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 shall calculated in accordance with the Florida Building Code 8th Edition (2023) and ASCE 7-22 using the ASD load combinations.
- Testing meets Florida Building Code 7th Edition; TAS 201; TAS 202; TAS 203; ASTM E 330-02; ASTM E 1996-17, Level D and ASTM E 1886-12 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 perimeters 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 than 1.5 times the offset, which ever is greater. For trapped openings the screen should extend complete to fill the opening. (see page 10, note 5)
- 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 fully embedded and shall not extend into finished facing.
- If tapcons are used with Grommet Style Screen, a washer should be utilized.
- 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 bolt into the anchor is at least $\frac{2}{3}$ of the threaded length of the fastener. For a $\frac{1}{2}$" diameter drop-in anchor the thread length is $\frac{13}{16}$" and the fastener length is 2". Therefore, the minimum engagement length for the bolt is $\frac{9}{16}$". The minimum engagement length for a $\frac{3}{8}$" eyebolt is $\frac{7}{16}$" and for a $\frac{1}{4}$" bolt $\frac{5}{16}$".
- In instances where a screen is made up of two pieces of fabric or for repair purposes, a flat felled 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 wind/rain abatement and impact system only. All other building components shown herein are depicted as existing or samples and not constructed by the screen company.

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www.armorscreen.com

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Revision Date(s): 10/23/07, 10/11/10, 10/18/17, 10/19/20, 10/23/23

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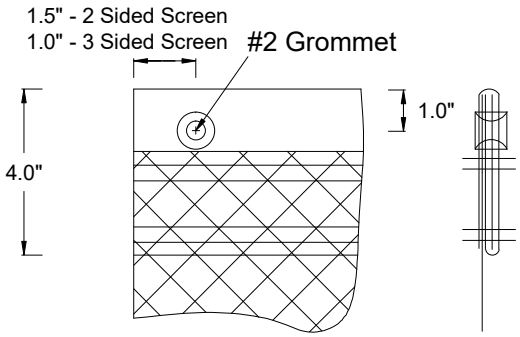
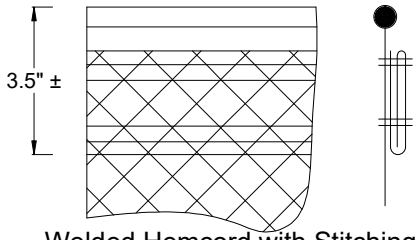


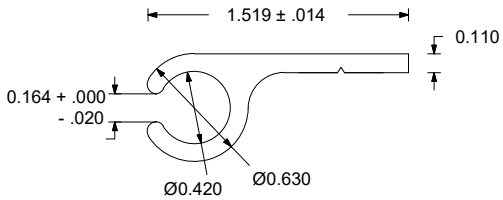
Grommet with Stitching Detail

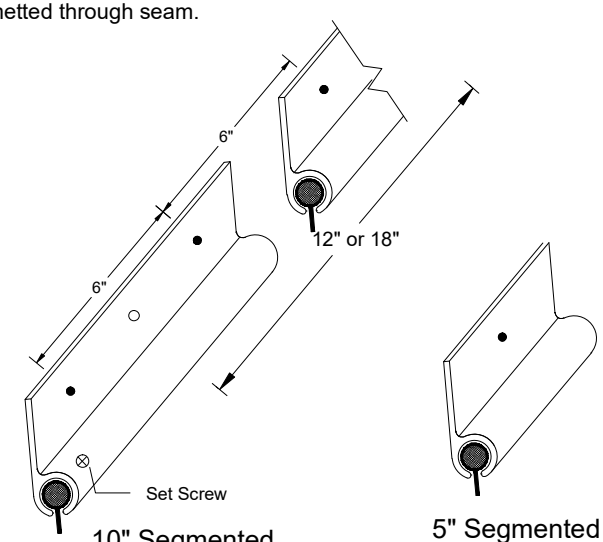
Stitching Detail
- Support Edge, Trifold Seam around 4" Polypro webbing
- Sewing includes 2 rows, Double Lock Stitch, of Anefil Nylon T135 bonded thread or Solar Fix 2400/2640 or equal.
- Grommetted through seam.



Welded Hemcord with Stitching Detail

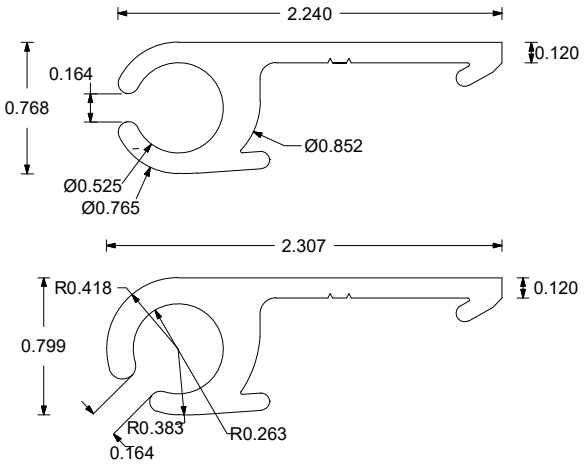
Stitching Detail
- Hemcord Dia.: $\frac{5}{16}$"
- Sewing includes 2 rows, Double Lock Stitch, of Anefil Nylon T135 Bonded Thread or Solar Fix 2400/2640 or equal.
- Reinforced welded hemcord includes a 2" trifold Polypro Seam sewn over the weld.





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

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



C-Channel
Alloy: 6063-T6 Aluminum
NOTE: Heavier alternate extrusion may be used.

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.
- For Anchor Spacing, see Anchor Tables on pages 14 - 19.
- A ¼" TEK Screw may be used to secure the C-Channel end to limit screen movement.

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HEMCORD / C-CHANNEL

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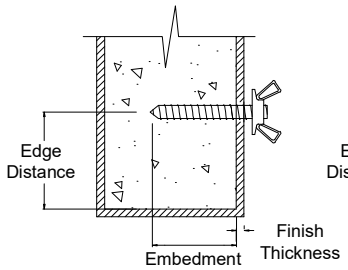
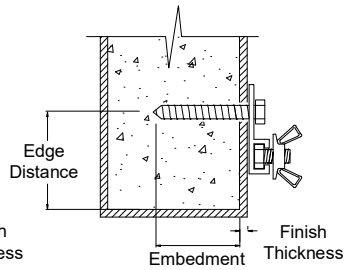
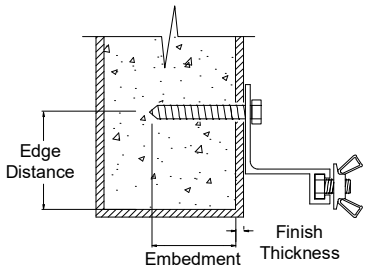


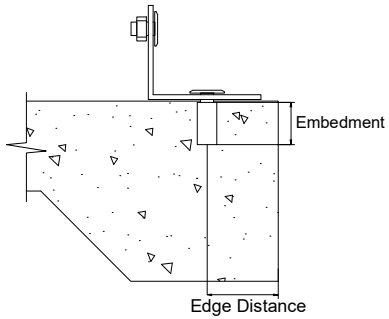
Grommet
Direct Mount
Anchoring Detail



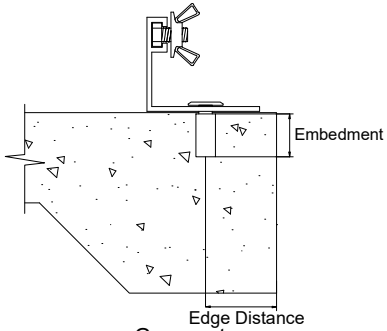
Grommet
F-Track 6063-T6
Anchoring Detail



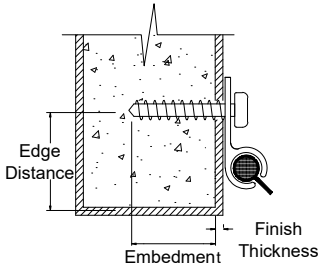
Grommet
F-Track 6063-T6
(1", 2", and 3" Build-Out)
Anchoring Detail



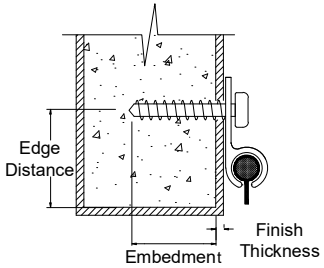
Grommet
Angle Aluminum
Minimum .125" x 6063-T6
Anchoring Detail



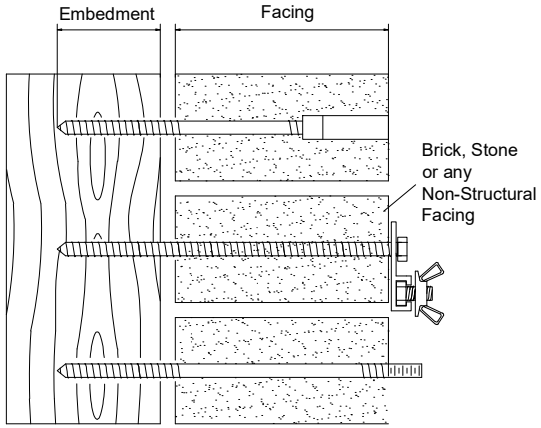
Grommet
Studded / Studless Angle F-Track
Minimum .125" x 6063-T6
Anchoring Detail



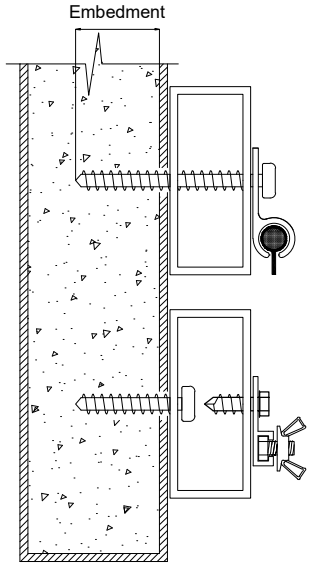
45° C-Channel



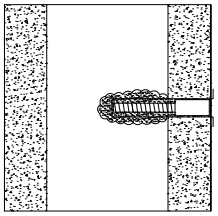
180° C-Channel



¼" or ⅜" Hanger Bolt with Coupler,
Panelmate or Hex Lag Screw
(Non-Structural Facing)
(Caulk or Sealant suggested to seal facing)
Some damage to the facing may be
expected.



⅛" Aluminum Tube / Angle
For Build-Out
6063-T6 Alloy



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

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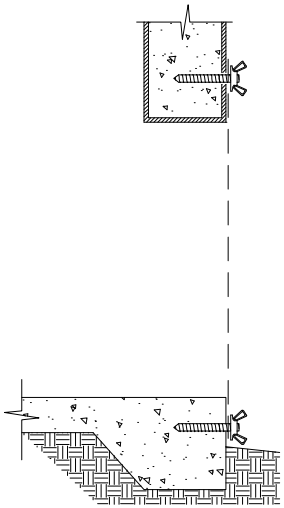
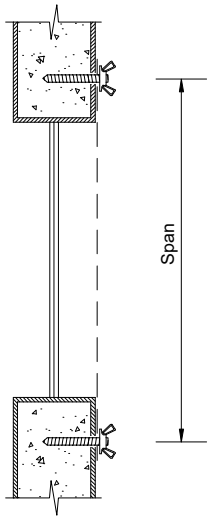
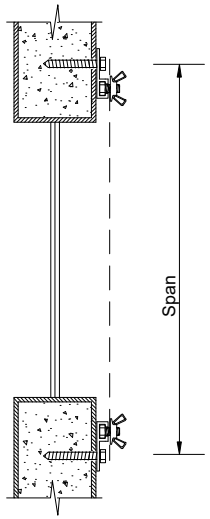


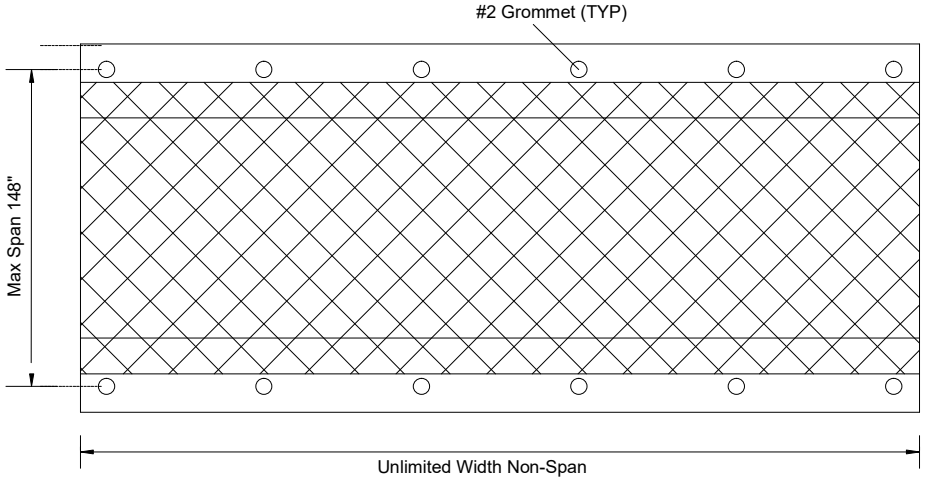
Direct Mount
Typical Vertical
Sectional View



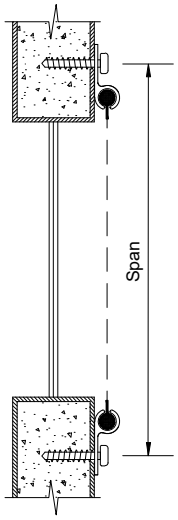
Direct Mount
Typical Vertical
Window
Sectional View



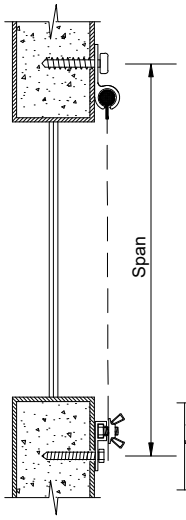
F-Track
Typical Vertical
Window
Sectional View



GROMMET VERTICAL INSTALLATION
(Span Sides = Welded Seam)



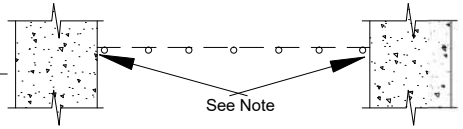
C-Channel
Typical Vertical
Window
Sectional View



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

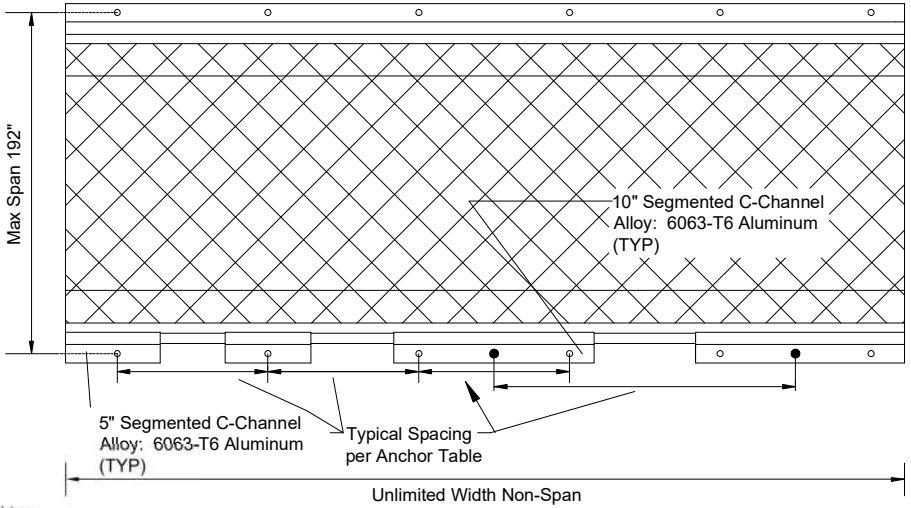
NOTES:

- 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.



PLAN VIEW, VERTICAL SCREEN, TRAPPED OPENING

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



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

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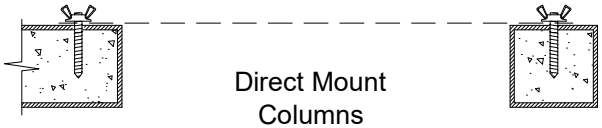
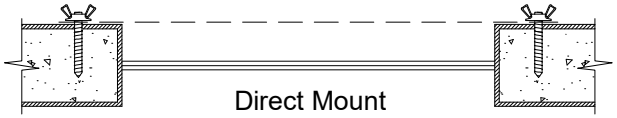
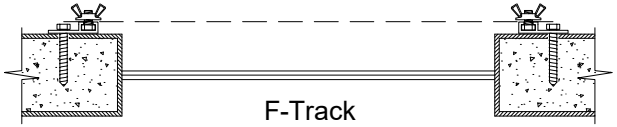
Scale: Not to scale



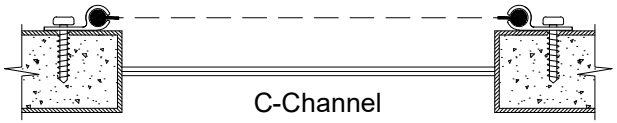
Direct Mount
Columns
Plan View



Direct Mount
Typical Window
Plan View

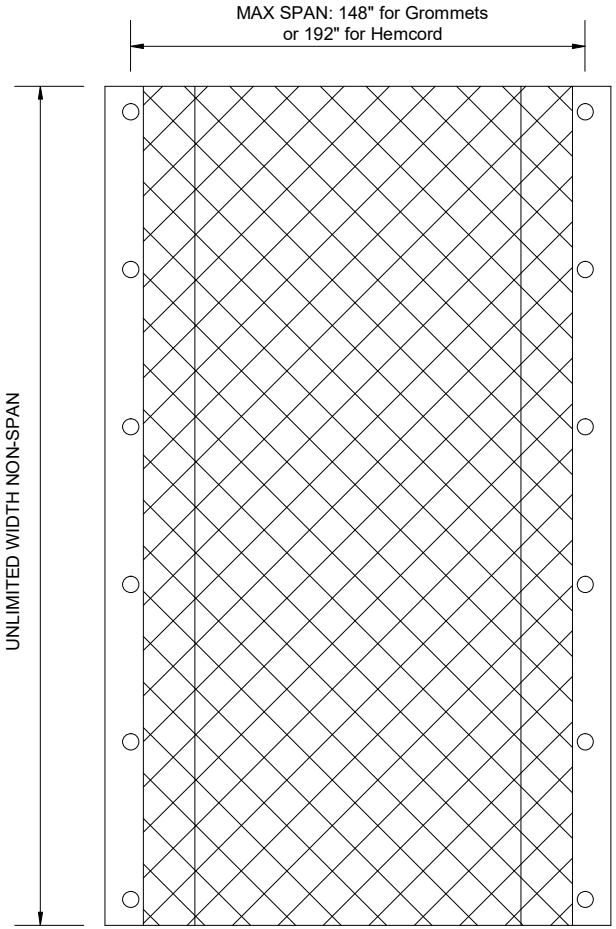


F-Track
Typical Window
Plan View



C-Channel
Maximum Span 192"
Typical Window
Plan View

C-Channel
Maximum Span 192"
Column Mount
Plan View



HORIZONTAL INSTALLATION
(Span Sides = Welded Seam)

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

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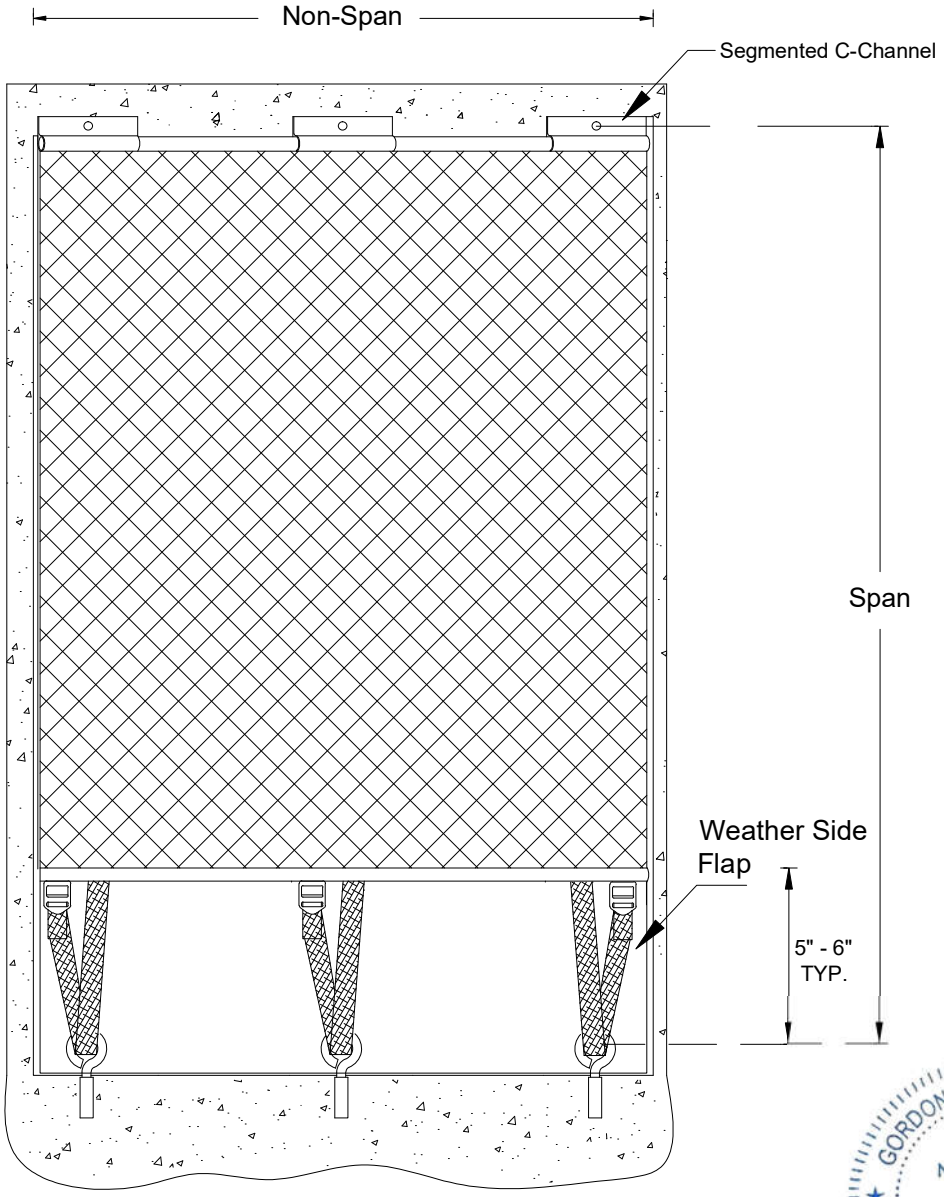
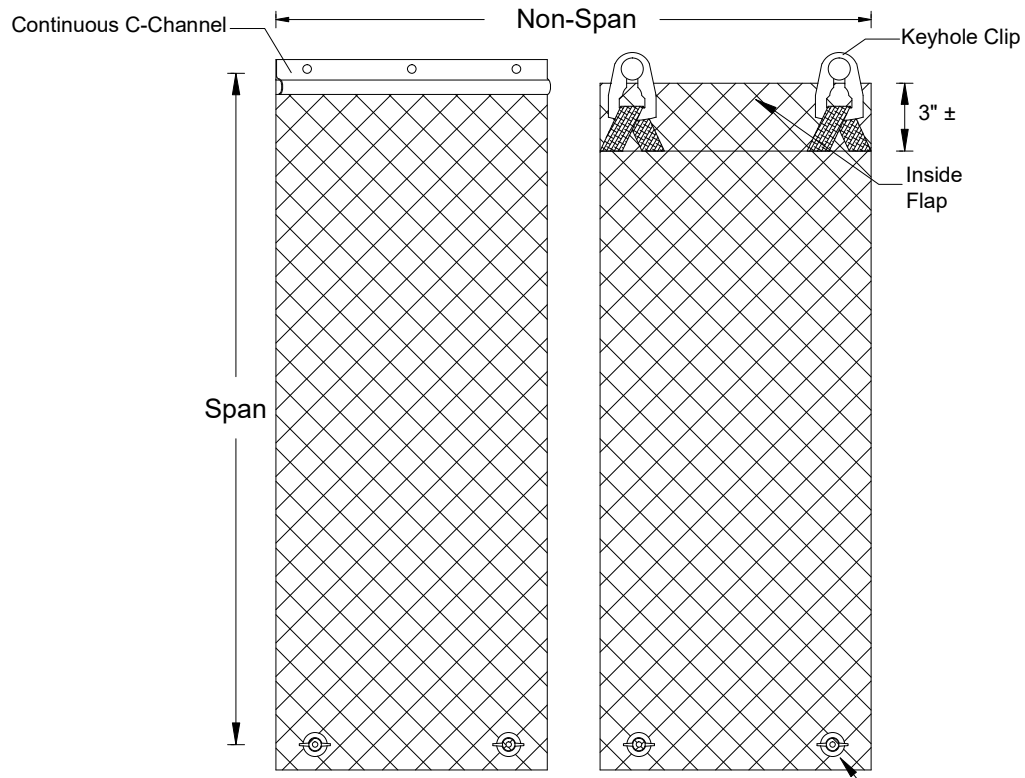
Scale: Not to scale



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



COMBINATION ATTACHMENT
W/ KEYHOLE CLIPS AND CARRIAGE BOLTS
OR CONTINUOUS C-CHANNEL

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 DirecTex 2" High Tenacity Polypro black or white.
- Buckle with raised "Armor Screen" imprint is proprietary to Armor Screen Corp.

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GROMMET AND HEMCORD SERIES 2000
HURRICANE PROTECTION

ARMOR SCREEN, CORP
2744 HILLSBORO ROAD
WEST PALM BEACH, FL 33405
TEL: 561.841.8890
FAX: 561.841.8892
www.armorscreen.com

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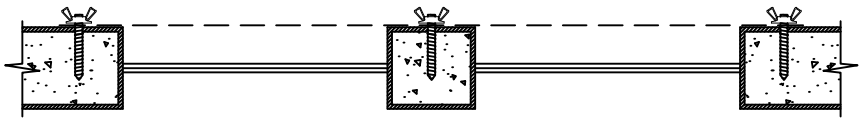
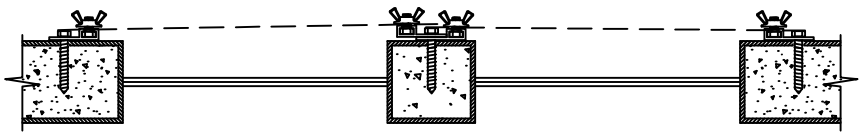
Revision Date(s): 10/23/07, 10/11/10, 10/18/17, 10/19/20, 10/23/23

Scale: Not to scale

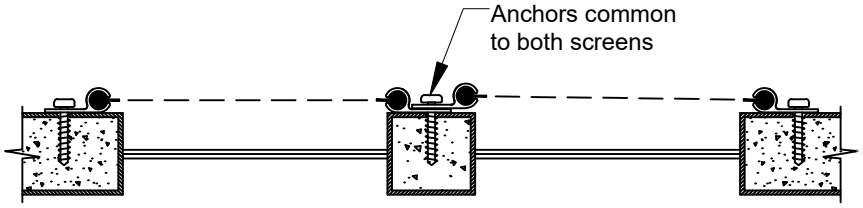
Direct Mount
Columns
Plan View



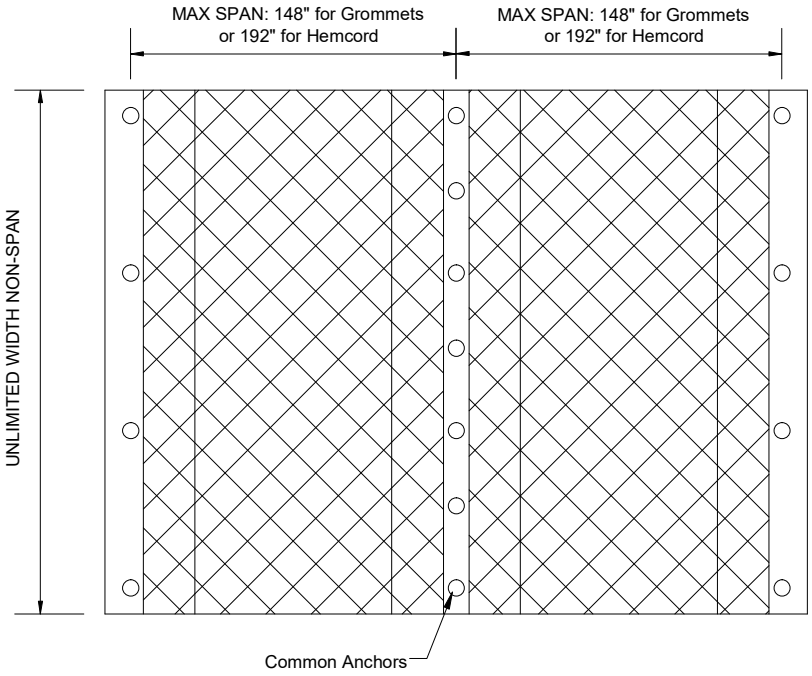
Direct Mount
Typical Window
Plan View



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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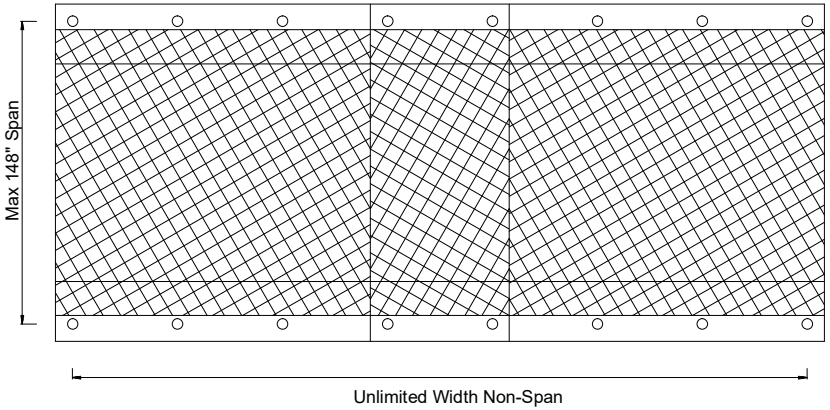
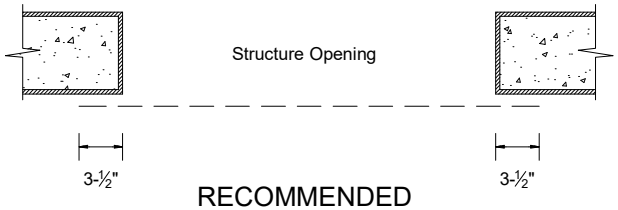
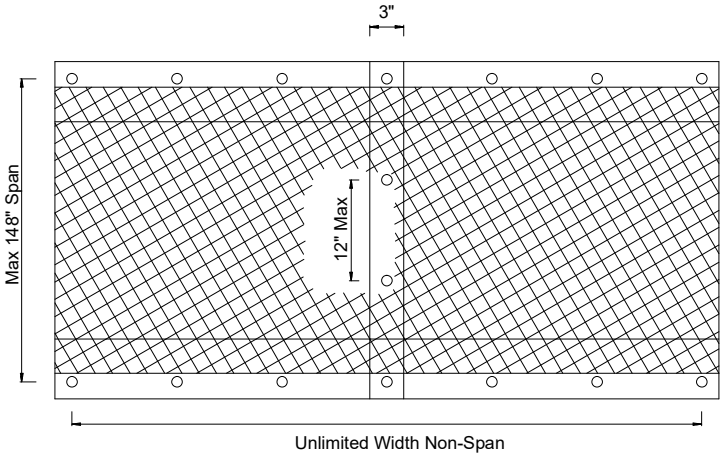


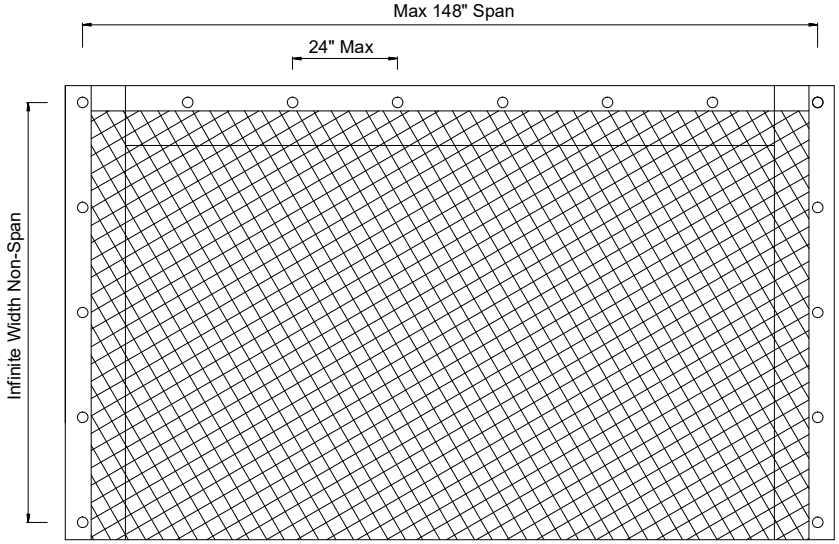
TYPE 1 GROMMET SCREEN OVERLAP



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



TYPE 2 GROMMET SCREEN OVERLAP



THREE SIDED 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 ¼" bolt / nut assembly should be used 12" on center maximum.
- Adjacent screens may also be connected with approved buckle/strap.

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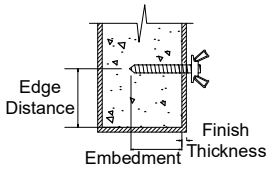
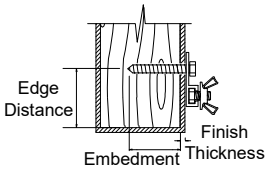
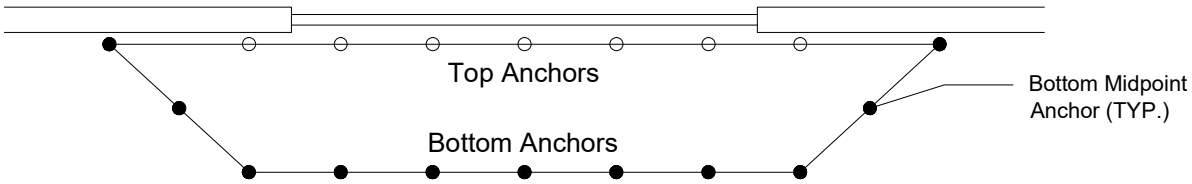


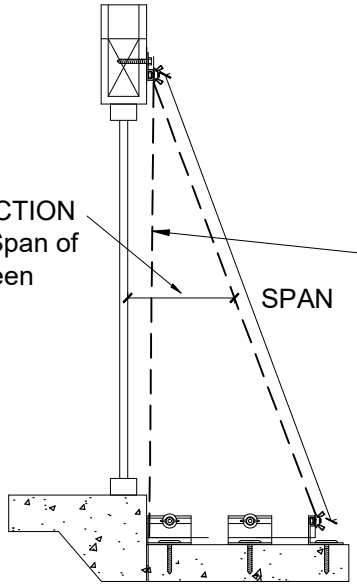
Grommet
Direct Mount
Top Anchoring Detail



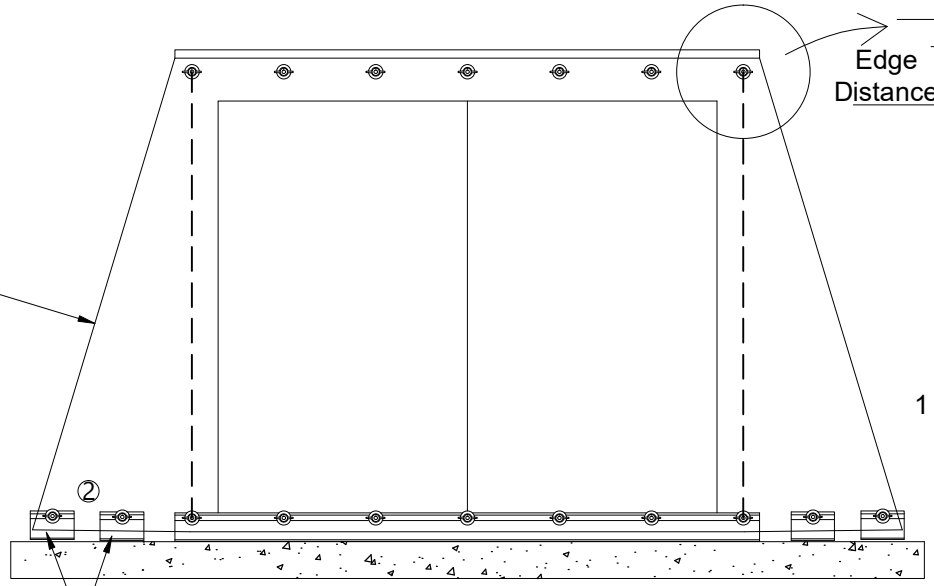
Grommet
F-Track
Top Anchoring Detail



Plan View

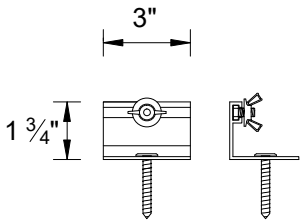


Offset Distance



Return Anchors

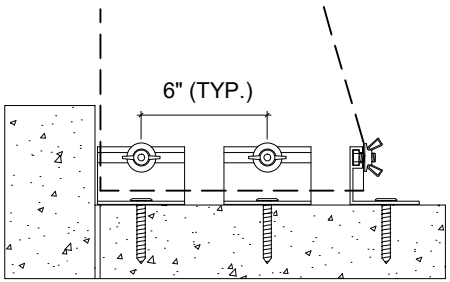
Elevation



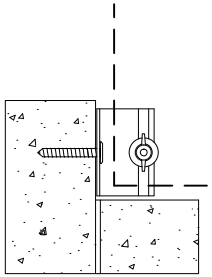
Bottom Return Anchors

ANGLED SCREEN NOTES:

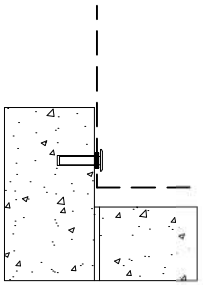
1. Refer to Deflection Table D-1.1 page 13.
2. Bottom Return Requires a midpoint anchor.
3. Side Return (span side) anchors are optional.
4. Typical screen anchor attachment may be grommet, continuous C-Channel, segmented C-Channel or any combination.



Bottom Return Anchors
Using Segmented F-Track



Alternate Bottom
Corner Attachment



Direct Mount

ANGLED SCREEN

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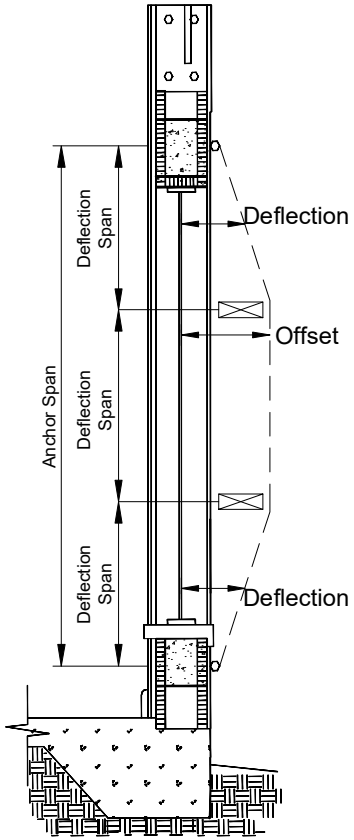
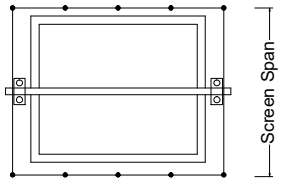
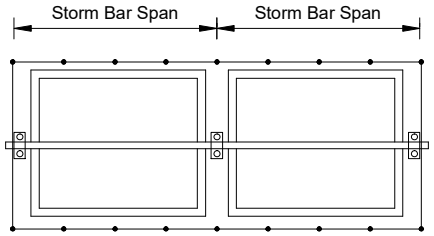


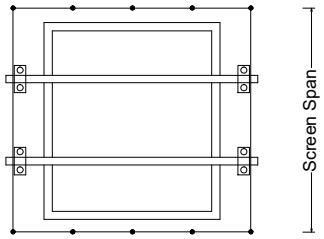
Multiple Storm Bar with Single Opening



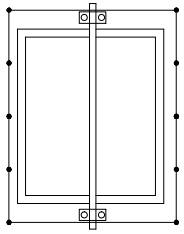
Single Storm Bar Elevation



Single Storm Bar with Multiple Openings Elevation



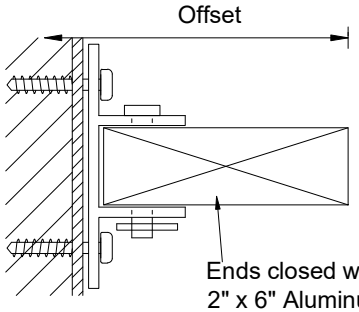
Multiple Storm Bar Elevation



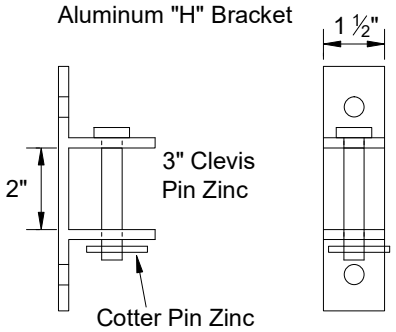
Vertical Storm Bar Elevation

STORM BAR NOTES:

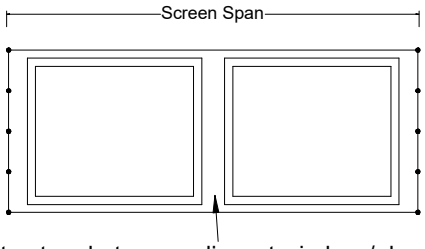
1. Refer to Table D-1.2 on page 13.
2. The storm bar system is designed to achieve deflection and may utilize one or more storm bars. The offset may be increased with blocking.
3. Storm bars may be positioned horizontal, vertical or as required.
4. The storm bar bracket may be permanent or removable and attached to the structure using two (2) approved ¼ inch anchors. Refer to pages 14 - 19.
5. The storm bar and screen should extend past the protected opening by 1.5 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.



Ends closed with a vinyl cap
2" x 6" Aluminum Tube



BRACKET 6063-T6



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.

STORM BAR & BRACKET

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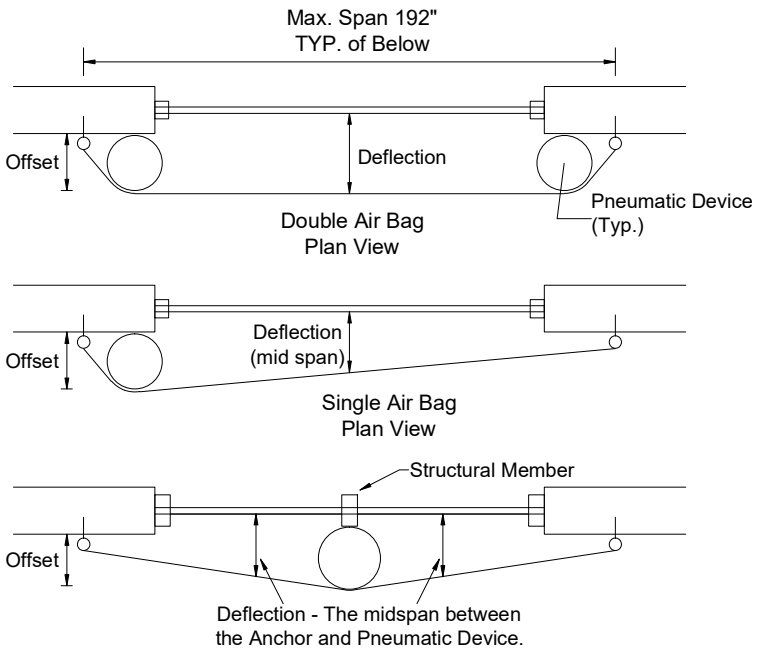
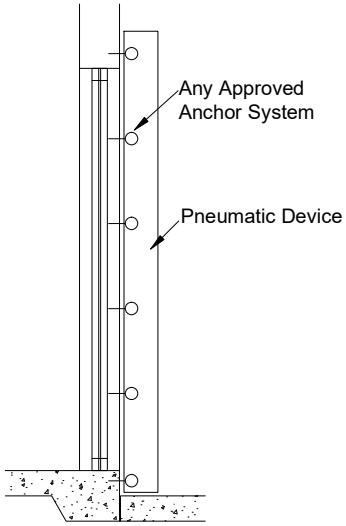
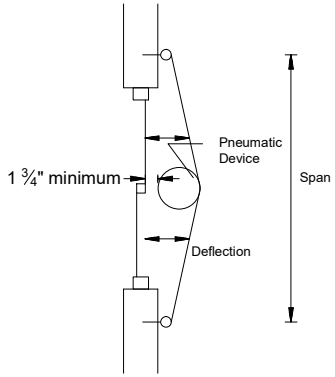


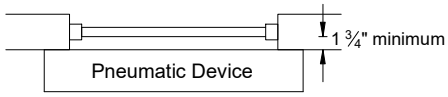
STORE FRONT OR CURTAIN WALL APPLICATION
Plan View



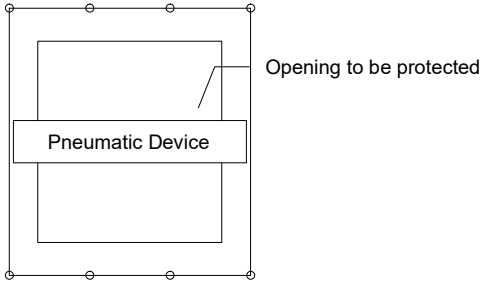
Side Sectional
End Supported PD



Side Sectional
End Supported PD



Top Sectional
End Supported PD



Elevation
End Supported PD

PNEUMATIC DEVICE (PD) SPECIFICATIONS:

1. Pneumatic Device consists of two parts, a refillable polymer air bladder capable of holding air without perceptible leakage, and should be attached to the Armor Screen.
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 Pneumatic Device should not be attached to the building structure unless designed as a site 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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PNEUMATIC DEFLECTION SYSTEM

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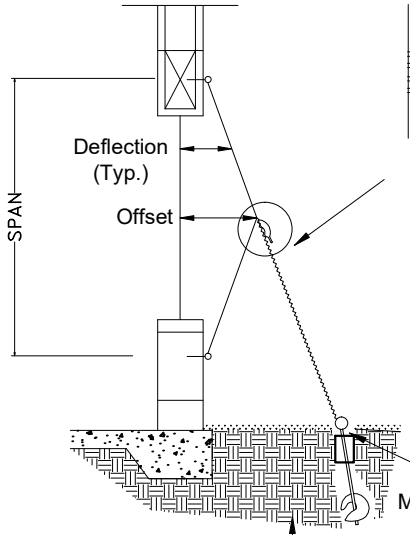
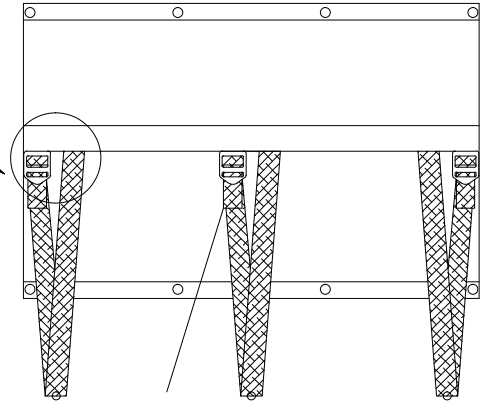


Multilayer Structural
Hem at Mid-Span

Stitching Detail
- Sewing includes 2 rows, Double Lock Stitch, of Anefil Nylon T135 bonded thread or Solar Fix 2400/2640 or equal.

Earth Anchor
Stabilized with a 4" dia. x 6"
Minimum Schedule 40 PVC Sleeve.
See chart on this page.

Soil shall be minimum dense
course sand.



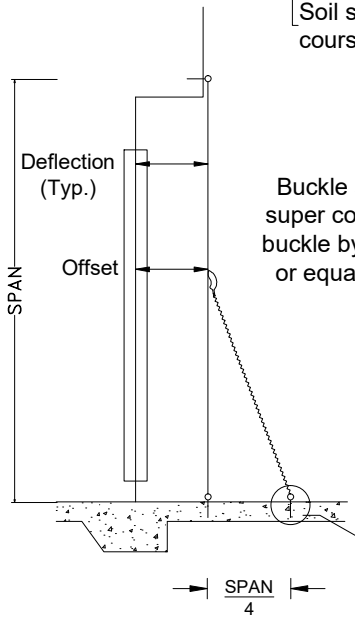
Wellington
Synthetic Fiber
Strand Product No.
M-170 H or equal

CENTER HEM DEFLECTION SYSTEM NOTES :

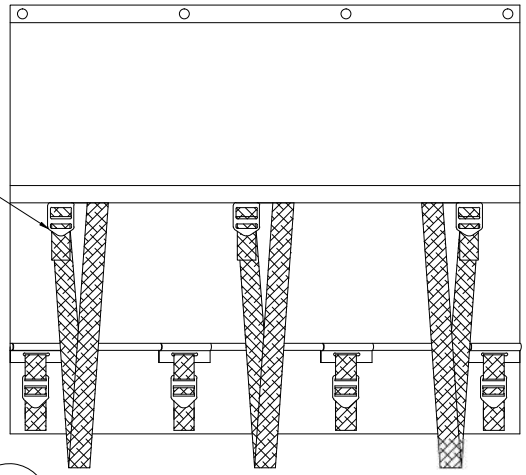
1. Refer to Deflection Table D-1.1 on page 13.
2. This system is designed to achieve deflection by pulling and supporting the center of the screen towards the windward direction.
3. One or more structural hems with buckles and straps may be used to achieve deflection.
4. The support hem system may be positioned horizontal, vertical or as required.
5. If the screen does not return to the structure it should extend past protected opening by distance equal to or greater than 1.5 times the offset. For trapped openings the screen should extend complete to fill the opening.
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.

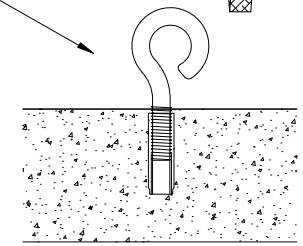
CENTER HEM SUPPORT ANCHORS

	ANCHOR	MIN. EMBED.	MIN. E.D.	SPAN up to 100"	SPAN up to 192"
				ANCHOR SPACING	
3000 PSI CONCRETE	⅜" DROP-IN ANCHOR	1 ½"	4"	18"	12"
3000 PSI CONCRETE	½" DROP-IN ANCHOR	2"	5"	24"	18"
SOIL CLASS 5 MED DENSE COURSE SAND	EARTH ANCHOR ½" x 30" SHAFT x 4" HELIX WITH WELDED EYE. 3150 LBS WORKING LOAD	28"	N/A	24"	24"
SOIL CLASS 5 MED DENSE COURSE SAND	PAVER ANCHOR ½" x 30" SHAFT x 4" HELIX WITH SS COUPLER AND SS EYEBOLT	28"	N	24"	18"



Buckle shall be
super contoured
buckle by Nexus
or equal (TYP.)





Drop-In Anchor
See chart on this page.

CENTER HEM DEFLECTION SYSTEM

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ARMOR SCREEN
GROMMET AND HEMCORD SERIES 2000
HURRICANE PROTECTION

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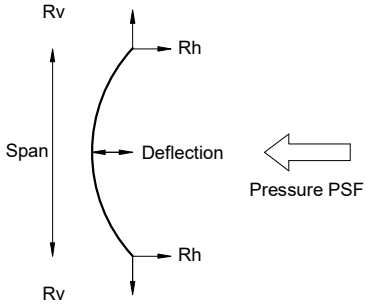
Scale: Not to scale

LOADS ON EXISTING STRUCTURE FROM SCREEN SYSTEM Rh= PERPENDICULAR LOADS (PSF)								
Span in feet	Span in inches	PRESSURE (PSF)						
		30 psf	40 psf	50 psf	60 psf	70 psf	90 psf	110 psf
3 ft.	38 in.	45	60	75	90	105	135	165
4 ft.	48 in.	60	80	100	120	140	180	220
5 ft.	60 in.	75	100	125	150	175	225	275
6 ft.	72 in.	90	120	150	180	210	270	330
7 ft.	84 in.	105	140	175	210	245	315	385
8 ft.	96 in.	120	160	200	240	280	360	440
9 ft.	108 in.	135	180	225	270	315	405	495
10 ft.	120 in.	150	200	250	300	350	450	550
11 ft.	132 in.	165	220	275	330	385	495	605
12 ft.	144 in.	180	240	300	360	420	540	660
13 ft.	156 in.	195	260	325	390	455	585	715
14 ft.	168 in.	210	280	350	420	490	630	770
15 ft.	180 in.	225	300	375	450	525	675	825
16 ft.	192 in.	240	320	400	480	560	720	880

LOADS ON EXISTING STRUCTURE FROM SCREEN SYSTEM Rv= PARALLEL LOADS (PLF)								
Span in feet	Span in inches	PRESSURE (PSF)						
		30 psf	40 psf	50 psf	60 psf	70 psf	90 psf	110 psf
3 ft.	38 in.	59	76	92	109	126	129	127
4 ft.	48 in.	78	101	123	145	168	172	169
5 ft.	60 in.	98	126	154	182	369	215	211
6 ft.	72 in.	118	151	185	218	251	258	253
7 ft.	84 in.	137	176	215	254	293	301	296
8 ft.	96 in.	157	201	246	291	335	344	338
9 ft.	108 in.	177	227	277	327	377	387	380
10 ft.	120 in.	196	252	308	363	419	430	422
11 ft.	132 in.	216	277	338	400	461	474	464
12 ft.	144 in.	235	302	369	436	503	517	507
13 ft.	156 in.	255	327	400	472	545	560	549
14 ft.	168 in.	275	353	431	509	587	603	591
15 ft.	180 in.	294	378	461	545	629	646	633
16 ft.	192 in.	314	403	492	581	670	689	676



NOTES:

1. Deflections are delivered from test results.
2. Deflection is the minimum glass separation measured at mid span of the screen and subject to rational analysis.
3. Reaction Rh can be positive (towards structure) or negative (away from structure).
4. Rv is always tension as shown.

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REACTION TABLES

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Scale: Not to scale

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
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.	72	6.2	6.8	7.1	8.0	8.4	9.7	10.8
7 ft.	84	7.2	7.8	8.3	9.2	9.7	11.2	12.5
8 ft.	96	8.2	8.9	9.4	10.5	11.0	12.7	14.2
9 ft.	108	9.2	10.0	10.5	11.8	12.3	14.2	15.9
10 ft.	120	10.2	11.0	11.7	13.0	13.7	15.7	17.6
11 ft.	132	11.2	12.1	12.8	14.3	15.0	17.3	19.3
12 ft.	144	12.1	13.2	13.7	15.5	16.3	18.8	21.0
Hemcord Series 2000 Deflection Table								
13 ft.	156	12.9	14.0	14.8	16.5	17.3	19.9	22.3
14 ft.	168	13.9	15.1	15.9	17.7	18.6	21.4	24.0
15 ft.	180	14.9	16.1	17.0	19.0	19.9	23.0	25.7
16 ft.	192	15.8	17.2	18.1	20.3	21.3	24.3	27.4

TABLE D-1.2

Grommet / Hemcord storm bar									
Storm Bar Span / Length		3'	4'	5'	6'	8'	10'	12'	14'
Max. PSF		Per Deflection Table							
Deflection		Per Deflection Table							
1	Reserved								
2	Reserved								
3	Alum. Tube 1" x 2" x 1/8" 6063-T6	x							
4	Alum. Tube 2" x 2" x 1/8" 6063-T6	x	x	x					
5	Alum. Tube 2" x 4" x 1/8" 6061-T6	x	x	x					
6	Alum. Tube 2" x 4" x 1/4" 6061-T6	x	x	x	x				
7	Alum. Tube 2" x 6" x 1/8" 6061-T6	x	x	x	x	x			
8	Alum. Tube 2" x 6" x 1/4" 6061-T6	x	x	x	x	x	x	x	
9	Alum. Tube 2" x 8" x 1/4" 6061-T6	x	x	x	x	x	x	x	x

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DEFLECTION TABLES

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Scale: Not to scale

ANCHOR SPACING

TABLE 1 CONCRETE, 3000 PSI - ¼" ANCHORS

3000 PSI CONCRETE - ¼" ANCHORS

Anchor	Min. Embed.	Min. E.D.	Pressure (psf)	Total Width to 48"	to 72"	to 96"	to 120"	to 144"	to 168"	to 192"
¼" DIA. DEWALT DROP-IN ANCHORS	1"	3 ½"	30 (psf)	12"	12"	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	12"	12"	6"
			60 (psf)	12"	12"	12"	6"	6"	6"	6"
			90 (psf)	12"	12"	6"	6"	6"	6"	6"
			110 (psf)	12"	12"	6"	6"	6"	6"	4"
¼" DIA. TAPCON SG	1 ¾"	2 ½"	30 (psf)	12"	12"	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	12"	12"	12"
			60 (psf)	12"	12"	12"	12"	12"	12"	6"
			90 (psf)	12"	12"	12"	12"	6"	6"	6"
			110 (psf)	12"	12"	12"	12"	6"	6"	6"
¼" DIA. 410SS TAPCON RED HEAD	1 ¾"	3"	30 (psf)	12"	12"	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	12"	12"	12"
			60 (psf)	12"	12"	12"	12"	6"	6"	6"
			90 (psf)	12"	12"	6"	6"	6"	6"	6"
			110 (psf)	12"	12"	6"	6"	6"	4"	4"
¼" DIA. PANELMATE (MALE OR FEMALE OR HEX HEAD)	1 ¾"	2 ½"	30 (psf)	12"	12"	12"	12"	12"	12"	6"
			40 (psf)	12"	12"	12"	12"	12"	12"	6"
			60 (psf)	12"	12"	12"	6"	6"	6"	6"
			90 (psf)	12"	12"	6"	6"	6"	6"	6"
			110 (psf)	12"	12"	6"	6"	6"	4"	4"
¼" DIA. SAMMYS SSC	2 ¼"	2 ½"	30 (psf)	12"	12"	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	12"	12"	12"
			60 (psf)	12"	12"	12"	12"	12"	6"	6"
			90 (psf)	12"	12"	12"	6"	6"	6"	6"
			110 (psf)	12"	12"	12"	6"	6"	6"	6"
¼" DIA. DEWALT CRETE FLEX 410 SS	2"	2 ½"	30 (psf)	12"	12"	12"	12"	12"	12"	6"
			40 (psf)	12"	12"	12"	12"	12"	12"	6"
			60 (psf)	12"	12"	12"	12"	6"	6"	6"
			90 (psf)	12"	12"	12"	6"	6"	6"	---
			110 (psf)	12"	12"	6"	6"	6"	6"	---
¼" DIA. DEWALT SCREW BOLT+	2 ½"	3"	30 (psf)	12"	12"	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	12"	12"	12"
			60 (psf)	12"	12"	12"	12"	12"	6"	6"
			90 (psf)	12"	12"	12"	12"	6"	6"	6"
			110 (psf)	12"	12"	12"	12"	6"	6"	6"
¼" DIA DEWALT POWER-STUD SD6	1 ¾"	4"	30 (psf)	12"	12"	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	12"	6"	6"
			60 (psf)	12"	12"	12"	6"	6"	6"	6"
			90 (psf)	12"	12"	6"	6"	6"	6"	---
			110 (psf)	12"	12"	6"	6"	6"	---	---

TABLE 2 CONCRETE, 3000 PSI - ¼" AND 5/16" ANCHORS

3000 PSI CONCRETE - ¼" AND 5/16" ANCHORS

Anchor	Min. Embed.	Min. E.D.	Pressure (psf)	Total Width to 48"	to 72"	to 96"	to 120"	to 144"	to 168"	to 192"
¼" DIA. ALL POINTS SOLID SET ANCHORS	⅞"	3"	30 (psf)	12"	12"	12"	6"	6"	6"	6"
			40 (psf)	12"	12"	6"	6"	6"	6"	6"
			60 (psf)	12"	6"	6"	6"	---	---	---
			90 (psf)	12"	6"	6"	---	---	---	---
			110 (psf)	12"	6"	---	---	---	---	---
¼"-20 CALK-IN ANCHORS	⅞"	3 ½"	30 (psf)	12"	12"	12"	12"	12"	6"	6"
			40 (psf)	12"	12"	12"	12"	6"	6"	6"
			60 (psf)	12"	12"	6"	6"	6"	6"	---
			90 (psf)	12"	12"	6"	6"	6"	---	---
			110 (psf)	12"	6"	6"	6"	---	---	---
¼" Dia. Dewalt Mushroom Spike Anchor	1 ¼"	3 ½"	30 (psf)	12"	12"	12"	12"	12"	12"	6"
			40 (psf)	12"	12"	12"	12"	6"	6"	6"
			60 (psf)	12"	12"	12"	6"	6"	6"	---
			90 (psf)	12"	12"	6"	6"	6"	---	---
			110 (psf)	12"	12"	6"	6"	---	---	---
¼" DIA. HOLLOW SET DROP-IN ANCHORS	⅞"	4"	30 (psf)	12"	12"	12"	12"	12"	6"	6"
			40 (psf)	12"	12"	12"	12"	6"	6"	6"
			60 (psf)	12"	12"	12"	6"	6"	6"	---
			90 (psf)	12"	12"	6"	6"	6"	---	---
			110 (psf)	12"	6"	6"	6"	---	---	---
¼" DIA. DEWALT PANELMATE INSERT	1 ⅝"	1 ½"	30 (psf)	12"	12"	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	12"	12"	6"
			60 (psf)	12"	12"	12"	12"	6"	6"	6"
			90 (psf)	12"	12"	12"	6"	6"	6"	6"
			110 (psf)	12"	12"	12"	6"	6"	6"	4"
5/16" ITW XL SERIES TAPCON OR 5/16" DIA. ULTRACON	1 ¾"	2 3/16"	30 (psf)	12"	12"	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	12"	12"	12"
			60 (psf)	12"	12"	12"	12"	6"	6"	6"
			90 (psf)	12"	12"	6"	6"	6"	6"	6"
			110 (psf)	12"	12"	6"	6"	6"	6"	6"

CONCRETE NOTES:

Provide longer fasteners, if required, to allow for thickness of finishes such as stucco, plaster, siding, etc.

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Scale: Not to scale

ANCHOR SPACING

TABLE 3 CONCRETE, 3000 PSI - ⅜" ANCHORS

	Anchor	Min. Embed.	Min. E.D.	Pressure (psf)	Total Width to 48"	to 72"	to 96"	to 120"	to 144"	to 168"	to 192"
3000 PSI CONCRETE - ⅜" ANCHORS	⅜" ASTM 304-316 SS THREADED ROD IN EPOXY W/ SS COUPLER AND EYEBOLT (INSTALL PER MANUFACTURER'S INSTRUCTIONS)	3 ⅜"	4"	30 (psf)	18"	18"	18"	18"	18"	18"	18"
				40 (psf)	18"	18"	18"	18"	18"	18"	18"
				60 (psf)	18"	18"	18"	18"	18"	18"	18"
				90 (psf)	18"	18"	18"	18"	18"	18"	12"
				110 (psf)	18"	18"	18"	18"	18"	12"	12"
	⅜" DIA. LDT 410 SS	3 ¼"	5"	30 (psf)	18"	18"	18"	18"	18"	18"	18"
				40 (psf)	18"	18"	18"	18"	18"	18"	18"
				60 (psf)	18"	18"	18"	18"	18"	18"	18"
				90 (psf)	18"	18"	18"	18"	18"	12"	12"
				110 (psf)	18"	18"	18"	18"	12"	12"	12"
	⅜" DIA. SS DROP-IN ANCHORS	1 ½"	4"	30 (psf)	18"	18"	18"	18"	18"	18"	18"
				40 (psf)	18"	18"	18"	18"	18"	18"	18"
				60 (psf)	18"	18"	18"	18"	18"	18"	18"
				90 (psf)	18"	18"	18"	18"	18"	12"	12"
				110 (psf)	18"	18"	18"	18"	12"	12"	12"
	⅜"-16 CAULK-IN BOLT	1 ¼"	4"	30 (psf)	18"	18"	18"	18"	18"	18"	18"
				40 (psf)	18"	18"	18"	18"	18"	18"	18"
				60 (psf)	18"	18"	18"	18"	18"	18"	18"
				90 (psf)	18"	18"	18"	18"	18"	12"	12"
				110 (psf)	18"	18"	18"	18"	12"	12"	12"

TABLE 4 CONCRETE, 3000 PSI - ⅜" AND ½" ANCHORS

	Anchor	Min. Embed.	Min. E.D.	Pressure (psf)	Total Width to 48"	to 72"	to 96"	to 120"	to 144"	to 168"	to 192"
3000 PSI CONCRETE - ⅜" AND ½" ANCHORS	⅜" DIA. DEWALT SS MUSHROOM SPIKE ANCHOR	1 ¾"	4"	30 (psf)	18"	18"	18"	18"	18"	18"	18"
				40 (psf)	18"	18"	18"	18"	18"	18"	18"
				60 (psf)	18"	18"	18"	18"	18"	18"	18"
				90 (psf)	18"	18"	18"	18"	18"	12"	12"
				110 (psf)	18"	18"	18"	18"	12"	12"	12"
	⅜" DIA. DEWALT SS MUSHROOM SPIKE ANCHOR	1 ¾"	3 ½"	30 (psf)	18"	18"	18"	18"	18"	18"	18"
				40 (psf)	18"	18"	18"	18"	18"	18"	18"
				60 (psf)	18"	18"	18"	18"	18"	18"	12"
				90 (psf)	18"	18"	18"	18"	18"	12"	12"
				110 (psf)	18"	18"	18"	12"	12"	12"	12"
	⅜" DIA. DEWALT HOLLOW SET DROP-IN ANCHORS	1 ½"	5"	30 (psf)	18"	18"	18"	18"	18"	18"	18"
				40 (psf)	18"	18"	18"	18"	18"	18"	18"
				60 (psf)	18"	18"	18"	18"	18"	18"	18"
				90 (psf)	18"	18"	18"	18"	18"	12"	12"
				110 (psf)	18"	18"	18"	18"	12"	12"	12"
	⅜" DIA. DEWALT POWER STUD SD6	3"	6"	30 (psf)	18"	18"	18"	18"	18"	18"	18"
				40 (psf)	18"	18"	18"	18"	18"	18"	18"
				60 (psf)	18"	18"	18"	18"	18"	18"	18"
				90 (psf)	18"	18"	18"	18"	18"	12"	12"
				110 (psf)	18"	18"	18"	18"	12"	12"	12"
	½" DIA. LDT 410 SS	3"	6"	30 (psf)	18"	18"	18"	18"	18"	18"	18"
				40 (psf)	18"	18"	18"	18"	18"	18"	18"
				60 (psf)	18"	18"	18"	18"	18"	18"	12"
				90 (psf)	18"	18"	18"	12"	12"	12"	12"
				110 (psf)	18"	18"	18"	12"	12"	12"	12"

TABLE 5 CONCRETE, 3000 PSI - ½" ANCHORS

	Anchor	Min. Embed.	Min. E.D.	Pressure (psf)	Total Width to 48"	to 72"	to 96"	to 120"	to 144"	to 168"	to 192"
3000 PSI - CONCRETE	½" DIA. SS DROP-IN ANCHORS	2"	5"	30 (psf)	18"	18"	18"	18"	18"	18"	18"
				40 (psf)	18"	18"	18"	18"	18"	18"	18"
				60 (psf)	18"	18"	18"	18"	18"	18"	18"
				90 (psf)	18"	18"	18"	18"	18"	18"	18"
				110 (psf)	18"	18"	18"	18"	18"	18"	18"
	½" DIA. DEWALT SCREW BOLT	3 ½"	5"	30 (psf)	18"	18"	18"	18"	18"	18"	18"
				40 (psf)	18"	18"	18"	18"	18"	18"	18"
				60 (psf)	18"	18"	18"	18"	18"	18"	18"
				90 (psf)	18"	18"	18"	18"	18"	18"	18"
				110 (psf)	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.
- ½" Hardware Anchor Spacing only valid with C-Channel mounting.

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Scale: Not to scale

ANCHOR SPACING

TABLE 6 CONCRETE BLOCK (CMU) - ¼" AND 5/16"

CONCRETE BLOCK (CMU) CMU F'm = 1800 psi (note typical F'm = 1500 psi)

Anchor	Min. Embed.	Min. E.D.	Pressure (psf)	Total Width to 48"	to 72"	to 96"	to 120"	to 144"	to 168"	to 192"
¼" DIA. TAPCON SG	1 ¼"	2 ½"	30 (psf)	12"	12"	12"	12"	12"	12"	6"
			40 (psf)	12"	12"	12"	12"	6"	6"	6"
			60 (psf)	12"	12"	12"	12"	6"	6"	4"
			90 (psf)	12"	12"	6"	6"	6"	---	---
			110 (psf)	12"	6"	6"	6"	6"	---	---
¼" DIA. ALL POINTS SOLID SET ANCHORS (VALUES AND INSTALLATION PER MIAMI-DADE NOA 05-1116.04 EXP. 12-2011)	⅞"	3"	30 (psf)	12"	12"	12"	6"	6"	6"	6"
			40 (psf)	12"	12"	6"	6"	6"	6"	6"
			60 (psf)	6"	6"	6"	6"	---	---	---
			90 (psf)	---	---	---	---	---	---	---
			110 (psf)	---	---	---	---	---	---	---
¼"-20 CALK-IN ANCHORS	⅞"	3"	30 (psf)	12"	12"	12"	12"	6"	6"	6"
			40 (psf)	12"	12"	12"	6"	6"	6"	6"
			60 (psf)	12"	6"	6"	6"	4"	---	---
			90 (psf)	12"	6"	6"	---	---	---	---
			110 (psf)	6"	6"	4"	---	---	---	---
¼" DIA 410 SS TAPCON RED HEAD	1"	4"	30 (psf)	12"	12"	6"	6"	6"	6"	4"
			40 (psf)	12"	6"	6"	6"	4"	4"	---
			60 (psf)	6"	6"	4"	---	---	---	---
			90 (psf)	6"	4"	---	---	---	---	---
			110 (psf)	6"	---	---	---	---	---	---
¼" DIA. PANELMATE (MALE OR FEMALE OR HEX HEAD)	1 ¼"	3"	30 (psf)	12"	12"	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	12"	12"	12"
			60 (psf)	12"	12"	12"	12"	6"	6"	6"
			90 (psf)	12"	12"	6"	6"	6"	6"	6"
			110 (psf)	12"	6"	6"	6"	6"	6"	6"
¼" DIA. DEWALT PANELMATE INSERT	1 ½"	3 ½"	30 (psf)	12"	12"	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	12"	6"	6"
			60 (psf)	12"	12"	12"	6"	6"	6"	6"
			90 (psf)	12"	12"	6"	6"	6"	6"	6"
			110 (psf)	12"	12"	6"	6"	6"	6"	---
5/16" DIA. DEWALT ULTRACON+	1 ¼"	3 ⅛"	30 (psf)	12"	12"	12"	12"	12"	12"	6"
			40 (psf)	12"	12"	12"	12"	6"	6"	6"
			60 (psf)	12"	12"	6"	6"	6"	6"	---
			90 (psf)	12"	6"	6"	6"	---	---	---
			110 (psf)	12"	6"	6"	---	---	---	---

TABLE 7 CONCRETE BLOCK (CMU) - ⅜"

CONCRETE BLOCK (CMU) CMU F'm = 1800 psi (note typical F'm = 1500 psi)

Anchor	Min. Embed.	Min. E.D.	Pressure (psf)	Total Width to 48"	to 72"	to 96"	to 120"	to 144"	to 168"	to 192"
⅜"-16 Calk-In Anchors (1)	1 ¾"	4"	30 (psf)	12"	12"	12"	12"	12"	6"	---
			40 (psf)	12"	12"	12"	12"	6"	6"	---
			60 (psf)	12"	12"	12"	6"	6"	6"	---
			90 (psf)	12"	12"	6"	6"	6"	---	---
			110 (psf)	12"	12"	6"	6"	6"	---	---
⅜" DIA. HOLLOW SET DROP-IN ANCHORS (1)	1"	4"	30 (psf)	12"	12"	12"	12"	12"	6"	6"
			40 (psf)	12"	12"	12"	12"	6"	6"	---
			60 (psf)	12"	12"	12"	6"	6"	6"	---
			90 (psf)	12"	12"	6"	6"	6"	---	---
			110 (psf)	12"	6"	6"	6"	6"	---	---

TABLE 8 CMU AND TERRA COTTA BLOCK WITH STUCCO - ¼" AND ⅜"

TERRACOTTA BLOCK AND STUCCO

Anchor	Min. Embed.	Min. E.D.	Pressure (psf)	Total Width to 48"	to 72"	to 96"	to 120"	to 144"	to 168"	to 192"
¼" DIA. DEWALT CRETE-FLEX MASONRY FASTENERS	1 ¼"	2 ½"	30 (psf)	12"	12"	6"	6"	6"	6"	6"
			40 (psf)	12"	6"	6"	6"	---	---	---
			60 (psf)	12"	6"	6"	---	---	---	---
			90 (psf)	6"	6"	---	---	---	---	---
			110 (psf)	6"	6"	---	---	---	---	---
CUSTOM COUPLER IN EPOXY	3 ¼"	4"	30 (psf)	12"	12"	12"	12"	12"	12"	12"
			40 (psf)	12"	12"	12"	12"	6"	6"	6"
			60 (psf)	12"	12"	12"	6"	6"	6"	6"
			90 (psf)	12"	12"	6"	6"	6"	6"	6"
			110 (psf)	12"	12"	6"	6"	6"	6"	6"

Notes: 1. Custom fastener = ⅜" x 2 ½" threaded rod (30455) w/ ½" x 1 ¼" coupler (31656) fully inserted in ½" dia. 3 ¼" screen tube fully filled w/ Dewalt Pure 50+ Epoxy.
2. ⅜" x 1" carriage bolt, eye bolt, or machine screw

CONCRETE BLOCK (CMU) NOTES:

- Provide longer fasteners, if required, to allow for thickness of finishes such as stucco, plaster, siding, etc.

NOTES:

- Allowable values for Terra Cotta Block with Stucco per HTL Test report #0365-0416-06 dated 05-31-06.
- Anchors shall be installed in face shell, not at mortar joints.

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Scale: Not to scale

ANCHOR SPACING

TABLE 9 SOLID GROUTED (CMU) - ¼" AND 5/16"

	Anchor	Min. Embed.	Min. E.D.	Pressure (psf)	Total Width to 48"	to 72"	to 96"	to 120"	to 144"	to 168"	to 192"
SOLID GROUTED (CMU)	¼" DIA. TAPCON SG	1 ¾"	2 ½"	30 (psf)	12"	12"	12"	12"	12"	12"	12"
				40 (psf)	12"	12"	12"	12"	12"	12"	6"
				60 (psf)	12"	12"	12"	12"	6"	6"	6"
				90 (psf)	12"	12"	12"	6"	6"	6"	6"
				110 (psf)	12"	12"	12"	6"	6"	6"	4"
	¼" DIA. DEWALT CRETE-FLEX	2"	2 ½"	30 (psf)	12"	12"	12"	12"	12"	6"	6"
				40 (psf)	12"	12"	12"	12"	6"	6"	6"
				60 (psf)	12"	12"	6"	6"	6"	---	---
				90 (psf)	12"	6"	6"	6"	---	---	---
				110 (psf)	12"	6"	6"	6"	---	---	---
	¼" DIA. DEWALT SCREW BOLT	2 ½"	3 ¾"	30 (psf)	12"	12"	12"	12"	12"	12"	12"
				40 (psf)	12"	12"	12"	12"	12"	12"	12"
				60 (psf)	12"	12"	12"	12"	6"	6"	6"
				90 (psf)	12"	12"	12"	6"	6"	6"	6"
				110 (psf)	12"	12"	12"	6"	6"	6"	6"
	¼" DIA. DEWALT PANELMATE INSERT	1 ½"	4"	30 (psf)	12	12"	12"	12"	12"	12"	12"
				40 (psf)	12	12"	12"	12"	12"	12"	6"
				60 (psf)	12	12"	12"	6"	6"	6"	6"
				90 (psf)	12	12"	6"	6"	6"	6"	6"
				110 (psf)	12"	12"	6"	6"	6"	4"	4"
	¼" DIA. -20 CALK-IN ANCHOR	⅞"	3 ½"	30 (psf)	12"	12"	12"	12"	6"	6"	6"
				40 (psf)	12"	12"	12"	6"	6"	6"	6"
				60 (psf)	12"	6"	6"	6"	4"	---	---
				90 (psf)	12"	6"	6"	---	---	---	---
				110 (psf)	6"	6"	4"	---	---	---	---
	5/16" DIA. DEWALT ULTRACON	2 ¼""	2 ½"	30 (psf)	12"	12"	12"	12"	12"	12"	12"
				40 (psf)	12"	12"	12"	12"	12"	6"	6"
				60 (psf)	12"	12"	12"	6"	6"	6"	6"
				90 (psf)	12"	12"	6"	6"	6"	6"	---
				110 (psf)	12"	12"	6"	6"	---	---	---

SOLID GROUTED CMU NOTES:

- Provide longer fasteners, if required, to allow for thickness of finishes such as stucco, plaster, siding, etc.
- Anchors shall be installed in face shell, not at mortar joints.

TABLE 10 SOLID GROUTED (CMU) - ⅜" ANCHORS

	Anchor	Min. Embed.	Min. E.D.	Pressure (psf)	Total Width to 48"	to 72"	to 96"	to 120"	to 144"	to 168"	to 192"
SOLID GROUTED (CMU)	⅜" ASTM 304-316 SS THREADED ROD IN EPOXY W/ SS COUPLER AND EYEBOLT (INSTALL PER MANUFACTURER'S INSTRUCTIONS)	3 ½"	12"	30 (psf)	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"	6"	6"
				110 (psf)	12"	12"	12"	12"	6"	6"	6"
	⅜" DIA. DEWALT SCREW BOLT	3 ¼"	6"	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"
				90 (psf)	12"	12"	12"	12"	12"	6"	6"
				110 (psf)	12"	12"	12"	12"	6"	6"	6"
	⅜" DIA DEWALT HOLLOW SET DROP-IN ANCHOR	1 ¾"	5 ¼"	30 (psf)	12"	12"	12"	12"	12"	12"	6"
				40 (psf)	12"	12"	12"	6"	6"	6"	6"
				60 (psf)	12"	12"	6"	6"	6"	6"	---
				90 (psf)	12"	6"	6"	6"	---	---	---
				110 (psf)	12"	6"	6"	---	---	---	---
	⅜" DIA. CALK-IN ANCHOR 410 SS	1 ¼"	5 ¼"	30 (psf)	12"	12"	12"	12"	12"	12"	12"
				40 (psf)	12"	12"	12"	12"	12"	12"	12"
				60 (psf)	12"	12"	12"	12"	6"	6"	6"
				90 (psf)	12"	12"	12"	6"	6"	6"	---
				110 (psf)	12"	12"	6"	6"	6"	---	---
	⅜" POWERS MUSHROOM SPIKE	1 ¾"	4 "	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"
				90 (psf)	12"	12"	12"	12"	12"	6"	6"
				110 (psf)	12"	12"	12"	12"	6"	6"	6"

SOLID GROUTED CMU NOTES:

- Spacing for fasteners used in testing are shown as per test
- Spacing for all other fasteners calculated with SF=3 min.

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ANCHOR SPACING

TABLE 11 WOOD SYP #2 - ¼" AND 5/16"

	Anchor	Min. Embed.	Min. E.D.	Pressure (psf)	Total Width						
					to 48"	to 72"	to 96"	to 120"	to 144"	to 168"	to 192"
WOOD SYP #2	¼" DIA. X 2 ¼" PANELMATE (MALE OR FEMALE OR HEX HEAD)	1 ¾"	¾"	30 (psf)	12"	12"	12"	12"	12"	12"	12"
				40 (psf)	12"	12"	12"	12"	12"	12"	12"
				60 (psf)	12"	12"	12"	12"	12"	6"	6"
				90 (psf)	12"	12"	12"	12"	6"	6"	6"
				110 (psf)	12"	12"	12"	6"	6"	6"	6"
	¼" DIA. SPAX SCREW	2"	¾"	30 (psf)	12"	12"	12"	12"	12"	12"	12"
				40 (psf)	12"	12"	12"	12"	12"	12"	6"
				60 (psf)	12"	12"	12"	12"	6"	6"	6"
				90 (psf)	12"	12"	12"	6"	6"	6"	6"
				110 (psf)	12"	12"	6"	6"	6"	6"	6"
	¼" DIA. SS LAG SCREWS OR EYE LAG OR HANGER BOLT	2"	3/4" into stud or lintel	30 (psf)	12"	12"	12"	12"	6"	6"	6"
				40 (psf)	12"	12"	12"	6"	6"	6"	---
				60 (psf)	12"	6"	6"	6"	4"	---	---
				90 (psf)	12"	6"	6"	4"	---	---	---
				110 (psf)	12"	6"	6"	---	---	---	---
	5/16" DIA. SS LAG SCREWS OR EYE LAG OR HANGER BOLT	2"	1 ¼" into stud or lintel	30 (psf)	12"	12"	12"	12"	6"	6"	6"
				40 (psf)	12"	12"	12"	6"	6"	6"	6"
				60 (psf)	12"	12"	6"	6"	---	---	---
				90 (psf)	12"	6"	6"	---	---	---	---
				110 (psf)	12"	6"	6"	---	---	---	---

TABLE 12 WOOD SYP #2 - 3/8" AND ½"

	Anchor	Min. Embed.	Min. E.D.	Pressure (psf)	Total Width						
					to 48"	to 72"	to 96"	to 120"	to 144"	to 168"	to 192"
WOOD SYP #2	3/8" DIA. SS LAG SCREWS OR EYE LAG, OR HANGER BOLT	2"	1 ½" into stud or lintel	30 (psf)	12"	12"	12"	12"	6"	6"	6"
				40 (psf)	12"	12"	6"	6"	6"	6"	---
				60 (psf)	12"	6"	6"	6"	---	---	---
				90 (psf)	12"	6"	6"	---	---	---	---
				110 (psf)	12"	6"	6"	---	---	---	---
	3/8" DIA. SS LAG SCREW OR LAG ANCHOR OR HANGER BOLT	3"	1 ½" into stud or lintel	30 (psf)	12"	12"	12"	12"	12"	12"	12"
				40 (psf)	12"	12"	12"	12"	12"	12"	12"
				60 (psf)	12"	12"	12"	12"	6"	6"	6"
				90 (psf)	12"	12"	12"	6"	6"	6"	---
				110 (psf)	12"	12"	6"	6"	6"	---	---
	½" DIA. SS LAG SCREW OR LAG ANCHOR OR HANGER BOLT	3"	2" into side grain	30 (psf)	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"	6"	6"
				110 (psf)	12"	12"	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 2018.
- Lag Anchor to be fully embedded.
- Douglas Fir - Larch and Red Oak are alternate acceptable wood type

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(561)-569-8707
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REGISTRY No. 34110

ARMOR SCREEN
GROMMET AND HEMCORD SERIES 2000
HURRICANE PROTECTION

ARMOR SCREEN, CORP
2744 HILLSBORO ROAD
WEST PALM BEACH, FL 33405
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Date: 10/23/23

Revision Date(s): 10/23/07, 10/11/10, 10/18/17, 10/19/20, 10/23/23

Scale: Not to scale

TABLE 13 METAL - ¼"- 5/16"

ANCHOR SPACING

	Anchor	Min. Embed.	Min. E.D.	Pressure (psf)	Total Width						
					to 48"	to 72"	to 96"	to 120"	to 144"	to 168"	to 192"
18 GAGE METAL STUDS	¼"-14 TEKS SELF-TAPPING SCREWS (spacing per test #01 dated 2-8-08)		½"	30 (psf)	6"	6"	6"	6"	6"	6"	6"
				40 (psf)	6"	6"	6"	6"	6"	6"	6"
				60 (psf)	6"	6"	6"	6"	6"	6"	6"
				90 (psf)	6"	6"	6"	6"	6"	6"	6"
				110 (psf)	6"	6"	6"	6"	6"	6"	6"
3/16" STEEL	¼"-14 TEKS SELF-TAPPING SCREWS		½"	30 (psf)	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"
				110 (psf)	12"	12"	12"	12"	12"	12"	12"
⅛" (12 GA) STEEL	¼"-14 TEKS SELF-TAPPING SCREWS		½"	30 (psf)	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"	6"
				110 (psf)	12"	12"	12"	12"	12"	6"	6"
⅛" ALUMINUM 6063-T6	¼"-14 TEKS SS SELF-TAPPING SCREWS		½"	30 (psf)	12"	12"	12"	12"	12"	12"	12"
				40 (psf)	12"	12"	12"	12"	12"	12"	12"
				60 (psf)	12"	12"	12"	12"	6"	6"	6"
				90 (psf)	12"	12"	12"	6"	6"	6"	6"
				110 (psf)	12"	12"	6"	6"	6"	6"	6"
¼" ALUMINUM 6063-T6	¼"-14 TEKS SS SELF-TAPPING SCREWS		½"	30 (psf)	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"
				110 (psf)	12"	12"	12"	12"	12"	12"	12"
3/16" ALUMINUM 6063-T6	¼"-14 TEKS SS SELF-TAPPING SCREWS		½"	30 (psf)	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"	6"
				110 (psf)	12"	12"	12"	12"	12"	6"	6"
⅛" & ¼" ALUMINUM 6063-T6	¼" DIA. THRU BOLT		½"	30 (psf)	12"	12"	12"	12"	12"	12"	12"
				40 (psf)	12"	12"	12"	12"	12"	12"	12"
				60 (psf)	12"	12"	12"	12"	6"	6"	6"
				90 (psf)	12"	12"	12"	6"	6"	6"	6"
				110 (psf)	12"	12"	6"	6"	6"	4"	4"
⅛" & ¼" ALUMINUM 6063-T6	5/16" DIA. THRU BOLT		½"	30 (psf)	12"	12"	12"	12"	12"	12"	12"
				40 (psf)	12"	12"	12"	12"	12"	12"	12"
				60 (psf)	12"	12"	12"	12"	12"	6"	6"
				90 (psf)	12"	12"	12"	6"	6"	6"	6"
				110 (psf)	12"	12"	12"	6"	6"	6"	4"

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.

GORDON M. DIBATTISTO
LICENSE
No PE82328
STATE OF FLORIDA
PROFESSIONAL ENGINEER

GORDON DIBATTISTO, P.E.
P.E. No. 82328
10/23/23
VALID ONLY WITH ORIGINAL SEAL

REPRODUCTION WITHOUT WRITTEN CONSENT, ALTERATIONS, ADDITIONS, OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE OUR CERTIFICATION.

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ANCHOR SPACING

TABLE 14 METAL - #12 - 5/16" AND 3/8"

	Anchor	Min. Embed.	Min. E.D.	Pressure (psf)	Total Width						
					to 48"	to 72"	to 96"	to 120"	to 144"	to 168"	to 192"
1/8" STEEL	5/16" DIA. THRU BOLT		1/2"	30 (psf)	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"	6"
				110 (psf)	12"	12"	12"	12"	12"	6"	6"
1/8" ALUMINUM 6063-T6	#12-24 TEKS SELF-TAPPING SCREWS		1/2"	30 (psf)	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"
				110 (psf)	12"	12"	12"	12"	12"	12"	12"
1/4" ALUMINUM 6063-T6	#12-24 TEKS SELF-TAPPING SCREWS		1/2"	30 (psf)	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"
				110 (psf)	12"	12"	12"	12"	12"	12"	12"
3/16" ALUMINUM 6063-T6	#12-24 TEKS SELF-TAPPING SCREWS		1/2"	30 (psf)	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"
				110 (psf)	12"	12"	12"	12"	12"	12"	12"
1/8" AND 1/4" STEEL	3/8"- RIVET-NUTS INTERNALLY THREADED		1"	30 (psf)	12"	12"	12"	12"	12"	12"	12"
				40 (psf)	12"	12"	12"	12"	12"	12"	12"
				60 (psf)	12"	12"	12"	12"	12"	12"	6"
				90 (psf)	12"	12"	12"	12"	12"	12"	6"
				110 (psf)	12"	12"	12"	12"	12"	6"	6"
1/4" ALUMINUM	3/8"- RIVET-NUTS INTERNALLY THREADED		1"	30 (psf)	12"	12"	12"	12"	12"	6"	6"
				40 (psf)	12"	12"	12"	12"	6"	6"	6"
				60 (psf)	12"	12"	6"	6"	6"	6"	6"
				90 (psf)	12"	12"	6"	6"	6"	3"	3"
				110 (psf)	12"	6"	6"	6"	3"	3"	3"

METAL NOTES:

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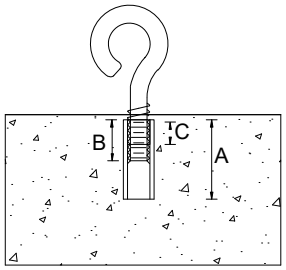

DROP-IN ANCHOR			
	Embedment		
	1/4"	3/8"	1/2"
A	1"	1 9/16"	2"
B	1/2"	11/16"	13/16"
C	5/16"	7/16"	9/16"

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

MINIMUM BOLT ENGAGEMENT IN FEMALE ANCHOR

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