

CONCEPT FRAMES

2015 Industrial Drive
Newton, NC 28658

UL CERTIFIED HURRICANE RESISTANT DOOR & FRAME PRODUCT

INSTALLATION INSTRUCTIONS

UL CATEGORY & FILE REFERENCES:

DOORS: ZHCW.R26900

FRAMES: ZHDL.R27012

APPLICABLE APPROVALS:

FLORIDA BUILDING CODE

FBC: FL 40163

TAS-201(1994), TAS-202(1994), TAS-203(1994)

ASTM E330 - 02, ASTM E1886 - 2005, ASTM E1996 - 2009

Configuration			Door Series	Min Ga	Max Size	Max Design Load (psf)	Large Missile Impact Rating (ft-lbs)	Latch	
Type	Orientation	Latching						Minimum Throw (in.)	Minimum Latch Strength (lbf)
Singles	Out-Swing	CYL, ML or REH	DE DEMB	18	3' x 7'	+/- 50	350	CYL, ML: 1/2 REH: N/A	CYL, ML: 525 REH: N/A
		ML ^(*) or MEH	All	18	3' x 7'	+/- 60	350	ML: 1/2 MEH: N/A	ML: 630 MEH: N/A
		CYL, ML ^(*) , REH or VRH	All	18	4' x 7'	+ 65/ - 70	350	CYL: 1/2 ML: 3/4 REH, VRH: N/A	CYL, ML: + 65 psf: 910 - 70 psf: 980 REH, VRH: N/A
		CYL or CYL + DB	All	18	3' x 7'	+/- 70	350	CYL: 1/2 DB: 1	735
		ICL	All	18	3' x 7'	+/- 70	350	Act Latch: 1/2 Dead Latch: 3/4	735
		ML ^(*) , REH or VRH	All	16	4' x 8'	+/- 70	350	ML: 3/4 REH, VRH: N/A	ML: 1120 REH, VRH: N/A
	In-Swing	CYL or ML ^(*)	All	18	3' x 7'	+/- 60	350	CYL: 1/2 ML: 3/4	630
		CYL + DB	All	18	3' x 7'	+/- 70	350	CYL: 1/2 DB: 1	735
		ICL	All	18	3' x 7'	+/- 70	350	Act Latch: 1/2 Dead Latch: 3/4	735
		ML ^(*)	All	18	3' x 7'	+/- 70	350	3/4	735
Pairs	Out-Swing	REH x Rem HM Mull	All	18	8' x 7'	+/- 65	350	5/8	910
		CYL + DB X FB	All	18	6' x 7'	+ 65/ - 70	350	CYL: 1/2 FB: 1	+ 65 psf: SPL 683, SB 342 ea - 70 psf: SPL 735, SB 368 ea
		CYL X SB	All	18	8' x 7'	+ 65/ - 70	350	CYL: 1/2 SB: 3/4	+ 65 psf: SPL 910, SB 455 ea - 70 psf: SPL 980, SB 490 ea
		ML ^(*) x FB	All	18	6' x 7'	+/- 70	350	ML: 3/4 FB: 1	ML: 735 FB: 368
		ML ^(*) x SB, REH x Hdwr. Mull, or VRH x VRH	All	18	8' x 7'	+/- 70	350	ML, SB: 3/4 REH, VRH: N/A	ML: 980 SB: 490 ea REM, VRH: N/A
		ML ^(*) x SB, REH x Hdwr. Mull, or VRH x VRH	All	16	8' x 8'	+/- 70	350	ML, SB: 3/4 REH, VRH: N/A	ML: 1120 SB: 560 ea REM, VRH: N/A
	In-Swing	ML ^(*) x FB	All	18	6' x 7'	+/- 70	350	ML: 3/4 FB: 1	ML: 735 FB: 368

Notes: (*) - Dead bolt function required for a mortise lock
 (*) - Dead bolt function NOT required for a mortise lock

Doors detailed above include the following constructions:

Lock Seam Construction

DE Series: 16 or 18 Gauge Face Sheets
 DEMB Series (Embossed): 18 Gauge Face Sheets

Vertically Steel Stiffened

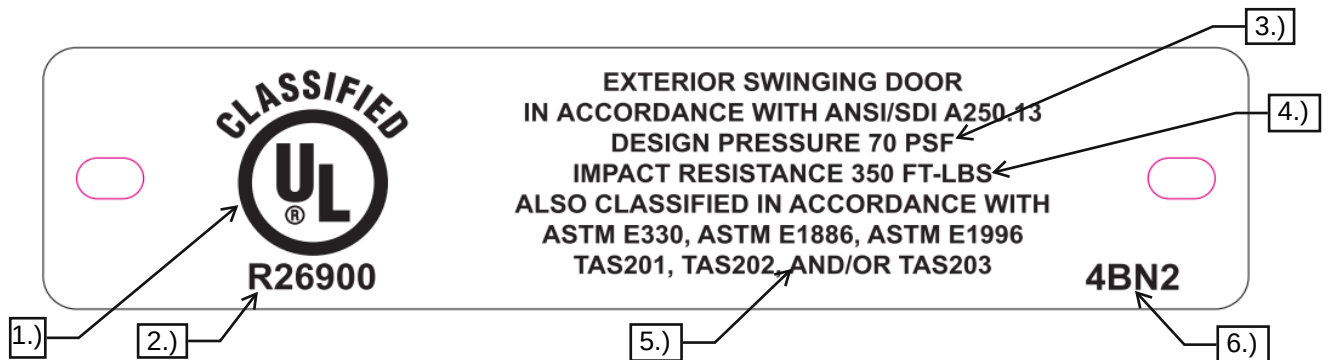
DS Series
 16 or 14 Gauge Face Sheets
 Welded Vertically Stiffened Core
 Stiffness Class: 1

Latching Device Legend		
CYL : Cylindrical lock or latch	MEH: Mortise exit hardware	SPL : Single point latch
DB : Dead bolt	ML : Mortise lock or latch	VRH: Vertical rod exit hardware
FB : Flush bolt	REH : Rim exit hardware	
ICL : Interconnected lock or latch	SB : Surface bolt	

- All doors are tested, UL Listed, Certified and labeled to TAS 201(1994), TAS-202(1994), TAS 203(1994)
 ASTM E330-02, ASTM E1886-2005, ASTM E1996-2009

- Glass lights and louvers are permitted in doors up to and including +/- 70 psf Design Load

			WINDSTORM RESISTANT DOORS - SIZE AND RATING LIMITATIONS -	
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Label Information

- 1.) UL Classified Logo
- 2.) Company Identification - UL File Number
- 3.) Design Pressure - Varies - 70 psf Shown
- 4.) Impact Rating 350 ft-lbs - Missile Level D
- 5.) Compliant Test Standards
- 6.) Label Part Number

Label Size: 1" x 4.50"

Material: Aluminum

			WINDSTORM RESISTANT DOORS - UL DOOR LABEL DETAILS -	
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Product	Configuration			Construction	Maximum Design Load (psf)	Large Missile Impact Rating (ft-lbs)	Maximum Frame Rabbit Width x Height	Permitted Wall Types & Anchorage ^(*)				
	Type	Orientation	Latching : Strike Prep					New Unit Masonry	Concrete or Exist. Unit Masonry	Wood Stud	Steel Stud	Structural Steel
3-Sided Frames	Singles	Out-Swing	CYL : SMLASA or UNL ML : MUNL MEH : ASA	KD FW	+/- 60	350	3' x 7' ^(*)	√	√	√	√	√
			CYL : ASA ML : ASA REH : RIM	KD FW	+ 65/ - 70	350	4' x 7' ^(*)					
			CYL : ASA CYL + DB : ASA + ASANL or ASA + SMLASANL ICL : SMLASA + SMLASANL REH : RIM	KD FW	+/- 70	350	3' x 7' ^(*)					
			ML : ASA REH : RIM VRH : MHS	KD FW	+/- 70	350	4' x 8'					
		In-Swing	CYL : ASA or SMLASA	KD FW	+/- 60	350	3' x 7'	√	√	√	√	√
			CYL + DB : ASA + ASANL or ASA + SMLASANL ICL : SMLASA + SMLASANL ML : ASA	KD FW	+/- 70	350	3' x 7'					
	Pairs	Out-Swing	REH x Rem HM Mullion : HR	FW	+/- 65	350	8' x 7' ^(*)	√	√	√	√	√
			CYL x SB : MHS ML x SB : MHS	KD FW	+ 65/ - 70	350	8' x 7' ^(*)					
			CYL + DB x FB : MHS	KD FW	+ 65/ - 70	350	6' x 7'					
			ML x FB : MHS	KD FW	+/- 70	350	6' x 7'					
			ML x SB : MHS VRH x VRH : MHS REH x Rem Hardware Mullion : HR	KD FW	+/- 70	350	8' x 8'					
		In-Swing	ML x FB : MHS	KD FW	+/- 70	350	6' x 7'	√	√	√	√	√

All frames are tested, UL Listed, Certified and labeled to TAS 201(1994), TAS 202(1994), TAS 203(1994), ASTM E330-02, ASTM E1886-2005, ASTM E1996-2009

*1: See Sheets 8 and 10 for wall anchor details and requirements.

*2: Meets the HVHZ requirements for Air and Water Infiltration (TAS 202). Frame must be FW (face welded) construction. Requires Pemko # 315CR or National Guard # 130NA jamb and head gasket, Pemko # 2001AV or National Guard # 950N threshold and for pairs Pemko 375CR astragal.

Latching Device Legend			
CYL : Cylindrical lock or latch	ICL : Interconnected lock or latch	REH : Rim exit hardware	
DB : Dead bolt	MEH : Mortise exit hardware	SB : Surface bolt	
FB : Flush bolt	ML : Mortise lock or latch	VRH : Vertical rod exit hardware	

Strikes and Preparations Legend			
ASA : 4-7/8" x 1-1/4" lipped strike	MHS : Mortise head strike for flush or surface bolt, or vertical rod exit hardware	SMLASA : 2-3/4" x 1-1/8" lipped strike	
ASANL : 4-7/8" x 1-1/4" non-lipped strike	MUNL : 4-7/8" x 1-1/4" electro-mechanical device for mortise lock or latch	SMLASANL : 2-3/4" x 1-1/8" non-lipped strike	
HR : Head reinforcing for removable mullion	RIM : Surface strike for rim exit hardware	UNL : 4-7/8" x 1-1/4" electro-mechanical device for cylindrical lock or latch	

			WINDSTORM RESISTANT 3-SIDED FRAMES - SIZES AND RATING LIMITATIONS -	
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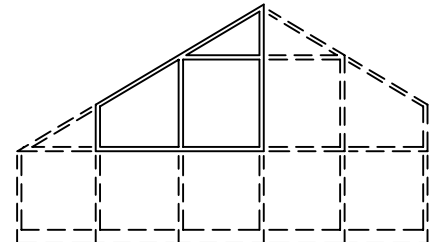
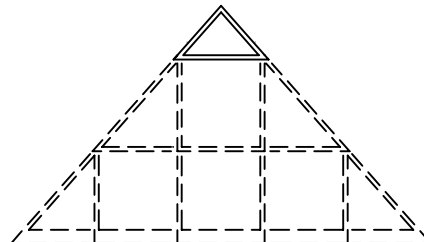
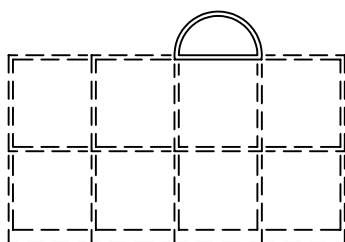
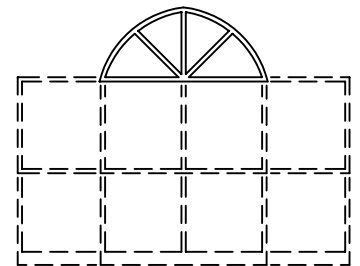
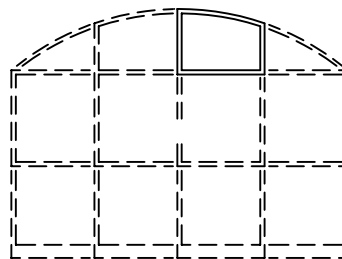
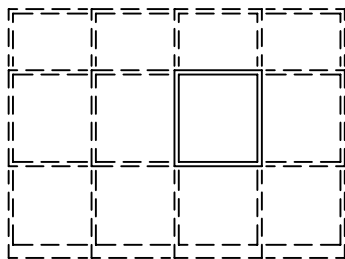
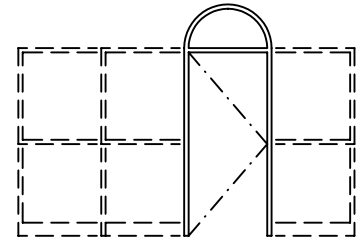
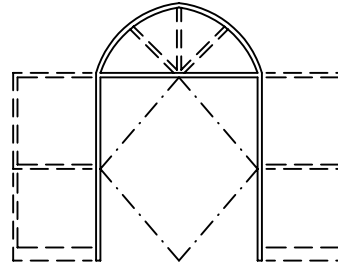
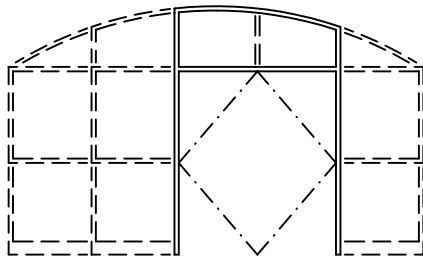
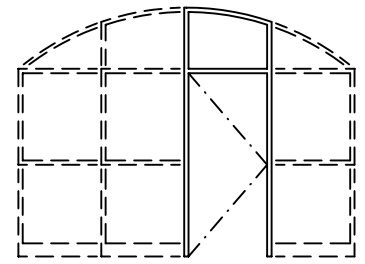
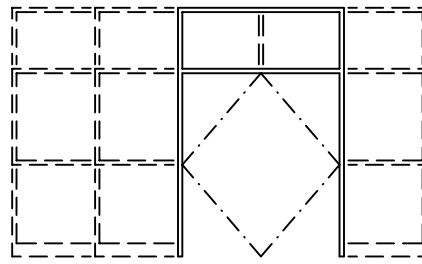
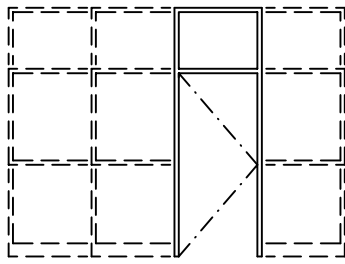
Product	Configuration			Construction	Maximum Design Load (psf)	Large Missile Impact Rating (ft-lbs)	Maximum Frame Rabbet Width x Height (Maximum O/A Unit Width x Height)	Permitted Wall Types & Anchorage ^(*)				
	Type	Orientation	Latching : Strike Prep ^(*)					New Unit Masonry	Concrete or Existing Unit Masonry	Wood Stud	Steel Stud	Structural Steel
Transom Frames	Singles	Out-Swing	CYL : ASA, SMLASA or UNL ML : ASA or MUNL ICL : SMLASA + SMLASANL REH : RIM MEH : ASA VRH : MHS	FW	+/-60	350	3' x 7' (10' 2") ^(*)	√	√	√	√	√
			ML : ASA REH : RIM VRH : MHS	FW	+/-60	350	3' x 8' (10') ^(*)	√	√	√	-	√
	Pairs	In-Swing	CYL : ASA or SMLASA ML : ASA ICL : SMLASA + SMLASANL	FW	+/-60	350	3' x 7' (10' 2") ^(*)	√	√	√	√	√
		Out-Swing	CYL x SB or FB : MHS ML x FB : MHS	FW	+/-60	350	6' x 7' (10') ^(*)	√	√	√	-	√
			ML x SB : MHS VRH x VRH : MHS REH x Hardware Mullion : HR	FW	+/-60	350	6' x 8' (10') ^(*)	√	√	√	-	√
Sidelight Frames	Singles	Out-Swing	CYL : ASA or SMLASA ML : ASA ICL : SMLASA + SMLASANL REH : RIM MEH : ASA VRH : MHS	FW	+/-60	350	3' x 7' (4' 6") ^(*)	√	√	√	√	√
			ML : ASA REH : RIM VHR : MHS	FW	+/-60	350	3' x 8' (12' 8" x 10')	√	√	√	-	√
		In-Swing	CYL : ASA or SMLASA ML : ASA ICL : SMLASA + SMLASANL	FW	+/-60	350	3' x 7' (4' 6") ^(*)	√	√	√	√	√
	Pairs	Out-Swing	ML x FB : MHS	FW	+/-60	350	6' x 7' (12' 8" x 10')	√	√	√	-	√
			ML x SB : MHS VRH x VRH : MHS REH x Rem Hardware Mullion : HR	FW	+/-60	350	6' x 8' (12' 8" x 10')	√	√	√	-	√
Windows	Not Applicable	Not Applicable	Not Applicable	FW	+/-60	350	Rabbet Not Applicable (12' 8" x 10')	√	√	√	-	√

All transom, sidelight and window frames are tested, UL Listed, Certified and labeled to TAS-201(1994), TAS-202(1994), TAS-203(1994), ASTM E330-02, ASTM E1886-2005, ASTM E1996-2009

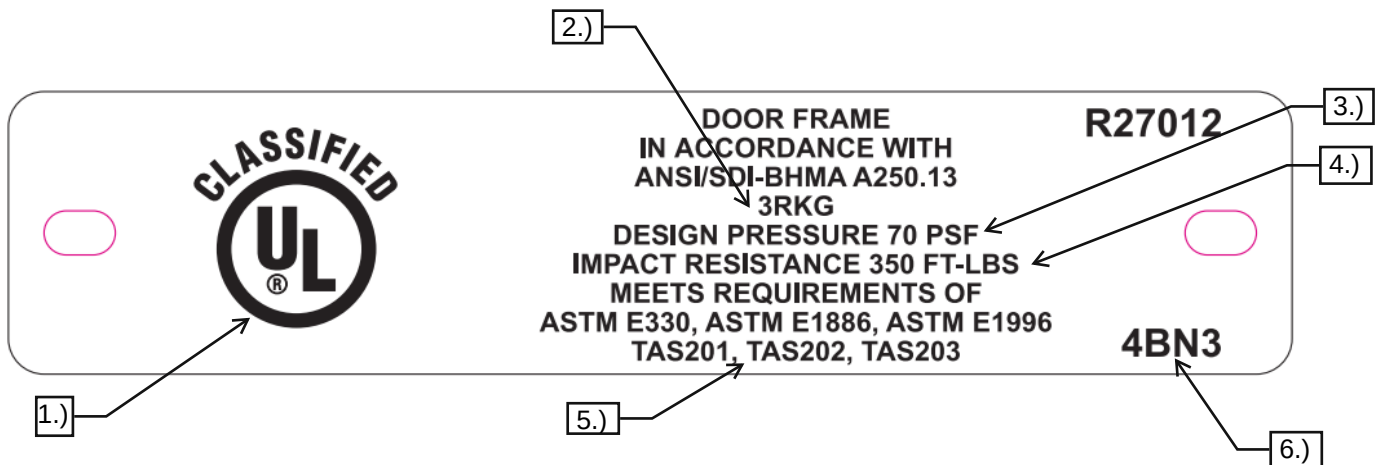
Notes :

- *1 : Maximum combined door + transom opening height
- *2 : Maximum over-all unit width
- *3 : See sheets 9 and 10 for wall anchor details and requirements
- *4 : See Sheet # 3 for Latching and Strike Prep Legends

			WINDSTORM RESISTANT TRANSOM, SIDELIGHT & WINDOW FRAMES - SIZE AND RATING LIMITATIONS -	
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			WINDSTORM RESISTANT TRANSOM, SIDELIGHT & WINDOW FRAMES - TYPICAL ELEVATIONS -	
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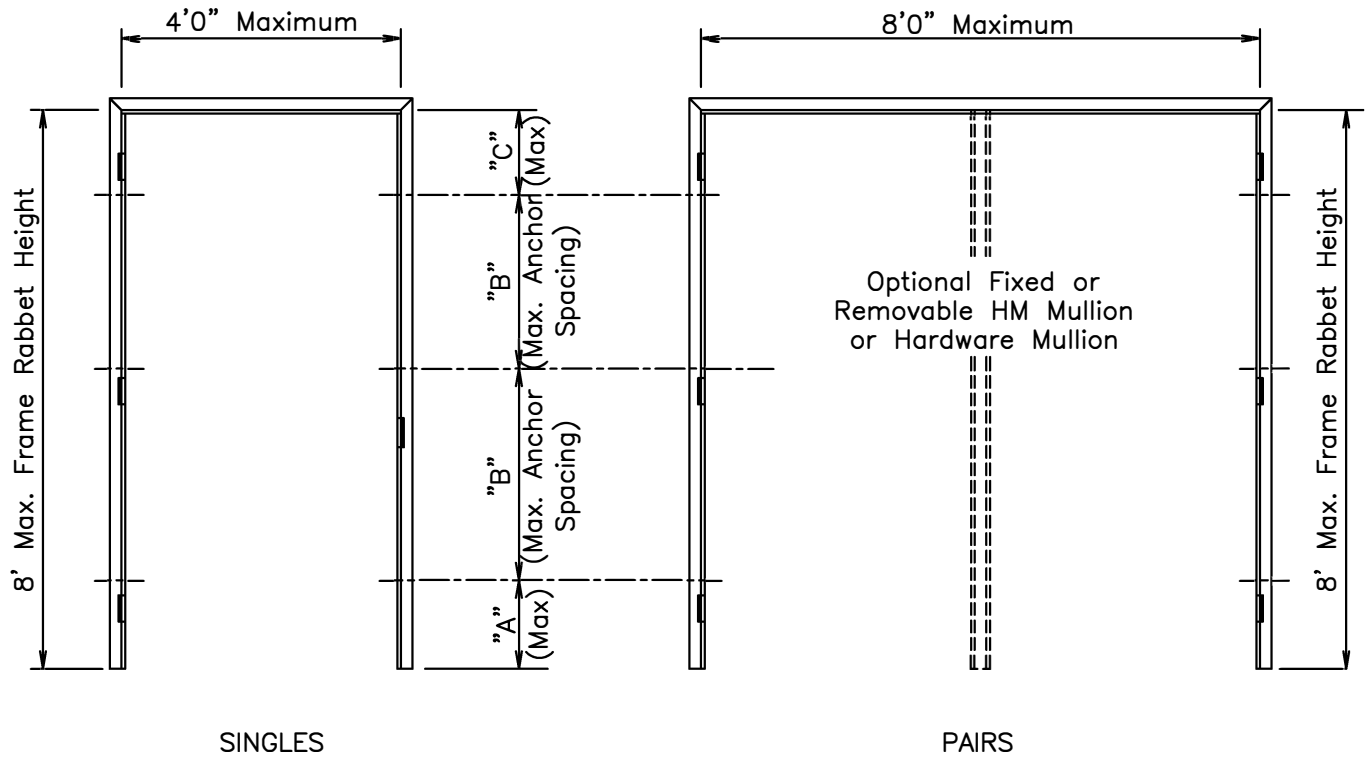
Label Information

- 1.) UL Classified Logo
- 2.) UL Label Number
- 3.) Design Pressure - Varies - 70 psf Shown
- 4.) Impact Rating 350 ft-lbs - Missile Level D
- 5.) Compliant Test Standards
- 6.) Label Part Number

Label Size: 1" x 4.50"

Material: Aluminum

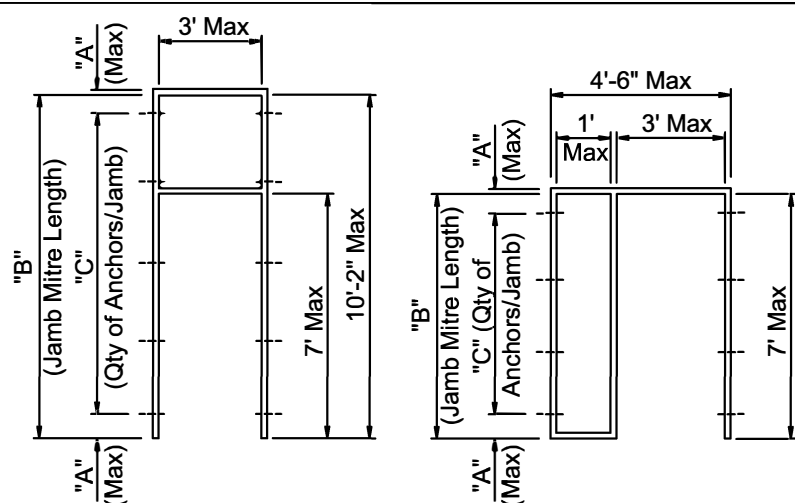
			WINDSTORM RESISTANT FRAME PRODUCT - UL LABEL DETAILS -	
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Partition Type	Jamb Anchor Type	"A"	"B"	"C"	Securement Requirements
Wood Stud	Welded CSA	6"	24"	6"	(4) #8 x 1" embed wood screws per wall anchor
	Welded EWA	6"	24"	6"	(1) 3/8" ϕ x 6" lag bolt per anchor with a minimum 2-1/2" stud engagement
Steel Stud	Welded CSA or Z	6"	24"	6"	(4) #8 x 1" embed wood screws per wall anchor
Structural Steel	Welded Steel Shims	5"	36"	5"	Steel shims secured to jambs with 3/16" x 1" long welds both sides of frame. 1/8" Shims welded to 1/8" min. A36 steel structure at time of installation.
Existing Masonry or Concrete	Welded EWA	6"	24"	6"	(1) 3/8" ϕ x 6" expansion shell anchor or 3/16" x 6" concrete screw per anchor with a minimum 2-1/2" wall engagement
New Unit Masonry	Loose "T" or Wire	16"	32"	16"	Not applicable

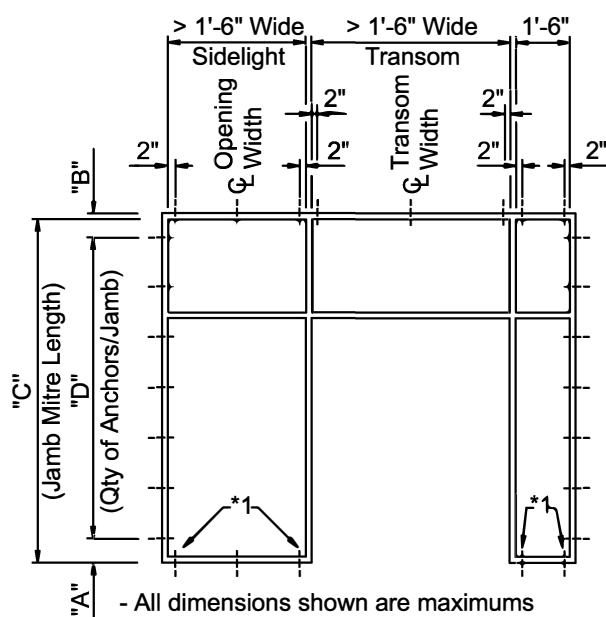
- 16 gage minimum. 12 gage maximum frame profiles
- 4" minimum. 14" maximum jamb depths
- 1-3/4" minimum, 2" maximum jamb face widths
- 1-3/4" minimum, 4" maximum head face widths
- See Sheet #10 for anchor illustrations.
- Floor anchors are required for frames installed in new unit masonry and steel stud partitions

			WINDSTORM RESISTANT 3-SIDED FRAMES - ANCHORAGE & PROFILE REQUIREMENTS -	
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For transom frames or sidelights meeting all the dimensional limitations shown at the left, wall anchorage shall be as shown in the table below. See the bottom section of this drawing for methods of securement for each anchor and partition type.

Partition Type	Jamb Anchors	"A"	"B"	"C"
Wood Stud	CSA or EWA	6"	96" Max	4
Steel Stud	CSA			
Structural Steel	Welded Steel Shims		> 96"	5
Existing Masonry or Concrete	EWA	16"	96" Max	3
New Unit Masonry	"T" or Wire		> 96"	4



For transom frames, sidelights or windows exceeding any of the dimensional limitations shown above, jamb, head and sill anchorage shall be as shown in the tables below. See the bottom section of this drawing for methods of securement for each anchor and partition type.

Partition Type	Jamb Anchors	"A"	"B"	"C"	"D"
Wood Stud, Existing Masonry or Concrete	EWA	12"	8"	< 60"	3
				< 80"	4
				96" Max	5
				> 96"	6
New Unit Masonry	"T"	16"	16"	48" Max	2
				64" Max	3
				< 80"	4
				96" Max	5
				114" Max	6
Structural Steel	Welded Steel Shims	5"	5"	> 114"	7
				40" Max	2
				< 72"	3
				102" Max	4
				> 102"	5

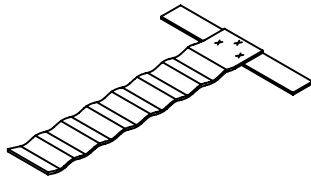
- All dimensions shown are maximums
- Jamb anchors are equally spaced
- *1: Floor anchors adjacent to jambs and vertical mullions may be provided in lieu of EWA preparations and guides

Partition Type	Head Anchors	Sill Anchors
Wood Stud	EWA	EWA or Floor Anchors (*1)
Existing Masonry or Concrete or New Unit Masonry	EWA or Welded Steel Shims	
Structural Steel	Welded Steel Shims	

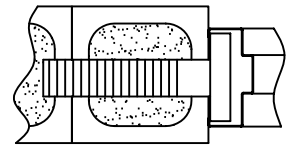
Jamb or Head Anchor Type	Partition Type	Securement Requirements
Combination Stud Anchor (CSA) Welded 1 or 2-Piece Type	Wood or Steel Stud	(4) #8 x 1" embed wood screws per anchor
Welded Existing Wall Anchor (EWA) Guides; Pipe and Spacer or Butterfly Type	Wood Stud	(1) 3/8" x 6" lag bolt per anchor with a minimum of 2-1/2" engagement into studs
	Existing Unit Masonry or Poured Concrete	(1) 3/8" x 6" expansion shell anchor or 3/16" x 6" concrete screw per anchor with a minimum of 2-1/2" engagement into wall
Welded Steel Shims 2" x (Jamb Depth + 1-1/4") x 12 Ga	Structural Steel	Steel shims secured to jambs and/or heads with 3/16" x 1" long welds both sides of frame at labeling facility. Shims welded to steel structure at time of installation.

- 16 gage minimum, 12 gage maximum frame profiles
- 4" minimum, 14" maximum jamb depths
- 1-3/4" minimum, 2" maximum jamb & mullion face widths
- 1-3/4" minimum, 4" maximum head, sill and center rail face widths
- See Sheet #10 for anchor illustrations
- Floor anchors are required for units installed in new unit masonry and steel stud partitions

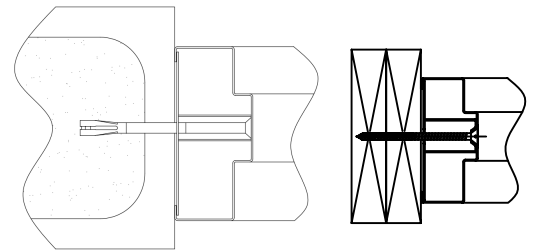
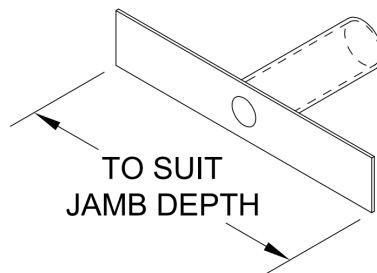
			WINDSTORM RESISTANT TRANSOM, SIDELIGHT & WINDOW FRAMES - ANCHORAGE & PROFILE REQUIREMENTS -	
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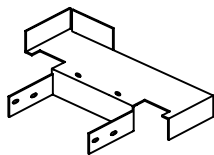
Loose "T" Anchor



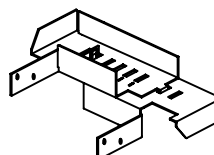
ANCHORS FOR NEW UNIT MASONRY PARTITIONS



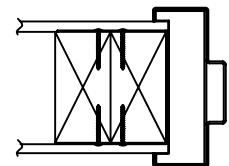
WELDED EXISTING WALL ANCHOR GUIDES (EWA's) FOR EXISTING WOOD STUD, EXISTING UNIT MASONRY AND POURED CONCRETE PARTITIONS



1-Piece Type

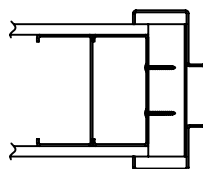
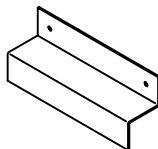


2-Piece Type



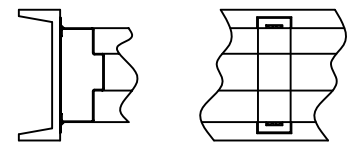
Combination Stud Anchors

WELDED WALL ANCHORS FOR WOOD OR STEEL STUD PARTITIONS



"Z" Type Anchor

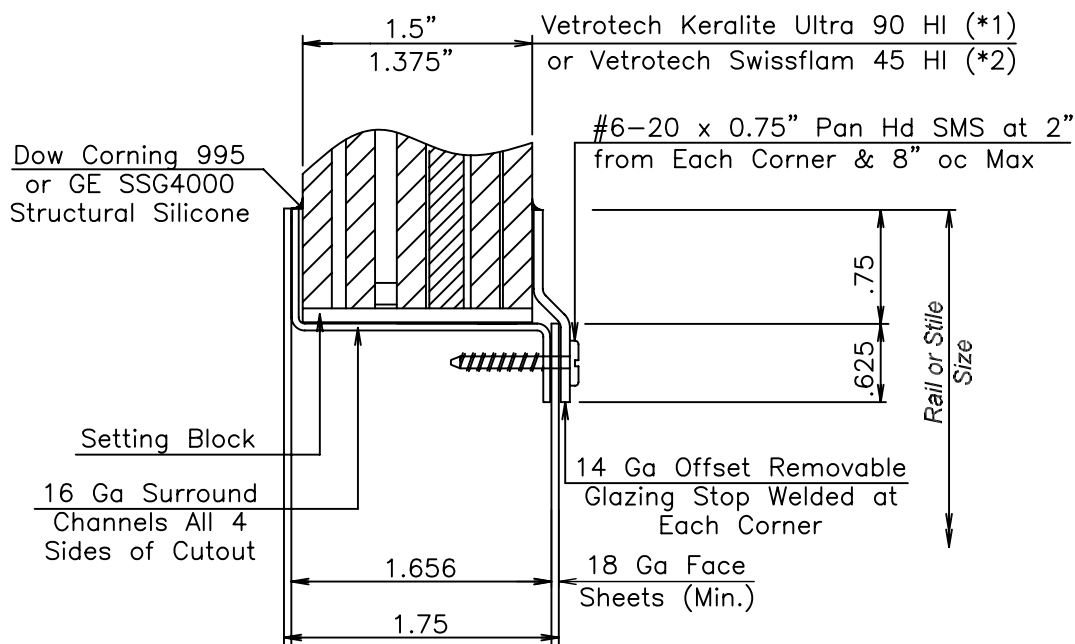
WELDED WALL ANCHORS FOR STEEL STUD PARTITIONS



Welded 12 Gage Steel Shims

WALL ANCHORS FOR STRUCTURAL STEEL PARTITIONS

			WINDSTORM RESISTANT FRAME PRODUCT - ANCHOR ILLUSTRATIONS -	
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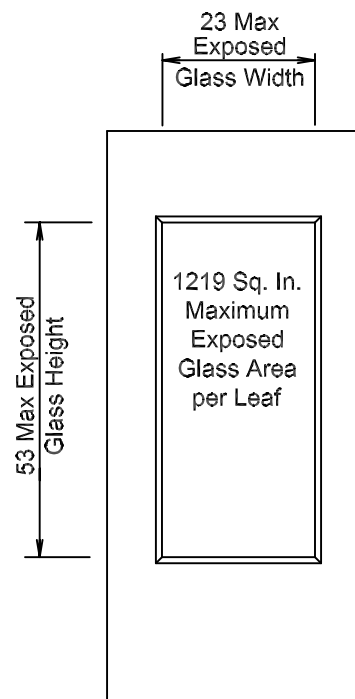


UL Fire Protection Ratings

Up to and including 90 minutes

23" Max. Width x 53" Max. Height

Max. Visible Area (D.L.O.) 1219 sq. in.

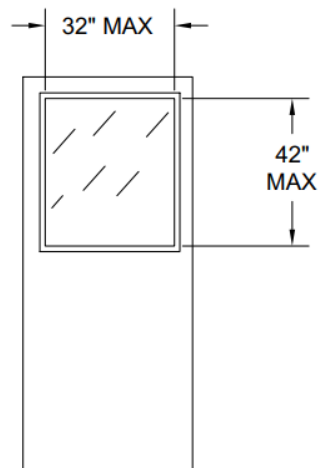
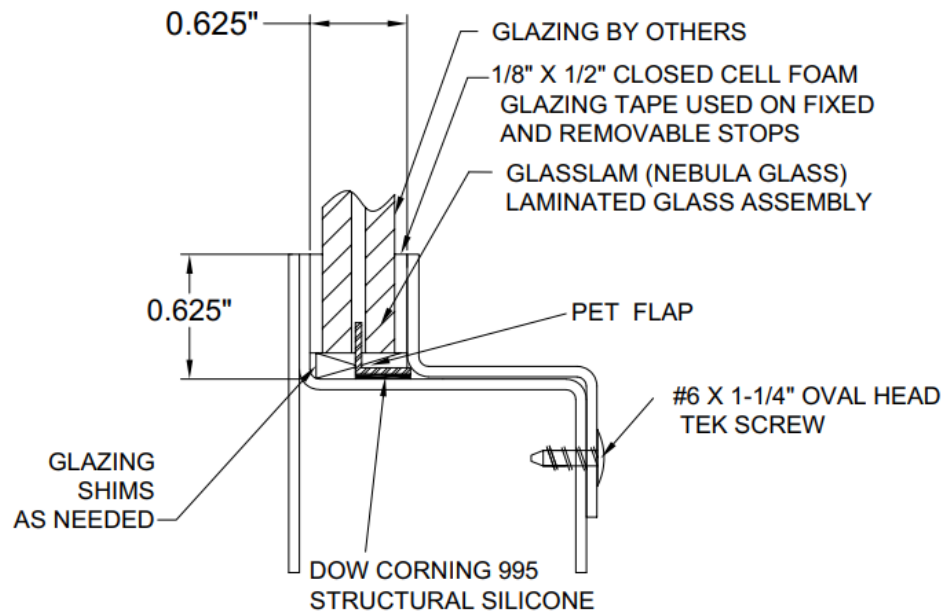


Design Load:
+/- 70 psf Max

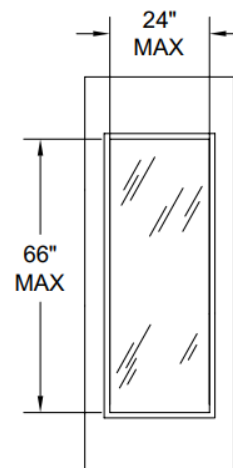
Impact Rating: 350 ft lbf

WINDSTORM RESISTANT DOORS - GLAZING KIT DETAILS -

			WINDSTORM RESISTANT DOORS – GLAZING KIT DETAILS –	
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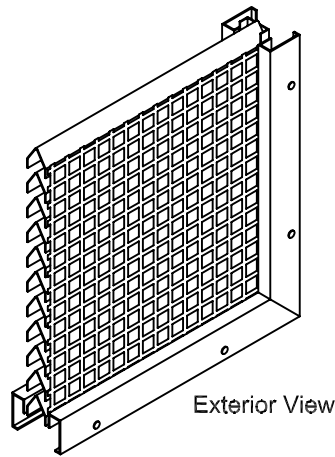


70 PSF 32" X 42" MAXIMUM
EXPOSED WIDTH & HEIGHT
1344 SQ. IN. MAX. EXPOSED
AREA PER LEAF
6" MINIMUM STILE AND RAIL
IMPACT LEVEL D - 350 FT. LBS.
NOT FIRE RATED

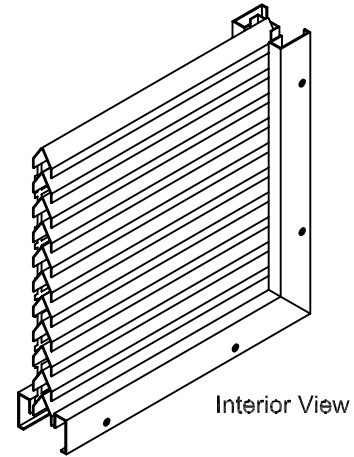


60 PSF 24" X 66" MAXIMUM
EXPOSED WIDTH & HEIGHT
1544 SQ. IN. MAX. EXPOSED
AREA PER LEAF
6" MINIMUM STILE AND RAIL
IMPACT LEVEL D - 350 FT. LBS.
NOT FIRE RATED

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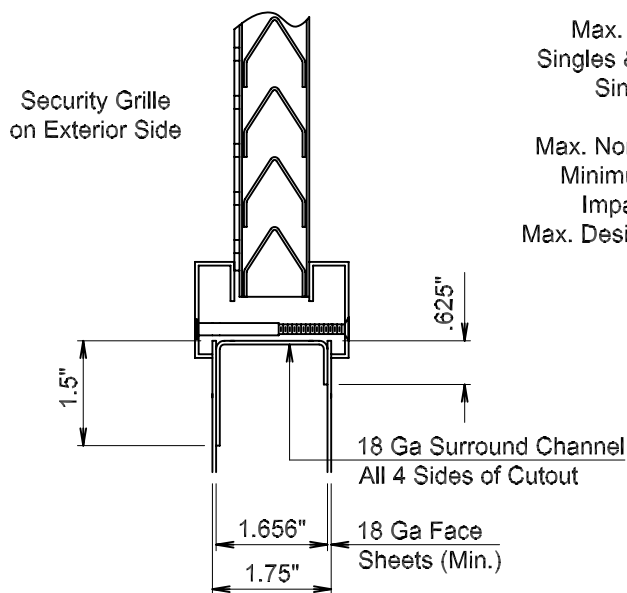
Exterior View



Interior View

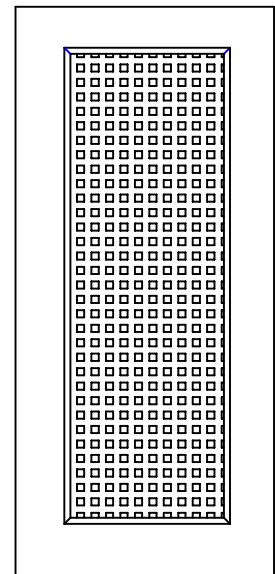
- Louvers must be UL Windstorm-Rated under Category ZHLL
- Louver manufacturer's listings may limit maximum louver size, minimum door gage, impact and design load ratings shown.
- Louvers may be installed at labeling location or on-site (See Note below)
- Rockwood LV-WS UL Listed louvers with Security Grille requirements shown
- Louvers are not TAS-202 (Air or Water Infiltration) compliant
- Louvers have not been tested to AMCA 550

Note : If the louver is to be installed on-site, an adhesive-backed sticker must be applied to the visible leg of the bottom surround channel by the labeling facility stating: " A UL Windstorm-Rated Door Louver Must Be Installed In This Opening "



Max. Nom. Door Leaf Size:
Singles & Pairs Out-Swing: 4' x 8'
Single In-Swing: 3' x 7'

Max. Nom. Louver Size: 34" x 78"
Minimum Stile and/or Rail: 6"
Impact Rating: 350 ft lbs
Max. Design Load Rating: +/- 70 psf



			WINDSTORM RESISTANT DOORS - LOUVER DETAILS -	
0	Oct 2021	FBC Submission		
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