

STRUCTURAL NOTES:

- THIS NON POROUS SYSTEM HAS BEEN VERIFIED FOR COMPLIANCE IN ACCORDANCE WITH THE 2020 (SEVENTH EDITION) OF THE FLORIDA BUILDING CODE (FBC) . THIS SYSTEM SHALL NOT BE INSTALLED IN THE HIGH VELOCITY HURRICANE ZONE (MIAMI-DADE/ BROWARD COUNTIES) NOR ESSENTIAL FACILITIES. THE ADEQUACY FOR IMPACT, DEFLECTION AND FATIGUE RESISTANCE HAS BEEN VERIFIED IN ACCORDANCE WITH SECTION 1609 OF THE ABOVE REFERENCED CODE, AND AS PER TAS 201, TAS 202 and TAS 203 PROTOCOLS.
- DESIGN PRESSURE REQUIREMENTS OF A SPECIFIC SITE SHALL BE DETERMINED BY OTHERS IN CONFORMANCE TO SECTION 1609 OF THE FBC FOR A BASIC WIND SPEED (ALLOWABLE STRESS DESIGN) AS REQUIRED BY THE JURISDICTION WHERE THE SYSTEM WILL BE INSTALLED. ULTIMATE DESIGN LOADS (UD) DETERMINED BY ASCE 7-16 SHALL BE REDUCED TO ALLOWABLE STRESS DESIGN LOADS (ASD) BY MULTIPLYING THE UD BY 0.6. TO COMPARE THEM TO THE ASD PRESSURE RATINGS SHOWN ON SHEET 1 AND 2. USE OF DIRECTIONALITY FACTOR Kd=0.85 IS ALLOWED.
- IMPACT AND FATIGUE RESISTANCE HAS BEEN DETERMINED IN ACCORDANCE WITH THE FBC SECTION 1609.1.2 MISSILE LEVEL 'D' AS LISTED HEREIN.
- NO 33-1/3% INCREASE IN ALLOWABLE STRESS INCREASE HAS BEEN USED IN THE DESIGN OF THIS PRODUCT.
- THIS PRODUCT EVALUATION DOCUMENT (PED) DETAILED HEREIN IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SPECIFIC SITE. IF SITE CONDITIONS DEVIATE FROM THE CONDITIONS DETAILED HEREIN, A LICENSED ENGINEER OR REGISTERED ARCHITECT SHALL PREPARE SITE SPECIFIC DOCUMENTS TO BE USED IN CONJUNCTION WITH THIS DOCUMENT.
- THE CONTRACTOR AND / OR PERMIT HOLDER IS TO BE RESPONSIBLE FOR THE SELECTION, PURCHASE AND INSTALLATION OF THIS SYSTEM, INCLUDING VERIFYING THE ADEQUACY OF THE EXISTING STRUCTURE TO WITHSTAND THE NEW SUPERIMPOSED LOADS SHOWN BELOW AND THE SOUNDNESS OF THE STRUCTURE WHERE THE SYSTEM IS TO BE ATTACHED TO INSURE PROPER ANCHORAGE.
- SITE SPECIFIC PROJECTS SHALL BE PREPARED BY A FLORIDA LICENSED ENGINEER OR ARCHITECT WHO WILL BECOME THE ENGINEER OF RECORD (EOR) FOR THE PROJECT AND WHO WILL BE RESPONSIBLE FOR THE PROPER USE OF THE PED ENGINEER OF RECORD, ACTING AS A DELEGATED ENGINEER TO THE PED ENGINEER SHALL SUBMIT TO THIS ENGINEER THE SITE SPECIFIC DRAWINGS FOR REVIEW.
- THIS PED SHALL BEAR THE DATE AND ORIGINAL SEAL OF THE PROFESSIONAL ENGINEER OF RECORD THAT PREPARED IT.
- THIS SYSTEM MAY ALSO BE INSTALLED HORIZONTALLY FOLLOWING INSTALLATION DETAILS SHOWN HEREIN.
- THIS WIND ABATEMENT SYSTEM IS INTENDED FOR USE ONLY DURING HURRICANE OR OTHER TROPICAL STORM WARNINGS. SEASONAL OR PERMANENT INSTALLATION OR STORAGE OF THIS WIND ABATEMENT SYSTEM IN AREAS OF PROLONGED EXPOSURE TO DIRECT SUNLIGHT OR OTHER WEATHERING CONDITIONS MAY CAUSE MATERIAL DETERIORATION OR OTHERWISE INHIBIT THEIR ADEQUACY AS AN IMPACT RESISTANT SYSTEM.
- LIMITATIONS OF USE
PER FBC 2020 NO MINIMUM SEPARATION FROM GLASS IS REQUIRED.
THE MAXIMUM SIZE SHALL BE 80 PSF MAX. PRESSURE @214 INCHES MAXIMUM SPAN. SEE TABLE ON SHEET 1/2.
- RESERVED.
- ALL SCREWS TO BE STAINLESS STEEL 304 OR 316 SERIES OR CORROSION RESISTANT COATED CARBON STEEL WITH A 50 KSI YIELD STRENGTH AND A 90 KSI TENSILE STRENGTH.
- ALL BOLTS TO BE ASTM A307, GALVANIZED OR 304 SERIES STAINLESS STEEL WITH A MINIMUM 36 KSI YIELD STRENGTH.
- ANCHORS TO STRUCTURE (WALL / FLOOR / CEILING / SYSTEM) SHALL BE INSTALLED PER MANUFACTURERS' RECOMMENDATIONS AND AS FOLLOWS:
 - CONCRETE BLOCK MASONRY (ASTM C-90)
TAPCON ANCHORS (ITW BUILDEX) OR PANELMATE MALE & FEMALE FASTENERS (ELCO TEXTRON) - 1/4 IN. DIA.
I. MINIMUM EMBEDMENT INTO HOLLOW CONCRETE BLOCK MASONRY FOR TAPCON ANCHORS AND ELCO PANELMATES IS 1 1/4 IN., FILLED MASONRY EMBEDMENT IS 1 3/4". NO EMBEDMENT INTO STUCCO SHALL BE PERMITTED.
II. PAVERS, BRICKS OR OTHER PRE-CAST PRODUCTS LOCATED ON THE EXISTING STRUCTURE WALL OR FLOOR SHALL HAVE ANCHORS OF SUFFICIENT LENGTH TO PROPERLY ATTACH TO THE PRIMARY STRUCTURE BEHIND IT.
III. MINIMUM EDGE DISTANCE = 3.0"
 - POURED CONCRETE (f'c=3000 PSI MIN.)
TAPCON ANCHORS (ITW BUILDEX) OR PANELMATE MALE & FEMALE FASTENERS (ELCO TEXTRON) - 1/4 IN. DIA.
I. MINIMUM EMBEDMENT INTO POURED CONCRETE FOR TAPCON ANCHORS AND ELCO PANELMATES IS 1 3/4 IN. NO EMBEDMENT INTO STUCCO SHALL BE PERMITTED. SCREWS TO BE 1/4"-20 X 1 3/4" FOR STUCCO, 1 1/4" WITH NO STUCCO.
II. PAVERS, BRICKS OR OTHER PRE-CAST PRODUCTS LOCATED ON THE EXISTING STRUCTURE WALL OR FLOOR SHALL HAVE ANCHORS OF SUFFICIENT LENGTH TO PROPERLY ATTACH TO THE PRIMARY STRUCTURE BEHIND IT.
III. MINIMUM EDGE DISTANCE = 3.0"
 - WOOD (Nominal 2x4(min) "Southern Pine" SG=0.55 OR GREATER)
TAPCON ANCHORS (ITW BUILDEX) DIA. OR PANELMATE MALE & FEMALE FASTENERS (ELCO TEXTRON) - 1/4 IN.
I. MINIMUM EDGE DISTANCE = CENTER OF 2" NOMINAL LUMBER (APPROX. 3/4"). MINIMUM EMBEDMENT = 1-1/2"
- MAXIMUM DESIGN PRESSURE VERSUS PANEL SPAN SHOWN ON SHEET 1/2
- SCREEN PANEL'S MANUFACTURER LABEL SHALL BE PLACED ON A READILY AND VISIBLE LOCATION ON THE PANEL. ONE LABEL SHALL BE PLACED FOR EVERY OPENING. LABEL SHALL READ AS FOLLOWS:
HURRICANE FABRIC.COM LLC
PO BOX 50153; CLAYTON, MO 63105
FLORIDA PRODUCT APPROVAL NUMBER: FL-XXXX. OPENING NO.: XX
- THIS DOCUMENT IN ITS ENTIRETY WILL BE CONSIDERED INVALID IF IT IS ALTERED BY ANY MEANS.

RETENTION CLIP END CONNECTOR:

RHODIA ENGINEERING PLASTICS - POLYAMIDE 66

FABRIC SPECIFICATION:

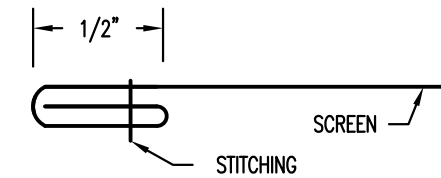
FIBER CONTENT: TEXTILE FABRIC
CONSTRUCTION: 3/4 BASKET-WEAVE, WARP - 60 ENDS PER INCH, WERE - 50 ENDS PER INCH
FINISH: CALENDERED
WEIGHT (ASTM D-3776): 7.6 -OZ/SQUARE YARD
SELVAGE : HEAT CUT OR WOVEN
TENSILE STRENGTH (GRAB METHOD, ASTM D -4632): WARP - 495 lbs., WEFT - 425 lbs.
BURST STRENGTH (ASTM D - 3786): 825 PSI
TEAR STRENGTH (ASTM D - 4533): WARP - 185 lbs., WEFT - 170 lbs.
ABRASION RESISTANCE (ASTM D -4886) 95% STRENGTH RETAINED
PUNCTURE STRENGTH (ASTM D -4833) 190 lbs.
UV RETENTION (ASTM D-G154): 77%

SEWING:

(1) SINGLE ROW OF STRAIGHT STITCH AT INTERVALS OF 1/2" MM USING 138 DENIER POLYESTER THREAD.

EDGES:

1/2" TRI-FOLDED ALL AROUND THE PERIMETER ONE CONTINUOUS SEWING



STITCHING DETAIL

1/2" SINGLE STITCH WEAVE SCREEN - N.T.S.

SCREEN SPAN	FASTENER SPACING OF A SINGLE UNIT SCREEN FOR ANY LENGTH ATTACHED WITH 1/4" ELCO PANELMATE PRO, MALE & FEMALE (INCHES)															
	FILLED CMU (1900 PSI)				CONCRETE (4000 PSI)				HOLLOW CMU				TIMBER			
	PRESSURE (PSF)				PRESSURE (PSF)				PRESSURE (PSF)				PRESSURE (PSF)			
	60	50	40	30	60	50	40	30	60	50	40	30	60	50	40	30
4'-0"	12	12	12	12	12	12	12	12	11	12	12	12	10	11	12	12
6'-0"	11	12	12	12	12	12	12	12	8	9	10	12	7	8	9	12
8'-0"	7	8	10	12	8	9	11	12	5	6	7	9	5	5	6	8
10'-0"	6	7	8	10	7	8	9	11	4	5	6	7	-	4	5	6
12'-0"	5	6	7	9	6	7	8	9	-	4	5	6	-	-	4	6
14'-0"	4	5	6	7	5	5	6	8	-	-	4	5	-	-	-	5
16'-0"	-	5	5	6	4	5	6	7	-	-	-	5	-	-	-	4
18'-0"	-	-	5	6	-	4	5	6	-	-	-	4	-	-	-	-

SCREEN SPAN	FASTENER SPACING OF A SINGLE UNIT SCREEN FOR ANY LENGTH ATTACHED WITH 3/8" DROP-IN ANCHOR WITH SIDEWALK BOLT (INCHES)															
	FILLED CMU (1900 PSI)				CONCRETE (4000 PSI)				HOLLOW CMU				TIMBER			
	PRESSURE (PSF)				PRESSURE (PSF)				PRESSURE (PSF)				PRESSURE (PSF)			
	60	50	40	30	60	50	40	30	60	50	40	30	60	50	40	30
4'-0"	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
6'-0"	12	12	12	12	12	12	12	12	12	12	12	12	9	11	12	12
8'-0"	12	12	12	12	12	12	12	12	12	12	12	12	6	7	8	10
10'-0"	12	12	12	12	12	12	12	12	10	12	12	12	5	6	7	9
12'-0"	10	12	12	12	12	12	12	12	9	10	12	12	5	5	6	8
14'-0"	9	10	12	12	10	11	12	12	8	9	10	12	-	4	5	6
16'-0"	8	9	10	12	8	10	11	12	7	8	9	11	-	-	4	6
18'-0"	7	8	9	11	8	9	10	12	6	7	8	10	-	-	4	5

John H. Kampmann Jr., PE
FL License #: 47516
DATE:

2020 FBC (NON-HIGH VELOCITY HURRICANE ZONE) 7TH EDITION

Project Name:

HURRICANE FABRIC.COM LLC
PO BOX 50153
CLAYTON, MO 63105
PHONE: (239)899-0099
WWW.HURRICANEFABRIC.COM

ASTRO FLEX
Wind Abatement System

Drawn: JK
Project #: 20-045
Scale: NTS
Date: 10/3/20
Sheet No.:

1/2

CA #6752
WWW.MEAENGINEERS.COM

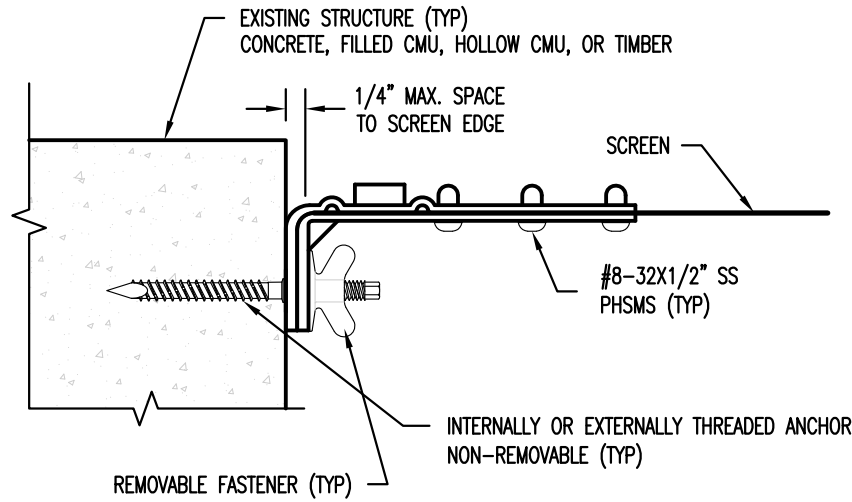
MEAE
ENGINEERS, INC.
5656 Lawton Drive
Sarasota, Florida 34233
(941) 922-3854 CA-6072

DESCRIPTION

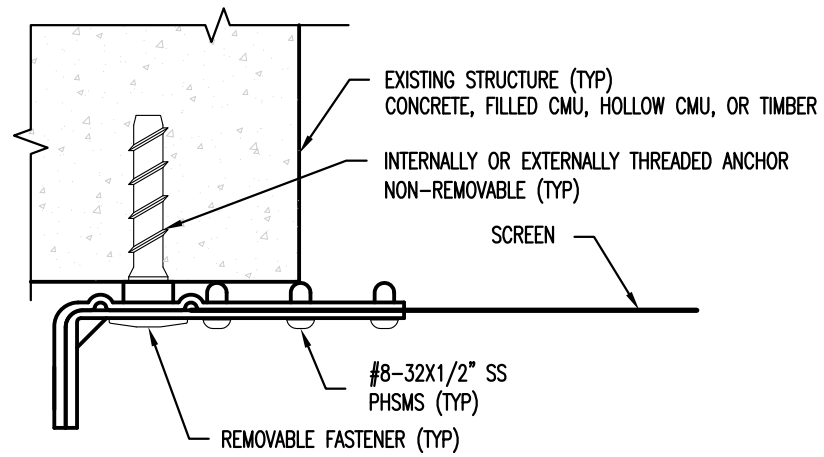
REV

1

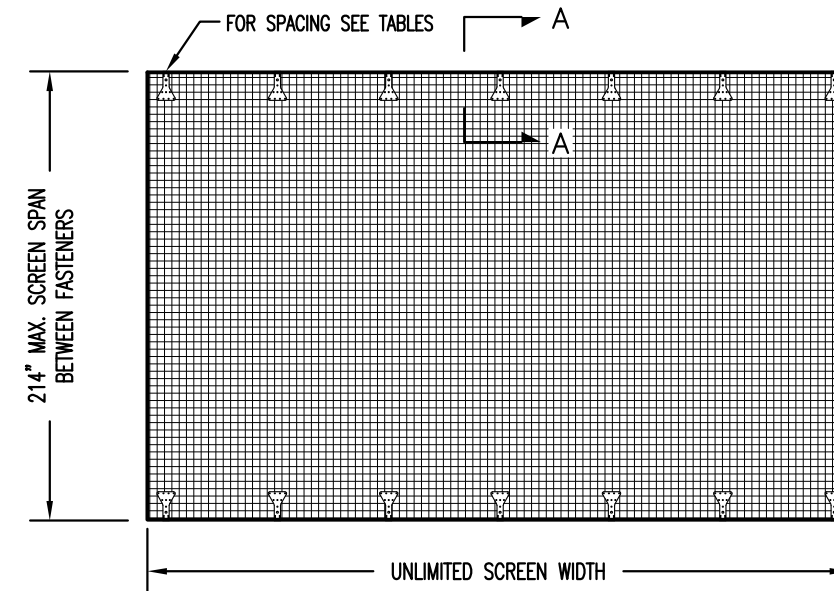
XX/XX/XX-XXXXXXX



SECTION A-A (OPTION 1)
INSIDE MOUNT INSTALLATION - N.T.S.

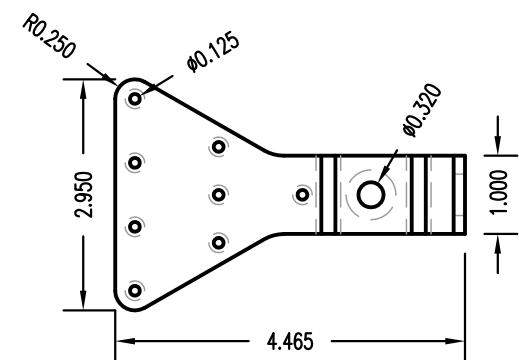
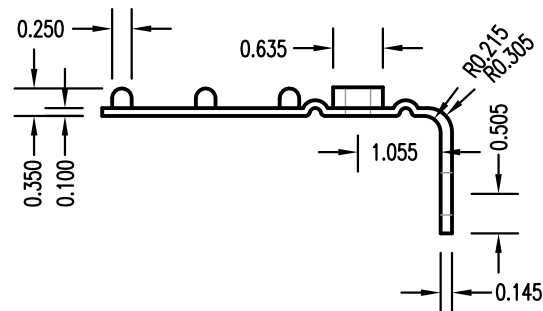


SECTION A-A (OPTION 2)
OUTSIDE MOUNT INSTALLATION - N.T.S.

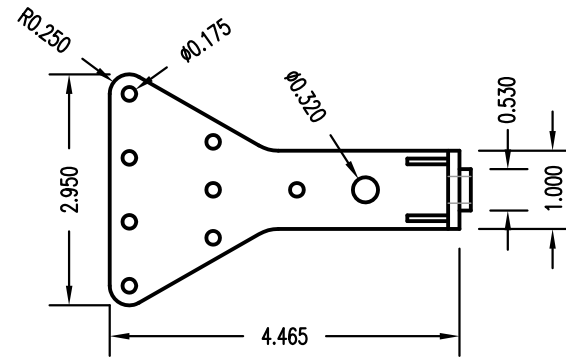
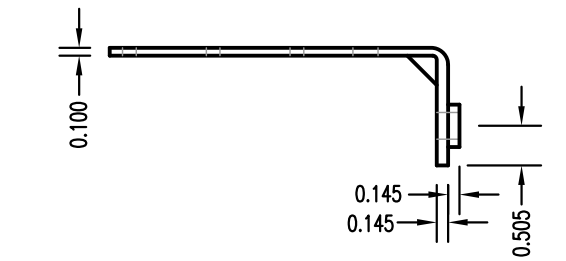


TYPICAL TWO-SIDED INSTALLATION
VERTICAL OR HORIZONTAL INSTALLATION - N.T.S.

NOTE:
PANELS CAN BE ATTACHED ON THREE OR FOUR SIDES.
FOR FOUR SIDE ATTACHMENT THE SPAN IS IN THE SHORT
DIMENSION BETWEEN FASTENERS



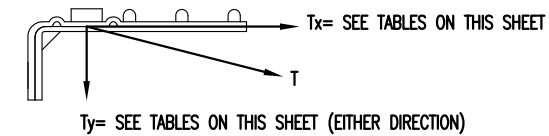
BOTTOM MOUNTING CLIP DETAILS
INSIDE OR OUTSIDE MOUNT INSTALLATION - N.T.S.



TOP MOUNTING CLIP DETAILS
INSIDE OR OUTSIDE MOUNT INSTALLATION - N.T.S.

LOADS ON EXISTING STRUCTURE FROM SCREEN SYSTEM				
T _x = PARALLEL LOADS (PLF)				
SCREEN SPAN	PRESSURE (PSF)			
	80	60	50	40
4'-0"	240	270	190	180
6'-0"	510	400	320	270
8'-0"	630	510	430	330
10'-0"	750	600	520	430
12'-0"	870	620	600	510
14'-0"	930	765	680	580
16'-0"	1030	870	750	630
18'-0"	1067	907	808	694

LOADS ON EXISTING STRUCTURE FROM SCREEN SYSTEM				
T _y = PERPENDICULAR LOADS (PLF)				
SCREEN SPAN	PRESSURE (PSF)			
	80	60	50	40
4'-0"	160	120	100	80
6'-0"	240	180	150	120
8'-0"	320	240	200	160
10'-0"	400	300	250	200
12'-0"	480	360	300	240
14'-0"	560	420	350	280
16'-0"	640	480	400	320
18'-0"	713	535	446	357



2020 FBC (NON-HIGH VELOCITY HURRICANE ZONE) 7TH EDITION

CA #6752
WWW.MEAENGINEERS.COM

MEA
ENGINEERS, INC.
5656 Lawton Drive
Sarasota, Florida 34233
(941) 922-3854 CA-6072

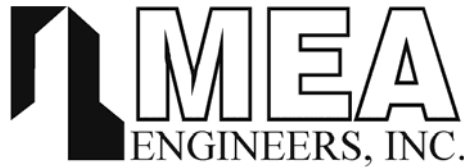
REV	DESCRIPTION
1	XX/XX/XX - xxxxxxxx

HURRICANE FABRIC.COM LLC
PO BOX 50153
CLAYTON, MO 63105
PHONE: (239)699-0099
WWW.HURRICANEFABRIC.COM

Project Name:
ASTRO FLEX
Wind Abatement System

Drawn: JK
Project #: 20-045
Scale: NTS
Date: 10/3/20
Sheet No.:

John H. Kampmann Jr., PE
FL License #: 47516
DATE:



CIVIL • STRUCTURAL • MARINE
COASTAL • GEOTECHNICAL

www.meaengineers.com

PRODUCT EVALUATION REPORT

REPORT NO.: 20-045
DATE: October 3, 2020
PRODUCT CATEGORY: Impact Protective Systems
PRODUCT SUB-CATEGORY: Removable
PRODUCT NAME: Astro Flex Wind Abatement System
MANUFACTURER: HurricaneFabric, LLC
PO Box 50153
Clayton, MO 63105

SCOPE OF EVALUATION:

This is a Product Evaluation Report issued by **John H. Kampmann Jr., PE** (FBC Org. No.: ANE2480) to **HurricaneFabric.com, LLC**, 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 2020 Seventh 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

MEEA Engineers, Inc. Drawing #20-045 titled "Astro Guard Wind Abatement System", Sheets 1 and 2, prepared by John H. Kampmann Jr., PE; signed and sealed by John H. Kampmann Jr., PE; Dated 10/3/20, is an integral part of this Evaluation Report.

TEST REPORTS

Uniform Static Loads per Protocol TAS 202. Test Report prepared by Fenestration Testing Lab, Lab No. 5777, Dated 11/25/08 for Florida State Approval.

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 Fenestration Testing Lab, Lab No. 5777, Dated 11/25/08 for Florida State Approval.

Note: Test Reports Signed and Sealed by Michael Wenzel PE on dates shown.

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.

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).