11/29/2022.

- 2. Test reports on 1) Self-Ignition Temp. per ASTM D1929
  - 2) Rate of Burning per ASTM D635

3) Smoke Density per ASTM D2843

along with marked-up drawings and installation diagram of a polycarbonate Storm Panel Shutter, prepared by QAI Laboratories, Test Report No. 13190, dated 11/11/2022, signed & sealed by Idalmis Ortega, P.E., on 11/14/2022.

3. Test reports on 1) Tensile test per ASTM D638 along with marked-up drawings and installation diagram of a polycarbonate Storm Panel Shutter, prepared by QAI Laboratories, Test Report No. 13189, dated 03/30/2023, signed & sealed by Idalmis Ortega, P.E., on 04/04/2023.

# C. CALCULATIONS

1. Comparative Analysis and Anchor Calculations, 11 sheets, prepared by PTC Product Design Group, LLC, dated January 13, 2023, signed and sealed by Robert J. Amoruso, P.E., on March 27, 2023.

#### **D. QUALITY ASSURANCE**

1. By Miami-Dade County Department of Regulatory and Economic Resources.

# E. MATERIAL CERTIFICATIONS

1. None.

# F. STATEMENTS

1. Florida Building Code, 2020 Edition Compliance Letter prepared by PTC Product Design Group, LLC, dated March 29, 2023, signed and sealed by Robert J. Amoruso, P.E., on August 02, 2023.

Helmy A. Makar, P.E., M.S. Product Control Section Supervisor NOA No. 23-1207.05 Expiration Date: 09/07/2028 Approval Date: 06/27/2024

#### **NOTICE OF ACCEPTANCE:** EVIDENCE SUBMITTED

#### 2. NEW EVIDENCE SUBMITTED

### A. DRAWINGS

1. Drawing No. **EXN0001**, titled "**16MM Polycarbonate Storm Panels-HVHZ**", sheets 1 through 3 of 3, prepared by PTC Product Design Group, LLC, dated January 13, 2023, last revision #A dated 06/18/24, signed and sealed by Robert J. Amoruso, P.E., on 06/18/24.

#### B. TESTS

1. None.

#### C. CALCULATIONS

1. None.

#### D. QUALITY ASSURANCE

1. By Miami-Dade County Department of Regulatory and Economic Resources.

#### E. MATERIAL CERTIFICATIONS

1. None.

#### F. STATEMENTS

1. Florida Building Code, 2023 Edition Compliance Letter prepared by PTC Product Design Group, LLC, dated June 18, 2024, signed and sealed by Robert J. Amoruso, P.E., on June 18, 2024.

Helmy A. Makar, P.E., M.S. Product Control Section Supervisor NOA No. 23-1207.05 Expiration Date: 09/07/2028 Approval Date: 06/27/2024

#### **GENERAL NOTES:**

- THE PRODUCT SHOWN HEREIN IS DESIGNED TO COMPLY WITH THE 8TH EDITION (2023) FLORIDA BUILDING CODE INCLUDING (HVHZ) HIGH VELOCITY HURRICANE ZONE.
- THE DESIGN BASIS FOR THE PRODUCT SHOWN HEREIN IS DERIVED FROM 2. TEST REPORT 13219, DATED 10/21/22 BY QAI LABORATORIES.
- PANEL FRAME MATERIAL: EXOLON MULTI UV 5X/16-25 POLYCARBONATE 16MM 3. (5/8").
- MAXIMUM PANEL SIZE: 48" X 96". 4.
- PANELS MAY BE MOUNTED VERTICALLY (AS SHOWN ON THIS SHEET) OR 5 HORIZONTALLY.
- DETAILS A, B, C AND D ON SHEET 2 DEPICT TYPICAL CONCRETE / MASONRY 6. AND WOOD ANCHORAGE CONNECTIONS, RESPECTIVELY THESE DETAILS MAY BE USED INTERCHANGEABLY AS FIELD CONDITIONS DICTATE.
- 7. DETAILS A, B, C AND D ON SHEET 2 DEPICT INSTALLATION USING THE PANELMATE OR STORM GUARD TYPE INSTALLATION ANCHOR. PANELMATE INSERT IS ALSO APPROVED FOR USE. SEE INSTALLATION ANCHOR SCHEDULE AND NOTES ON SHEET 3.
- A MINIMUM REQUIRED SEPARATION OF 6.21 INCHES BETWEEN 8 POLYCARBONATE STORM PANELS AND FENESTRATION GLAZING OR FRAMING MEMBERS IS REQUIRED.
- 9. CONCRETE / MASONRY OPENING AND 2X BUCKS ARE TO BE DESIGNED AND ANCHORED TO PROPERLY TRANSFER ALL LOADS TO STRUCTURE. CONCRETE / MASONRY OPENING AND 2X BUCKS ARE THE RESPONSIBILITY OF THE ARCHITECT OR ENGINEER OF RECORD.
- 10. PRODUCTS SHOWN HEREIN ARE APPROVED FOR USE WHERE LARGE MISSILE IMPACT RESISTANCE IS REQUIRED.
- 11. SEE DESIGN PRESSURE RATINGS ON THIS SHEET.
- 12. ALL INSTALLATION ANCHORS AND ASSOCIATE HARDWARE MUST BE MADE OF CORROSION RESISTANT MATERIAL OR HAVE A CORROSION RESISTANT COATING. DISSIMILAR METALS OR MATERIALS IN CONTACT WITH PRESSURE TREATED WOOD MUST BE PROTECTED TO PREVENT REACTION.
- 13. PANELS SHALL BE PERMANENTLY LABELED WITH A MINIMUM OF ONE LABEL PER PANEL CONTAINING THE FOLLOWING:

EXOLON GROUP, STRADA DI VAGNO 15/A - 05035, NERA MONTORO (TR), ITALY MIAMI-DADE NOTICE OF ACCEPTANCE (NOA) NUMBER TAS 201-94, TAS 202-94 AND TAS 203-94

#### INSTALLATION NOTES:

- ONE (1) ANCHOR IS REQUIRED AT EACH INSTALLATION ANCHOR LOCATION SHOWN.
- SPACE INSTALLATION ANCHORS 6" FROM EACH CORNER AND 12" O.C. 2. MAXIMUM, MINIMUM ANCHOR SPACING OF 6".
- FOR CONCRETE / MASONRY INSTALLATION USE 1/4" ELCO PANELMATE OR 3 ITW TAPCON SG W/ WASHERED WING NUTS WITH 1/4" x 1 1/2" O.D. STEEL FLAT WASHER AND 1/4" x 1 1/2" O.D. EDPM FLAT WASHER, MINIMUM EMBEDMENT AND EDGE DISTANCE AS SHOWN IN TABLE ON SHEET 3, 1/4" ELCO PANELMATE INSERT ALSO APPROVED (SEE SHEET 3).
- 4 FOR WOOD FRAMING INSTALLATION USE 1/4" ELCO PANELMATE W/ WASHERED WING NUTS, 1/4" x 1 1/2" O.D. STEEL FLAT WASHER AND 1/4" x 1 1/2" O.D. EDPM FLAT WASHER. MINIMUM EMBEDMENT AND EDGE DISTANCE AS SHOWN IN TABLE ON SHEET 3. 1/4" ELCO PANELMATE INSERTS ALSO APPROVED (SEE SHEET 3).

# **EXOLON GROUP 16MM POLYCARBONTE STORM PANELS - HVHZ** INSTALLATION ANCHORAGE DETAILS





# INSTALLATION ANCHOR TABLE OF MINIMUM EMBEDMENTS AND EDGE DISTANCES

SUBSTRATE		1/4" ITW TAPCON STORM GUARD		1/4" ELCO MALE I	PANELMATE PRO	1/4" ELCO PANELMATE INSERT		
TYPE	STRENGTH	EMBEDMENT DEPTH (IN)	EDGE DISTANCE (IN)	EMBEDMENT DEPTH (IN)	EDGE DISTANCE (IN)	EMBEDMENT DEPTH (IN)	EDGE DISTANCE (IN) 4	
CONCRETE	2500 PSI	1-3/4	3	1-3/4	2-1/2	1-7/16		
HOLLOW BLOCK	ASTM C90. MEDIUM WEIGHT DENSITY	1-1/4	1-1/4	1-1/4	1-1/4	1-1/4	1-3/4	
GROUT FILLED BLOCK	ASTM C90. MEDIUM WEIGHT DENSITY W/OGROUT FILLING PER FBC	1-3/4	1-1/4	N/R	N/R	1-7/16	4	
WOOD	0.55 SG (HVHZ)	N/R	N/R	1-1/2	2	1-5/8	3/4	

NOTES:

1. TABLE VALUES CORRESPOND TO MANUFACTURER'S PUBLISHED DATA FOR 1/4 INCH ANCHORS.

2. TABLE VALUES INDICATE . MINIMUM EMBEDMENT AND EDGE DISTANCE.

3.FOR HOLLOW BLOCK AND GROUT FILLED BLOCK DO NOT INSTALL ANCHORS INTO MORTAR JOINTS.

4. EDGE DISTANCE IS MEASURED FROM FREE EDGE OF BLOCK OR EDGE OF MORTAR JOINT INTO FACE SHELL OF BLOCK.

5. TABLE VALUES CORRESPOND TO THE MINIMUM EMBEDMENTS AND EDGE DISTANCES PER SUBSTRATE.

6.USE OF THESE EMBEDMENT DEPTHS AND EDGE D1STANCES WITH THE CORRESPONDING ANCHOR TYPE PROVIDES ANCHOR CAPACITIES ADEQUATE FOR THE APPLIED DESIGN PRESSURE INDICATED HEREIN.

7.OTHER ANCHOR TYPES ARE ACCEPTAELE AS LONG AS THE MANUFACTURERS INSTALLATION REQUIREMENTS FOR STRENGTH, EMBEDMENT AND EDGE DISTANCE ARE MET. ADDITIONALLY, A MINIMUM TENSION (PULL-OUT) STRENGTH OF 137 LBS. MUST BE MET FOR ALL ANCHOR SUBSTITUTIONS. 8. N/R - NOT RECOMMENDED.

GLASS SEPARATION NOTES GLASS SEPARATION OF 6.21 INCHES PROVIDES FOR 1 INCH MINIMUM SEPARATION DISTANCE REQUIRED BETWEEN EXTERIOR FACE OF GLAZING (OR OTHER PRODUCT BEING PROTECTED) AND INTERIOR FACE OF INSTALLED STORM PANEL.

SEPARATION DISTANCE IS REQUIRED FOR USE WITH POSITIVE LOADS ONLY.

SEPARATION DISTANCE FROM GLASS IS REQUIRED ONLY WHEN INSTALLED WITHIN THE HIGH VELOCITY HURRICANE ZONE, ASTM 3. WIND ZONE 4 AND ESSENTIAL FACILITIES.

### EXOLON MULTI UV 5X/16-25 POLYCARBONATE 16MM PRODUCT PROPERTIES

(REFERENCE 1: TEST REPORT NO. 13190, DATED 11/11/22 BY QAI LABORATORIES) (REFERENCE 2: TEST REPORT NO. 13189, DATED 03/30/23 BY QAI LABORATORIES)

TEST DESCRIPTION	TEST METHOD	RESULTS		
SELF IGNITION TEMPERATURE	ASTM D1929-16	810°F > 650°	F	
SMOKE DENSITY RATING	ASTM D2843-16	70.31% < 75%	6	
LINEAR RATE OF BURN	ASTM D635-18	CC1		
TENSILE STRENGTH (MEAN)	ASTM D638-10	6113 PSI	6682 PSI	
		BEFORE	AFTER	

\* THE CHANGE IN THE AVERAGE TENSILE STRESS OF THIS MATERIAL BETWEEN THE UNEXPOSED AND 4500 HOUR ASTM G155 EXPOSED SAMPLES WAS 8.9%.

		BILL OF MATE	ERIALS		
TEM #	PART #	DESCRIPTION	MATERIAL	VENDOR	
1		EXOLON MULTI UV 5X/16-25 POLYCARBONATE 16MM PANEL	EXOLON MULTI UV	EXOLON GROUP	
2		1/4" PANELMATE MALE FASTENER	STEEL		ELCO
3		1/4" STEEL FENDER WASHER	STEEL		
4		1/4-20 ZAMAC NICKEL PLATED WASHERED WINGNUT	STEEL		
5		1/4" TAPCON STORM GUARD (SG)	STEEL		ITW BUILDEX
6		1/4" EPDM WASHER	EPDM RUBBER		
7		1/4" PANELMATE INSERT W/1/4" COATED SCREW W/WASHER	R & EPDM WASHER STEEL & EPDM RUBBER FOR WASHER		ELCO



			T	T			A	BY	
5X/16-25 I6MM PANEL	21					0 2	6/18/24 RJA	DATE B	
	реолест NUMBER: 423-0901						UPDATED TO 2023 FBC	DESCRIPTION	
	PRO		L			-	A	REV	
ZAMAC NICKEL D WASHERED UT	Exolon Group	n Group	203 N LaSalle Street - Suite 2550	Chicago, IL 60601	STORM PANELS - HVHZ	OF MATERIALS & COMPONENTS	DRAWN BY: DATE: 1/13/2023	SCALE N.T.S. DRAWIN	REV: A SHEET:
ER 51" THICK MIN.) 1.50" DIA. (O.D.) 0.28" DIA. (I.D.) ELMATE INSERT		203 N LaSalle S	Chicag	16MM POLYCARBONTE STORM PANELS	BILL		PTC PRODUCT DESIGN GROUP. LLC	PO BOX 520775 Phone: 221,890,1788 LONGWOOD, FLORIDA 32752 Fax: 321,690,1788 FBPE C.A. NO, 25835 Email: Inb@ptc-outp.com	
" COATED SCREW ASHER & EPDM WASHER R OTHER)	as a Bui Aca	Iding eptar bratio mi D		g with de No 2 Pate 0 Produ	3 - 9/ No.	D Flori	du 7.01 209 P.E.		
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