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FL# FL17734-R5 Application Type Revision Code Version 2023 Application Status Approved

Comments

Archived

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Category Impact Protective Systems

Subcategory Removable

Compliance Method Evaluation Report from a Florida Registered Architect or a Licensed Florida

Professional Engineer

Evaluation Report - Hardcopy Received

Florida Engineer or Architect Name who developed the Gordon DiBattisto, P.E.

Evaluation Report

Florida License

PE-82328

Quality Assurance Entity National Accreditation and Management Institute

Quality Assurance Contract Expiration Date 12/31/2024 Validated By Troy Bishop, P.E.

Validation Checklist - Hardcopy Received

Certificate of Independence FL17734 R5 COI COI .pdf

Referenced Standard and Year (of Standard) **Standard Year** TAS 201 1994 TAS 202 1994 TAS 203 1994

Equivalence of Product Standards

Certified By

Sections from the Code

 Date Submitted
 10/23/2023

 Date Validated
 10/23/2023

 Date Pending FBC Approval
 10/31/2023

 Date Approved
 12/12/2023

Summary of Products

FL #	Model, Number or Name	Description
17734.1	Armor Screen ProBond Series	Fabric Hurricane Protection System
Zone 4, High Velocity Hur The un-breached envelop considered 'non-porous' of Zone and remains intact of	ide HVHZ: Yes	Installation Instructions FL17734 R5 II DWG .pdf Verified By: Gordon DiBattisto 82328 Created by Independent Third Party: Yes Evaluation Reports FL17734 R5 AE EVAL .pdf Created by Independent Third Party: Yes

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Product Approval Accepts:





ARMOR SCREEN PROBOND SERIES

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.
- Design loads shall be calculated in accordance with the Forida Building Code 8th Edition (2023) and ASCE 7-22 using ASD load combinations.
- Testing meets Florida Building Code 8th Edition; TAS 201; TAS 202; TAS 203; ASTM 1886; ASTM 1996; ASTM 330 per Sections 1620 and 1626 and fulfills its requirement for opening protection.
- The unbreached envelope criterion is met when this approved wall component encloses the protected opening all around.
- The open areas in the Armor Screen Fabric are small enough that the surface tension of water causes the barrier screen to become solid in the presence of rain, and in actual hurricane conditions has been shown to prevent damaging voluminous water intrusion, even from torrential rains.
- Has satisfied checklist #0445 for resistance to burning, smoke, ignition, temperature. and weathering and qualifies as a permanently installed building component; ASTM G155, ASTM D638, ASTM C158, ASTM D635 - C1, ASTM D1929.
 - ASTM G155
 - ASTM D638
 - ASTM C158
 - ASTM D635 C1
 - **ASTM D1929**
- Product Marking: A permanent label shall be affixed to the screen barrier with the following statement: "Armor Screen Corporation, Current Address, 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

(ASTM D5199) **Thickness** 20 MIL. 22 x 21% Wide Width Elongation (ASTM D4595)

Apparent Opening Size 30 US STD Sieve

Percentage of Open Area

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.

LIMITATIONS OF USE:

Maximum Span 113"

Maximum Non-Span Unlimited, Utilizing side overlapping details, page 3

Maximum Design Pressure +60 / -60 PSF

• Span (anchor span) equals the distance between the primary rows of anchors on opposing sides of the screen and when calculated with negative wind pressure, determines fastener size and spacing.

INSTALLATION NOTES:

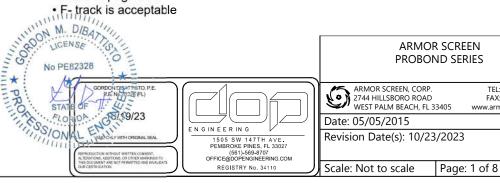
- · Deflection is the minimum glass separation measured at mid span of the screen and subject to interpolation between listed spans (see tables on page 8). Separation offset may be achieved alone or by any combination thereof, Natural Deflection, Angled Style Screens, Storm Bars and Pneumatic Devices
- Screen may be mounted with opposing primary anchored perimeters (span) in vertical, horizontal, or any alignment appropriate to the structure being protected.
- 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.
- The screens may be installed at any height on the structure as long as the design pressure rating for the screens is not exceeded.
- Anchors on the non-primary perimeter side (span side) of the screen are optional (e.g. to limit potential sag in the screen or reduce movement on the free side or other site specific reasons).
- 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 should be used to allow for facing materials.
- Anchor embedment into masonry shall be into the face shell, not mortar joints.
- · All fully embedded anchors may be flush with the finished facing provided they have the correct embedment into the structure behind the finish material.
- Anchor installations should follow the manufacturer's recommended methods.
- · For attachment into female anchors, sidewalk bolts, washered head bolts or bolts with a standard washer are required.
- A caulk or sealant should be used with all wood penetrating anchors.
- All fasteners shall be corrosion resistant as specified in the IRC and IBC or stainless

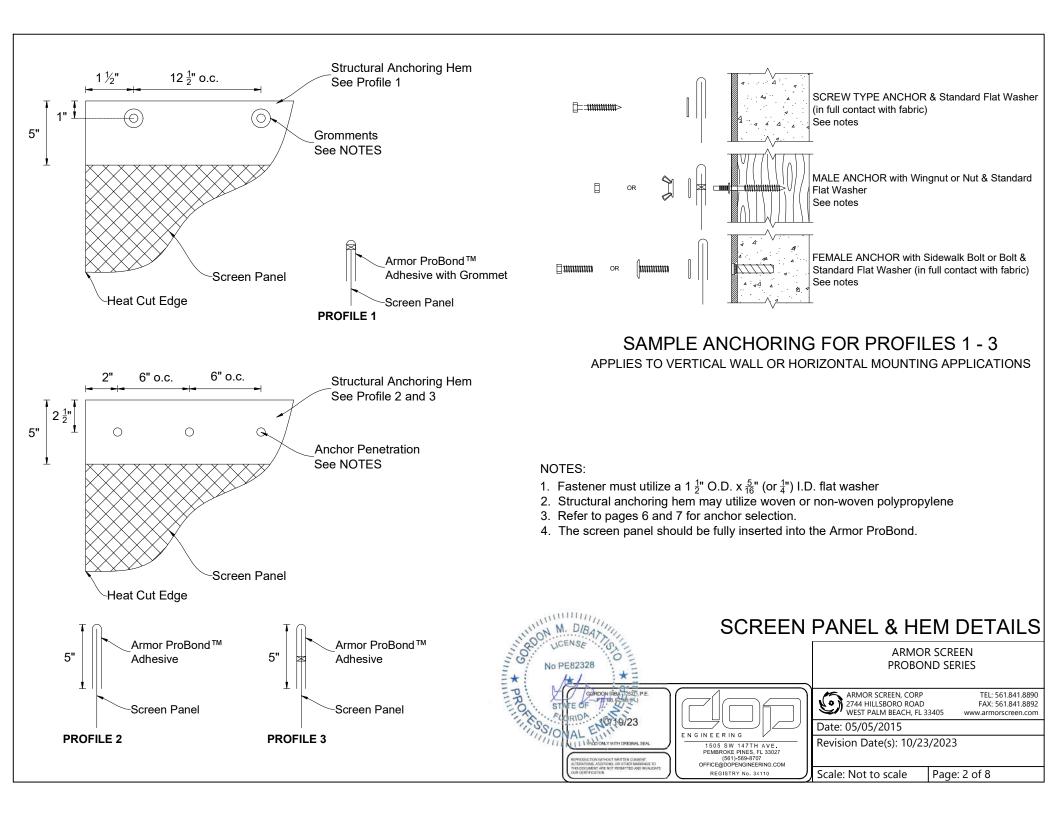
TEL: 561.841.8890

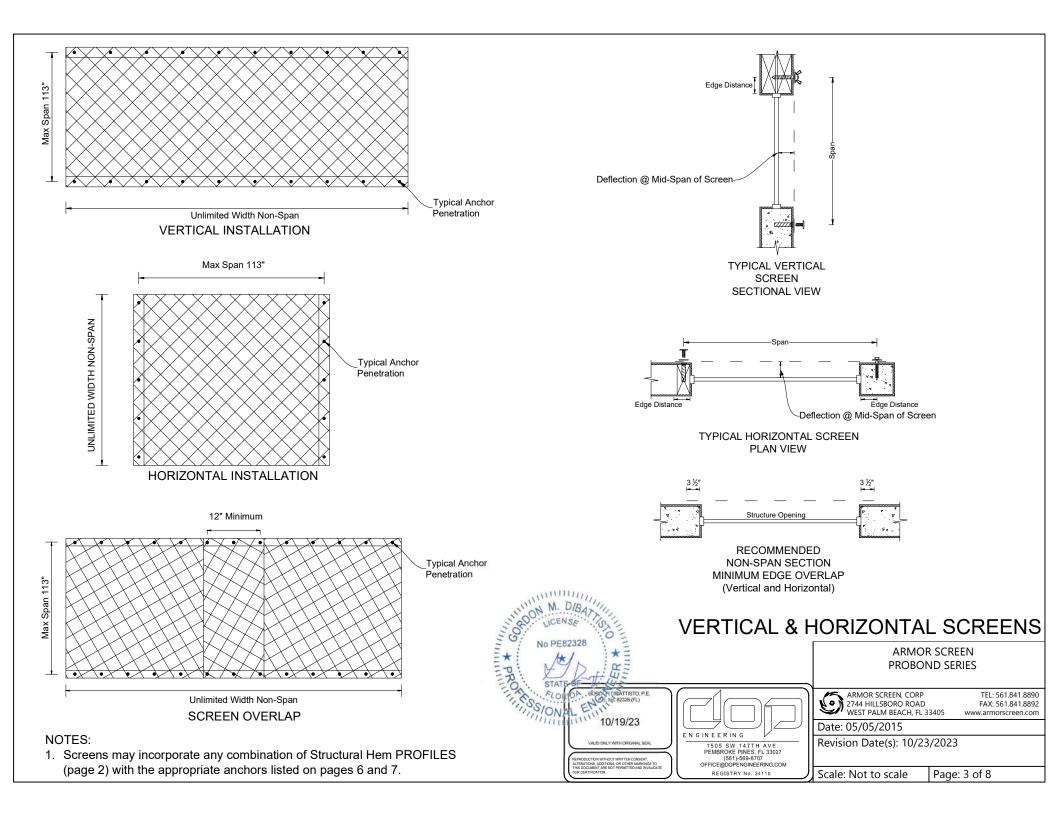
FAX: 561.841.8892

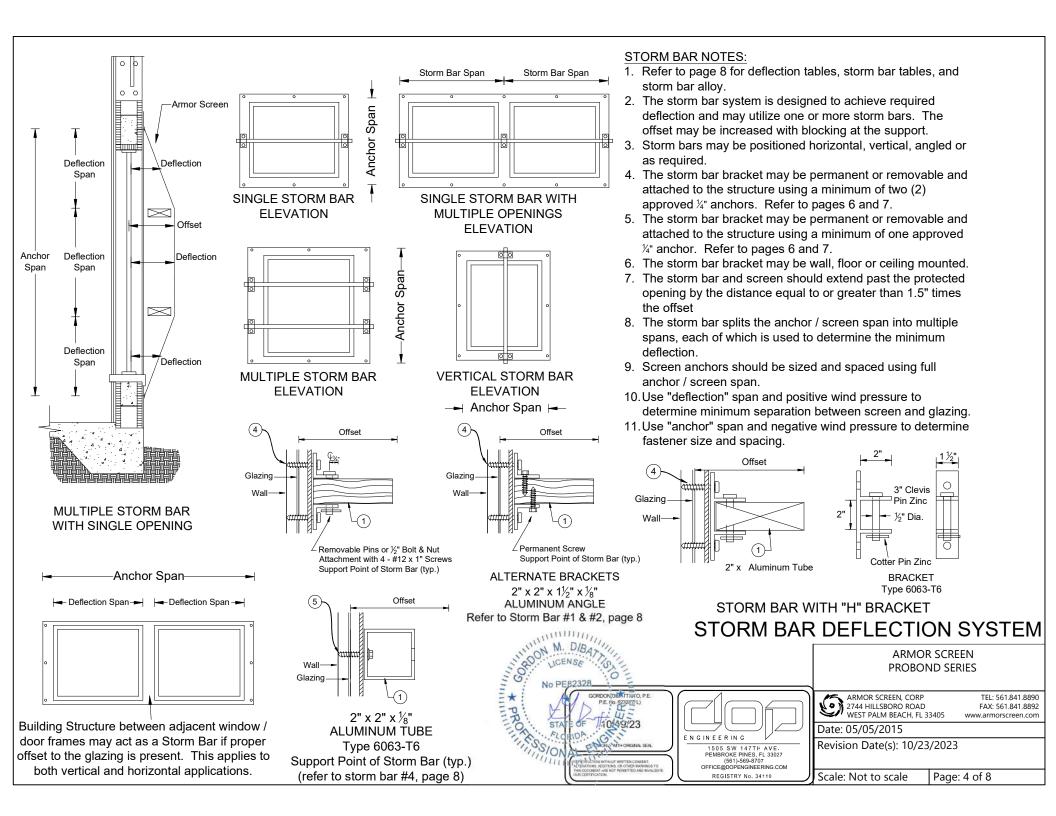
www.armorscreen.com

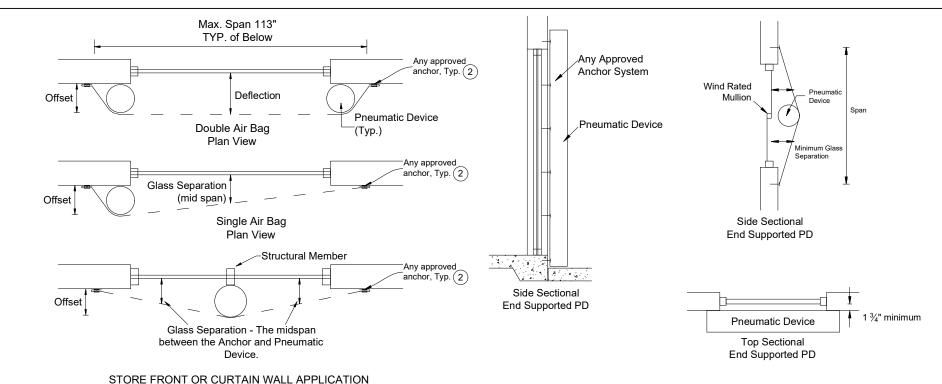
- Refer to pages 6 and 7 for approved anchors and anchor spacing.
- Refer to page 8 for deflection and storm bar tables.











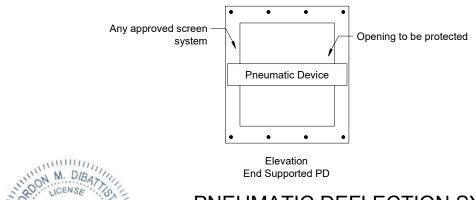
Plan View

PNEUMATIC DEVICE (PD) SPECIFICATIONS:

- 1. Pneumatic Device consists of two parts, a refillable polymer air bladder, diameter as appropriate to achieve glass separation, 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.

NOTES: PNEUMATIC DEVICE (PD) DEFLECTION SYSTEM

- 1. Refer to the Deflection Table on page 8 to determine PD diameter.
- 2. Refer to pages 6 and 7 for approved anchors.
- 3. The PD not supported directly on glaing may rest on a wind rated window mullion.
- 4. Inflation of the device requires a minimum pressure of 2.0 psi.
- 5. One or more devices may be used to achieve required HVHZ separation.
- 6. This system may be positioned horizontally, vertically, or as required.
- 7. Use "Deflection" span and positive wind pressure to determine minimum separation between screen and glazing.
- 8. Use "Anchor" span and negative wind pressure to determine fastener size and
- 9. The pneumatic device should be positioned to provide adequate deflection between the screen / barrier and surface being protected.



ENGINEERING

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10/19/23

PNEUMATIC DEFLECTION SYSTEM

ARMOR SCREEN, CORP 2744 HILLSBORO ROAD WEST PALM BEACH, FL 33405 Date: 05/05/2015

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Revision Date(s): 10/23/2023

Scale: Not to scale Page: 5 of 8

ARMOR SCREEN

PROBOND SERIES

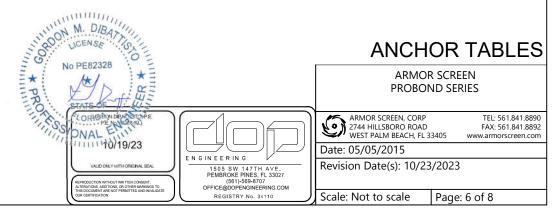
	3000 PSI C	ONC	RE	TE		
Dia.	Anchor Description	Min.	Min.	Maximum Span	Max. Anchor Spacing	
Dia.	Manufacturer Part Number	Embed.	E.D.	(inches)	(inches)	
1/4"	Tapcon	2"	2 ½"	113"	12 ½	
74	Dewalt □ ••••		113	14 2		
1/4"	Panelmate (Male or Female)	1 3/4"	2 ½"	113"	12 ½	
74	Dewalt -	113	14 2			
1/4"	Panelmate Inserts	1 ½"	3"	113"	12 ½	
74	Dewalt	777		113	12 2	
1/ "	Calk-In Anchor	7/8"	3"	113"	12 ½	
1/4"	Dewalt	113	14 2			

CONCRETE BLOCK (CMU)											
	, , , , , , , , , , , , , , , , , , , ,										
Dia.	Anchor Description	Min.	Min.	Maximum Span	Max. Anchor Spacing						
	Manufacturer Part Number	Embed.	E.D.	(inches)	(inches)						
	Panelmate (Male or Female)	1 1/4"	3 ½"								
1/4"	,	113"	$12\frac{1}{2}$								
	Dewalt -										
	Panelmate Inserts	1 ½"	3 ½"								
1/4"		1 1	_	113"	$12\frac{1}{2}$						
	Dewalt	777									
	Calk-In Anchor	7/8"	3"								
1/4"		_		113"	$12\frac{1}{2}$						
	Dewalt										

	SOLID GROUTED CMU								
Dia.	Anchor Description	Min.	Min.	Maximum Span	Max. Anchor Spacing				
ыа.	Manufacturer Part Number	Embed.	E.D.	(inches)	(inches)				
1/4"	Tapcon	2"	2 ½"	113"	12 ½				
74	Dewalt □••••	113	12 2						
1/ "	Panelmate (Male or Female)	1 1/4"	3"	113"	12 ½				
1/4"	Dewalt -	110	12 2						
1/4"	Panelmate Inserts	1 ½"	3 ½"	113"	12 ½				
/4	Dewalt	777	7	110	12 2				
1/4"	Calk-In Anchor	7/8"	3"	113"	12 ½				
74	Dewalt	113	14 2						

NOTES:

- 1. Maximum spans designed to +60 psf / -60 psf.
- 2. Provide longer fasteners, if required, to allow for thickness of non-structural finishes.
- All anchor holes to be clean and dust free before inserting intended anchor.
- 4. All anchors to be as specified.
- 5. Edge distances and embedments are minimums.



	WOOD SYP #2 (G = 0.55)								
Dia.	Anchor Description	Min.	Min.	Maximum Span	Max. Anchor Spacing				
Dia.	Manufacturer Part Number	Embed.	E.D.	(inches)	(inches)				
1/4"	Spax Self Drilling Screw	2"	3/4"	113"	12 ½				
74"	Spax d		113	12 2					
1/4"	Panelmate (Male or Female)	2"	3/4"	113"	12 ½"				
74	Dewalt -	113	14 2						
1/4"	Panelmate Inserts	1 %"	11/4"	113"	12 ½"				
74	Dewalt	113	14 2						

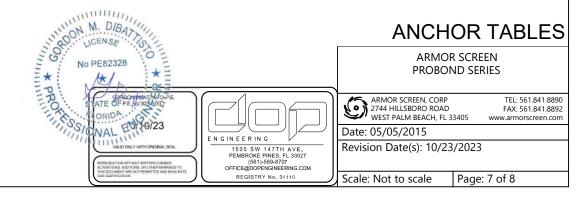
NOTES:

- 1. Maximum spans designed to +60 psf / -60 psf.
- 2. Caulk or sealant is recommended for all penetrations into a wood substrate.
- 3. Provide longer fasteners, if required, to allow for thickness of non-structural finishes such as stucco, plaster, brick, stone, siding, etc.
- 4. All anchors to be as specified.
- 5. Design as per NDS 2018.
- 6. Douglas Fir Larch and Red Oak are an acceptable alternate.
- 7. Edge distances and embedments are minimums.

	STEEL AND ALUMINUM								
	Dia.	Anchor Description	Min.	Min.	Maximum Span	Max. Anchor Spacing			
	Dia.	Manufacturer Part Number Em		E.D.	(inches)	(inches)			
%" Steel	1/4"	Self Drilling Screws note 3 1/2"			113"	12 ½			
3/46"	74	½"-14 TEKS □	113	12 2					
%" (12 GA) Steel	1/11	Self Drilling Screws	note 3	1/2"	113"	12 ½			
%" (13 St	1/4"	½"-14 TEKS □		113	12 2				
%" Aluminum 6063-T6	1/11	Self Drilling Screws		1/2"	113"	12 ½			
½" Alu 606	1/4"	½"-14 TEKS □	>		113	12 2			

NOTES:

- 1. Maximum spans designed to +60 psf / -60 psf.
- 2. Provide longer fasteners, if required, to allow for thickness of non-structural finishes such as stucco, plaster, brick, stone, siding, etc.
- 3. Screws shall extend (3) pitches passing the thread plane.
- 4. All anchors to be as specified.
- 5. Edge distances and embedments are minimums.



	STORM	BAR	TAB	LE					
	Storm Bar Span / Length	3'	4'	5'	6'	8'	10'	12'	14'
	Max. PSF			Per [Deflec	tion T	able		
	Deflection			Per [Deflec	tion T	able		
1	Wood 2" x 6"	х	х	Х	х				
2	Wood 2" x 8"	х	х	х	х	х			
3	Alum. Tube 1" x 2" x ½" 6063-T6	x							
4	Alum. Tube 2" x 2" x ½" 6063-T6	х	х	х					
5	Alum. Tube 2" x 4" x ½" 6061-T6	х	х	х					
6	Alum. Tube 2" x 4" x ½" 6061-T6	х	х	х	х				
7	Alum. Tube 2" x 6" x ½" 6063-T6	х	х	х	х	х			
8	Alum. Tube 2" x 6" x ½" 6061-T6	х	х	х	х	х	х	х	
9	Alum. Tube 2" x 8" x ½" 6061-T6	х	х	х	х	х	х	х	х

SCREEN REACTIONS FOR PRESSURE AND SPAN												
Load (psf)			Span									
		2 ft.	3 ft.	4 ft.	5 ft.	6 ft.	7 ft.	8 ft.	9 ft.	10 ft.		
		24"	36"	48"	60"	72"	84"	96"	108"	120"		
20	Rh	30	45	60	75	90	105	120	135	150		
30	Rv	39	59	78	98	118	137	157	177	196		
40	Rh	40	60	80	100	120	140	160	180	200		
40	Rv	50	76	101	126	151	176	201	227	252		
50	Rh	50	75	100	125	150	175	200	225	250		
	Rv	62	92	123	154	185	215	246	277	308		
60	Rh	60	90	120	150	180	210	240	270	300		
	Rv	73	109	145	182	218	254	291	327	363		

NOTES:

- 1. Reaction Rh can be positive (towards structure) or negative (away from structure).
- 2. Rv is always tension as shown.

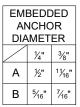
NOTES:

- 1. Wood Storm Bar #1 and #2 requires alternate storm bar bracket, see detail on page 7.
- 2. Wood Storm Bar #1 and #2 to be #2 SYP (Southern Yellow Pine) or Douglas Fir-Larch.
- 3. Storm Bars #3, #4, #5 and #6, screen width supported by storm bars shall be equal to span or 6' maximum. For screens wider than maximum width use multiple storm bars.

N	IINIMUM G	LASS SEI	PARATIO	N TABLE	
Span	Span		Deflection	in inches	
in feet	in inches	30 psf	40 psf	50 psf	60 psf
2 ft.	24	3.0	3.1	3.3	3.5
3 ft.	36	4.0	4.2	4.4	4.8
4 ft.	48	4.9	5.3	5.5	6.0
5 ft.	60	5.9	6.3	6.7	7.3
6 ft.	72	7.2	7.8	8.1	9.0
7 ft.	84	8.2	8.8	9.3	10.2
8 ft.	96	9.2	9.9	10.4	11.5
9 ft.	108	10.2	11.0	11.5	12.8
10 ft.	120	11.2	12.0	12.7	14.0

NOTES:

- 1. Deflection is the minimum glass separation measured at MID SPAN of the screen and subject to rational analysis.
- 2. One inch (1") has been added to actual minimum separation for safety factor.



- A Internal Thread Length (varies)
- B Minimum Thread Engagement

MINIMUM BOLT THREAD ENGAGEMENT

NOTES:

- 1. Table applies to any threaded connection.
- 2. Refer to anchor spacing tables, pages 6 and 7, for anchor embedment.
- 3. Edge distances and embedments are minimums.

