FL #	FL15208-R5
Application Type	Revision
Code Version	2017
Application Status	Approved
Comments	
Archived	☐
Product Manufacturer	Hurricane Fabric, LLC
Address/Phone/Email	1505 Poinsettia dr STE H-3 Delray Beach, FL 33444 (561) 742-3756 joe@hurricanefabric.com
Authorized Signature	Joseph Aufenanger joe@hurricanefabric.com
Technical Representative	Scott Purcell
Address/Phone/Email	1500 SW 30th Ave Unit 4 Boynton Beach, FL 33426 (941) 893-7900 scott@hurricanefabric.com
Quality Assurance Representative	Scott Purcell
Address/Phone/Email	1505 Poinsettia Dr Suite H-3 Delray Beach, FL 33444 (561) 742-3756 scott@hurricanefabric.com
Category	Impact Protective Systems
Subcategory	Removable
Compliance Method	Evaluation Report from a Florida Registered Architect or a Licensed Florida Professional Engineer ☐ Evaluation Report - Hardcopy Received
Florida Engineer or Architect Name who developed the Evaluation Report	John Kampmann Jr.
Florida License	PE-47516
Quality Assurance Entity	National Accreditation and Management Institute
Quality Assurance Contract Expiration Date	12/31/2019
Validated By	Frank L. Bennardo, P.E. ☑ Validation Checklist - Hardcopy Received
Certificate of Independence	FL15208_R5_COI_Certificate_of_Independence_17-0226.pdf

Referenced Standard and Year (of Standard)

Standard	Year
ASTM E1886	2005
ASTM E1996	2005
ASTM E330	2002
TAS 201, 202, 203	1994

Equivalence of Product Standards
Certified By

Sections from the Code

Product Approval Method	Method 1 Option D
Date Submitted	10/20/2017
Date Validated	10/26/2017
Date Pending FBC Approval	10/26/2017
Date Approved	12/12/2017

Summary of Products

FL #	Model, Number or Name	Description
15208.1	Astroguard	Fabric Hurricane Protection System
Limits of Use **Approved for use in HVHZ:** No **Approved for use outside HVHZ:** Yes **Impact Resistant:** Yes **Design Pressure:** +60/-60 **Other:**		**Installation Instructions** FL15208_R5_II_Installation Drawing 17-0226.pdf Verified By: John Henry Kampmann Jr., PE PE-47516 Created by Independent Third Party: Yes **Evaluation Reports** FL15208_R5_AE_Product Evaluation Report 17-0226i.pdf Created by Independent Third Party: Yes

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STRUCTURAL NOTES:

1. THIS NON POROUS SYSTEM HAS BEEN VERIFIED FOR COMPLIANCE IN ACCORDANCE WITH THE 2014 (FIFTH 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 AND ASTM E330-02, ASTM E1886-05 AND ASTM E1996-05. SEE LIST OF REPORTS ON SHEET 1/2.
2. 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 7-10 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.
3. IMPACT AND FATIGUE RESISTANCE HAS BEEN DETERMINED IN ACCORDANCE WITH THE FBC SECTION 1609.1.2 MISSLE TYPE "D" AS LISTED HEREIN.
4. NO 33-1/3% INCREASE IN ALLOWABLE STRESS INCREASE HAS BEEN USED IN THE DESIGN OF THIS PRODUCT.

5a. 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.

5b. 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 SOUDNESS OF THE STRUCTURE WHERE THE SYSTEM IS TO BE ATTACHED TO INSURE PROPER ANCHORAGE.

5c. 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.

6. THIS PED SHALL BEAR THE DATE AND ORIGINAL SEAL OF THE PROFESSIONAL ENGINEER OF RECORD THAT PREPARED IT.
7. THIS SYSTEM MAY ALSO BE INSTALLED HORIZONTALLY FOLLOWING INSTALLATION DETAILS SHOWN HEREIN.
8. 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.
9. LIMITATIONS OF USE
PER FBC 2010 NO MINIMUM SEPARATION FROM GLASS IS REQUIRED.
THE MAXIMUM SIZE SHALL BE 60 PSF MAX. PRESSURE @216 INCHES MAXIMUM SPAN. SEE TABLES ON SHEET 1/2 AND 2/2.

10. RESERVED.
11. 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.
12. ALL BOLTS TO BE ASTM A307, GALVANIZED OR 304 SERIES STAINLESS STEEL WITH A MINIMUM 36 KSI YIELD STRENGTH.
13. ANCHORS TO STRUCTURE (WALL / FLOOR / CEILING / SYSTEM) SHALL BE INSTALLED PER MANUFACTURERS' RECOMMENDATIONS AND AS FOLLOWS:
    A. 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"
    B. 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"
    C. 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"
14. MAXIMUM DESIGN PRESSURE VERSUS PANEL SPAN SHOWN ON SHEET 2/2
15. 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 LLC
    PO BOX 50153; CLAYTON, MO 63105
    FLORIDA PRODUCT APPROVAL NUMBER: FL-XXXX. OPENING NO.: XX
16. 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:

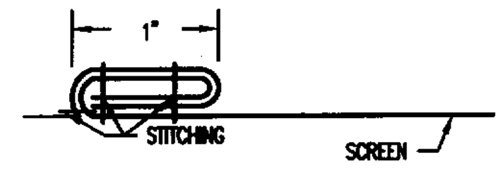
FIBER CONTENT: TEXTILE FABRIC
CONSTRUCTION: 20 X 20 WEAVE
FINISH: RESIN COATED
WEIGHT (ASTM D-3776): 9.0 -OZ/SQUARE YARD
TENSILE STRENGTH (GRAB METHOD, ASTM D -4632): WARP - 570 lbs., WEFT - 570 lbs.
BURST STRENGTH (ASTM D - 3786): 1,000 PSI
ABRASION RESISTANCE (ASTM D -4886) 95% STRENGTH RETAINED

SEWING:

ONLY SEWING IS AT SPLICE

EDGES:

NO SEWING AT EDGES



SPLICE DETAIL

FASTENER SPACING OF A SINGLE UNIT SCREEN FOR ANY LENGTH ATTACHED WITH 3/8" DROP-IN ANCHOR WITH SIDEWALK BOLT (INCHES)																
SCREEN SPAN	FILLED CMU (1900 PSI) PRESSURE (PSF)				CONCRETE (4000 PSI) PRESSURE (PSF)				HOLLOW CMU PRESSURE (PSF)				TIMBER 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

FASTENER SPACING OF A SINGLE UNIT SCREEN FOR ANY LENGTH ATTACHED WITH 1/4" ELCO PANELMATE PRO, MALE & FEMALE (INCHES)																
SCREEN SPAN	FILLED CMU (1900 PSI) PRESSURE (PSF)				CONCRETE (4000 PSI) PRESSURE (PSF)				HOLLOW CMU PRESSURE (PSF)				TIMBER 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	-	-	-	-

EVALUATION BASED ON:
FENESTRATION TESTING LABORATORY, INC

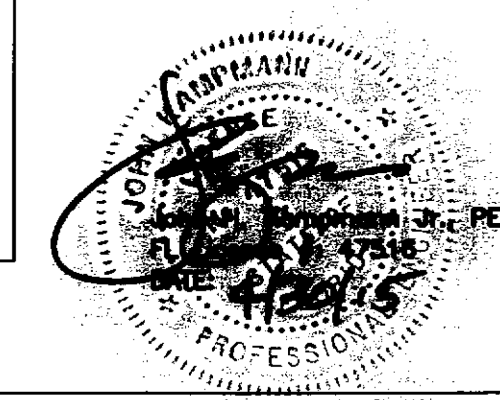
LAB NO.: 6418 DATED 12/7/2010

ASTM E330-02 - UNIFORM STATIC LOADS
ASTM E1886-05 & ASTM E1996-05 - LARGE MISSILE TYPE "D" IMPACT RESISTANCE & CYCLIC LOADING PERFORMANCE

LAB NO.: 5804 DATED 01/13/2009

TAS 202 - UNIFORM STATIC LOADS
TAS 201, TAS 202 - LARGE MISSILE IMPACT RESISTANCE & CYCLIC LOADING PERFORMANCE

LIST OF REPORTS



2014 FBC (NON-HIGH VELOCITY HURRICANE ZONE) 5TH EDITION

CA #8782
WWW.MEAENGINEERS.COM

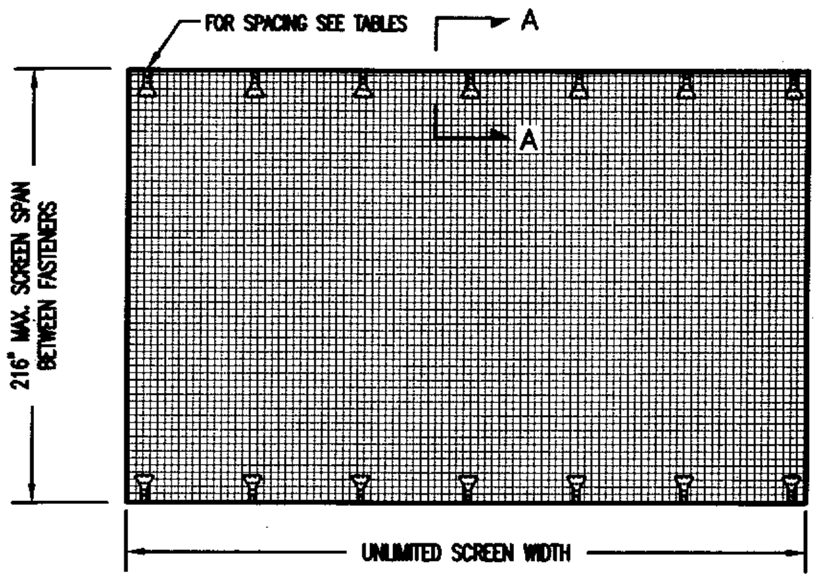
MEA ENGINEERS, INC.

REV.	DESCRIPTION
1	xx/xx/xx-RESERVED

Project Name:
HURRICANE FABRIC LLC
PO BOX 50153
CLAYTON, MO 63105
PHONE: (239)[illegible]
WWW.HURRICANEFABRIC.COM

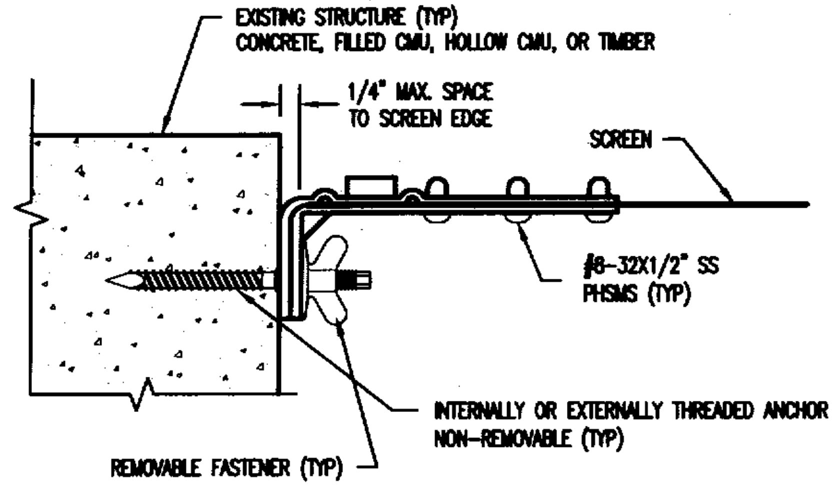
Description:
ASTRO GUARD
Wind Abatement System

Drawn: JK
Project #: 15-0226
Scale: NTS
Date: 4/30/15
Sheet No.: 1/2

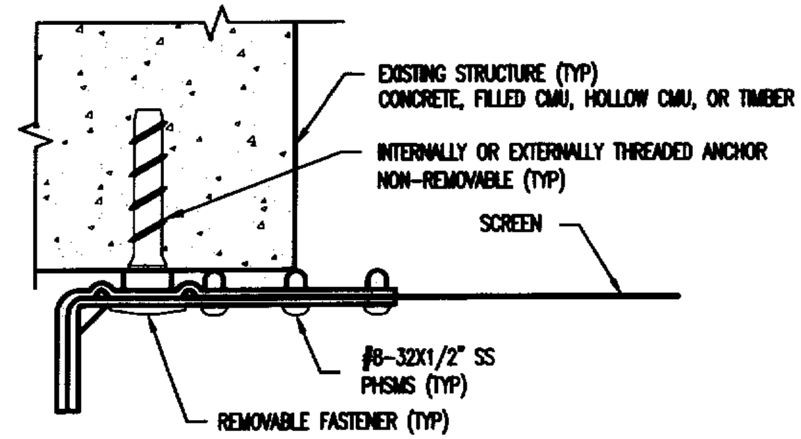


TYPICAL TWO-SIDED INSTALLATION
VERTICAL OR HORIZONTAL INSTALLATION - N.T.S.

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



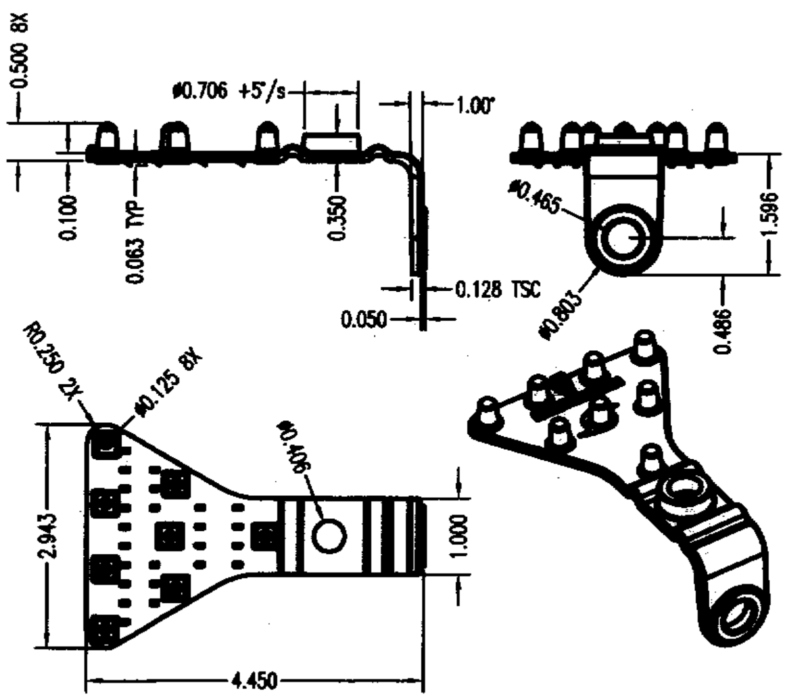
SECTION A-A (OPTION 1)
INSIDE MOUNT INSTALLATION - N.T.S.



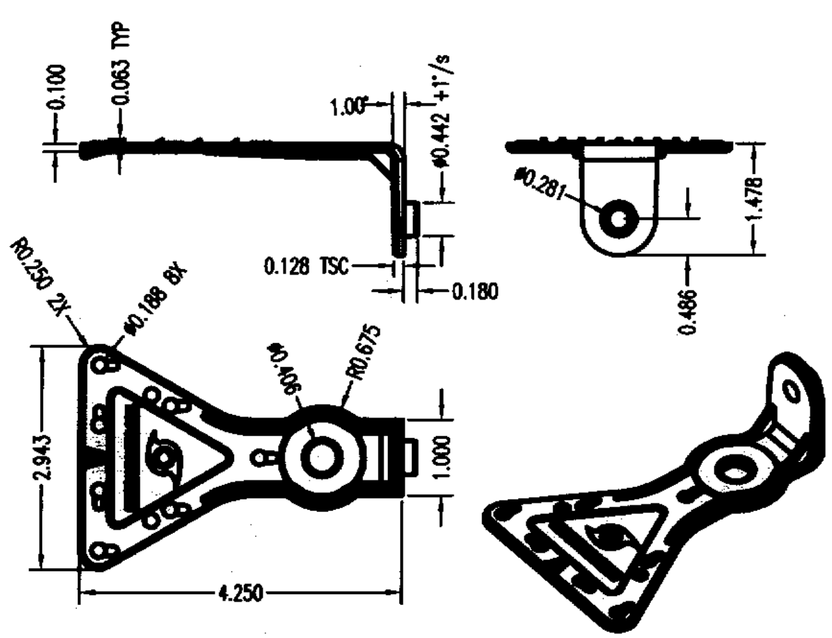
SECTION A-A (OPTION 2)
OUTSIDE MOUNT INSTALLATION - N.T.S.

LOADS ON EXISTING STRUCTURE FROM SCREEN SYSTEM TX = PARALLEL LOADS (PLF)							
SPAN	PRESSURE (PSF)						
(INCHES)	60	55	50	45	40	35	30
216	1134	1070	1004	936	866	792	714
192	1020	962	903	842	778	712	642
168	905	854	801	747	690	631	570
144	744	702	659	614	568	519	469
120	651	615	577	538	497	455	410
96	553	521	489	456	422	386	348
72	353	333	312	291	269	246	222
48	254	240	225	210	194	178	160

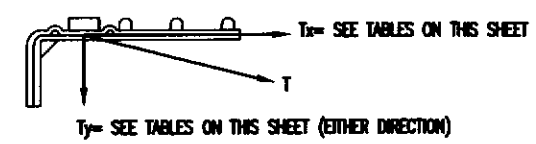
LOADS ON EXISTING STRUCTURE FROM SCREEN SYSTEM TY = PERPENDICULAR LOADS (PLF)							
SPAN	PRESSURE (PSF)						
(INCHES)	60	55	50	45	40	35	30
216	540	495	450	405	360	315	270
192	480	440	400	360	320	280	240
168	420	385	350	315	280	245	210
144	360	330	300	270	240	210	180
120	300	275	250	225	200	175	150
96	240	220	200	180	160	140	120
72	180	165	150	135	120	105	90
48	120	110	100	90	80	70	60



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



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



2014 FBC (NON-HIGH VELOCITY HURRICANE ZONE) 5TH EDITION

CA #8782
WWW.MEAENGINEERS.COM

REV.	DESCRIPTION
1	xx/xx/xx–RESERVED

MEA ENGINEERS, INC.
5858 Lawton Drive
Sarasota, Florida 34233
(941) 922-3854 CA-8072

Project Name:
HURRICANE FABRIC LLC
PO BOX 50153
CLAYTON, MO 63105
PHONE: (238)880-0089
WWW.HURRICANEFABRIC.COM

Description:
ASTRO GUARD
Wind Abatement System

Drawn: JK
Project #: 15-0226
Scale: NTS
Date: 4/30/15
Sheet No.: 2/2