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Product Approval
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FL #	FL8363-R5														
Application Type	Revision														
Code Version	2014														
Application Status	Approved														
Comments															
Archived	<input type="checkbox"/>														
Product Manufacturer	Armor Screen Corp.														
Address/Phone/Email	2744 Hillsboro Road West Palm Beach, FL 33405 (561) 841-8890 doug@armorscreen.com														
Authorized Signature	Douglas Turner doug@armorscreen.com														
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Quality Assurance Representative	Douglas Turner														
Address/Phone/Email	1881 Old Okeechobee Road West Palm Beach, FL 33409 (561) 841-8890 doug@armorscreen.com														
Category	Impact Protective Systems														
Subcategory	Removable														
Compliance Method	Evaluation Report from a Florida Registered Architect or a Licensed Florida Professional Engineer <input checked="" type="checkbox"/> Evaluation Report - Hardcopy Received														
Florida Engineer or Architect Name who developed the Evaluation Report	Theodore Berman, P.E.														
Florida License	PE-09814														
Quality Assurance Entity	National Accreditation and Management Institute														
Quality Assurance Contract Expiration Date	12/31/2018														
Validated By	Simon Segal, P.E. <input checked="" type="checkbox"/> Validation Checklist - Hardcopy Received														
Certificate of Independence	FL8363_R5_COI_Certification of Independence.SS.pdf														
Referenced Standard and Year (of Standard)	<table> <thead> <tr> <th>Standard</th> <th>Year</th> </tr> </thead> <tbody> <tr> <td>ASTM E 1886</td> <td>2005</td> </tr> <tr> <td>ASTM E 1996</td> <td>2005</td> </tr> <tr> <td>ASTM E 330</td> <td>2002</td> </tr> <tr> <td>TAS 201</td> <td>1994</td> </tr> <tr> <td>TAS 202</td> <td>1994</td> </tr> <tr> <td>TAS 203</td> <td>1994</td> </tr> </tbody> </table>	Standard	Year	ASTM E 1886	2005	ASTM E 1996	2005	ASTM E 330	2002	TAS 201	1994	TAS 202	1994	TAS 203	1994
Standard	Year														
ASTM E 1886	2005														
ASTM E 1996	2005														
ASTM E 330	2002														
TAS 201	1994														
TAS 202	1994														
TAS 203	1994														

Equivalence of Product Standards
Certified By

Sections from the Code

Product Approval Method

Method 1 Option D

Date Submitted

04/17/2015

Date Validated

04/27/2015

Date Pending FBC Approval

04/28/2015

Date Approved

06/23/2015

Summary of Products

FL #	Model, Number or Name	Description
8363.1	Armor Screen HVHZ Grommet and Hemcord System, Series 2000	Armor Screen HVHZ Grommet and Hemcord System, Series 2000
Limits of Use Approved for use in HVHZ: Yes Approved for use outside HVHZ: Yes Impact Resistant: Yes Design Pressure: +110/-110 Other: Glass separation is required for installations within Wind Zone 4, High Velocity Hurricane Zone and on Essential Facilities. The un-breached envelope criterion is met since the system is considered 'non-porous' outside of the High Velocity Hurricane Zone and remains intact under impact and air pressure loading. The system is to enclose the protected opening all around.		Installation Instructions FL8363 R5 II Installation Instructions-Grommet and Hemcord Series 2000.SS.pdf Verified By: Theodore Berman, P.E. 09814 Created by Independent Third Party: No Evaluation Reports FL8363 R5 AE Evaluation Report No. TBA 15-0423.01.pdf Created by Independent Third Party: Yes

[Back](#)

[Next](#)

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Product Approval Accepts:



ARMOR SCREEN GROMMET AND HEMCORD SERIES 2000 HURRICANE PROTECTION

GENERAL NOTES:

- This Flexible Wind Abatement / Impact Protection System is for use within and outside the high velocity hurricane zone (HVHZ - Miami-Dade & Broward Counties). Separation from glass is required only when system is installed within wind zone 4, high velocity hurricane zone and on essential facilities.
- The design loads are calculated in accordance with the Florida Building Code 5th Edition (2014) and ASCE 7-10. Pressures obtained under ASCE 7-10 may be multiplied by 0.6.
- Testing meets Florida Building Code 5th Edition (2014): TAS 201; TAS 202; TAS 203; ASTM E 330-02; ASTM E 1996-05 Level E; and ASTM E 1886-05 per Sections 1620 and 1626 and fulfills its requirement for opening protection.
- Testing performed by Fenestration Testing Laboratory, Inc. Medley, FL:
Test Reports: Date: 01/28/07 File #07-482 Lab #5174 Report #01
Date: 01/28/07 File #07-482 Lab #5180 Report #02
Date: 08/25/07 File #07-482 Lab #5279 Report #03
Date: 12/07/07 File #07-482 Lab #5446 Report #04
Date: 02/08/08 File #08-482 Lab #5533 Report #01
- Has been tested for resistance to burning, smoke, ignition, temperature and weathering: ASTM C158, ASTM D 635-C1, ASTM D 638, ASTM D 1929 and ASTM G 155.
- The pores in Armor Screen are small enough that the surface tension of water causes the barrier screen to become solid in the presence of rain, and prevents damaging voluminous water intrusion, even from torrential rains.
In dry conditions, the pores remain open, and based on testing, allow approximately 3% of the wind to pass through.
- The unbreached envelope criterion is met since the system is considered "non-porous" and remains intact under impact and air pressure loading. This envelope criterion is met when the system encloses the protected opening all around.
- Product Marking: A permanent label shall be fixed to the screen barrier with the following statement: "Armor Screen Corporation, West Palm Beach, FL, Testing Standards, Current FBC Number, Job Name and Screen Opening/Number, Patented and Patents Pending, US Patent No. 6176050".

PRODUCT DATA:

- Geosynthetic hurricane screen: The hurricane screen shall be produced from a polypropylene, woven geotextile fabric with filaments woven such that the filaments retain dimensional stability relative to each other.

The woven geotextile fabric shall have the following minimum average roll values:

Grab Textile Strength	(ASTM D4632)	425 x 325 LBS
Puncture Strength	(ASTM D4833)	130 LBS
Mullen Burst	(ASTM D3786)	675 PSI
Trapezoidal Tear	(ASTM D4533)	150 x 125 LBS
Wide Width Tensile Strength	(ASTM D4595)	225 x 205 LBS/IN
Thickness	(ASTM D5199)	20 MIL.
Wide Width Elongation	(ASTM D4595)	22 x 21%
Apparent Opening Size		30 US STD Sieve
Percentage of Open Area		5%

LIMITATIONS OF USE:

- Maximum Span
192 Inches Hemcord
148 Inches Grommet
- Maximum Non-Span
Unlimited, Utilizing side overlapping details, page 8
- Maximum Design Pressure
+110 / -110 PSF
- The design pressure may be increased 5% for negative loads.
- Span equals the distance between the primary rows of fasteners or grommets.

INSTALLATION NOTES:

- Screen may be mounted with opposing primary anchored perimeter in vertical, horizontal or any alignment appropriate to the structure being protected.
- Deflection is the minimum glass separation measured at mid span of the screen and subject to rational analysis and may be achieved by using F-track, Storm Bars, Pneumatic Device, various Angled Style Screens and Center Hem Style Screen.
- Screen unable to return should extend past protected opening by distance equal to or greater than the minimum deflection / offset, which ever is greater.
- All specifications to be equivalent or greater in product.
- Anchor attachments may include standard Wingnut, Hex, Round, and Truss Head Machine Screws, Stainless Steel Sidewalk Bolt, Carriage Bolts or any other appropriate and equal fastener.
- All Aluminum Extrusions to be minimum 6063-T6 or as indicated.
- The thickness of typical facing materials i.e. stucco, siding, stone, brick, pavers, etc. are not to be considered part of the anchor embedment. Longer fasteners may be used to allow for facing materials.
- Anchor embedment shall be in face shell, not mortar joints.
- Drop-In and Calk-In Anchors shall be flush with substrate and shall not extend into finished facing.
- If lapcons are used with Grommet Style Screen, a washer should be utilized.
- 18" and 12" attachment spacing for short spans (less than 76") may experience large screen deflections and incomplete closure at edges between anchors.
- The screens may be installed at any height on the structure as long as the design pressure rating for the screens is not exceeded.
- All fasteners shall be corrosion resistant as specified in the IRC and IBC.
- The minimum engagement of the eyebolt into the anchor is at least 2/3 of the threaded length of the fastener. For a 1/2" diameter drop-in anchor the thread length is 3/16" and the fastener length is 2". Therefore, the minimum engagement length for the eyebolt is 3/16". The minimum engagement length for a 3/8" eyebolt is 7/16" and for a 1/2" bolt 5/16".
- In instances where a screen is made up of two pieces of fabric or for repair purposes, a flat felt seam or triple layer hem with a minimum of two rows of double lock stitch thread is acceptable. The anchor attachment, i.e. loops or buckles & strap requires three rows of double stitching and the Grommet - Hemcord System requires two rows. The fabric comes in standard lengths such as 12' wide, therefore for screens that are larger, two pieces are seamed together as noted above.
- Span side anchors are optional.
- Flaps as depicted in the drawings are optional.

All Geosynthetic Hurricane Screen assembly details depicted within these drawings are typical for the installation of this Hurricane Protection system only. All other building components shown herein are depicted as existing or samples and not constructed by the screen company.

No 09814

Engineering Review By:
Michael J. Berman and
Star Associates, LLC

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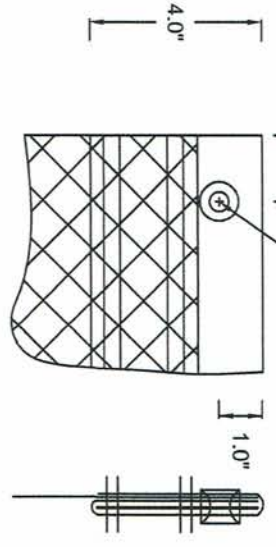
ARMOR SCREEN

GROMMET AND HEMCORD SERIES 2000 HURRICANE PROTECTION

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2744 Hillshon Road
West Palm Beach, FL 33405
(561) 841-8890 www.armorScreen.com

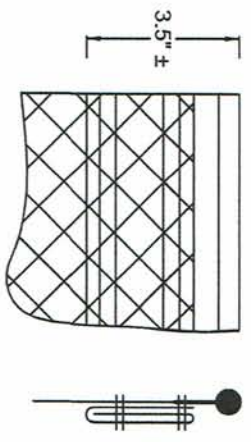
Date: 10/23/07 Rev. Date: 10/11/10 Rev. Date: 04/23/15
Scale: Not to Scale Page: 1 of 19

1.5" - 2 Sided Screen
1.0" - 3 Sided Screen #2 Nickel Plated Brass Grommet



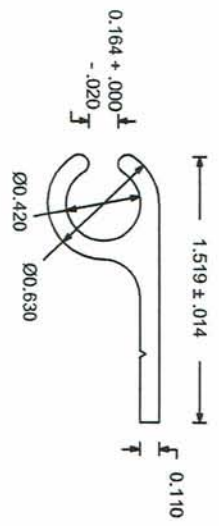
Grommet with Stitching Detail

- Stitching Detail**
- Support Edge, Trifold Seam around 4" Polyprow webbing
 - Sewing includes 2 rows, Double Lock Stitch, of Anefil Nylon T135 bonded thread or equal.
 - Grommetted through seam.

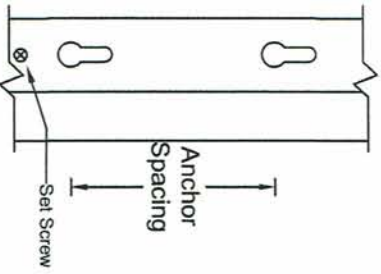


Welded Hemcord with Stitching Detail

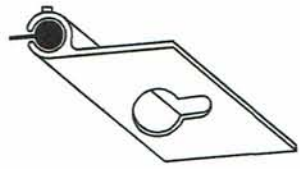
- Stitching Detail**
- Hemcord Dia.: 5/16"
 - Sewing includes 2 rows, Double Lock Stitch, of Anefil Nylon T135 Bonded Thread or equal.
 - Reinforced welded hemcord includes a 2" trifold Polyprow Seam sewn over the weld.



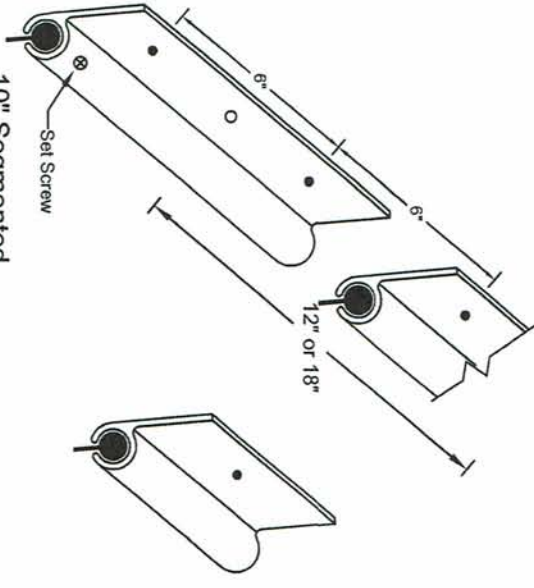
Same as above extrusion



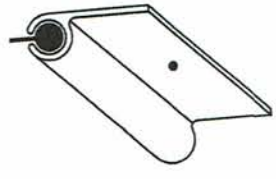
Keyhole Slot in Continuous C-Channel



Keyhole Slot in Segmented C-Channel



10" Segmented C-Channel Alloy: 6063-T6 Aluminum

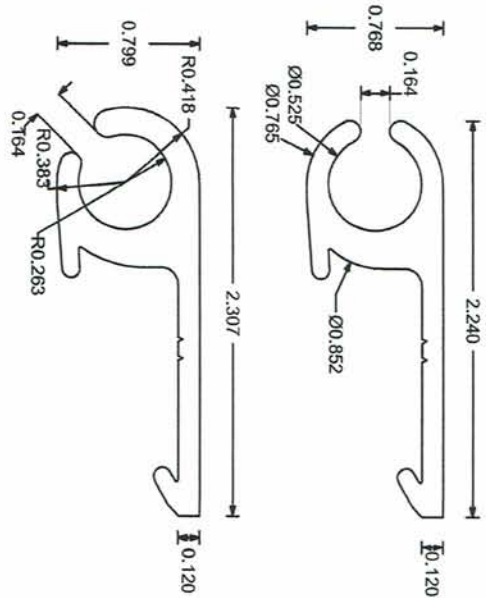


5" Segmented C-Channel Alloy: 6063-T6 Aluminum

NOTES:

- The length of the segmented C-Channel is governed by the strength of the fabric to C-Channel connection, not the hardware attachment to the C-Channel.
- When a Keyhole Slot or washer is used on continuous C-Channel, a set screw through the channel and into the substrate is required to lock in place.
- For Anchor Spacing, see Anchor Tables on pages 14 - 19.
- A 1/4" TEK Screw may be used to secure the C-Channel end to limit screen movement.

NOTE: Heavier alternate extrusion may be used.



C-Channel

Alloy: 6063-T6 Aluminum

HEMPCORD / C-CHANNEL

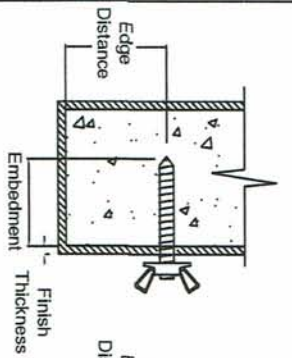
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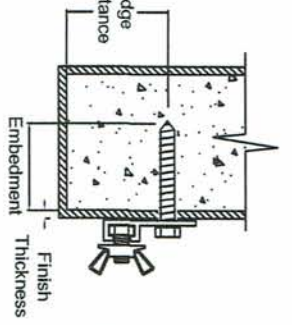
Engineering/Review By: [Signature]
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Certification # [Signature]
2525 Adair Highway, Suite 100
Maitland, FL 32751
Tel: (407) 898-4707
www.publicprocurement.com

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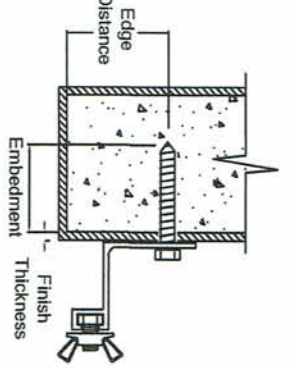
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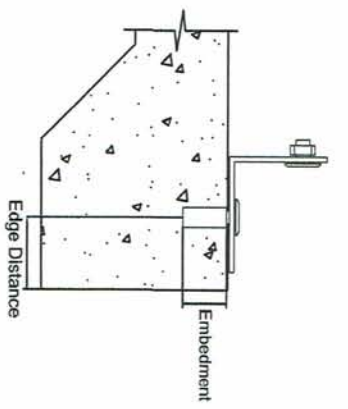
Grommet Direct Mount Anchoring Detail



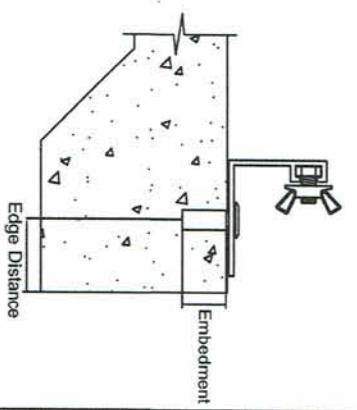
Grommet F-Track 6063-T6 Anchoring Detail



Grommet F-Track 6063-T6 (1", 2", and 3" Build-Out) Anchoring Detail



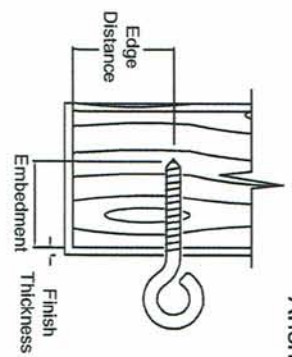
Grommet Angle Aluminum Minimum .125" x 6063-T6 Anchoring Detail



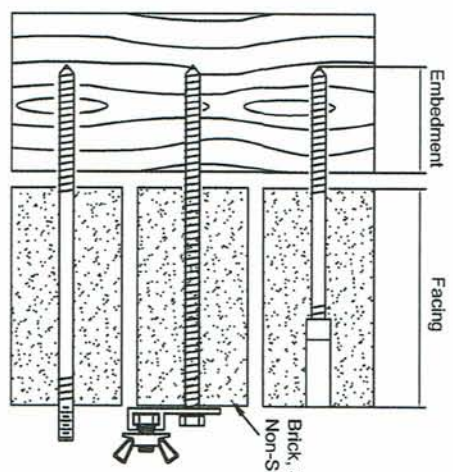
Grommet Studded / Studless Angle F-Track Minimum .125" x 6063-T6 Anchoring Detail



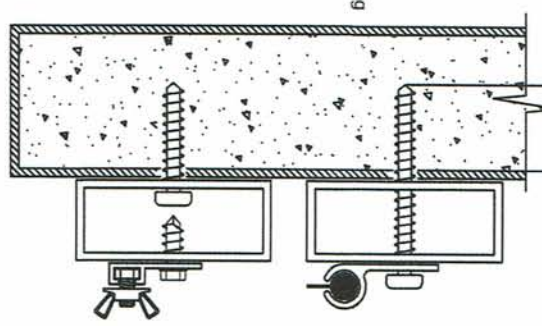
CMU and Terracotta Block Epoxy Anchor see Table 5, page 16 for anchoring details



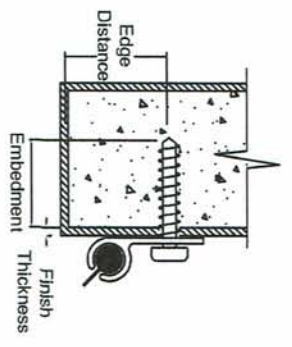
Grommet 3/8" Eye Lag Anchoring Detail



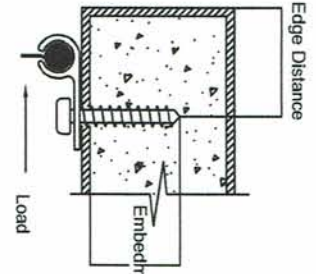
1/4" or 3/8" Hanger Bolt with Coupler, Panelmate or Hex Lag Screw (Non-Structural Facing)



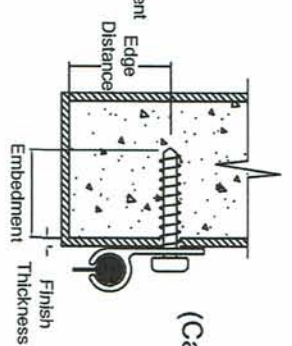
1/8" Aluminum Tube / Angle For Build-Out 6063-T6 Alloy



45° C-Channel



90° C-Channel



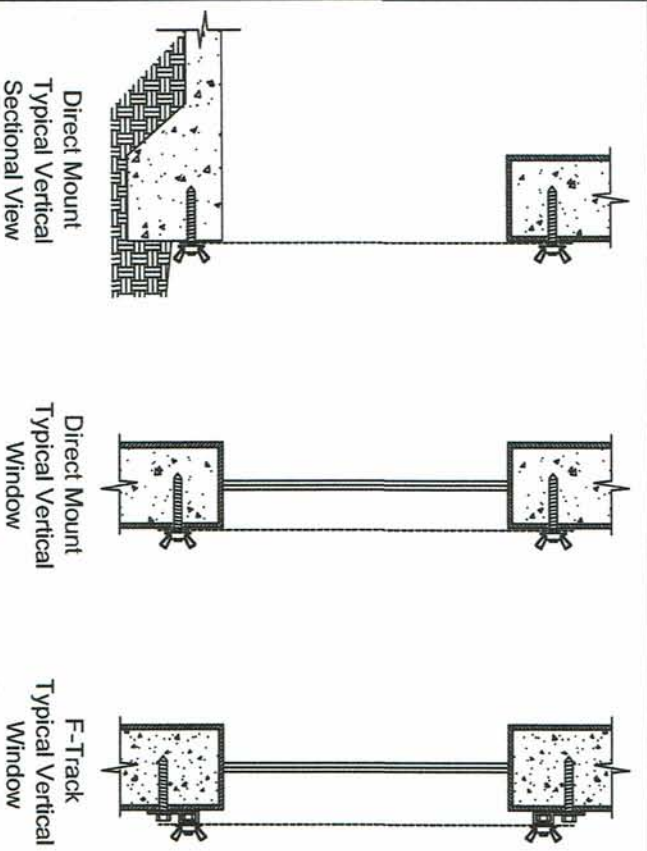
180° C-Channel

(Caulk or Sealant suggested to seal facing) Some damage to the facing may be expected

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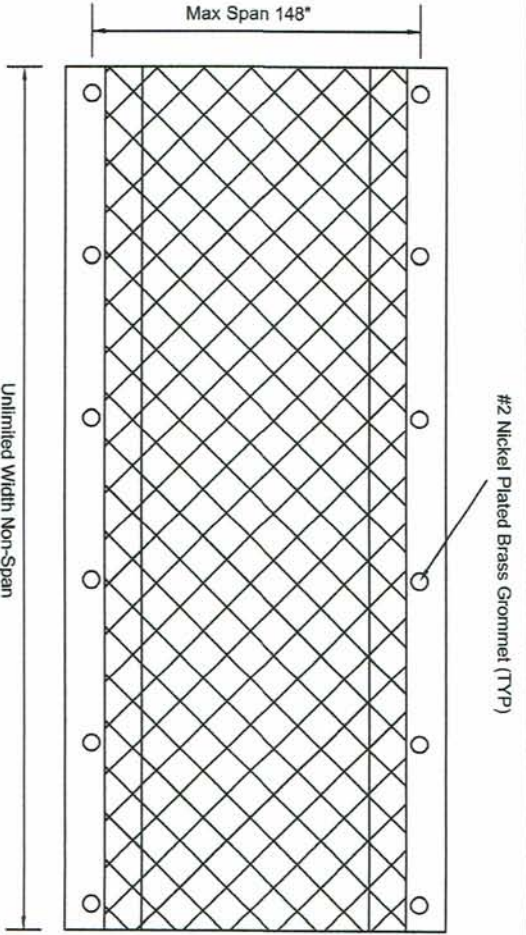


Direct Mount Typical Vertical Window Sectional View

Direct Mount Typical Vertical Window Sectional View

F-Track Typical Vertical Window Sectional View

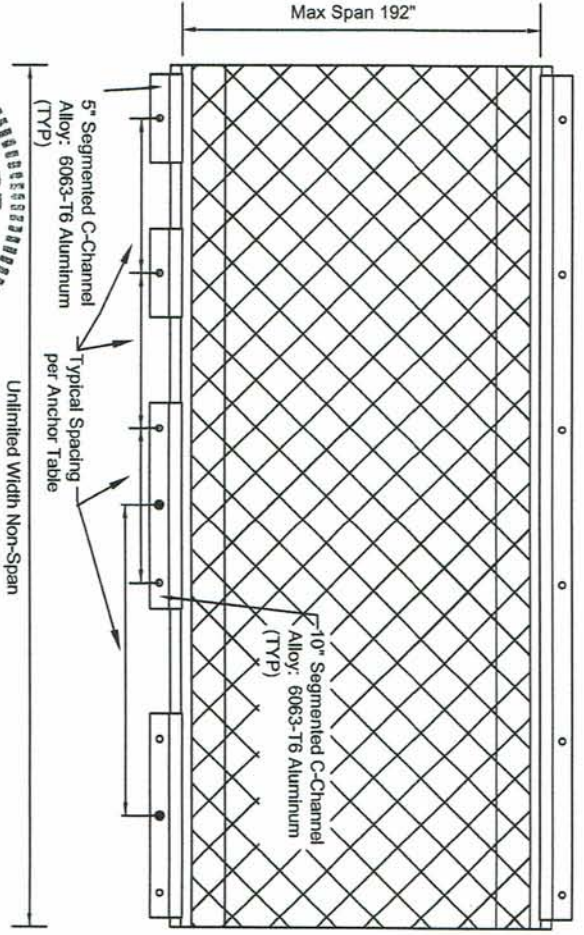
Span



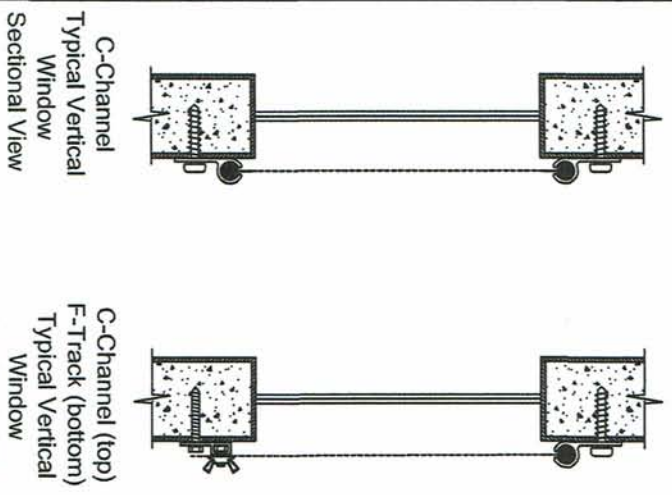
GROMMET VERTICAL INSTALLATION
(Span Sides = Welded Seam)

#2 Nickel Plated Brass Grommet (TYP)

- NOTES:**
- Typical screen anchor attachment may be grommet, continuous C-Channel, segmented C-Channel or any combination.
 - The length of the Segmented C-Channel is governed by the strength of the fabric to C-Channel connection, not the hardware attachment to the C-Channel.

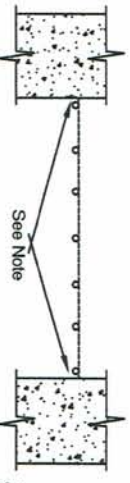


C-CHANNEL VERTICAL INSTALLATION
(Span Sides = Welded Seam)



C-Channel Typical Vertical Window Sectional View

C-Channel (top) F-Track (bottom) Typical Vertical Window Sectional View



PLAN VIEW, VERTICAL SCREEN, TRAPPED OPENING

NOTE: For a trapped opening, side anchors are optional on the span side of the screen. Screen should butt the walls

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FLORIDA STATE BOARD OF PROFESSIONAL ENGINEERING

Professional License No. 09814

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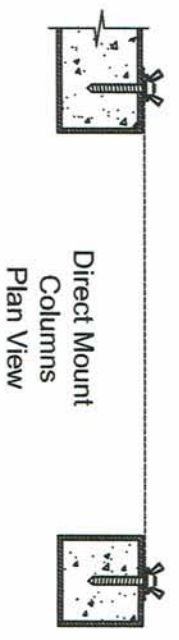
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For Program and Associates, LLC
Qualification Authorization # 77502

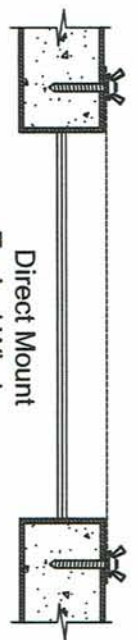
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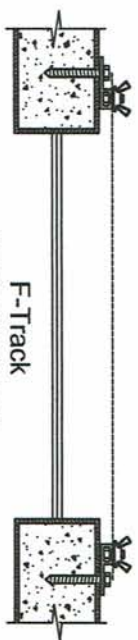
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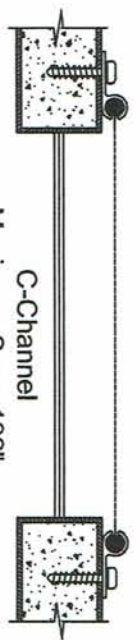
Direct Mount
Columns
Plan View



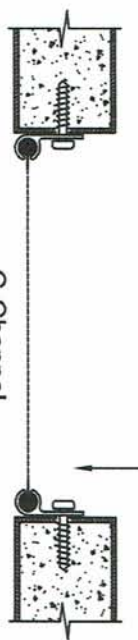
Direct Mount
Typical Window
Plan View



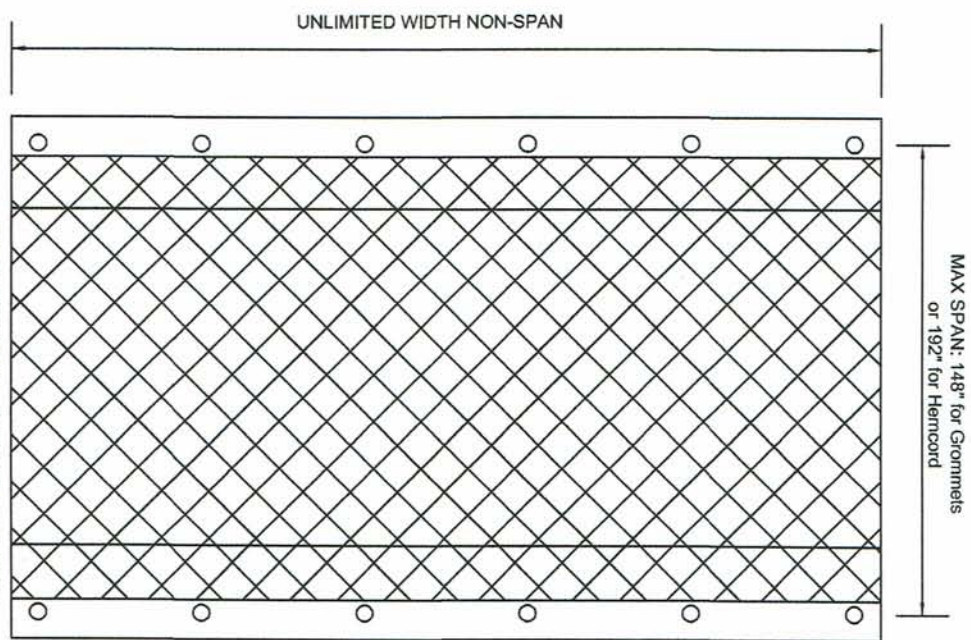
F-Track
Typical Window
Plan View



C-Channel
Maximum Span 192"
Typical Window
Plan View



C-Channel
Maximum Span 192"
Column Mount
Plan View



NOTE:
Typical screen anchor attachment may be grommet, continuous C-Channel, segmented C-Channel or any combination.

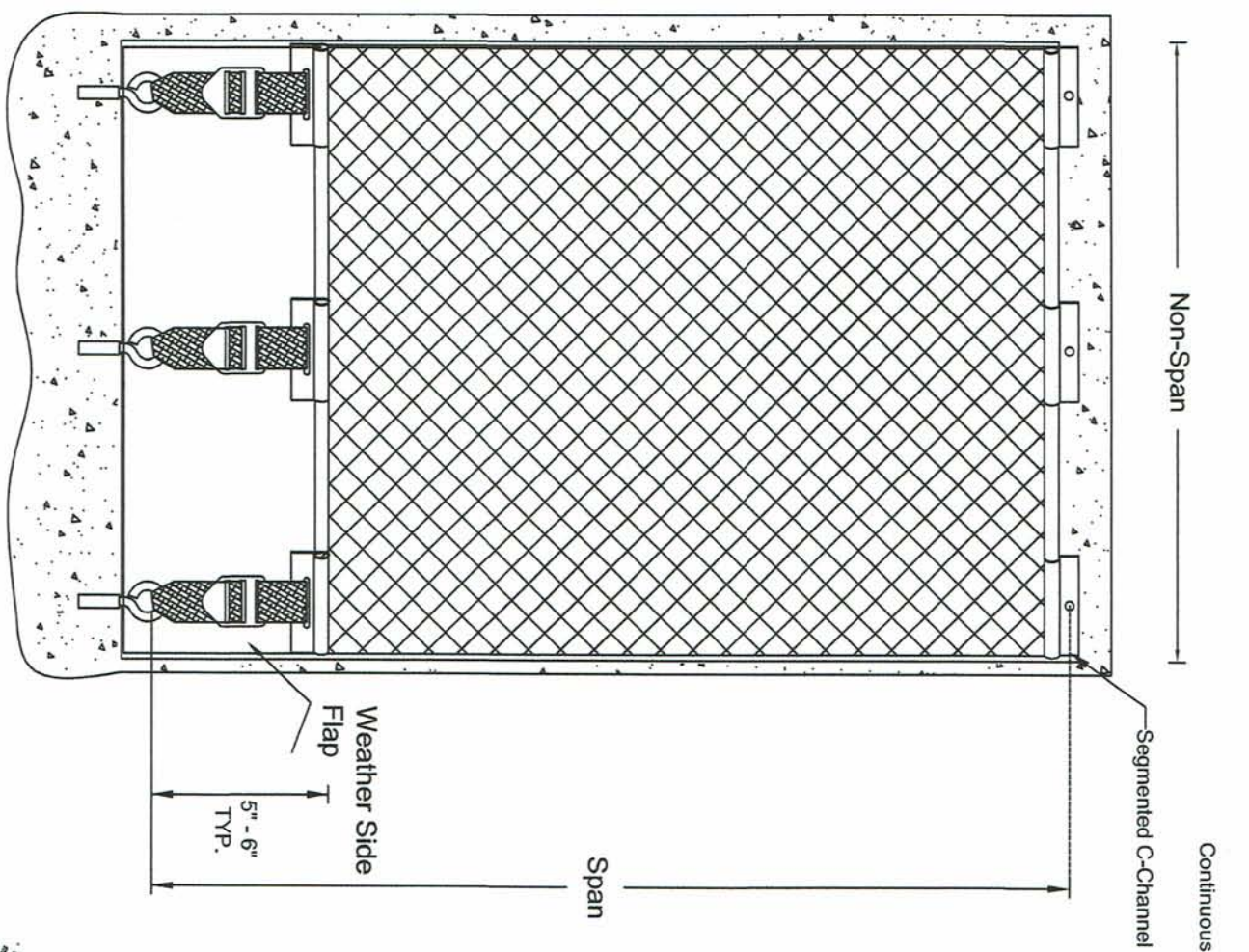


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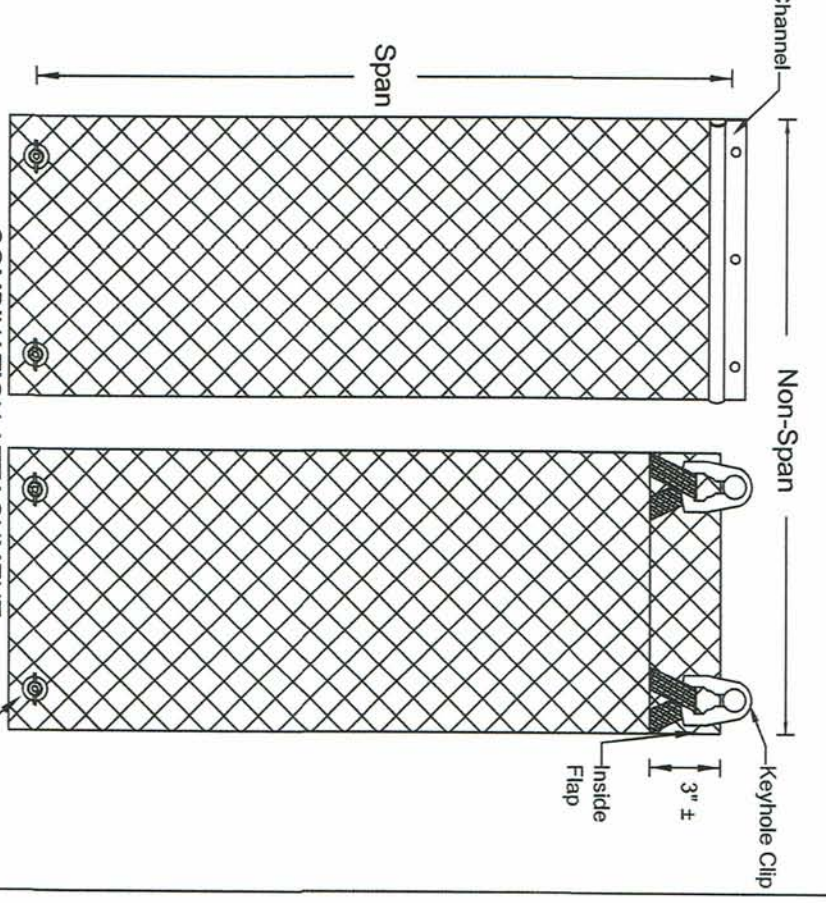
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COMBINATION ATTACHMENT
W/ EYEBOLT, BUCKLE/STRAP,
AND SEGMENTED C-CHANNEL
not to scale



NOTES:

- Typical screen anchor attachment may be grommet, continuous C-Channel, segmented C-Channel or any combination.
- For Combination Grommet / Hemcord System, use the grommet span.
- Strap material equal to DirectTex 2" High Tenacity Polypro black or white.
- Buckle with raised "Armor Screen" imprint is proprietary to Armor Screen Corp.

For buckle/strap details, see page 12

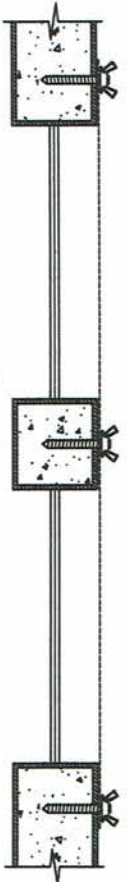


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 State of Florida
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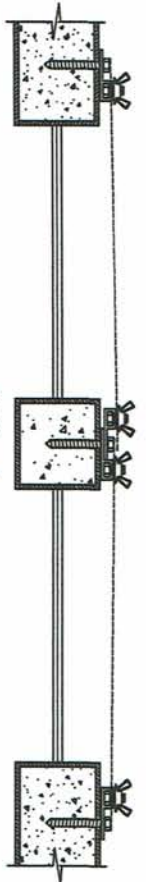
ARMOR SCREEN GROMMET AND HEMCORD SERIES 2000 HURRICANE PROTECTION	
ARMOR SCREEN, Inc. 2744 Hillisboro Road West Palm Beach, FL 33405 (561) 841-8890 www.armor-screen.com	Rev. Date: 10/11/10 Rev. Date: 04/23/15
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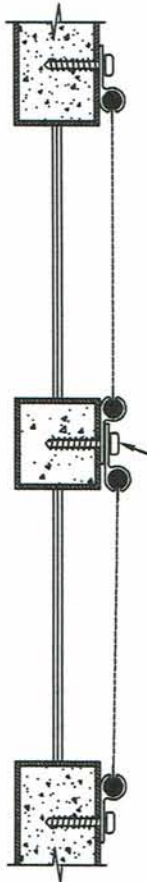
Direct Mount
Columns
Plan View



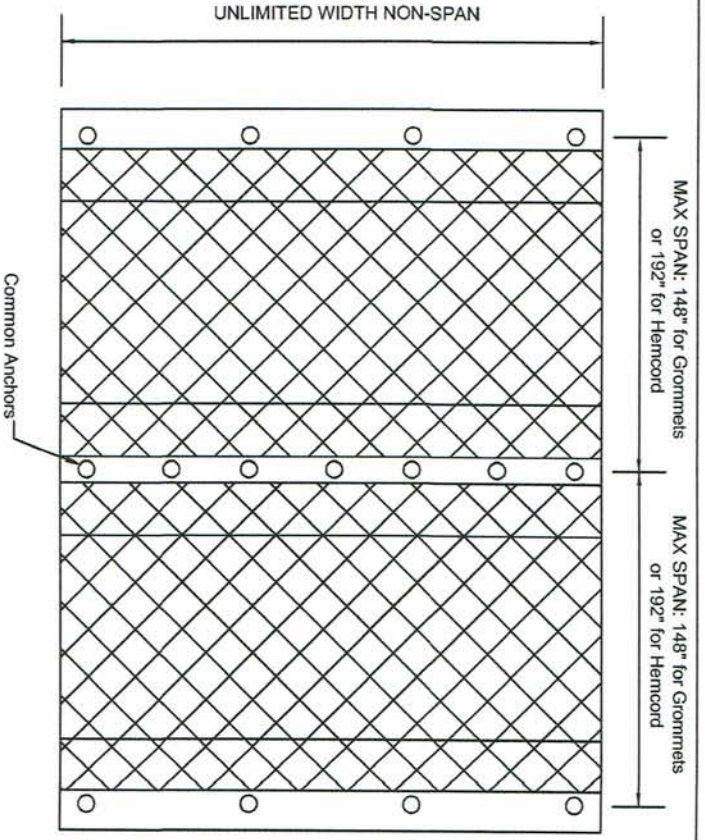
Direct Mount
Typical Window
Plan View



F-Track
Typical Window
Plan View



C-Channel Max. Span 192"
Typical Window
Plan View



- NOTES:
- Two adjacent screens may share common anchors.
 - Typical screen anchor attachment may be grommet, continuous C-Channel, segmented C-Channel or any combination.



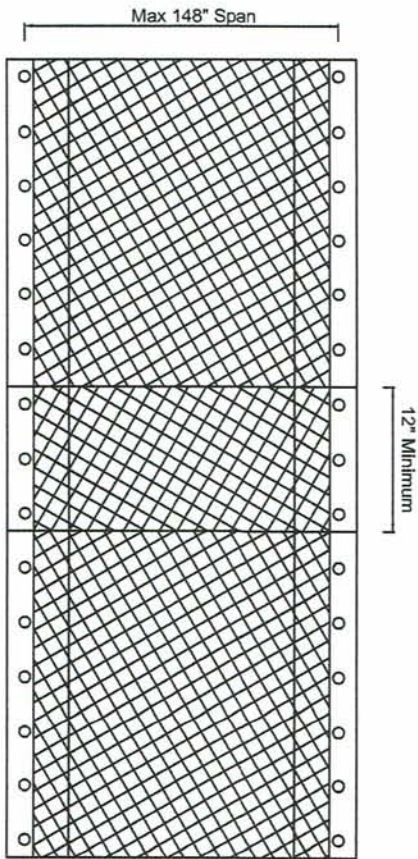
COMMON ANCHORS

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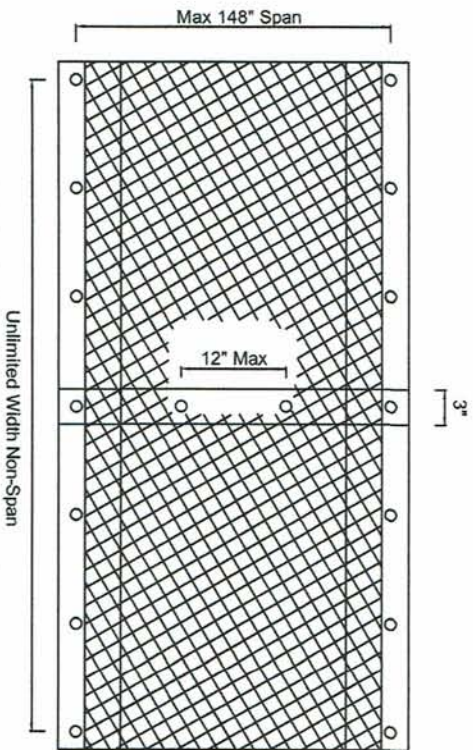
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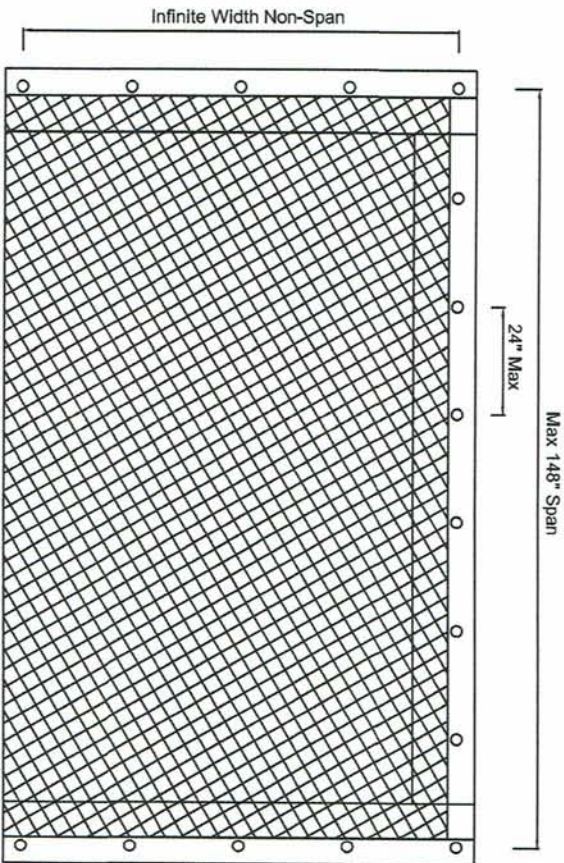
TYPE 1 GROMMET SCREEN OVERLAP



TYPE 2 GROMMET SCREEN OVERLAP



NON-SPAN SECTION
MINIMUM EDGE OVERLAP
(Vertical and Horizontal)



GROMMET SCREEN -GROMMET / C-CHANNEL

- NOTES:**
- Span Side Anchors are optional.
 - If adjacent screens are overlapped 3" and connected through the grommets with minimum deflection, a 1/4" nylon bolt / nut assembly should be used 12" on center maximum.
 - Adjacent screens may also be connected with approved buckle/strap.

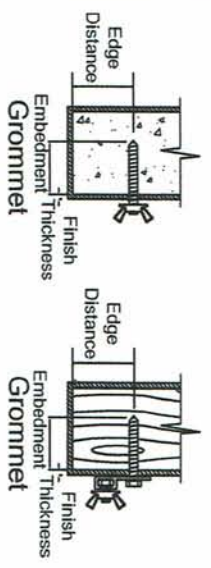


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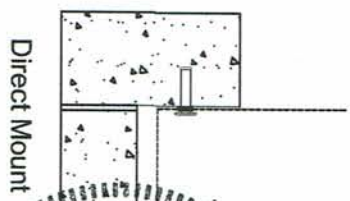
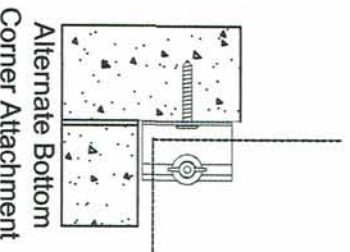
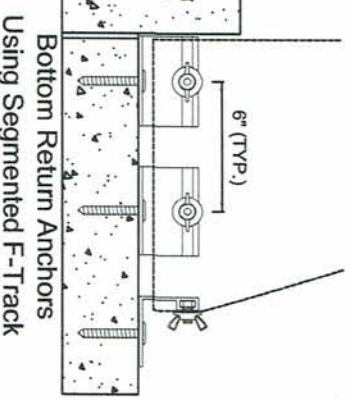
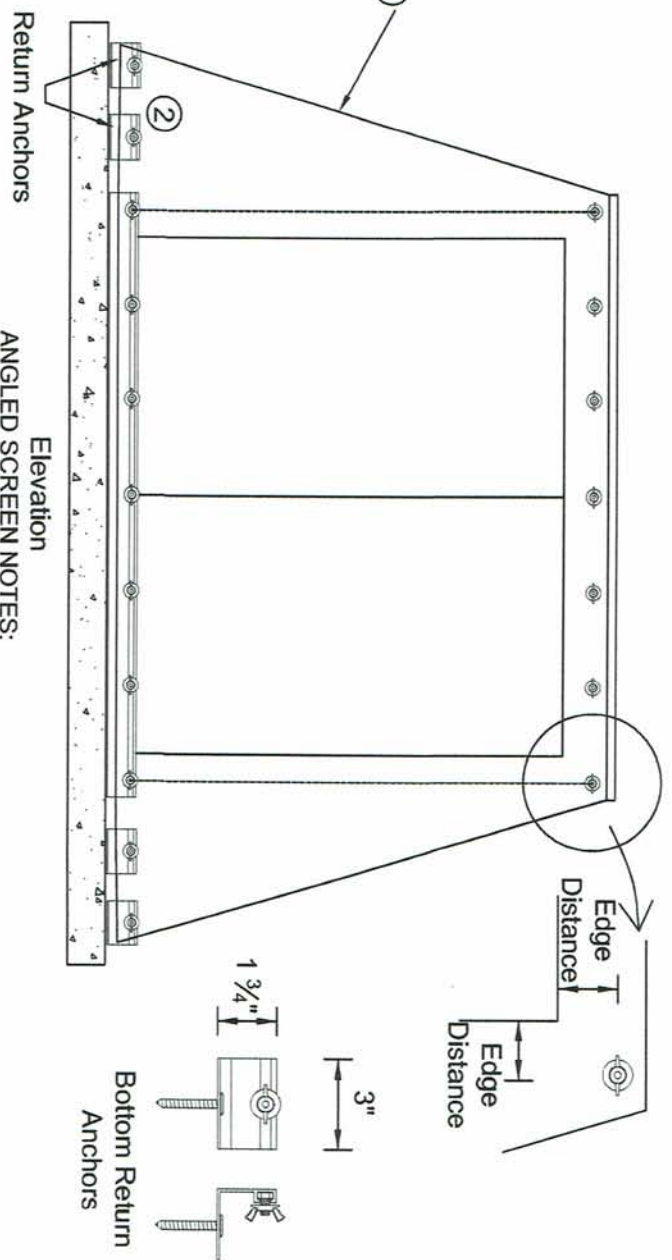
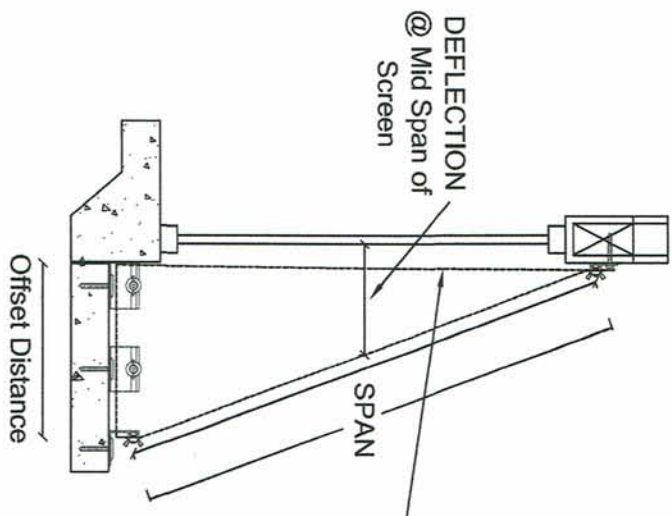
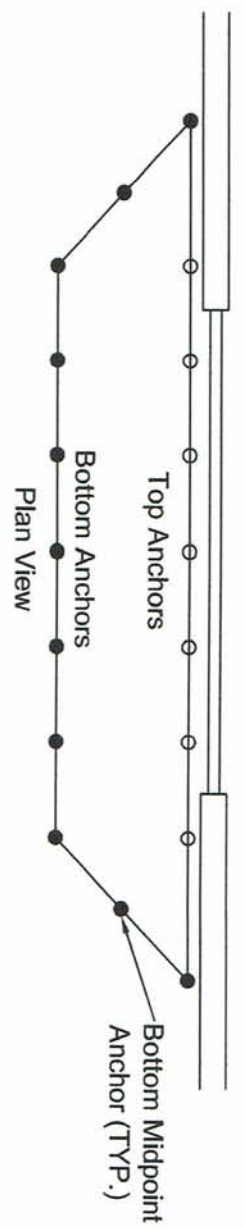
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Top Anchoring Detail Top Anchoring Detail

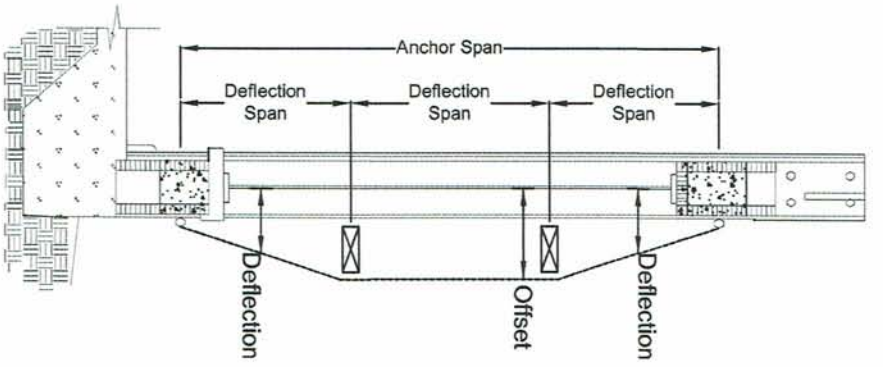


- ANGLED SCREEN NOTES:**
1. Refer to Deflection Table D-1.1 page 13.
 2. Bottom Return Requires a midpoint anchor.
 3. Side Return (span side) anchors are optional.
 4. Typical screen anchor attachment may be grommet, continuous C-Channel, segmented C-Channel or any combination.

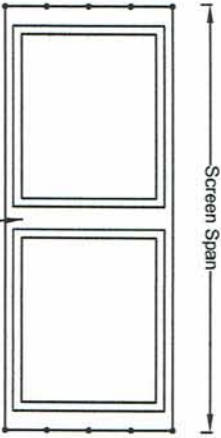
ANGLED SCREEN

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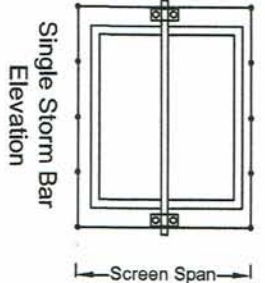
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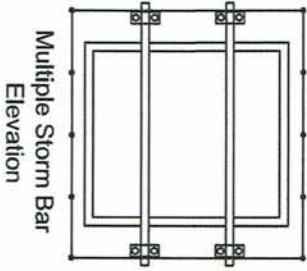
Multiple Storm Bar with Single Opening



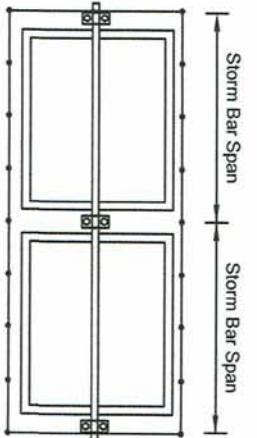
Building Structure between adjacent window / door frames may act as a Storm Bar if proper offset to the glazing is present. This applies to a vertical or horizontal applications.



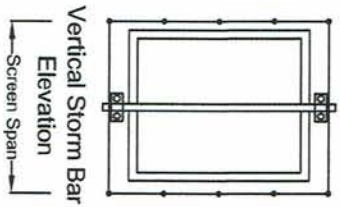
Single Storm Bar Elevation



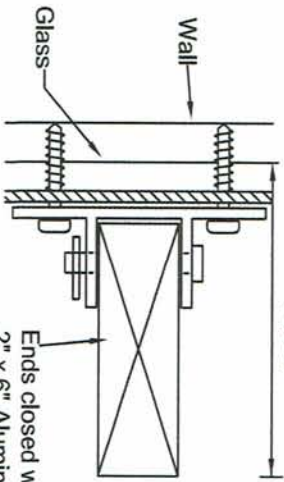
Multiple Storm Bar Elevation



Single Storm Bar with Multiple Openings Elevation

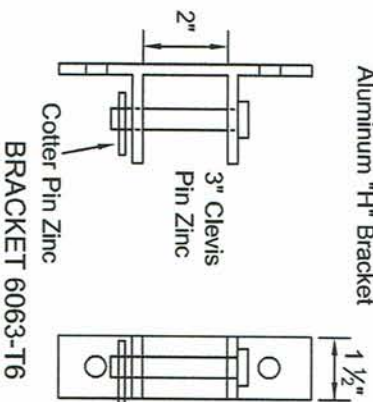


Vertical Storm Bar Elevation



STORM BAR & BRACKET

- STORM BAR NOTES:**
1. Refer to Table D-1.2 on page 13.
 2. The storm bar system is designed to achieve deflection and may utilize one or more storm bars. The offset may be increased with blocking at the support.
 3. Storm bars may be positioned horizontal, vertical or as required.
 4. The storm bar bracket may be permanent or removable and attached to the structure using two (2) approved 1/4 inch anchors. Refer to pages 14 - 19.
 5. The storm bar and screen should extend past the protected opening by 1 1/2 times the offset.
 6. Use "opening" span and positive wind pressure to determine the minimum separation between screen and glazing.
 7. Use "anchor" span and negative wind pressure to determine fastener size and spacing.



STORM BAR SYSTEM

ARMOR SCREEN
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HURRICANE PROTECTION

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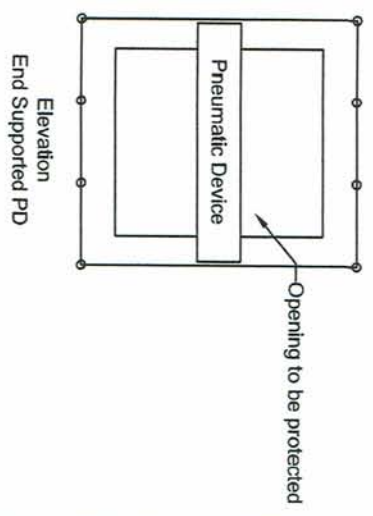
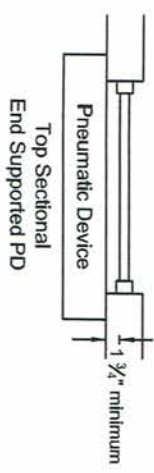
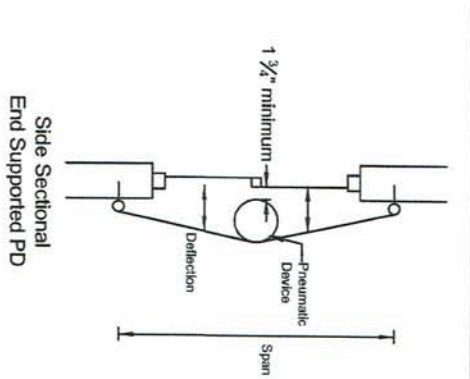
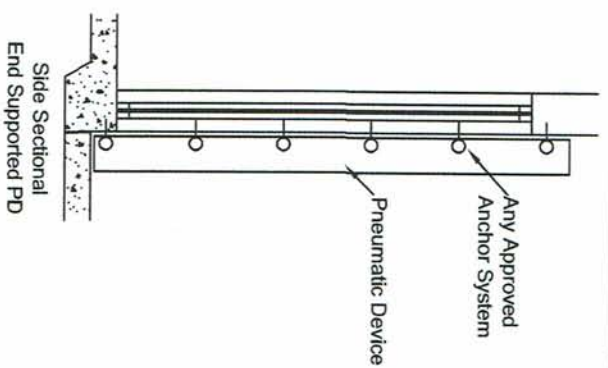
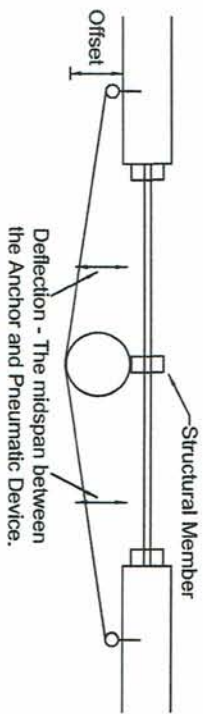
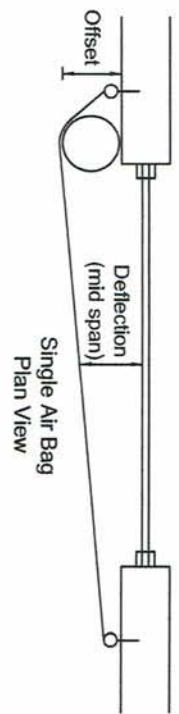
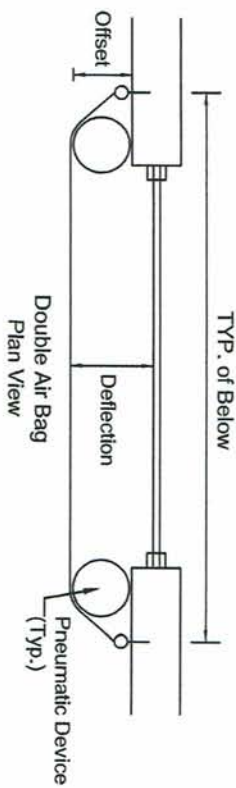
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Max. Span 192"
TYP. of Below



PNEUMATIC DEVICE (PD) SPECIFICATIONS:

1. Pneumatic Device consists of two parts, a refillable polymer air bladder capable of holding air without perceptible leakage, and a tough fabric cover for structural integrity and durability.
2. May be inflated by any residential or commercial vacuum cleaner, or air pump intended for air mattresses or equivalent devices.
3. Upon removal, the Pneumatic Device should be deflated and stored with screen barrier.

PNEUMATIC DEVICE (PD) DEFLECTION SYSTEM NOTES:

1. Refer to the Deflection Table D-1.1 on page 13.
2. Pneumatic device must not rest on glazing.
3. The pneumatic device may be attached to barrier and may rest on but not attached to the structure. The device may be end supported if spanning the protected opening.
4. Inflation of the device requires a minimum pressure of 2.0 psi.
5. One or more devices may be used to achieve separation.
6. This system may be positioned horizontally, vertically, or as required.
7. The pneumatic device may be permanently attached to the screen or made removable.
8. The sleeve should not be attached to the building structure unless designed as a specific installation by a structural engineer.
9. The pneumatic device should be positioned to provide adequate deflection between the screen / barrier and surface being protected.

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ARMOR SCREEN HURRICANE PROTECTION

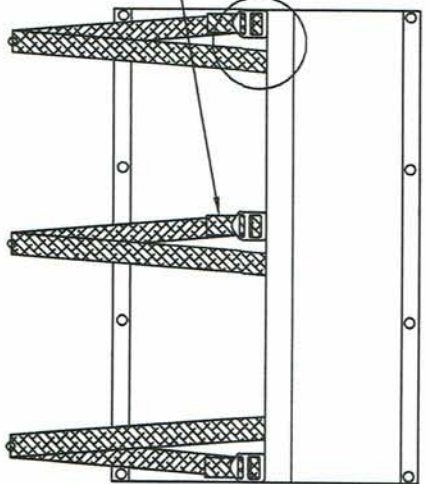
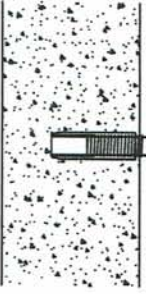
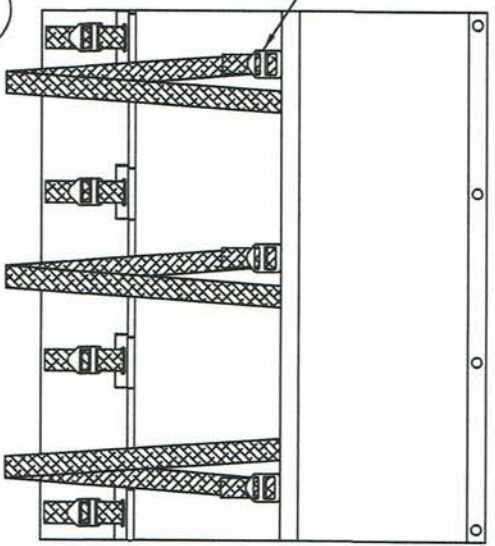
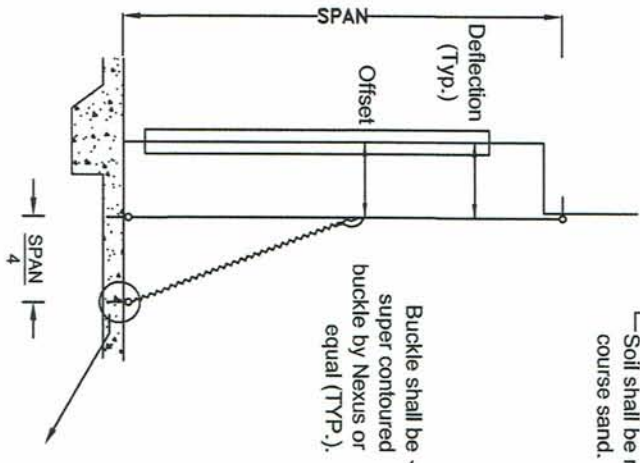
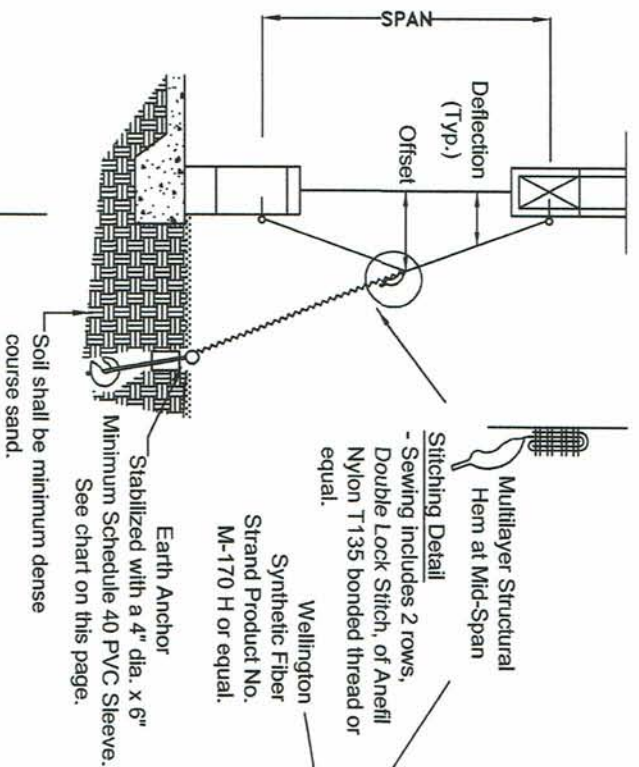
Professional Engineer License No. 09814

Engineering Review By: *Eric Bermann*

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GROMMET AND HEMCORD SERIES 2000
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Date: 10/23/07 Rev. Date: 10/11/10
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- CENTER HEM DEFLECTION SYSTEM NOTES:**
1. Refer to Deflection Table D-1.1 on page 13.
 2. This system is designed to achieve deflection by pulling and supporting the center of the screen towards the windward direction.
 3. One or more structural hems with buckles and straps may be used to achieve deflection.
 4. The support hem system may be positioned horizontal, vertical or as required.
 5. Screen unable to return should extend past protected opening by distance equal to or greater than the minimum deflection / offset, which ever is greater.
 6. Strap material equal to Directex 2" High Tenacity Polypro black or white.
 7. Buckle with raised "Armor Screen" imprint is proprietary to Armor Screen Corp.

CENTER HEM SUPPORT ANCHORS					
ANCHOR	MIN. EMBED.	MIN. E.D.	SPAN		
			up to 100"	up to 192"	
			ANCHOR SPACING		
SOIL CLASS 5 MED DENSE COURSE SAND					
3000 PSI CONCRETE					
$\frac{3}{8}$ " DROP-IN ANCHOR	1 1/2"	4"	18"	12"	
$\frac{1}{2}$ " DROP-IN ANCHOR	2"	5"	24"	18"	
EARTH ANCHOR $\frac{1}{2}$ " x 30" SHAFT x 4" HELIX WITH WELDED EYE. 3150 LBS WORKING LOAD	28"	N/A	24"	24"	
PAVER ANCHOR $\frac{1}{2}$ " x 30" SHAFT x 4" HELIX WITH SS COUPLER AND SS EYEBOLT	28"	N	24"	18"	

ARMOR SCREEN CENTER HEM DEFLECTION SYSTEM

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TABLE D-1.1

Grommet - Hemcord Series 2000 Deflection Table										
Span in feet	Span in inches	Deflection in inches								
		30 psf	40 psf	50 psf	60 psf	70 psf	90 psf	110 psf	140 psf	
2 ft.	24	2.0	2.1	2.3	2.5	2.6	3.0	3.4		
3 ft.	36	3.0	3.2	3.4	3.8	4.0	4.6	5.1		
4 ft.	48	3.9	4.3	4.5	5.0	5.3	6.1	6.8		
5 ft.	60	4.9	5.3	5.7	6.3	6.6	7.6	8.5		
6 ft. 4 in.	76	6.2	6.8	7.1	8.0	8.4	9.7	10.8		
7 ft. 4 in.	88	7.2	7.8	8.3	9.2	9.7	11.2	12.5		
8 ft. 4 in.	100	8.2	8.9	9.4	10.5	11.0	12.7	14.2		
9 ft. 4 in.	112	9.2	10.0	10.5	11.8	12.3	14.2	15.9		
10 ft. 4 in.	124	10.2	11.0	11.7	13.0	13.7	15.7	17.6		
11 ft. 4 in.	136	11.2	12.1	12.8	14.3	15.0	17.3	19.3		
12 ft. 4 in.	148	12.1	13.2	13.7	15.5	16.3	18.8	21.0		
Hemcord Series 2000 Deflection Table										
13 ft.	156	12.8	13.9	14.7	16.4	17.2	19.8	22.2		
14 ft.	168	13.8	15.0	15.8	17.6	18.5	21.3	23.9		
15 ft.	180	14.8	16.0	16.9	18.9	19.8	22.9	25.6		
16 ft.	192	15.7	17.1	18.0	20.2	21.2	24.4	27.3		

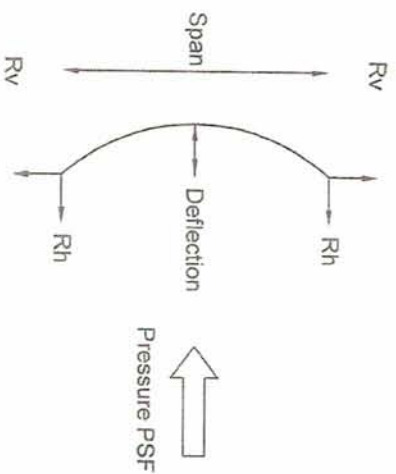
NOTE: Deflection is the minimum glass separation measured at mid span of the screen and subject to rational analysis.

TABLE D-1.2

Storm Bar Span / Length	Grommet / Hemcord Storm Bar				
	4'	5'	6'	8'	10'
Max. PSF					
Deflection	PER TABLE D1.1				
SYP 2" X 6"	X	X	X		
Alum. Tube 2" X 6" X 1/8"	X	X	X		
Alum. Tube 2" X 6" X 1/4"	X	X	X		
Alum. Tube 2" X 6" X 1/2"	X	X	X	X	

$R_h = W \cdot L/2$
 $R_v = W \cdot (L^2/2) / (\text{DEFLECTION})$
 $\text{TENSION} = (R_h \cdot 2 \cdot R_v)^{1/2} \cdot 0.5$

Load (psf)	SCREEN REACTIONS FOR PRESSURE AND SPAN															
	2 ft.		3 ft.		4 ft.		5 ft.		6 ft.		7 ft.		8 ft.		9 ft.	
	24"	36"	48"	60"	76"	88"	100"	112"	124"	136"	148"	156"	168"	180"	192"	
30	Rh	30.0	45.0	60.0	75.0	95.0	110.0	125.0	140.0	155.0	170.0	185.0	195.0	210.0	225.0	240.0
	Rv	90.0	135.0	184.6	229.6	291.1	336.1	381.1	426.1	471.1	516.1	565.7	595.1	639.1	684.1	733.8
40	Rh	40.0	60.0	80.0	100.0	126.7	146.7	166.7	186.7	206.7	226.7	246.7	260.0	280.0	300.0	320.0
	Rv	114.3	168.8	223.3	283.0	353.9	413.6	468.1	522.6	582.4	636.9	691.4	729.5	784.0	843.8	898.3
60	Rh	60.0	90.0	120.0	150.0	190.0	220.0	250.0	280.0	310.0	340.0	370.0	390.0	420.0	450.0	480.0
	Rv	144.0	213.2	288.0	357.1	451.2	526.0	595.2	664.3	739.2	808.3	883.2	927.5	1002.3	1071.4	1140.6
70	Rh	70.0	105.0	140.0	175.0	221.7	256.7	291.7	326.7	361.7	396.7	431.7	455.0	490.0	525.0	560.0
	Rv	150.0	225.0	300.0	375.0	478.6	553.5	628.5	703.5	774.1	848.6	928.6	980.4	1055.4	1130.4	1205.4
90	Rh	90.0	135.0	180.0	225.0	285.0	330.0	375.0	420.0	465.0	510.0	555.0	585.0	630.0	675.0	720.0
	Rv	180.0	264.1	354.1	444.1	558.2	648.2	738.2	828.2	918.2	1002.3	1092.3	1152.3	1242.3	1326.4	1416.4
110	Rh	110.0	165.0	220.0	275.0	384.3	403.3	458.3	513.3	568.3	623.3	678.3	715.0	770.0	825.0	880.0
	Rv	194.1	291.2	388.2	485.3	612.8	709.9	806.9	904.0	1001.1	1098.1	1195.2	1256.1	1353.1	1450.2	1547.3



- NOTES:
- Deflections are delivered from test results.
 - Reaction Rh can be positive (towards structure) or negative (away from structure).
 - Rv is always tension as shown.

ARMOR SCREEN DEFLECTION TABLES

ARMOR SCREEN
 GROMMET AND HEMCORD SERIES 2000
 HURRICANE PROTECTION



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CONCRETE, 3000 PSI - 1/4" AND 5/16" ANCHORS **TABLE 2 ANCHOR SPACING**

Anchor	Min. Embed.	Min. E.D.	Pressure (psf)	Span				
				to 48"	to 76"	to 100"	to 124"	to 148"
1/2" DIA. SS DROP-IN ANCHORS (1)	1"	3 1/2"	30 (psf)	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	12"
			60 (psf)	12"	12"	12"	12"	12"
1/2" DIA. TAPCON SG (INSTALL PER MIAMI-DADE NOA NO. 11-091604)	1 3/4"	2 1/2"	30 (psf)	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	12"
			60 (psf)	12"	12"	12"	12"	12"
1/2" DIA. X 1 3/4" SS TAPCON (1)	1 3/4"	2 1/2"	30 (psf)	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	12"
			60 (psf)	12"	12"	12"	12"	12"
1/2" DIA. X 2 1/2" PANELMATE (INSTALL PER PANELMATE INSTRUCTIONS) (1)	1 3/4"	2 1/2"	30 (psf)	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	12"
			60 (psf)	12"	12"	12"	12"	12"
1/2" DIA. SAMMY'S SSC (INSTALL PER MIAMI-DADE NOA NO. 11-091604)	2 1/4"	2 1/2"	30 (psf)	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	12"
			60 (psf)	12"	12"	12"	12"	12"
1/2" ELCO CRETE FLEX 410 SS (INSTALL PER MIAMI-DADE NOA NO. 12-012609)	2"	2 1/2"	30 (psf)	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	12"
			60 (psf)	12"	12"	12"	12"	12"
1/2" POWERS POWER STUD SS (1)	2"	3"	30 (psf)	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	12"
			60 (psf)	12"	12"	12"	12"	12"
1/2" DIA. POWERS WEDGE BOLT 410 SS (1)	1 3/4"	3"	30 (psf)	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	12"
			60 (psf)	12"	12"	12"	12"	12"

Anchor	Min. Embed.	Min. E.D.	Pressure (psf)	Span				
				to 48"	to 76"	to 100"	to 124"	to 148"
1/2" DIA. ALL POINTS SOLID SET ANCHORS (VALUES AND INSTALLATION PER MIAMI-DADE NOA 11-091606)	7/8"	3"	30 (psf)	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	12"
			60 (psf)	12"	12"	12"	12"	12"
1/2"-20 CALK-IN ANCHORS (INSTALL PER MANUFACTURER'S INSTRUCTIONS) (1)	1 1/4"	3 1/2"	30 (psf)	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	12"
			60 (psf)	12"	12"	12"	12"	12"
1/2" Dia. Powers SS Mushroom Spike Anchor (Install per manufacturer's instructions) (1)	1 1/4"	3 1/2"	30 (psf)	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	12"
			60 (psf)	12"	12"	12"	12"	12"
1/2" DIA. HOLLOW SET DROP-IN ANCHORS (INSTALL PER MANUFACTURER'S INSTRUCTIONS) (1)	7/8"	3 1/2"	30 (psf)	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	12"
			60 (psf)	12"	12"	12"	12"	12"
1/2" CONFAST HURRICANE SHUTTER INSERT ANCHOR w/ 1/2" DIA. INTERNAL THREAD	1 5/8"	4"	30 (psf)	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	12"
			60 (psf)	12"	12"	12"	12"	12"
5/16" TTW BUILD-XL SERIES TAPCON	2 1/4"	2 3/8"	30 (psf)	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	12"
			60 (psf)	12"	12"	12"	12"	12"

CONCRETE NOTES:
 • Provide longer fasteners, if required, to allow for thickness of finishes such as plaster, stucco, etc.
 • 1/2" Anchors for Clear.



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CONCRETE, 3000 PSI - 3/8" AND 1/2" ANCHORS

TABLE 3 ANCHOR SPACING

Anchor	Min. Embed.	Min. E.D.	Pressure (psf)	Span													
				to 48"	to 76"	to 100"	to 124"	to 148"	to 168"	to 192"							
3/8" ASTM 304-316 SS THREADED ROD IN EPOXY W/ SS COLLATER AND EYEBOLT (INSTALL PER MANUFACTURERS INSTRUCTIONS)	3 3/8"	4"	30 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	
			40 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	
			60 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"
			90 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"
3/8" DIA. 410 SS POWERS WEDGE BOLT (LDT)	2 1/2"	3 1/2"	30 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	
			40 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	
			60 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"
			90 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"
3/8" DIA. SS DROP-IN ANCHORS	1 1/2"	4"	30 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	
			40 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	
			60 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"
			90 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"
3/8"-16 CAULK-IN BOLT (INSTALL PER MANUFACTURERS INSTRUCTIONS)	1 1/4"	4"	30 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	
			40 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	
			60 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"
			90 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"

Anchor	Min. Embed.	Min. E.D.	Pressure (psf)	Span													
				to 48"	to 76"	to 100"	to 124"	to 148"	to 168"	to 192"							
3/8" DIA. POWERS SS MUSHROOM SPIKE ANCHOR (INSTALL PER MANUFACTURERS INSTRUCTIONS)	1 3/4"	4"	30 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	
			40 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	
			60 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"
			90 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"
3/8" DIA. POWERS SS MUSHROOM SPIKE ANCHOR (INSTALL PER MANUFACTURERS INSTRUCTIONS)	1 3/4"	3 1/2"	30 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	
			40 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	
			60 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"
			90 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"
3/8" DIA. POWERS HOLLOW SET DROP-IN ANCHORS (INSTALL PER MANUFACTURERS INSTRUCTIONS)	1 1/2"	4"	30 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	
			40 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	
			60 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"
			90 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"
3/8" POWERS POWER STUD SS	1 3/8"	4"	30 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	
			40 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	
			60 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"
			90 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"

Anchor	Min. Embed.	Min. E.D.	Pressure (psf)	Span													
				to 48"	to 76"	to 100"	to 124"	to 148"	to 168"	to 192"							
3000 PSI - CONCRETE 1/2" DIA. SS DROP-IN ANCHORS	2"	5"	30 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	
			40 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	
			60 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"
			90 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"
3000 PSI - CONCRETE 1/2" DIA. SS POWERS WEDGE BOLT (LDT)	3 1/2"	5"	30 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	
			40 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	
			60 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"
			90 (psf)	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"

- CONCRETE NOTES:**
- Provide longer fasteners, if required, to allow for thickness of finishes such as stucco, plaster, siding, etc.
 - 1/2" Hardware Anchor Spacing only valid with C-Channel mounting.

THEODORE BERMAN
Professional Engineer
License No. 09814
State of Florida

Engineering Review By: *Theodore Berman*
 Date: 10/23/07
 Title: ARMOR SCREEN HURRICANE PROTECTION

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CONCRETE BLOCK (CMU) - 1/4"

TABLE 4 ANCHOR SPACING

CONCRETE BLOCK (CMU) - 3/8"

Anchor	Min. Embed.	Min. E.D.	Pressure (psf)	Span				
				to 48"	to 76"	to 100"	to 124"	to 148"
1/2" DIA. TAPCON SG (INSTALL PER MANUFACTURERS INSTRUCTIONS)	1 1/2"	2 1/2"	30 (psf)	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	
			60 (psf)	12"	12"	12"	12"	
1/2" DIA. ALL POINTS SOLID SET ANCHORS (VALUES AND INSTALLATION PER MANUFACTURER NOA 05-1118.04 EXP. 12-2011)	3/8"	3"	30 (psf)	12"	12"	12"	6"	6"
			40 (psf)	12"	12"	6"	6"	
			60 (psf)	6"	6"	6"	6"	
1/2"-20 CALK-IN ANCHORS	3/8"	3"	30 (psf)	12"	12"	12"	6"	6"
			40 (psf)	12"	12"	6"	6"	
			60 (psf)	6"	6"	6"	6"	
1/2" DIA. X 1 3/4" 410 SS TAPCON (INSTALL PER MANUFACTURER NOA 03-0114.03)	1 3/4"	2 1/2"	30 (psf)	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	
			60 (psf)	12"	12"	12"	12"	
1/2" DIA. X 2 1/2" PANELMATE (INSTALL PER MANUFACTURERS INSTRUCTIONS)	1 1/4"	3"	30 (psf)	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	
			60 (psf)	12"	12"	12"	12"	
1/2" DIA. X 2 1/2" PANELMATE (INSTALL PER MANUFACTURERS INSTRUCTIONS)	1 3/4"	2"	30 (psf)	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	
			60 (psf)	12"	12"	12"	12"	
CONCRETE HURRICANE INSERT ANCHOR W/ 1/2" DIA. INTERNAL THREAD (1)	1 3/8"	4"	30 (psf)	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	
			60 (psf)	12"	12"	12"	12"	
CONCRETE HURRICANE INSERT ANCHOR W/ 1/2" DIA. INTERNAL THREAD (1)	1 3/8"	4"	30 (psf)	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	
			60 (psf)	12"	12"	12"	12"	

CONCRETE BLOCK (CMU) NOTES:
 • Provide longer fasteners, if required, to allow for thickness of finishes such as stucco, plaster, siding, etc.

NOTES:
 • (1) - 2 Anchors per Cleat.

Anchor	Min. Embed.	Min. E.D.	Pressure (psf)	Span				
				to 48"	to 76"	to 100"	to 124"	to 148"
3/8"-16 Calk-In Anchors (1)	1 3/4"	4"	30 (psf)	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	
			60 (psf)	12"	12"	12"	12"	
3/8" DIA. HOLLOW SET DROP-IN ANCHORS (1)	1"	4"	30 (psf)	12"	12"	12"	6"	6"
			40 (psf)	12"	12"	6"	6"	
			60 (psf)	12"	12"	6"	6"	
3/8" POWERS TAPPER (1)	1 3/4"	4"	30 (psf)	12"	12"	12"	6"	6"
			40 (psf)	12"	12"	6"	6"	
			60 (psf)	12"	12"	6"	6"	

CMU AND TERRA COTTA BLOCK WITH STUCCO - 1/4" AND 3/8"

Anchor	Min. Embed.	Min. E.D.	Pressure (psf)	Span				
				to 48"	to 76"	to 100"	to 124"	to 148"
ELCO 1/2" X 2 CRETIFLEX MASONRY FASTENERS (INSTALL PER MANUFACTURERS INSTRUCTIONS)	1 1/4"	2 1/2"	30 (psf)	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	
			60 (psf)	12"	12"	12"	12"	
CUSTOM COUPLER IN EPOXY	3 1/4"	4"	30 (psf)	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	
			60 (psf)	12"	12"	12"	12"	

Notes: 1. Custom fastener = 3/8" x 2 1/2" threaded rod (30455) w/ 1/2" x 1 1/4" coupler (31656) fully inserted in 1/2" dia. 3 1/2" screen tube fully filled w/ Sikadur Anchorix-4 Injection Gel.
 2. 3/8" x 1" carriage bolt, eye bolt, or machine screw

TABLE 5 ANCHOR SPACING

Professional Engineer Seal: State of Florida, License No. 09814, Signature of Ted Bernan and Associates, LLC.

Engineering Review By: Ted Bernan and Associates, LLC, 27502 Arthur Godfrey Rd, Suite 104, Palm Beach, FL 33140, (305) 968-4707, www.fiproductapproval.com

ARMOR SCREEN GROMMET AND HEMCORD SERIES 2000 HURRICANE PROTECTION

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SOLID GROUTED (CMU) - 1/4" AND 3/8"

TABLE 6 ANCHOR SPACING

Anchor	Min. Embed.	Min. E.D.	Pressure (psf)	Span				
				to 48"	to 76"	to 100"	to 124"	to 148"
1/2" DIA. TAPCON SG (INSTALL PER MANUFACTURER'S INSTRUCTIONS)	shall be in face shell, not mortar joints	2 1/2"	30 (psf)	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	6"	6"
			60 (psf)	12"	12"	6"	6"	6"
			90 (psf)	12"	6"	6"	---	---
1/2" DIA. X 1 1/2" 410 SS TAPCON (INSTALL PER MANUFACTURER'S INSTRUCTIONS)	shall be in face, not mortar joints	2 1/2"	30 (psf)	12"	12"	12"	12"	6"
			40 (psf)	12"	12"	12"	6"	6"
			60 (psf)	12"	12"	6"	6"	6"
			90 (psf)	12"	6"	6"	---	---
1/2" DIA. 410 SS POWERS WEDGE BOLT (INSTALL PER MANUFACTURER'S INSTRUCTIONS)	1 3/4" shall be in face, not mortar joints	3 3/4"	30 (psf)	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	6"	6"	6"
			60 (psf)	12"	6"	6"	---	---
			90 (psf)	6"	6"	---	---	---
CON-FAST HURRICANE SHUTTER INSERT ANCHOR W/1/2" DIA. INTERNAL THREAD (spacing per test #01 dated 2-8-08)	1 5/8" shall be in face, not mortar joints	4"	110 (psf)	12"	6"	6"	6"	6"
			30 (psf)	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	12"
			60 (psf)	12"	12"	12"	12"	12"
1/2" DIA. -20 CALK-IN ANCHOR (INSTALL PER MANUFACTURER'S INSTRUCTIONS)	7/8" shall be in face, not mortar joints	3 1/2"	110 (psf)	12"	6"	6"	---	---
			30 (psf)	12"	12"	12"	12"	6"
			40 (psf)	12"	12"	12"	6"	6"
			60 (psf)	12"	12"	6"	6"	6"
1/2" ELCO CRETE-FLEX 410 SS	2" shall be in face, not mortar joints	2 1/2"	110 (psf)	6"	6"	---	---	---
			90 (psf)	6"	6"	---	---	---
			60 (psf)	12"	6"	6"	---	---
			40 (psf)	12"	6"	6"	---	---

Anchor	Min. Embed.	Min. E.D.	Pressure (psf)	Span									
				to 48"	to 76"	to 100"	to 124"	to 148"	to 168"	to 192"			
3/8" ASTM 304-316 SS THREADED ROD IN EPOXY W/SS COUPLER AND EYEBOLT (INSTALL PER MANUFACTURER'S INSTRUCTIONS)	3 1/2" shall be in face shell, not mortar joints	12"	30 (psf)	12"	12"	12"	12"	12"	12"	12"	12"		
			40 (psf)	12"	12"	12"	12"	12"	12"	12"			
			60 (psf)	12"	12"	12"	12"	12"	12"	12"			
			90 (psf)	12"	12"	12"	12"	12"	12"	12"			
1/2" DIA. POWERS WEDGE BOLT (LDT) 410 SS (spacing per test #04 dated 12-7-07)	2 1/2" shall be in face shell, not mortar joints	4"	110 (psf)	12"	12"	12"	12"	12"	12"	12"	12"		
			30 (psf)	24"	24"	24"	24"	24"	24"	24"			
			40 (psf)	24"	24"	24"	24"	24"	24"	24"			
			60 (psf)	18"	18"	18"	18"	18"	18"	18"			
1/2" DIA. POWERS HOLLOW SET DROP-IN ANCHOR (INSTALL PER MANUFACTURER'S INSTRUCTIONS)	1 3/4" shall be in face shell, not mortar joints	5 1/4"	110 (psf)	12"	12"	12"	12"	12"	12"	12"	12"		
			30 (psf)	12"	12"	12"	12"	12"	12"	12"			
			40 (psf)	12"	12"	12"	6"	6"	6"	6"			
			60 (psf)	12"	12"	6"	6"	6"	6"	6"			
1/2" DIA. CALK-IN ANCHOR 410 SS (INSTALL PER MANUFACTURER'S INSTRUCTIONS)	1 1/4" shall be in face shell, not mortar joints	5 1/4"	110 (psf)	12"	6"	6"	---	---	---	---			
			30 (psf)	12"	12"	12"	12"	6"	6"	6"			
			40 (psf)	12"	12"	12"	6"	6"	6"	6"			
			60 (psf)	12"	12"	6"	6"	6"	6"	6"			
3/8" POWERS MUSHROOM SPIKE (SPACING PER TEST #M DATED 12-7-07)	1 3/4" shall be in face shell, not mortar joints	4"	110 (psf)	12"	12"	12"	12"	12"	12"	12"			
			30 (psf)	24"	24"	24"	24"	24"	24"	24"			
			40 (psf)	24"	24"	24"	24"	24"	24"	24"			
			60 (psf)	18"	18"	18"	18"	18"	18"	18"			

SOLID GROUTED CMU NOTES:

- Spacing for fasteners used in testing are shown at spacing used in tests
- Spacing for other fasteners calculated with SF=3 min.

SOLID GROUTED CMU NOTES:
 • Provide longer fasteners, if required, to allow for thickness of finishes
 such as stucco plaster, siding, etc.



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WOOD SYP #2 - 1/4" 5/16" 3/8" 1/2"

Anchor	Min. Embed.	Min. E.D.	Pressure (psf)	Span					
				to 48"	to 76"	to 100"	to 124"	to 148"	
1/2" DIA. PANELMATE (INSTALL PER MANUFACTURERS INSTRUCTIONS) (VALUES PER NDS FOR WOOD CONSTRUCTION)	1 3/4"	3/4"	30 (psf)	12"	12"	12"	6"	6"	
			40 (psf)	12"	12"	6"	6"		
			60 (psf)	12"	6"	6"	6"		
1/2" DIA. X 1 1/2" SS TAPCON (INSTALL PER MANUFACTURERS INSTRUCTIONS) (VALUES PER NDS FOR WOOD CONSTRUCTION)	1 3/4"	3/4"	30 (psf)	12"	12"	12"	6"	6"	
			40 (psf)	12"	12"	6"	6"		
			60 (psf)	12"	6"	6"	6"		
1/2" DIA. SS LAG SCREWS OR EYE LAG OR HANGER BOLT	2"	1" into stud or lintel	30 (psf)	12"	12"	12"	6"	6"	
			40 (psf)	12"	12"	6"	6"		
			60 (psf)	12"	6"	6"	6"		
3/8" DIA. SS LAG SCREWS OR EYE LAG OR HANGER BOLT	2"	1 1/4" into stud or lintel	90 (psf)	6"	6"	6"	6"	6"	
			110 (psf)	6"	6"	6"	6"		
			110 (psf)	6"	6"	6"	6"		

TABLE 7 ANCHOR SPACING

Anchor	Min. Embed.	Min. E.D.	Pressure (psf)	Span					
				to 48"	to 76"	to 100"	to 124"	to 148"	to 168"
1/2" DIA. SS LAG SCREWS OR EYE LAG, OR HANGER BOLT	2"	1 1/2" into stud or lintel	30 (psf)	12"	12"	12"	12"	6"	6"
			40 (psf)	12"	12"	12"	6"	6"	
			60 (psf)	12"	12"	6"	6"	6"	
1/2" DIA. SS LAG SCREW OR LAG ANCHOR OR HANGER BOLT	3"	1 1/2" into stud or lintel	30 (psf)	12"	12"	12"	12"	6"	6"
			40 (psf)	12"	12"	12"	6"	6"	
			60 (psf)	12"	12"	6"	6"	6"	
1/2" DIA. SS LAG SCREW OR LAG ANCHOR OR HANGER BOLT	3"	2" into side grain	90 (psf)	12"	12"	12"	6"	6"	6"
			110 (psf)	12"	12"	6"	6"	6"	
			110 (psf)	12"	12"	6"	6"	6"	

WOOD SYP #2 NOTES:

- Provide longer fasteners, if required, to allow for thickness of finishes such as stucco, plaster, siding, etc.
- Design as per NDS 2012.
- *Lag Anchor to be fully embedded.
- Douglas Fir - Larch alternate acceptable wood type



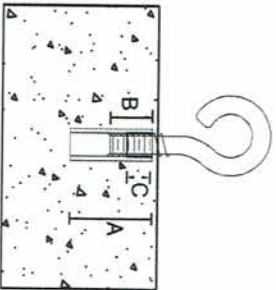
Engineering Review By: **THEODORE BERMAN**
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 State of Florida
 ARMOR SCREEN AND HEMCORD SERIES 2000 HURRICANE PROTECTION
 ARMOR SCREEN, Inc.
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 West Palm Beach, FL 33405
 (561) 841-8890 www.armorscreen.com
 Date: 10/23/07 Rev. Date: 10/11/10 Rev. Date: 04/23/15
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METAL - 1/4" - 3/8"

TABLE 8 ANCHOR SPACING

Anchor	Min. Embed.	Min. E.D.	Pressure (psf)	Span								
				to 48"	to 76"	to 100"	to 124"	to 148"	to 168"	to 192"		
20 GAGE METAL STUDS 1/2"-14 TEKS SELF-TAPPING SCREWS			30 (psf)	6"	3"	3"	3"	3"	3"	3"	3"	3"
			40 (psf)	6"	3"	3"	3"	3"	3"	3"	3"	3"
			60 (psf)	6"	3"	3"	3"	3"	3"	3"	3"	3"
			90 (psf)	6"	3"	3"	3"	3"	3"	3"	3"	3"
			110 (psf)	6"	3"	3"	3"	3"	3"	3"	3"	3"
18 GAGE METAL STUDS (spacing per test #01 dated 2-9-08)			30 (psf)	6"	6"	6"	6"	6"	6"	6"	6"	6"
			40 (psf)	6"	6"	6"	6"	6"	6"	6"	6"	6"
			60 (psf)	6"	6"	6"	6"	6"	6"	6"	6"	6"
			90 (psf)	6"	6"	6"	6"	6"	6"	6"	6"	6"
			110 (psf)	6"	6"	6"	6"	6"	6"	6"	6"	6"
1/8" STEEL 1/2"-14 TEKS SELF-TAPPING SCREWS			30 (psf)	12"	12"	12"	12"	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	12"	12"	12"	12"	12"
			60 (psf)	12"	12"	12"	12"	12"	12"	12"	12"	12"
			90 (psf)	12"	12"	12"	12"	12"	12"	12"	12"	12"
			110 (psf)	12"	12"	12"	12"	12"	12"	12"	12"	12"
3/8" AND 1/2" STEEL 3/8"-14 TEKS SELF-TAPPING SCREWS		1"	30 (psf)	12"	12"	12"	12"	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	12"	12"	12"	12"	12"
			60 (psf)	12"	12"	12"	12"	12"	12"	12"	12"	12"
			90 (psf)	12"	12"	12"	12"	12"	12"	12"	12"	12"
			110 (psf)	12"	12"	12"	12"	12"	12"	12"	12"	12"
1/2" ALUMINUM 6063-T6 1/2"-14 TEKS SS SELF-TAPPING SCREWS			30 (psf)	12"	12"	12"	12"	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	12"	12"	12"	12"	12"
			60 (psf)	12"	12"	12"	12"	12"	12"	12"	12"	12"
			90 (psf)	12"	12"	12"	12"	12"	12"	12"	12"	12"
			110 (psf)	12"	12"	12"	12"	12"	12"	12"	12"	12"
1/2" ALUMINUM 3/8"-14 TEKS SELF-TAPPING SCREWS		1"	30 (psf)	12"	12"	12"	12"	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	12"	12"	12"	12"	12"
			60 (psf)	12"	12"	12"	12"	12"	12"	12"	12"	12"
			90 (psf)	12"	12"	12"	12"	12"	12"	12"	12"	12"
			110 (psf)	12"	12"	12"	12"	12"	12"	12"	12"	12"

- METAL NOTES:**
- Minimum 3 pitch shall extend past metal substrate.
 - Install as per manufacturer's instructions.
 - 3" Spacing only valid with C-Channel & F-Track mounting. Grommet spacing to be 6" on center.
 - Rivet-nuts shall be installed as per manufacturer's instructions with the appropriate tool.
 - Self drilling screws into 18 gage metal studs shall be through C-Channel with threads into metal studs.



DROP-IN ANCHOR		
	Embedment	
A	1"	2"
B	1/16"	13/16"
C	5/16"	7/16"

- A - Drop-In Length
- B - Drop-In Internal Thread
- C - Minimum Thread Engagement

MINIMUM BOLT ENGAGEMENT IN COUPLER



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