F

BLAST MITIGATION

- BR604/BR606/BT601 Storefront
- BR7500/BW7600/BW8000 BW8100/BW8200 Windows
- Accessory Hardware

Toll Free Phone Service

(800) 262-5151

Toll Free Fax Service

(866) 262-3299

U.S. and Canada

CRL® U.S. ALUMINUM

usalum.com

F BLAST MITIGATION

National Guard Readiness Center
Spokane, WA

U.S. Aluminum Blast Mitigation Systems are engineered and successfully tested to withstand explosions from pressure levels of one to six pounds per square inch. The Series BT601 has been engineered and tested to perform in accordance with UFC 4-010-01 (Jan 07) Protocols, allowing the system to be specified for DoD, GSA, and private sector projects.

Our Defender Blast Resistant Windows are available in single hung, fixed, and horizontal sliding versions that are all DoD Blast Rated for one PSI. All of these windows utilize high performance glazing, are AAMA Rated, NFRC Certified, and can be ordered in an array of architectural coatings and anodized finishes.

SYSTEM — PAGES

For information or other assistance, use our toll free phone or fax service numbers from anywhere in the U.S. or Canada

Toll Free Phone (800) 262-5151 Toll Free Fax (866) 262-3299

Contact us through our web site at usalum.com

BLAST MITIGATION

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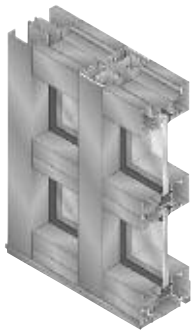
- Defender Series BR606

DEFENDER
BLAST MITIGATION PRODUCTS



SECTION F1

PAGE

U.S. Aluminum warrants its Blast Resistant Storefront Systems to perform at the published values for air and water infiltration and structural performance. U.S. Aluminum does not warrant any glazing materials.

When using this product, U.S. Aluminum recommends specifying a uniform overall glazing thickness of plus or minus .004" (0.1) over the entire area of the glazing unit. This must include edges and center of unit. It is critical to check the glazing unit prior to installing to ensure the proper thickness of the interlayer.

Glazing 4.4 psi Blast Load: BR604 Storefront - 1-5/16" (33) thick IG unit made up of 1/4" (6) annealed, 1/2" (12.7) air space, and 1/2" (12.7) annealed laminate using .030 butacite by Dupont®. BR604 Entrance Door - 1-5/16" (33) thick made up of 1/4" (6) tempered, 1/2" (12.7) air space and 1/2" (12.7) laminate using .030 butacite by Dupont®.

Glazing 6.0 psi Blast Load: BR606 Storefront - 1-5/16" (33) thick IG unit made up of 1/4" (6) annealed, 1/2" (12.7) air space, and 1/2" (12.7) annealed laminate using .060 butacite by Dupont®. BR606 Entrance Door - 1-5/16" (33) thick made up of 1/4" (6) tempered, 1/2" (12.7) air space, and 1/2" (12.7) annealed laminate using .060 butacite by Dupont®.

Due to the diversity in state/provincial, local, and federal laws and codes that govern the design and application of architectural products, it is the responsibility of the individual architect, owner, and installer to ensure that products selected for use on projects comply with all applicable building codes and laws. U.S. Aluminum exercises no control over the use or application of its products, glazing materials, and operating hardware, and assumes no responsibility thereof.

The rapidly changing technology within the architectural aluminum products industry demands that U.S. Aluminum reserve the right to revise, discontinue or change any product line, specification or electronic media without prior written notice.

NOTE: Dimensions in parentheses ( ) are millimeters unless otherwise noted.
Other metric units shown in this publication are:

m - meter	Kg - kilogram
Pa - pascal	KPa - kilopascal
MPa - megapascal	

BLAST MITIGATION

Specifications

SECTION 08 41 13 ALUMINUM STOREFRONTS

Blast Resistant Storefronts

- Defender Series BR604
- Defender Series BR606

SERIES	BLAST LOAD	FACE WIDTH	DEPTH	GLAZING INFILL	GLAZING METHOD
BR604	4.4 PSI	2-1/2" (63.5)	5" (127)	1-5/16" (33)	Exterior
BR606	6.0 PSI	2-1/2" (63.5)	5" (127)	1-5/16" (33)	Exterior

I. GENERAL DESCRIPTION

Work included: Furnish all necessary materials, labor, and equipment for the complete installation of aluminum framing as shown on the drawings and specified herein. (*Specifier Note: It is suggested that related items such as aluminum entrance doors, glass, and sealants be included whenever possible*).

Work not included: Structural support of the framing system, interior closures, trim. (*Specifier list other exclusions*). Related Work Specified Elsewhere: (*Specifier list*).

QUALITY ASSURANCE

Drawings and specifications are based on the Series BR604/BR606 System as manufactured by U.S. Aluminum. Whenever substitute products are to be considered, supporting technical literature, samples, drawings, and performance data must be submitted 10 days prior to bid in order to make a valid comparison of the products involved. Test reports certified by an independent test laboratory must be made available upon request.

PERFORMANCE REQUIREMENTS

Air Infiltration: Shall be tested in accordance with ASTM E 283-91 (99). Infiltration shall not exceed:

- BR604/BR606 Storefront - 1.00 cfm/ft² @ 6.24 psf = (5.08 L/s/m²) (IG500 Test)
- BR604/BR606 Doors - 1.00 cfm/ft² @ 6.24 psf = (5.08 L/s/m²) (IG500 Test)

Water Infiltration: Shall be tested in accordance with ASTM E 331-93. No water penetration at test pressure of:

- BR604/BR606 Storefront - 12 psf (IG500 Test)

Structural Performance: Shall be tested in Accordance with ASTM 330-96 and based on:

- Maximum deflection of L/175 of the span. [3/4" (19.1) max.]
- Allowable stress with a safety factor of 1.65. The system shall perform to this criteria under a wind load of (*Specify*) psf

BR604 Storefront (IG500 Test)
- Design 65 psf (1.59)
- Structural +/- 97.5 psf (195 mph)

BR606 Storefront (IG500 Test)
- Design 75 psf (171 mph)
- Structural +/- 112.5 psf (210 mph)

BR604 Doors (IG500 Test)
- Design 65 psf (1.59)
- Structural +/- 97.5 psf (195 mph)

BR606 Doors (IG500 Test)
- Design 75 psf (171 mph)
- Structural +/- 112.5 psf (210 mph)

Forced Entry Resistance: Shall be tested with a 300 lb. force applied to the active door panel simultaneously with a 150 lb. force applied in both perpendicular directions to the 300 lb. force.

Blast Test: Shall be tested in accordance with DoD, GSA, and ASTM test proceeds. Three test units 8' x 8' (2.4 x 2.4 m) made up of a 3' x 7' (.9 x 2.1 m) door, 5' x 6' (1.5 x 1.8 m) sidelite, 5' x 2' (1.5 x 6 m) sidelite and transom passed:

BR604
- 4.4 psi
- 32 psi - msec impulse
- 19 msec duration
- DoD response - High and medium
- GSA response - Condition 1 and 2
- ASTM response - No hazard and minimal hazard

BR606
- 6 psi
- 45 psi - msec impulse
- 19 msec duration
- DoD response - Medium and very low
- GSA response - Condition 2 and 4
- ASTM response - Minimal hazard

Testing Procedures:
ASTM 283, E 331, and E 330 - Laboratory performance testing. AAMA 503-08 - Newly installed storefronts. AAMA 511-08 - Installed storefronts after six months.

II. PRODUCTS MATERIALS

Extrusions shall be 6063-T5 alloy and temper (ASTM B221 alloy T5 temper). Fasteners, where exposed, shall be aluminum, stainless steel or zinc plated steel in accordance with ASTM A 164. Perimeter anchors shall be aluminum or steel, providing the steel is properly isolated from the aluminum. Glazing gaskets shall be E.P.D.M. elastomeric extrusions.

BLAST MITIGATION

Specifications

Blast Resistant Storefronts
- Defender Series BR604
- Defender Series BR606

SECTION 08 41 13 ALUMINUM STOREFRONTS

FINISH
All exposed framing surfaces shall be free of scratches and other serious blemishes. Aluminum extrusions shall be given a caustic etch followed by an anodic oxide treatment to obtain… (*Specify one of the following*):

____#11 Clear anodic coating
____#22 Dark Bronze anodic coating
____#33 Black anodic coating

A Fluoropolymer paint coating conforming with the requirements of AAMA 2605. Color shall be (*Specify a U.S. Aluminum standard color*).

FABRICATION
The framing system shall provide for flush glazing on all sides with no projecting stops. Vertical and horizontal framing members shall have a nominal face dimension of 2-1/2" (63.5). Overall depth shall be 5" (127). Entrance framing members shall be compatible with glass framing in appearance. Provide for internal drainage of infiltrated water into an extruded aluminum subsill channel where it is drained to the exterior through weep slots.

GLAZING
4.4 psi Blast Load
- BR604 Storefront - 1-5/16" (3.3) thick IG unit made up of 1/4" (6) annealed + 1/2" (12.7) air space + 1/2" annealed laminate using .030 butacite by Dupont®.
- BR604 Entrance Door - 1-5/16" (3.3) thick made up of 1/4" (6) tempered + 1/2" (12.7) air space + 1/2" (12.7) laminate using .030 butacite by Dupont®.

6.0 psi Blast Load
- BR606 Storefront - 1-5/16" (3.3) thick IG unit made up of 1/4" (6) annealed + 1/2" (12.7) air space + 1/2" (12.7) annealed laminate using .060 butacite by Dupont®.
- BR606 Entrance Door - 1-5/16" (3.3) thick IG unit made up of 1/4" (6) tempered + 1/2" (12.7) airspace + 1/2" (12.7) annealed laminate using .060 butacite by Dupont®.

SEALANTS
The framing system shall use DOW 995 Structural Silicone to adhere glass to framing. All metal-to-metal joints shall use DOW 795, except at fillers where DOW 995 Silicone is used (see installation instructions). Door seal gaskets shall require small joint sealer.

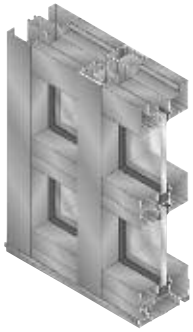
III. EXECUTION INSTALLATION
All glass framing shall be set in correct location as shown in the details and shall be level, square, plumb, and in alignment with other work in accordance with the manufacturer's installation instructions and approved shop drawings. All joints between framing and the building structure shall be sealed in order to secure a watertight installation.

PROTECTION AND CLEANING
After installation the General Contractor shall adequately protect exposed portions of aluminum surfaces from damage by grinding and polishing compounds, plaster, lime, acid, cement, or other contaminants. The General Contractor shall be responsible for final cleaning.

Project: Orlando Immigration Center, Orlando, FL

BLAST MITIGATION

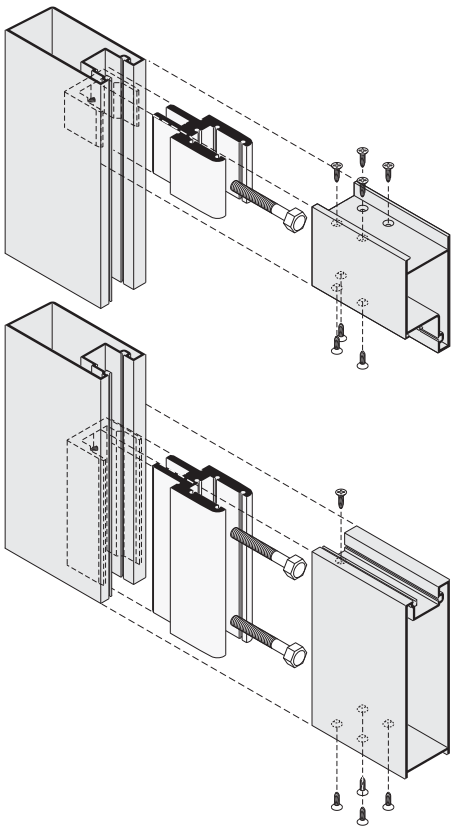
Special Features

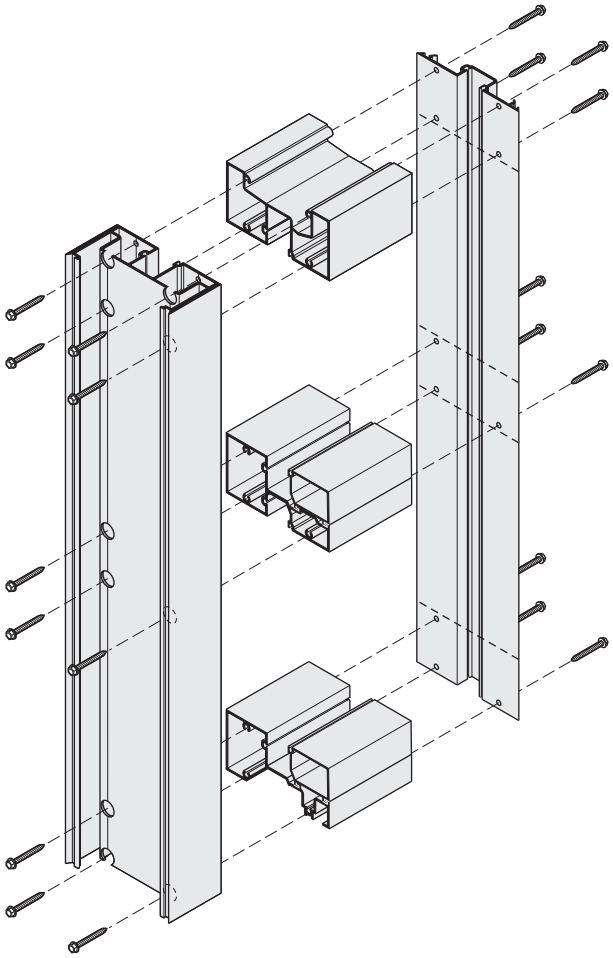


Blast Resistant Storefronts

- Defender Series BR604
- Defender Series BR606

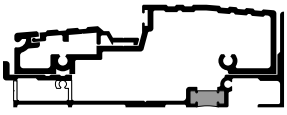
BR604 and BR606 are Blast Resistant Storefront Systems engineered and successfully tested to withstand blast pressures of 1 to 6 psi. These unique Storefront Systems utilize our Storm Front™ Entrance as well as: screw spline panel assembly and erection, insulating and laminated glass siliconed in place, high performance subsill, and steel reinforced mullions. Made in the U.S.A.





A Low Profile Air Resistant Threshold is offered for installations that have soffit overhangs greater than the entrance frame height. High Performance Water Resistant Thresholds are offered to provide superior water and air management, along with ramps to meet A.D.A. requirements.

Low Profile
Air Resistant Threshold



High Performance
Water Resistant Threshold

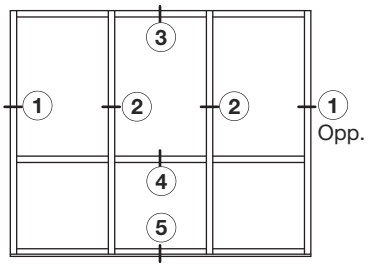
BLAST MITIGATION

Typical Details

Blast Resistant Storefronts
• Defender Series BR604

FOR 1-5/16" (33) GLAZING

NOTE: Frame height is limited to 8' (2.4 m). Consult your nearest U.S. Aluminum Service Center for deviation approval.



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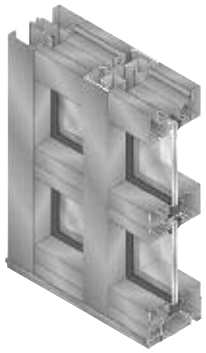

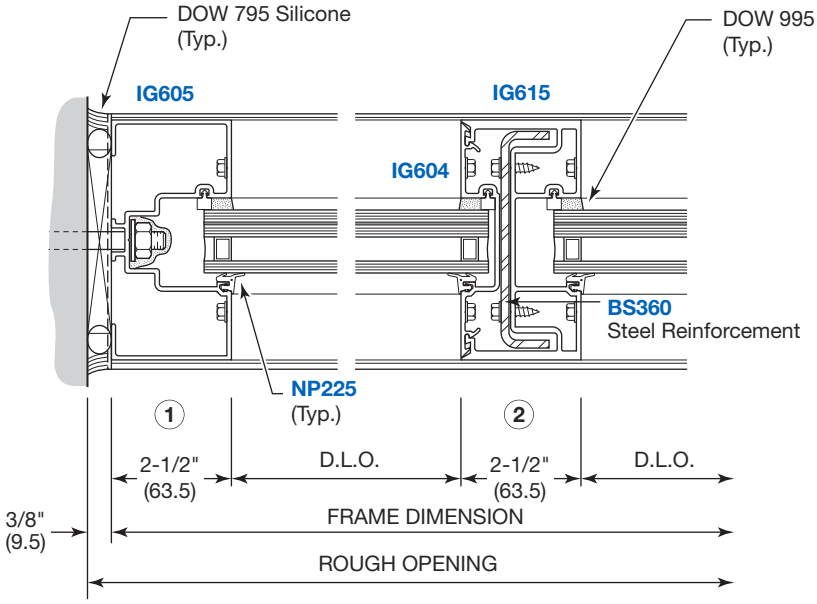

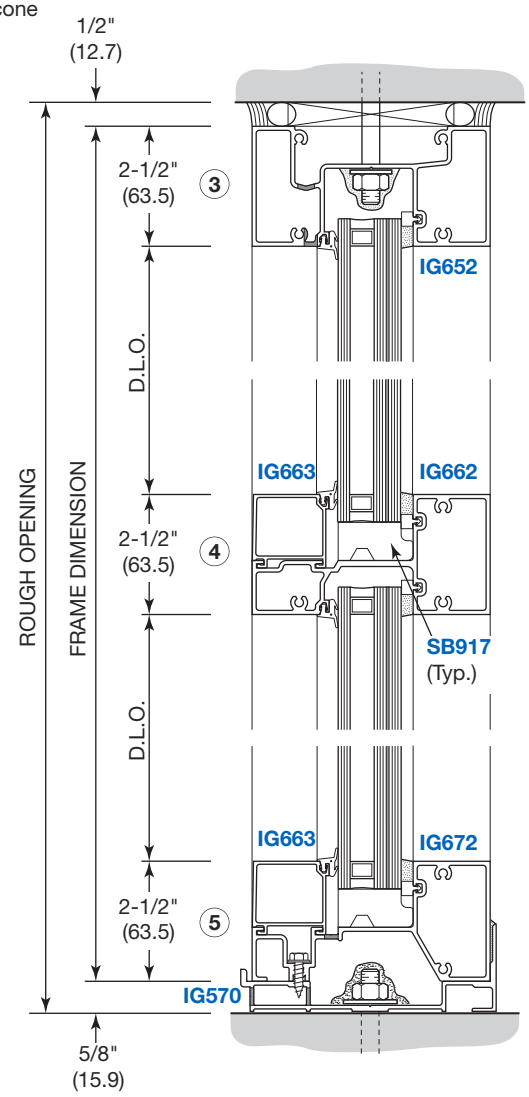

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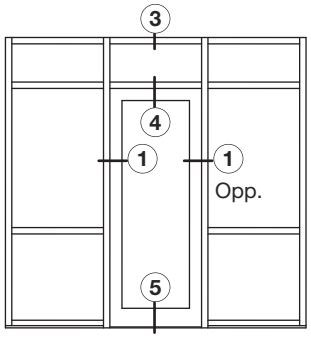
BLAST MITIGATION

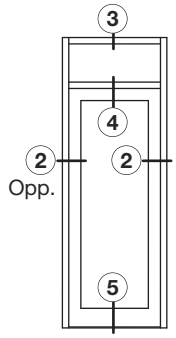
Typical Details

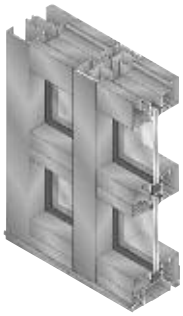
Blast Resistant Storefronts
• Defender Series BR604

FOR 1-5/16" (33) GLAZING

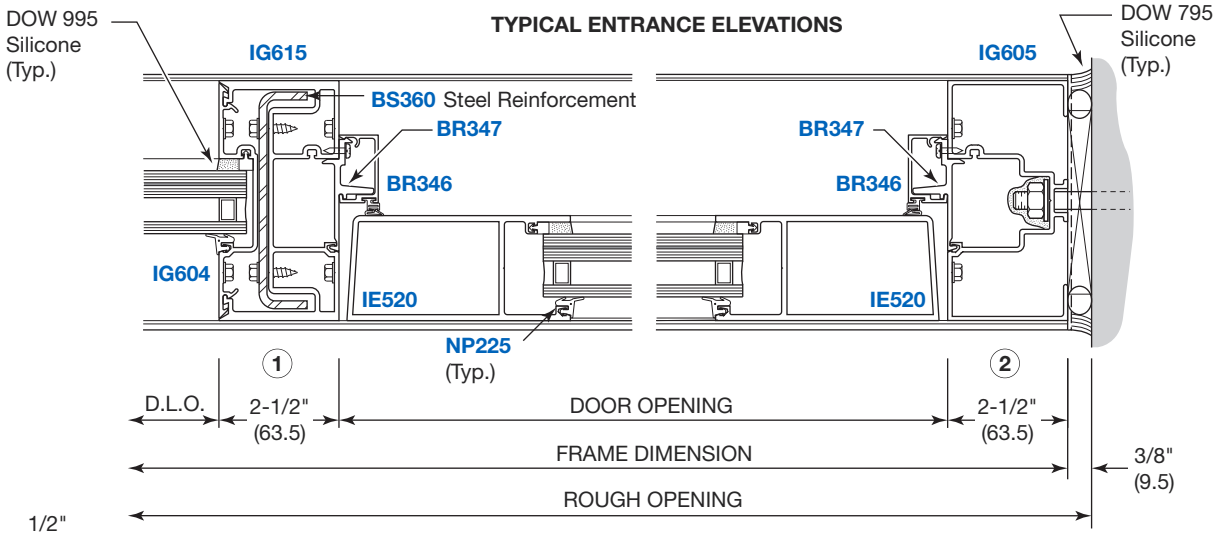
NOTE: Frame height is limited to 8' (2.4 m). Consult your nearest U.S. Aluminum Service Center for deviation approval.

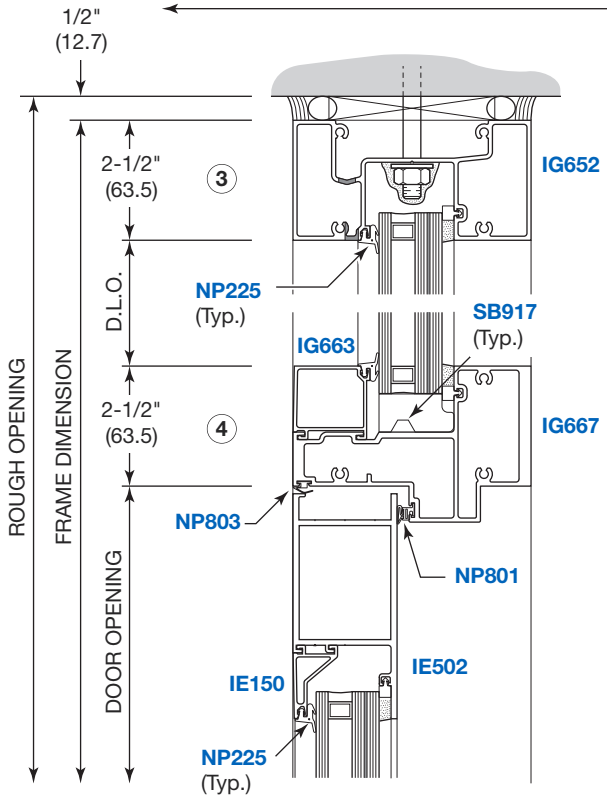


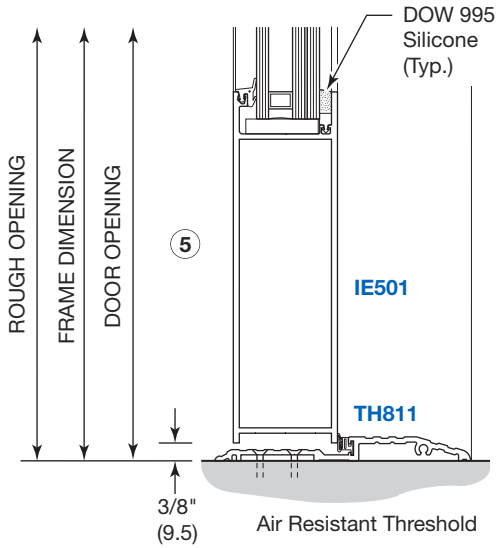




TYPICAL ENTRANCE ELEVATIONS







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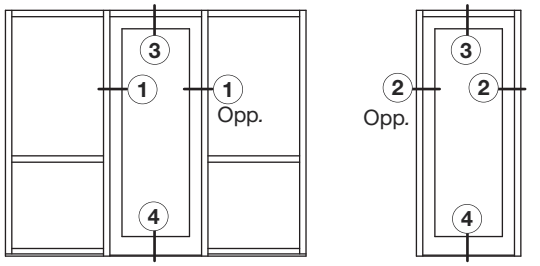
BLAST MITIGATION

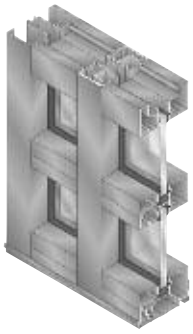
Typical Details

Blast Resistant Storefronts
• Defender Series BR604

FOR 1-5/16" (33) GLAZING

NOTE: Frame height is limited to 8' (2.4 m). Consult your nearest U.S. Aluminum Service Center for deviation approval.





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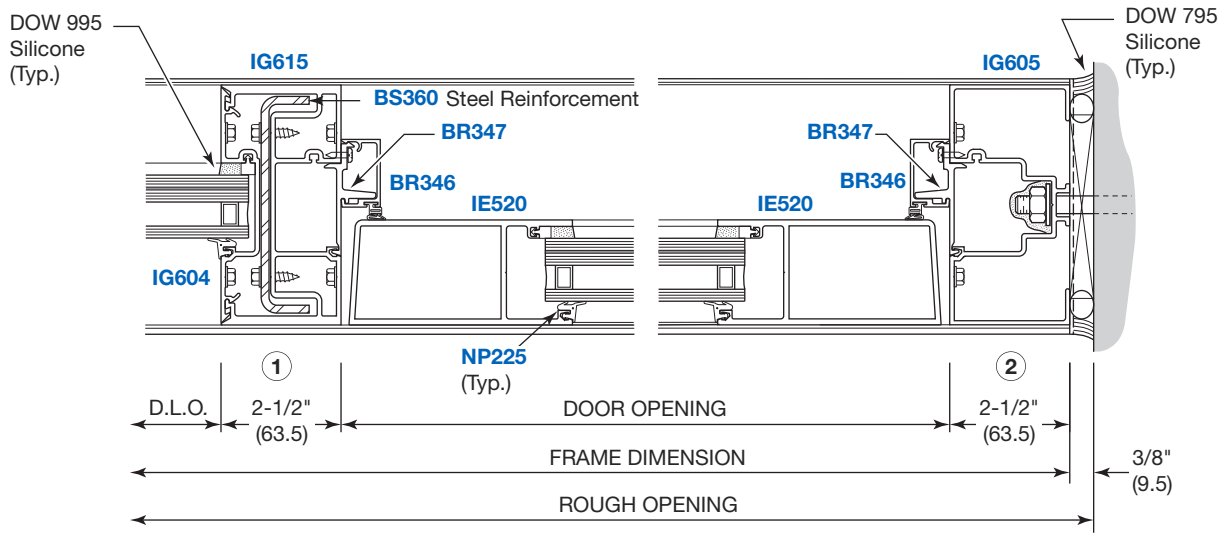

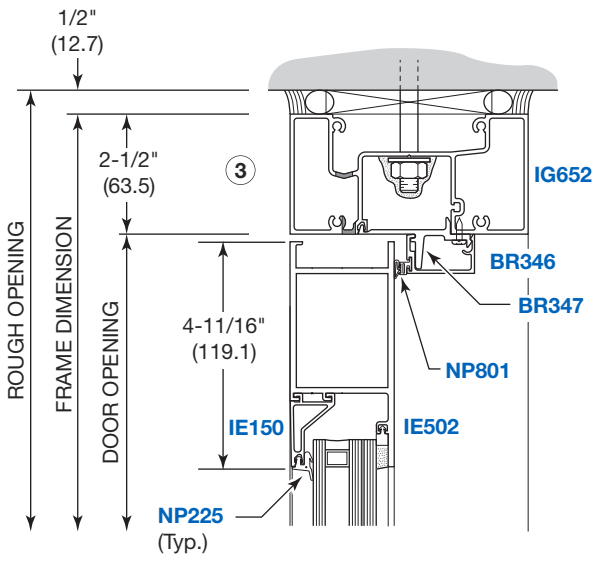

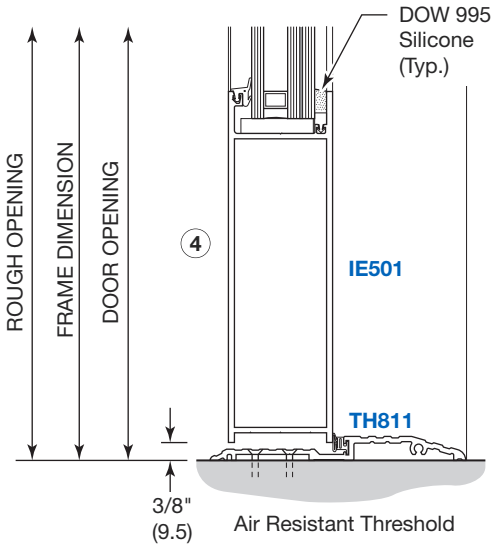

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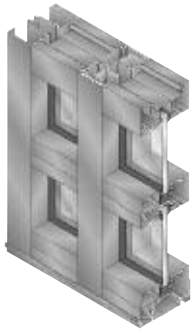
BLAST MITIGATION

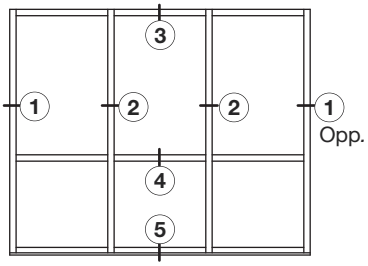
Typical Details

FOR 1-5/16" (33) GLAZING

Blast Resistant Storefronts
• Defender Series BR606



NOTE: Frame height is limited to 8' (2.4 m). Consult your nearest U.S. Aluminum Service Center for deviation approval.



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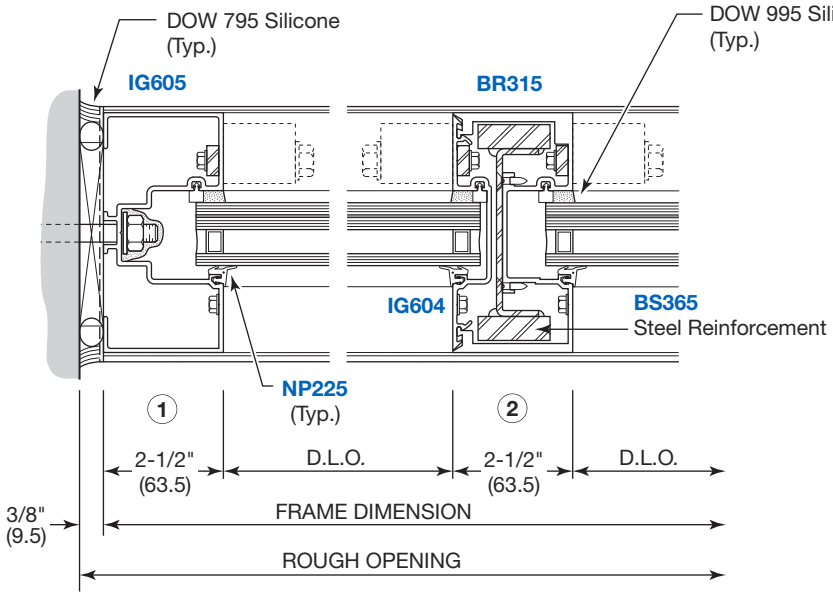

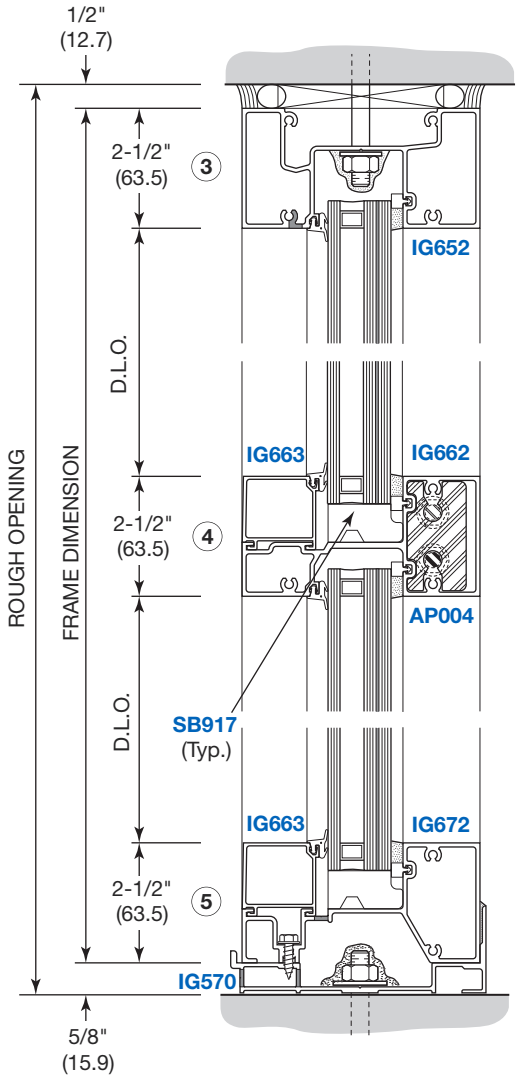

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BLAST MITIGATION

Typical Details

Blast Resistant Storefronts
• Defender Series BR606

FOR 1-5/16" (33) GLAZING

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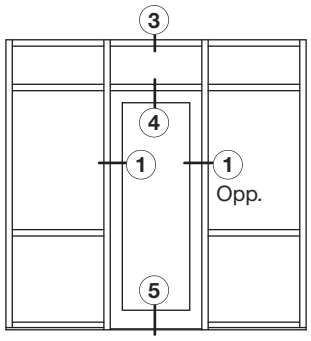
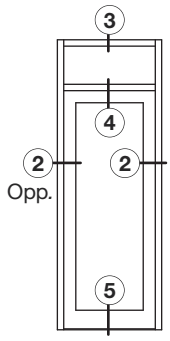
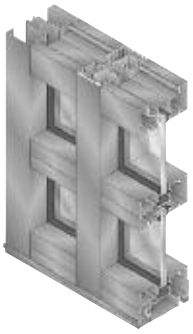
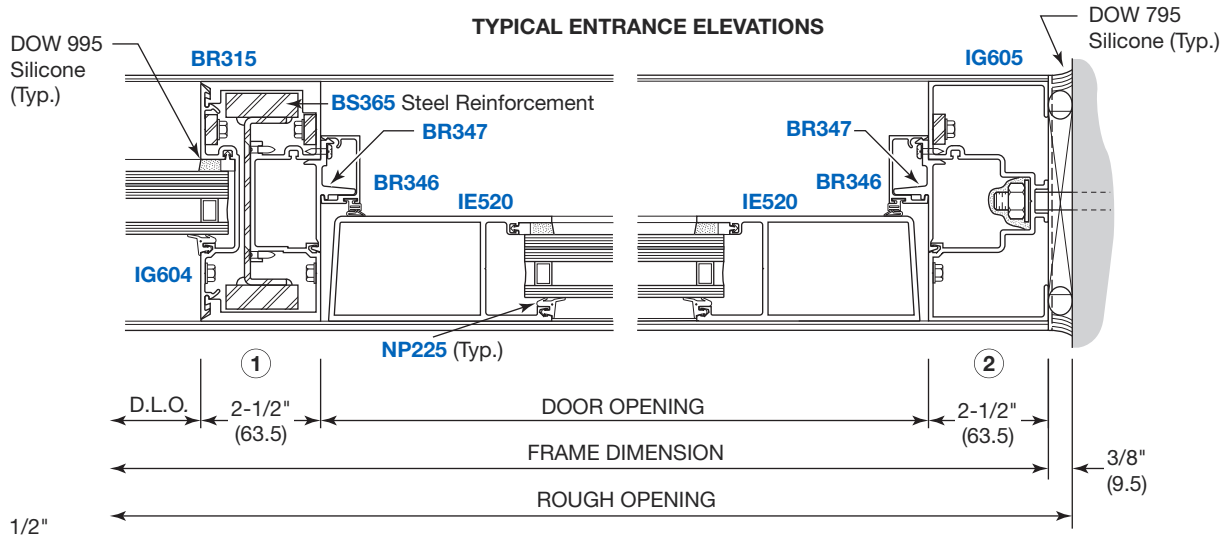
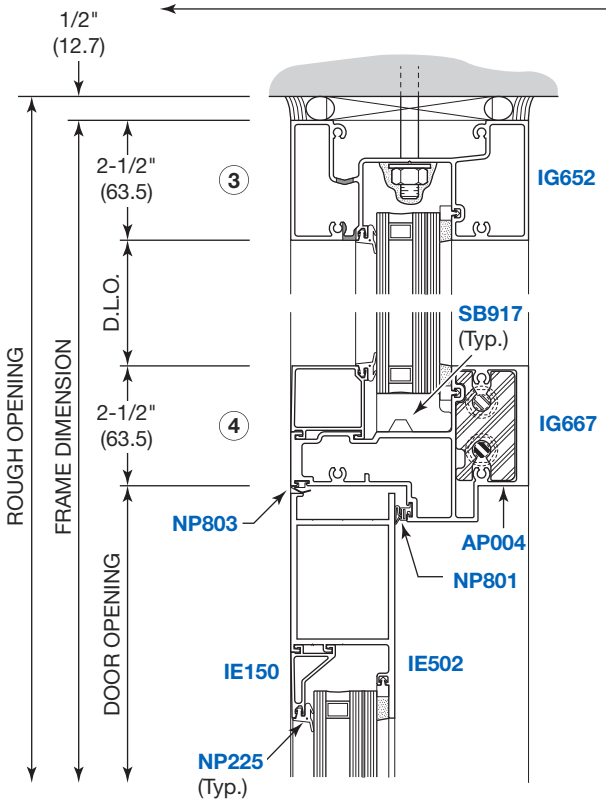


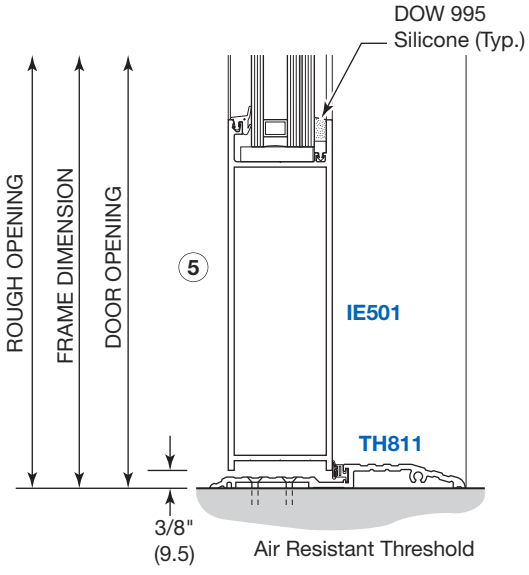




TYPICAL ENTRANCE ELEVATIONS







NOT TO SCALE

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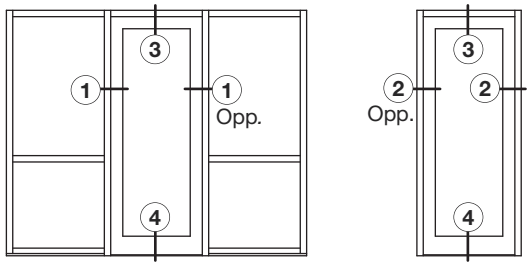
BLAST MITIGATION

Typical Details

Blast Resistant Storefronts
• Defender Series BR606

FOR 1-5/16" (33) GLAZING

NOTE: Frame height is limited to 8' (2.4 m). Consult your nearest U.S. Aluminum Service Center for deviation approval.



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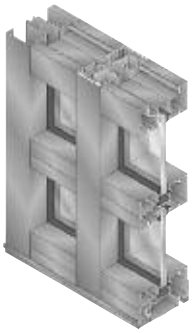

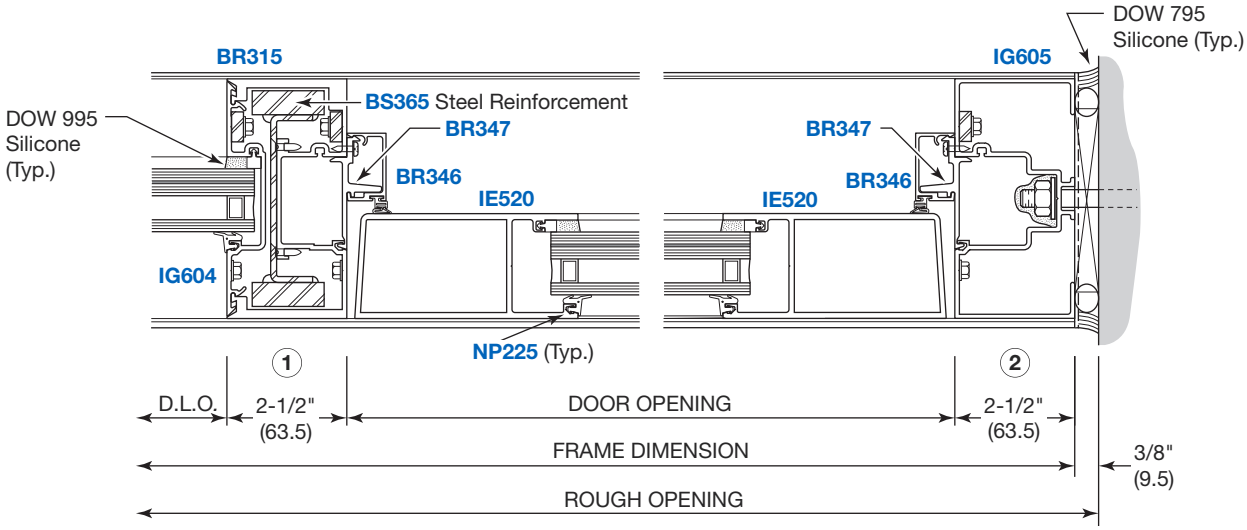

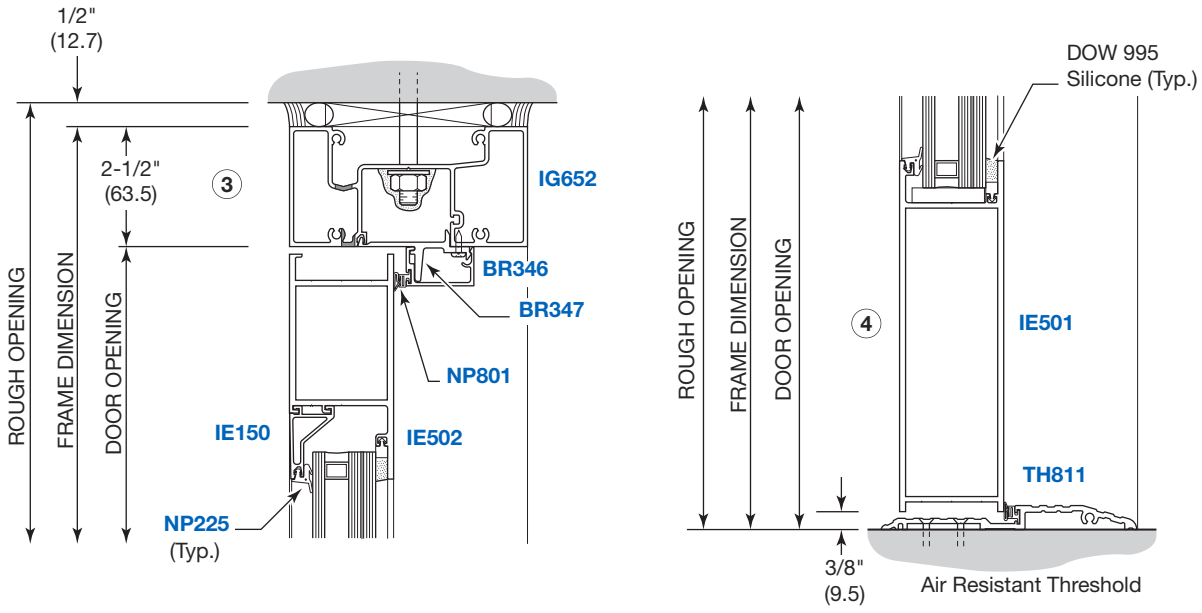

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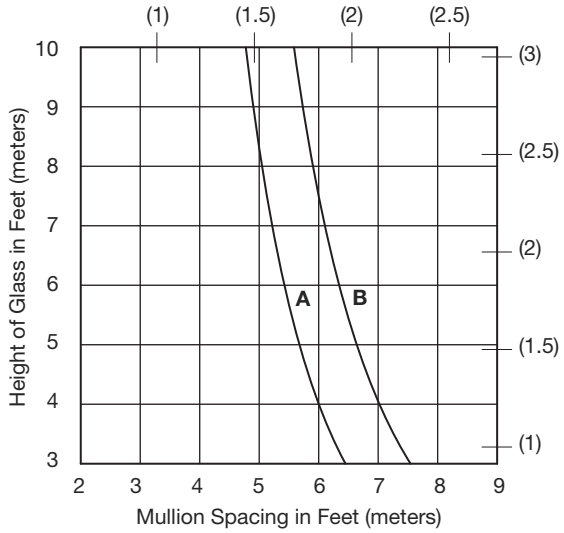
BLAST MITIGATION

Deadload Charts

INTERMEDIATE HORIZONTAL MULLIONS

Deadload charts are based on 1/8" (3.2) maximum allowable deflection at the center point of the horizontal member and with a glass weight of 9.75 psf (47.61 Kg/m^2) for 1-5/16" (33) glass.

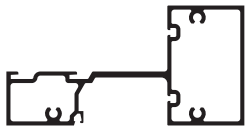
Glass shall rest on two setting blocks located at:
CURVES **A**: 1/4 points.
CURVES **B**: 1/8 points or 8" (203.2) from corners, whichever is larger.



Blast Resistant Storefronts

- Defender Series BR604
- Defender Series BR606

NOTE: Frame height is limited to 8' (2.4 m). Consult your nearest U.S. Aluminum Service Center for deviation approval.

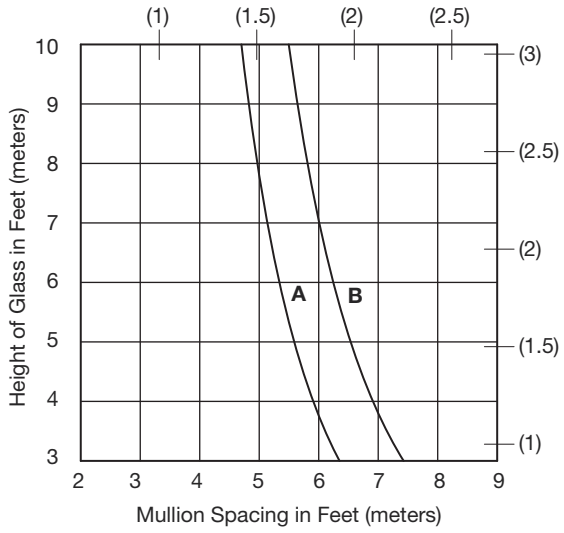


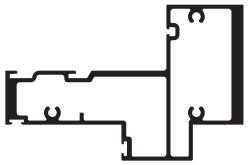
IG662
Iyy = 1.006
Syy = 0.661
(41.87 x 10^4)

DOOR HEADERS

Deadload charts are based on 1/16" (1.6) maximum allowable deflection at the center point of the horizontal member and with a glass weight of 9.75 psf (47.61 Kg/m^2) for 1-5/16" (33) glass.

Glass shall rest on two setting blocks located at:
CURVES **A**: 1/4 points.
CURVES **B**: 1/8 points or 8" (203.2) from corners, whichever is larger.





IG667
Iyy = 1.897
Syy = 1.118
(78.96 x 10^4)

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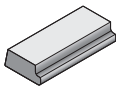
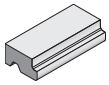
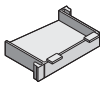
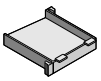
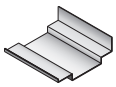
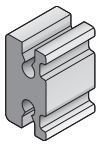
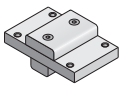
BLAST MITIGATION

Accessories

Blast Resistant Storefronts
- Defender Series BR604
- Defender Series BR606
- Defender Series BT601

PART NO.	DETAIL	DESCRIPTION	PKG. QTY.	WHERE USED		
				BR604	BR606	BT601
SB117		Setting Block for 1-5/16" (33) Glass	100			●
SB917		Setting Block for 1-5/16" (33) Glass	100	●	●	
WD911		Water Deflector	50	●	●	●
WD912		Water Deflector for BT815/BT835	50	●		
WD913		Water Deflector for BT805	50	●	●	●
EC801		End Caps for Jambs at Subsill for BR604/BR606	20	●	●	
EC870		End Caps for Jambs at Subsill for BT601	20			●
SV102		Splice Sleeve for Subsill	10	●	●	●
AP004		Shear Block Includes: (1) AC004 Shear Block (1) TB601 Back-up Plate (2) MF281 Bolts (2) MF254 Lock Washers	10		●	
DJ801		Drill Guide for Horizontals	1	●	●	●
ST286		Assembly Screw #12 x 2" (51) HWH SMS	100	●	●	●
ST268		Sill to Subsill Attachment #12 x 3/4" (19) HWH SMS	100	●	●	●
ST266		Reinforcement to Vertical Attachment #12 x 1" (25) HWH Tek	100	●		
ST248		Reinforcement to Vertical Attachment #10 x 3/4" (19) FH Tek	100		●	
ST238		Reinforcement to Vertical Attachment #10 x 3/8" (9.5) FH SMS	100			●
ST173		End Dam Attachment #8 x 1/2" (12.7) FH SMS	100	●	●	●
ST206		Splice Sleeve Attachment #8 x 1/2" (12.7) PH SMS	100	●	●	●

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