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PRODUCT EVALUATION REPORT

REPORT NO.: 25-0131
DATE: February 13, 2025
PRODUCT CATEGORY: Shutters
PRODUCT SUB-CATEGORY: Fabric Storm Panel
PRODUCT NAME: *TYPHOON ARMOR – Fabric Impact Protection Device–NON-HVHZ*
MANUFACTURER: Sentinel Storm Protection
3673 Exchange Avenue, Suite 1
Naples, FL 34104

SCOPE OF EVALUATION:

This is a Product Evaluation Report issued by **John H. Kampmann Jr., PE** (FBC Org. No.: ANE2480) to **SENTINEL STORM PROTECTION**, manufacturer, in accordance with the requirements of the Florida Department of Business and Professional Regulation (Florida Building Commission), Rule Chapter No.: 61G20-3, Method 1 (d).

All products listed above have been tested and/or evaluated as described herein to verify compliance with the **2023 Eighth Edition** of the **Florida Building Code**, and to verify that the product is for the purpose intended, at least equivalent to that required by the Code.

This Product Evaluation Report shall be subject to review and revision following Florida Building Code modifications or revisions.

EVIDENCE SUBMITTED:

PRODUCT EVALUATION DOCUMENTS

MEA Engineers, Inc. Drawing #23-0816 titled “TYPHOON ARMOR Removable and Roll-Up Shutter”, Sheets 1 - 4, prepared by John H. Kampmann Jr., PE; signed and sealed by John H. Kampmann Jr., PE; Dated 10/19/23, is an integral part of this Evaluation Report.

TEST REPORTS

Uniform Static Loads per Protocol TAS 202. Test Report prepared by Hurricane Engineering & Testing, Inc.; Report No. HETI-10-3115, Dated 9/30/10 for Florida State Approval. Signed and Sealed on 01/05/11 by Candido F. Font PE

Large Missile Impact Resistance and Cyclic Loading Performance per Protocol TAS 201 and TAS 203 as per section 1609.1.2 of the Florida Building Code. Test Report prepared by Hurricane Engineering & Testing, Inc.; Report No. 10-3127, Dated 9/30/10 for Florida State Approval. Signed and Sealed on 01/05/11 by Candido F. Font PE

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Uniform Static Loads per Protocol TAS 202 & ASTM E330-02 (Uniform Static Pressure). Test Report prepared by American Test Lab of South Florida; Report No. ATLSF 0204.02-11, Dated 4/28/11 for Florida State Approval. Signed and Sealed on 4/28/11 by Julio E. Gonzalez, PE

Large Missile Impact Resistance and Cyclic Loading Performance per Protocol TAS 201 and TAS 203 & ASTM E1886-05 & ASTM E1996-05 (Impact & Cyclic Loading) as per section 1609.1.2 of the Florida Building Code. Test Report prepared by American Test Lab of South Florida; Report No. ATLSF 0204.02-11, Dated 4/28/11 for Florida State Approval. Signed and Sealed on 4/28/11 by Julio E. Gonzalez, PE

STRUCTURAL ENGINEERING CALCULATIONS

Structural Engineering Calculations have been prepared which evaluate the product for maximum screen length vs. design wind load; maximum anchor spacing vs. design wind load and screen length based on rational and comparative analysis, per section 1609 of the Florida Building Code (Non-HVHZ).

MISSILE IMPACT RESISTANCE:

Large Missile Impact, per section 1609.1.2 of the Florida Building Code, as per Protocol TAS 201.

WIND LOAD RESISTANCE:

The product(s) listed above have been designed to resist wind loads as indicated in the span schedule(s) on its respective Product Evaluation Document – Drawing noted above.

INSTALLATION:

The product(s) listed above shall be installed in strict compliance as indicated in its respective Product Evaluation Document – Drawing noted above.

MATERIAL CHARACTERISTICS AND SPECIFICATIONS:

The product(s) listed above shall be installed in strict compliance as indicated in its respective Product Evaluation Document – Drawing noted above.

Additional Information:

Base Fabric

Spec		40 oz.x61"
Base fabric		Polyester
Yarn		1500 Denier
Threads		26 x 27 F/p fd/inch
Color		Black
Total Thickness		1.18 m/m
Total weight	FS # 191 5041:	1360 g/sq.m
Tensile strength	FS # 191 5102	684 / 655 lbs/in
	(Cut strip method)	
Elongation	FS # 191 5102	28% / 40%
Tear strength	FS# 191 5134	379 / 389 lbs
	(Tongue)	

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Adhesion Strength FS # 191 5970 14 / 11 lbs/in

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Material	Construction
Base Fabric	Panama Weave
Filament Size	1000 Denier
Construction	32 f/in x 29 f/in (25 f/2 cm x 23 f/2cm)
Base Fabric Weight	7.9 oz/sq Yd (268 g/sq m)
Finish Weight	16-24.5 oz/sq Yd (543.832 g/sq m).

Straps: Cargo Webbing (Rough)

Manufacturer	Granat Industries, Inc
	P5000 Series Tie Dow Webbing
Size	2" (+/- 1/8")
Material	Polyester
Part Number	P5000-2
Warp	2500 Denier
Binder	1300 Denier
Weft	1300 Denier
Lockstitch	500 Denier
Warp Ends	235
Binder Ends	19
Picks/Inch	15 (+/-1)
Thickness	0.075" (+/-0.010")
Tensile Str.	10,000 lbs

Straps: 4-Panel Polyester Webbing(Smooth)

Manufacturer	Granat Industries, Inc
	P3401 Series Tie Dow Webbing
Size	2" (+/- 1/16")
Material	Polyester
Part Number	P3401-2
Warp	1300 Denier
Binder	1300 Denier
Weft	840 Denier/ 1000 Denier
Lockstitch	210 Denier
Warp Ends	250 or 260 ends
Binder Ends	None
Picks/Inch	16 (+/-2)
Thickness	0.044" (+/-0.005")
Tensile Str.	5,000 lbs

LIMITATIONS AND CONDITIONS OF USE:

The product(s) listed above shall be installed in strict compliance as indicated in its respective Product Evaluation Document – Drawing noted above.

Conditions which are not indicated or accounted for in the Product Evaluation Document shall be designed for on a site-specific basis by a Florida Licensed Professional Engineer.

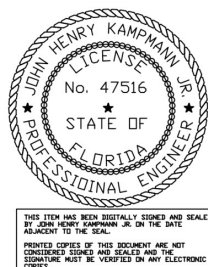
All components which are permanently installed shall be protected against corrosion, contamination and other such damage at all times. Periodic inspection is strongly recommended to insure its continued safe use.

The product(s) listed above **SHALL NOT** be installed within the HIGH VELOCITY HURRICANE ZONES as defined in section 1620 of the Florida Building Code, nor Essential Facilities.

The product(s) listed above shall only be installed onto Concrete Block, Poured Concrete and Wood Frame Structures.

Product Evaluation Report prepared by John H. Kampmann Jr., PE (Florida License No.: 47516, President of MEA Engineers, Inc. (CA-6752).

John H. Kampmann Jr., PE
FL License No.: 47516
Date:



John Henry
Kampmann Jr.
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