



Loewen

StormForce™ Technical Guide

Details, Sizing & Specifications

Elevate.

Every project begins with an innate desire to create something great.

History

Founded in 1905, Loewen has earned a reputation for inspirational products, design leadership and custom capability. Our history helps describe our journey and foundation on which the Loewen brand of windows and doors is built.

Loewen is a manufacturer of wood windows and doors designed and built for premium residential new construction, renovation/restoration and distinctive light commercial construction.



Select standard window and door configurations are represented in this Loewen Window & Door Technical Guide. Numerous custom opportunities exist. Please contact your Authorized Loewen Dealer.

Information in this guide subject to change without notice.

Table of Contents

Introduction

- S4 StormForce Series
- S6 StormForce Glazing
- S8 StormForce Windows
- S11 StormForce Doors
- S15 Color & Cladding
- S16 Window & Door Hardware
- S18 Divided Lites & Grilles
- S19 The Warranty

Size Tables & Detail Drawings

- S20 StormForce Casement Windows
- S30 StormForce Awning Windows
- S35 StormForce Picture/Direct Set Windows
- S38 StormForce Single/Double Hung Windows
- S45 StormForce Swinging Terrace & French Terrace Doors
- S63 StormForce Sliding Patio Doors & French Terrace Doors
- S65 StormForce LiftSlide Doors

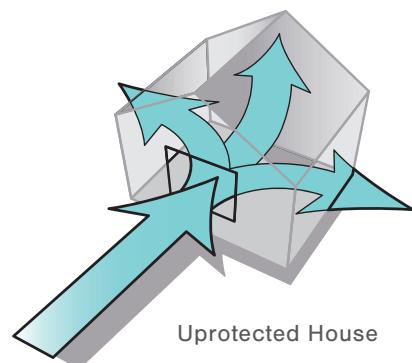
StormForce Series

Maximum Protection From Coastal Environments

Loewen StormForce products take the performance of our standard windows and doors to the extreme, maximum coastal protection - purposely designed to withstand all of nature's harshest elements - hurricanes, tropical storms, high winds, driving rain, sweltering heat and freezing cold.

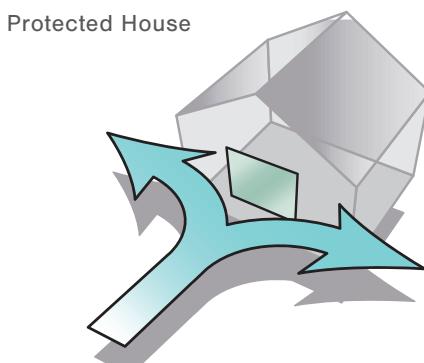
StormForce is available in Casement, Awning, Picture/Direct Set, Specialty Windows, Double/Single Hung, Patio Doors, Terrace Doors and LiftSlide Doors.

For the best performance, to enhance our woods' high natural resistance to moisture absorption, decay and insect infestation, every Loewen wood component is treated with a water repellent/wood preservative sealant before assembly.



Unprotected House

Windborne wreckage can impact homes during windstorms and hurricanes, with gusting, pervasive winds to follow. To protect the integrity and interior of homes, windows and doors must resist penetration and remain in place and intact.



Protected House

Impact designed laminated-glass windows and doors pass windborne debris impact tests, and even when broken, the glass fragments remain integral, adhering to the plastic interlayer, to preserve the building envelope.

With impact products rated up to DP 85, Loewen's superior design is able to withstand 9,000 cycles of positive and negative wind loading, 105 psf structural loading and the impact of a D-Missile* test.

All components in a StormForce window or door provide a number of additional benefits: enhanced security, excellent ultraviolet ray protection and increased sound attenuation.



Fenestration structurally enhanced to meet - and exceed - international residential code, Florida Building Code and other coastal requirements, including the stringent Dade County certification. Each test is conducted by an independent agency, based on extreme conditions and varying product sizes. Code compliance is a fundamental aspect of Loewen design and engineering.

StormForce delivers impact resistance, and superior thermal performance in an insulated glazing configuration with laminated glass products. StormForce frames and IG units are weather proof against all water and air infiltration and the energy efficient design meets specific regional building codes for U-Values in coastal areas from New York to Texas.



Florida Building Code

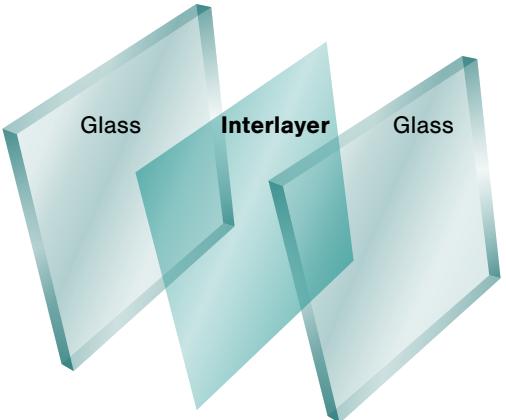
The Florida Building Code is the strictest code in the United States for resistance to wind-borne debris and wind-loading for fenestration products. Many Loewen certified products meet high velocity wind zone 4 standards.

*D-Missile certified products are tested to withstand impact from a 9 pound 2 x 4 stud, 8 feet in length, at an impact speed of 50 feet/second. Products are then tested to withstand 9,000 positive and negative wind loading cycles without failure of the building envelope.

StormForce Impact Glazing

All Loewen StormForce products use industry leading laminated glass produced by bonding a combination of plastic vinyl layers and polyester film between two panes of glass into a single sheet. Laminated glass has the look of ordinary glass but offers a fortification against accidental impact, forced entry, sun damage and noise that far surpasses that of standard glass.

Glazing options on Impact products include PVB and SGP in clear layers.



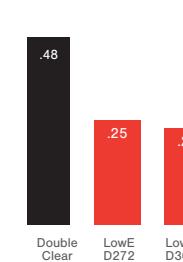
LowE Window Systems

LowE Window Systems offer varying levels of thermal protection. They also protect furnishings by screening out much of the damaging ultraviolet radiation that causes fading and related damage. The charts on the next page show the comparative performance of each Loewen Window System. LowE is a high-performance glazing system that offers great thermal value in a variety of climate zones.

LowE Compared With Clear Double Glass Units

U-Value*

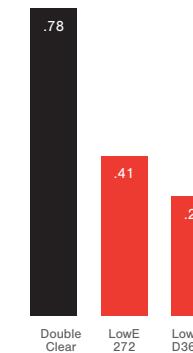
This chart illustrates the resistance of heat transfer through the glass. Lower U-Value indicates greater insulating capabilities. U-Value measured at center of glass.



Double Pane

Solar Heat Gain (SHGC)*

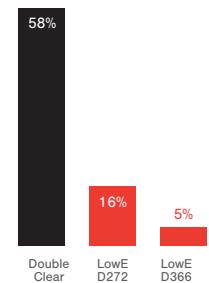
This chart measures the ratio of solar heat gain through a glazing system compared to an unobstructed opening.



Double Pane

UV Transmittance*

This chart measures the percentage of ultraviolet radiated wavelengths allowed to be transmitted through the glazing system.



Double Pane

*Ashrae calculated values Window 5.2 | 1/2" airspace (13 mm) | Does not apply to sealed units with capillary tubes installed

Note: Information in these charts compares the center of glass performance levels of the sealed unit only when manufactured with different glazing options. They are not representative of overall window performance, which depends on many factors including grille options, such as simulated divided lites, grilles between glass, product size and configuration. This information cannot be used to calculate energy performance, to determine resistance to condensation or to develop assumptions about suitability for use or compliance with energy codes. For overall performance of specific windows or doors, refer to "NFRC U-factor and SHGC/VT" information.

LowE Coating Options

We offer as many glazing configurations and LowE coatings as there are climates so our window performance can be built to provide comfort in any environment.

LoE³ – 366 Ultimate Performance

- Highest level of year-round comfort for every climate
- Better insulator (low u-value) and solar heat blockage (low SHGC)
- Three layers of silver (LoE3366)

LoE – 180 Passive Solar Gain

- Ideal for passive solar applications
- Good insulator (low u-value) and high solar heat gain
- One layer of silver

LoE³ – 340 Ultimate Solar Control

- Greatly reduces oppressive solar heat gain & glare
- Best insulator (low u-value)
- Three layers of silver (LoE3340)

LoE – i89 Roomside LoE

- Indoor lite, surface #4 (double) or #6 (triple) reflecting more heat back into the room
- Enhanced insulation (lowers u-value)
- Iridium Tin Oxide coating

LoE² – 272 All-Climate

- Year-round, well balanced performance and comfort
- Better insulator (low u-value) and moderate solar heat blockage
- Two layers of silver (LoE2272)

StormForce Windows



For beautiful windows that can protect from environmental hazards and come in all custom sizes and shapes Loewen StormForce is the correct choice. Is year-round, all-season thermal protection a must have? StormForce can also be made with insulating glass and tinted configurations. This will reduce the total window U-factor, protecting against unwanted heat loss during seasons of cooler temperatures.



StormForce Awning & Casement Windows

Loewen pushout and rotogear operating windows provide superior ventilation and easy operation. Casements provide one of the highest thermal performance ratings of any operating window style. Loewen makes six distinct styles of AW/CA windows, and are available in specialty shapes.

StormForce Picture & Specialty

Loewen picture windows are designed for maximum views with a minimum of wood framework. The ideal combination of view and ventilation can be created by pairing non-operating units with awning and casement windows. Picture units can be built in a variety of different shapes.

Highlights:

- Maximum coastal protection - purposely designed to withstand all of nature's harshest elements - hurricanes, tropical storms, high winds, driving rain, sweltering heat and freezing cold.
- Unseen structural upgrades - no unsightly brackets or locks commonly seen on coastal products.
- Versatile and enhanced styling - wood interior standard with the choice of extruded aluminum cladding.
- Integrated structural sill block and metal nailing flange allows for maximum protection against water infiltration.
- Thermally broken aluminum sill and glazing options for maximum energy efficiency.
- Flexible bulb weather seal for optimal performance.



StormForce Double Hung Windows

Loewen Double Hung windows have been designed to complement the depth and character of the traditional North American home. We've combined superior strength and durability with maximum coastal protection and innovative efficiency options to deliver a window that has the progressive performance.

Highlights:

- Innovative balance system allows window to open and close smoothly.
- Single-handed lock/tilt mechanism allows for inward tilting of the sash for easy cleaning.
- Heavy meet rail improves performance when struck by a D-Missile.
- Interlock system and integral sill block details enhance the structural integrity of the window.



Product Model	FL #	Dual IG Glazing	Monolithic Glazing	Douglas Fir	Mahogany	Rectangular	Cambertop	1/2 Round	1/4 Round	Full Round	Extended 1/4	Extended 1/2	Oval	Elliptical
Awning (AW)	13351	•		•	•	•								
	17485	•		•	•	•								
Push Out Awning (PAW)	13351	•		•	•	•								
Casement (CA)	13104	•	•	•	•	•	•			•	•			
Push Out Casement (PCA)	13104	•	•	•	•	•	•	•	•	•	•	•		
Casement Fixed (CAF)	13484	•		•	•	•	•	•	•	•	•	•	•	•
Picture (PS)	19052	•		•	•	•	•	•	•	•	•	•	•	•
Double Hung 'Liberty' (DH)	14692	•		•	•	•								
Single Hung 'Liberty' (SH)	14693	•		•	•	•	•							
Double Hung Fixed (DF)	14694	•		•	•	•	•	•	•		•	•		
Double Hung Transom (DT)	14695	•		•	•	•	•	•	•		•	•		

StormForce Doors



Loewen StormForce Door Panels combine rugged performance with architectural versatility. Available in Swinging Terrace and French Terrace Doors, Sliding Patio & French Patio Doors and LiftSlide Doors with all the features required for coastal protection with legendary Loewen Douglas Fir or Mahogany construction. StormForce doors equipped with standard multi-point hardware and stainless steel exposed components provide robust security and superior environmental performance.



StormForce LiftSlide Doors

The Loewen LiftSlide allows expansive glass panels to roll smoothly and easily during operation. With the touch of a hand, the LiftSlide mechanism rotates down to seal against water infiltration. LiftSlide Doors can be located in areas of extreme exposure where homeowners want a coastline, mountain or lake front vistas with minimal sightline interference.

With the high structural integrity and performance of LiftSlide doors, only raised threshold is available in StormForce For superior water protection an additional sill riser is available.

Liftslide Rails And Stiles are comprised of an aluminum/wood hybrid. Opening panels are equipped with 3G corrosion resistant stainless steel wheel assemblies with flat deformation resistant wheels and precision bearings.

- Aircraft grade aluminum extrusions with VG Douglas Fir or Mahogany interior.
- Aluminum corrosion resistant track with integral drains.
- Robust hardware can handle a maximum weight of 850 lbs per panel.



StormForce Terrace & French Terrace Doors

Traditional Terrace Doors hinge on the jamb so that one panel is fixed and the other operates. By contrast, French Terrace Doors are hinged on the outside to allow both doors to operate from the middle. Outswing versions of both styles are available as additional protection options.

Handle-activated stainless steel head and sill shoot bolts are standard with StormForce series. Additional lock points increase structural air/water performance and provide added security.

- Insulated sealed unit provides energy efficiency as well as impact resistance.
- Stainless steel support plates on top and bottom panels enhance structural integrity.
- Thick interlayer designed to resist Zone 3 D-Missile impact.
- Utilizes five-point stainless steel locking system, stainless steel strike plates and a sturdy astragal for superior impact performance.
- Tall sill enhances protection against water infiltration.



StormForce Sliding Patio Doors

Loewen Sliding Patio doors can open up the walls for larger living space. StormForce doors are weatherproof, safe, secure and easy to operate. Loewen uses laminated sash construction, thick, tempered safety glass and smooth tandem rollers. For added protection, Loewen builds an anti-lift device into every patio door. An optional foot lock is also available, as is manual three-point hardware.

- Anti-lift device.
- Zero clearance required.
- Standard integral sliding screens available.
- Standard multi-point locking hardware & foot lock mechanism.
- 2 1/4" thick sliding panels.
- Silicone-treated, woven pile and foam-filled Q-Ion weatherstripping system.



Product Model	FL #	Dual IG Glazing	Monolithic Glazing	Douglas Fir	Mahogany	Mid Rail	Rectangular	Cambertop	1/2 Round	Extended 1/2	Extended 1/4
Sliding Patio (WP2)	12531	•		•	•			•			
Sliding French Patio (FP2)	13103	•		•	•			•			
Terrace Outswing (TD1)	14369	•	•	•	•	•	•	•	•	•	•
Terrace Outswing (TD2) Hinged on jamb side	14369	•	•	•	•	•	•	•	•	•	•
Terrace Fixed Outswing (TDF)	14369	•	•	•	•	•	•	•	•	•	•
Terrace Inswing (TD1)	17221	•		•	•		•				
French Terrace Outswing (FD2)	14369	•	•	•	•	•	•	•	•	•	•
French Terrace Outswing (FD2) 1/2 Round	14369	•	•	•	•	•	•	•	•	•	•
French Terrace Inswing (FD2)	17221	•		•	•		•				
Terrace Transom (TDT1 or TDT2) 10' included	14370	•	•	•	•		•	•	•	•	•
French Terrace Transom (FDT2) 10' included	14370	•	•	•	•		•	•	•	•	•
10' Terrace Outswing (TD1)	14367	•	•	•	•	•		•			
10' Terrace Outswing (TD2) Hinged on jamb side.	14367	•	•	•	•	•		•			
10' French Terrace Outswing (FD2)	14367	•	•	•	•	•		•			
LiftSlide (per panel)	13353	•	•	•	•	•		•			

Color & Cladding

Superior Aluminum Cladding

Loewen uses only pre-finished extruded aluminum cladding to better protect window and door exteriors and eliminate the need for painting. Our thick extruded aluminum cladding retains its shape, resists denting and lasts longer than roll-formed aluminum. In addition, Loewen's window cladding is set away from the underlying wood, creating an airspace that improves thermal performance.

The broad variation in Loewen sizes, shapes and designs and the demanding environmental conditions that our product encounters require an alloy that has the ability to:

- Withstand serious impact without sustaining damage
- Allow intricate extrusion detailing
- Provide the malleability necessary to clad many sizes and shapes
- Deliver unequaled environmental durability
- Provide a stable substrate that enhances colorfast paint performance

AAMA 2605 / 70% Kynar Finishes

Loewen's paint formula includes 70% Kynar 500 PVDF (polyvinylidene fluoride) resin, which offers the greatest resistance to weathering, fading and chalking. This ensures a beautiful finish that will last when cared for properly. With excellent appearance and durability, these paints meet the specifications of the American Architectural Manufacturers Association (AAMA) 2605.

Also available:

- Anodized Aluminum
- Cyprium Copper
- Cyprium Bronze



Window & Door Hardware

Selecting a style and finish that reflects your unique taste is a critical part of creating the right look.

But choosing hardware involves more than just appearance – function and operation are essential, which is why Loewen offers a wide range of handles, locking systems and other hardware choices – from the most traditional to the most contemporary. Hardware must also offer intelligent design and flexibility. This is why Loewen provides designs such as the foldaway handle, useful when drapes or blinds fit tight against a window or when access space is limited.

For hard-to-reach windows, optional motorized operators can be activated by a simple wall switch or battery operated remote control.



Divided Lites & Grilles

Simulated Divided Lite (SDL) bars add a distinctive design feature to full-size panes of glass. Wood or metal bars securely bonded to the outer surfaces of the sealed glass unit simulate the appearance of traditional true divided lites.

Available with straight or radius bars.

Additional airspace bars (between the glass) complete a convincing reproduction of a multi-paned window or door. Our spacer bars function among the best in the industry and provide an intriguing aesthetic appearance in stainless steel or black color options. Wide shadow bars fill more of the airspace replicating the look of True Divided Lites. Narrow shadow bars also provide a similar appearance while allowing for improved sealed unit performance.



The Warranty Support, Consideration and Service

Our solid warranty is the written proof of our commitment to quality. Loewen windows and doors are made to last, and we have always stood behind our product with unsurpassed support, followup, and service.

The strength of a warranty is based on the quality of the windows and doors and the confidence of the company behind them. When you have been building custom windows and doors for decades, you know that the first step in having a credible warranty is the integrity of your products.

20³

20/20/20
WARRANTY

Loewen metal clad products carry a 20 year warranty covering paint, glass and wood components.

Visit loewen.com for complete details.

The Loewen Advantage

- Full 20-year warranty on glass, wood components, and paint finishes on clad product.
- We guarantee our products for the full length of our warranty, meaning our support does not reduce over time.
- Complete coverage for all color finishes on our aluminum clad exterior including protection against fading and chalking for 20 years.
- Full 10-year coastal warranty on painted finishes within one mile of the coastline.
- Fully supported warranty service with our network of Loewen experts and regional dealer inspections.
- Full 2 years labor warranty.

Competition Warranties

- May promote a longer warranty even if it is limited or not inclusive for all parts.
- May be prorated warranties that reduce the manufacturer's liability as the product ages.
- Vinyl and wood fiber clad exteriors may carry a color fade only warranty or none at all.
- Warranties on paint that extend past those of the paint specifications will not extend the life of the paint finish and are always limited.
- Warranties that cover various distances from the coast often do not consider the specific effects of coastal weather conditions.
- Confusing language - for example: a lifetime warranty against corrosion for an exterior component that contains no metals really needs to cover against UV deterioration and chalking.

StormForce Cambertop Casement Window Sizes

		Width				
Rough Opening		24 3/8"	28 5/16"	30 1/4"	32 1/4"	36 3/16"
Frame		619	719	769	819	919
Visible Glass		23 5/8"	27 9/16"	29 1/2"	31 1/2"	35 7/16"
Frame		600	700	750	800	900
40 1/8" 1019	39 3/8" 1000	17 5/8" 447	21 9/16" 547	23 1/2" 597	25 1/2" 647	29 7/16" 747
42" 1067	41 1/4" 1048	33 1/8" 842	CA1 0610	CA1 0710		
48" 1219	47 1/4" 1200	35 1/16" 890	CA1 0611	CA1 0711		
55 7/8" 1419	55 1/8" 1400	41" 1042	CA1 0612	CA1 0712	CA1 7512	CA1 0812
59 13/16" 1519	59 1/16" 1500	48 7/8" 1242	CA1 0614	CA1 0714	CA1 7514	CA1 0814
63 3/4" 1619	63" 1600	52 13/16" 1342	CA1 0615	CA1 0715	CA1 7515	CA1 0815
71 5/8" 1819	70 7/8" 1800	56 3/4" 1442	CA1 0616	CA1 0716	CA1 7516	CA1 0816
		64 5/8" 1642	CA1 0618	CA1 0718	CA1 7518	CA1 0818
						CA1 0918

Product Code

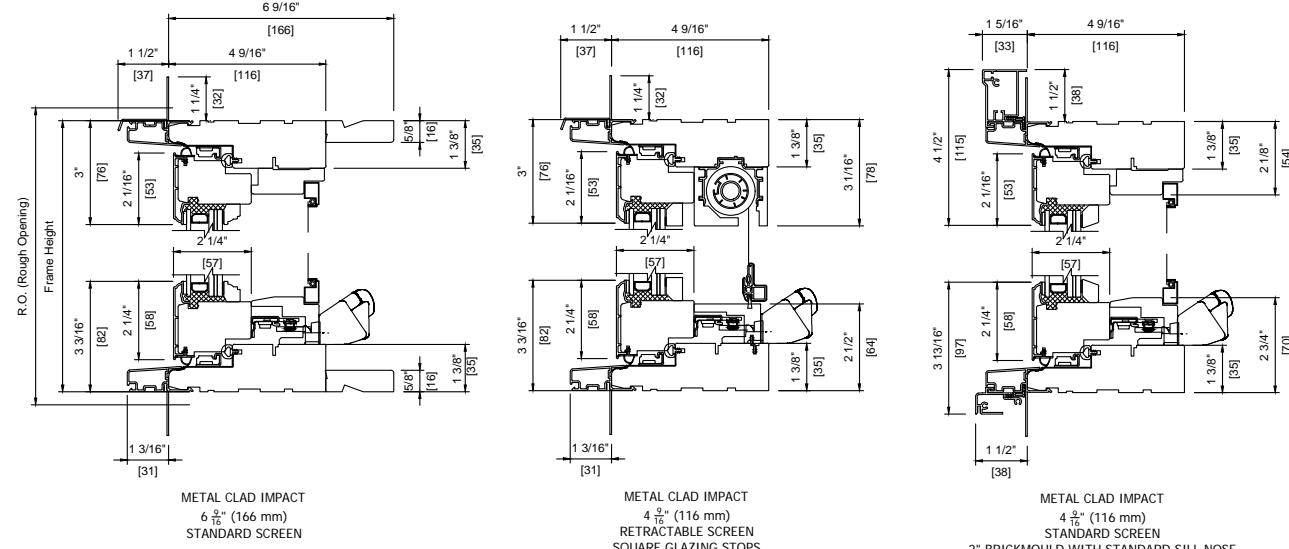
Glass Size = Visible Glass + 7/8" (22 mm)

Standard sizes shown. Additional sizes may be available. Custom sizes can be ordered.

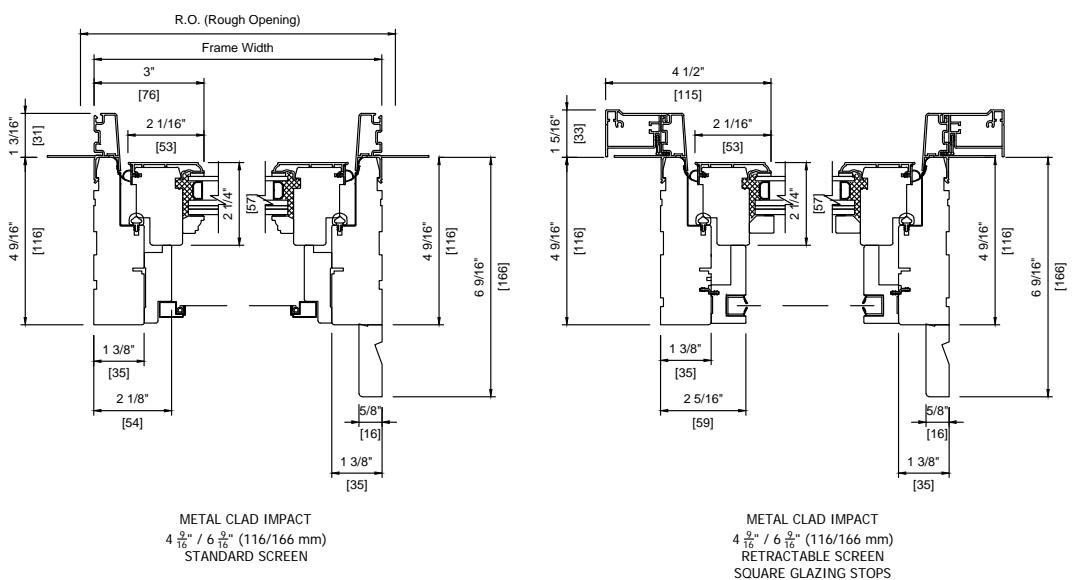
- Note: • SDL/Grille patterns are dependent on SDL/Grille type and window size.
 Please verify SDL/Grille patterns before confirming your order.
 • Available with sash moulding matching Push Out mouldings.
 • Sizes are shown as Impact IG.

StormForce Casement Window Detail

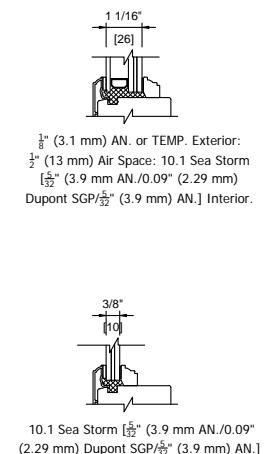
Head & Sill Detail



Plan View

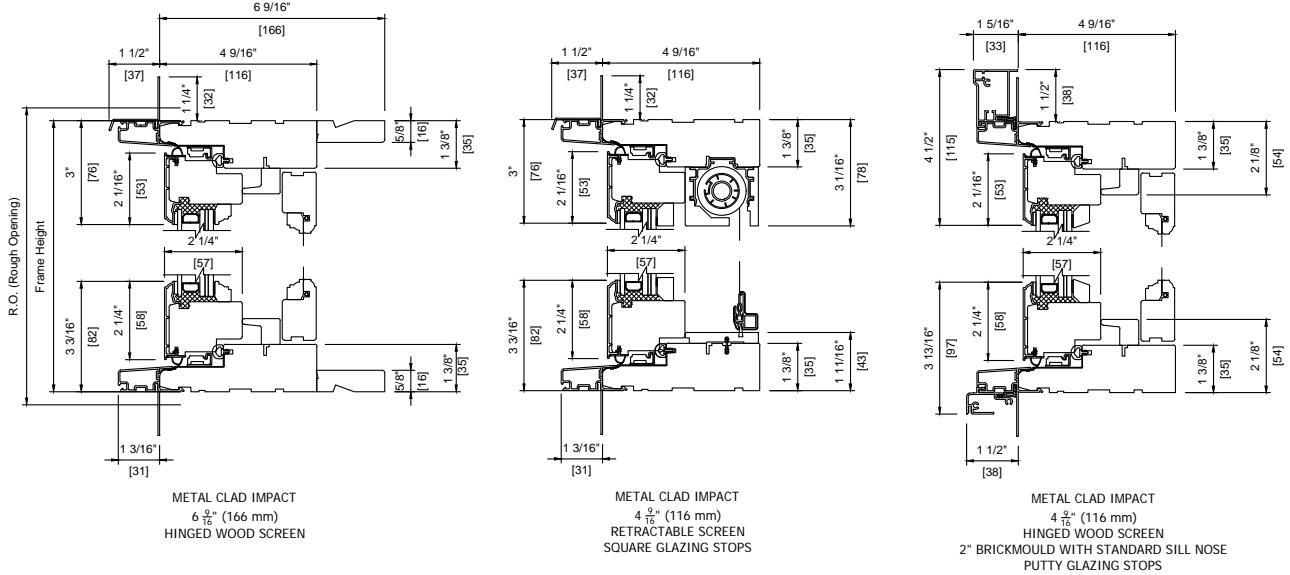


Glazing Detail

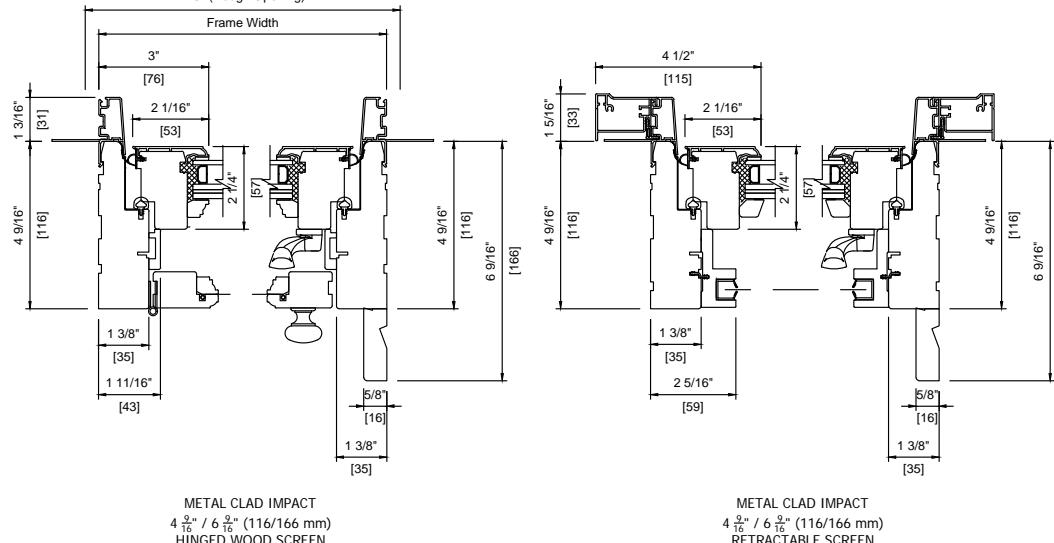


StormForce Pushout Casement Window Detail

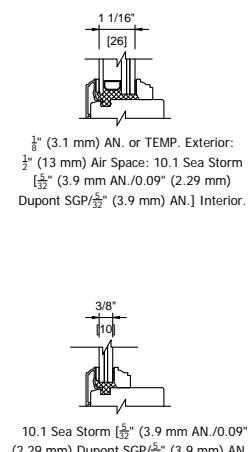
Head & Sill Detail



Plan View



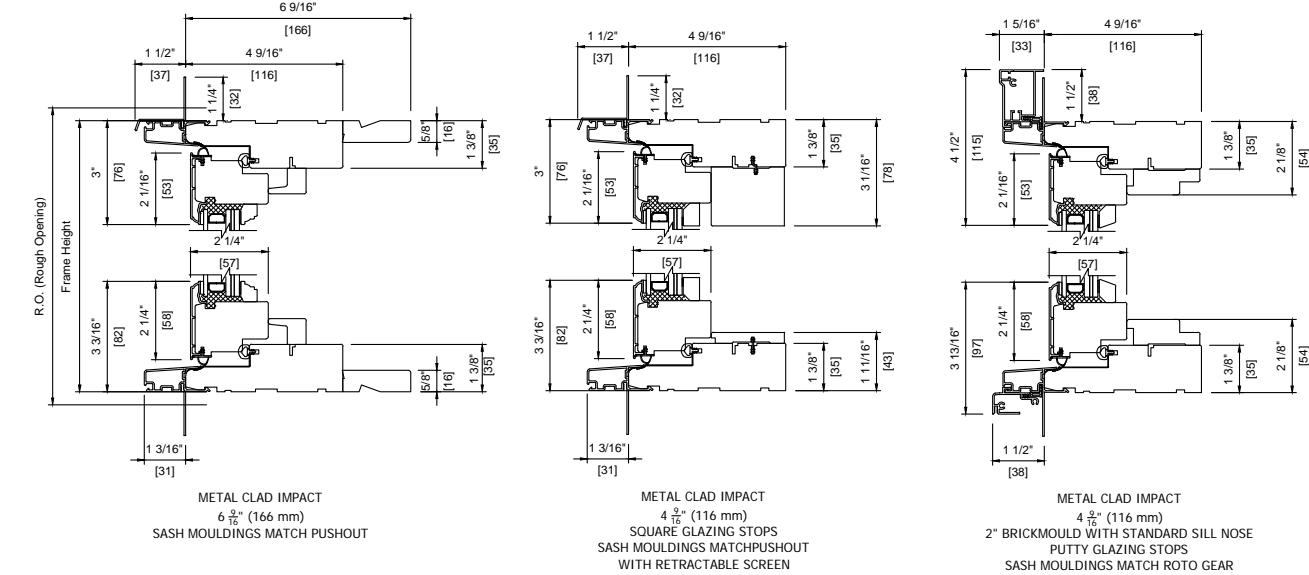
Glazing Detail



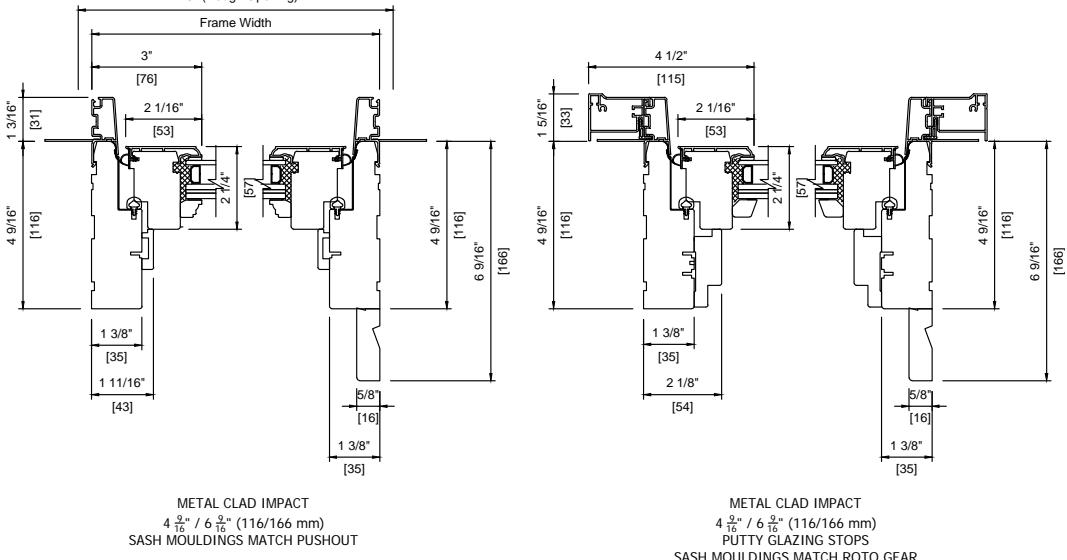
Note: • Other jamb widths available.
• All dimensions to have +/- 1/16" (2 mm) tolerance.

StormForce Fixed Casement Window Detail

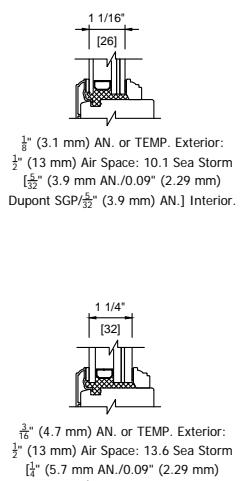
Head & Sill Detail



Plan View



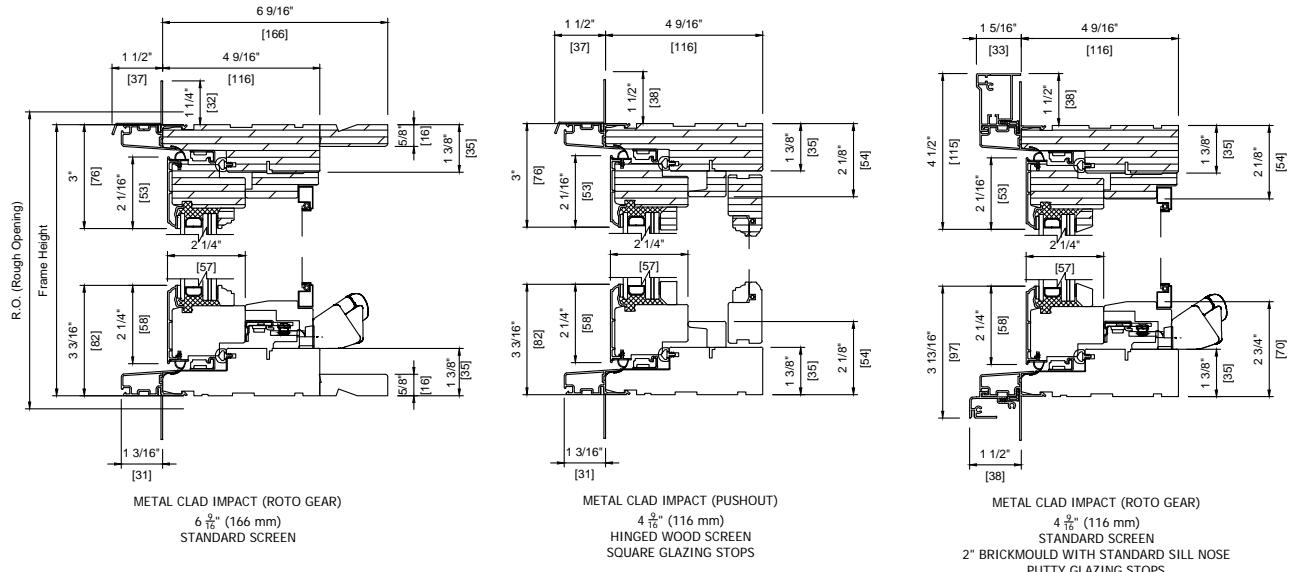
Glazing Detail



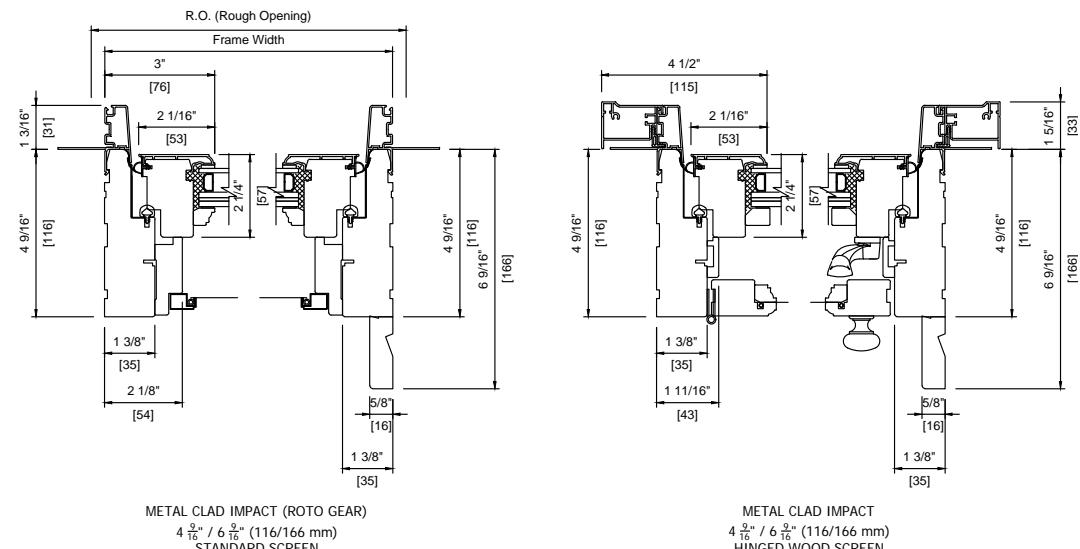
Note: • Other jamb widths available.
• All dimensions to have +/- 1/16" (2 mm) tolerance.

StormForce Radius Top Casement Window Detail

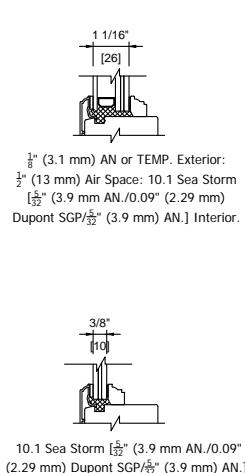
Head & Sill Detail



Plan View

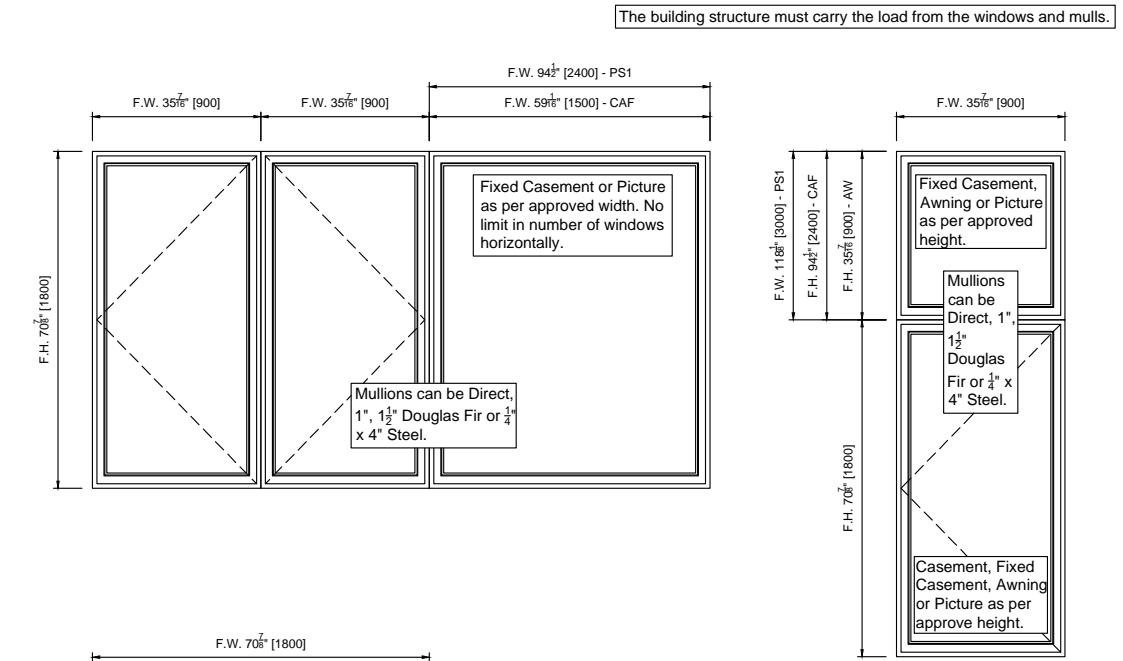


Glazing Detail

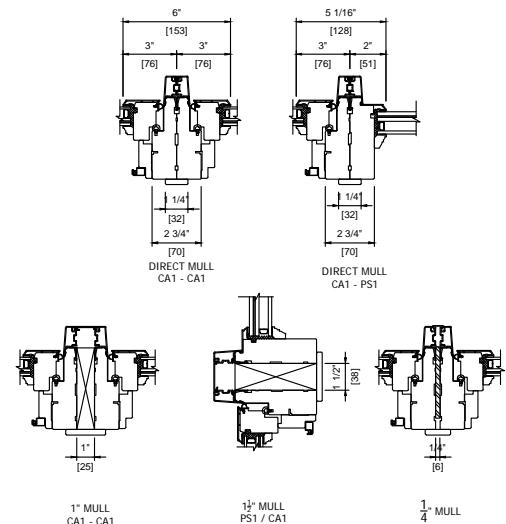
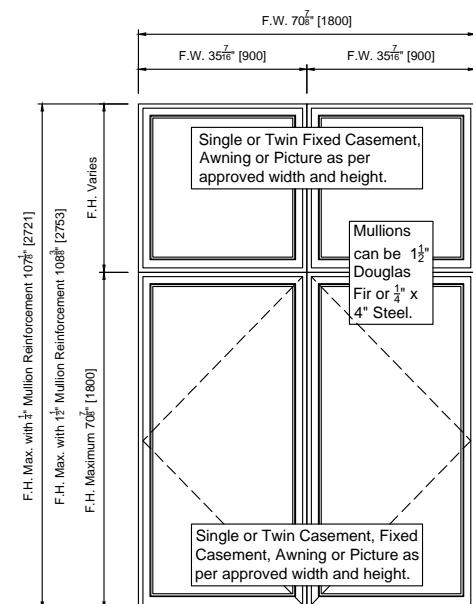


StormForce Casement Window Combinations Detail

Elevations



Sections Detail (Mullion Examples)

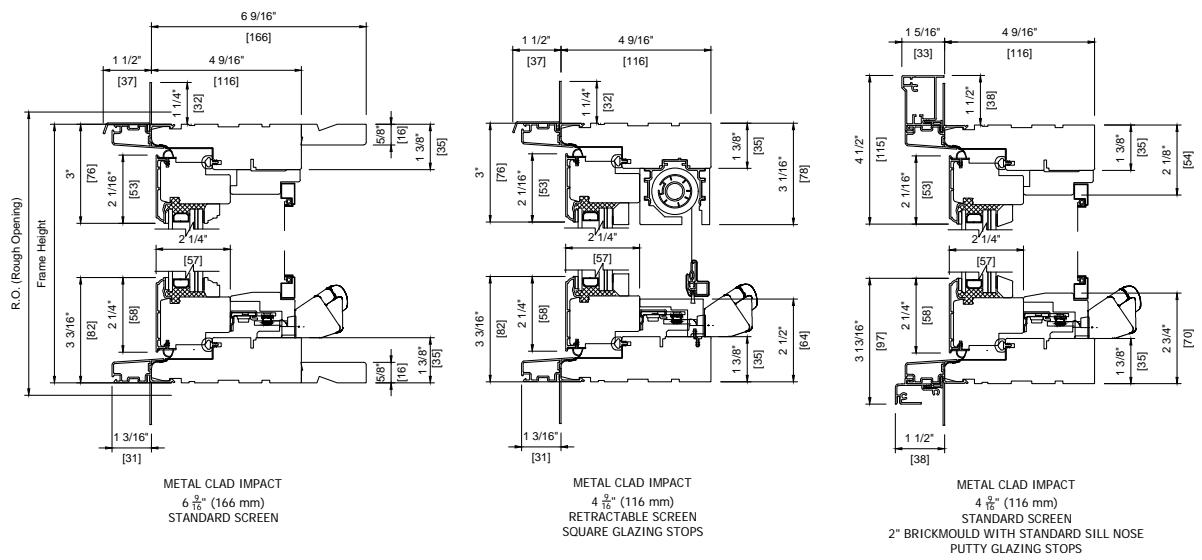


Note: • Other jamb widths available.
• All dimensions to have +/- 1/16" (2 mm) tolerance.

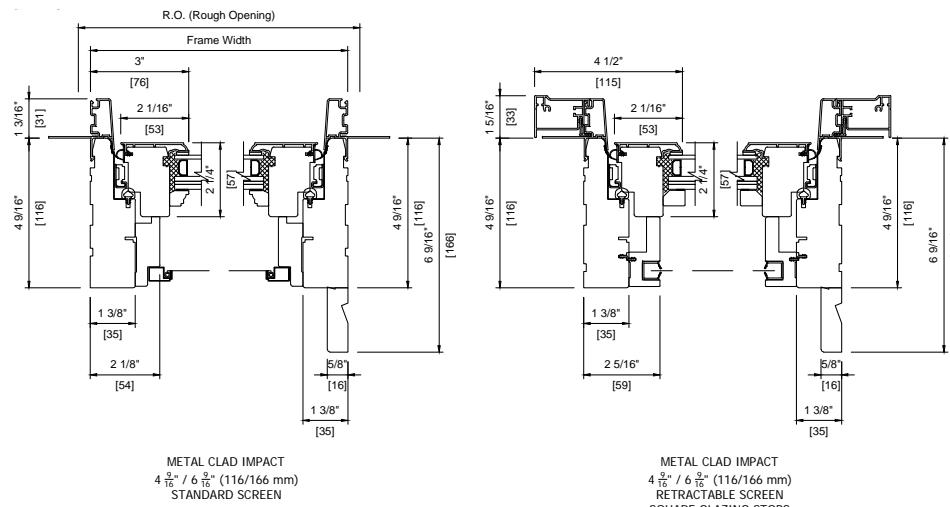
Note: • Other jamb widths available.
• All dimensions to have +/- 1/16" (2 mm) tolerance.

StormForce Awning Window Zone 4 Detail

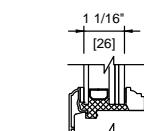
Head & Sill Detail



Plan View



Glazing Detail

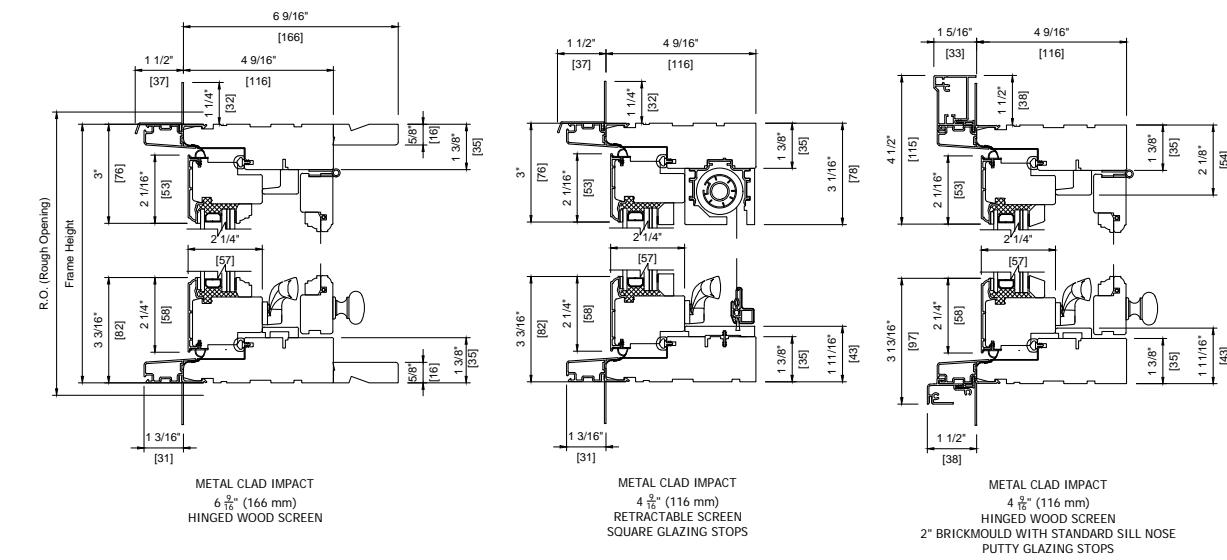


Note:

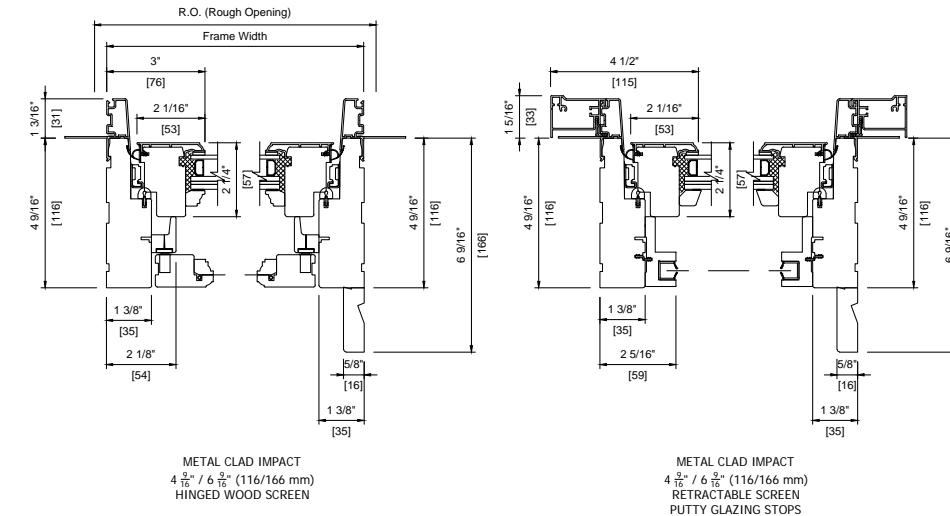
- Other jamb widths available.
- All dimensions to have +/- 1/16" (2 mm) tolerance.

StormForce Pushout Awning Window Zone 4 Detail

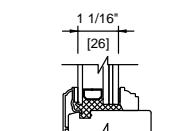
Head & Sill Detail



Plan View



Glazing Detail



Note:

- Other jamb widths available.
- All dimensions to have +/- 1/16" (2 mm) tolerance.

StormForce Double Hung Transom Window Sizes

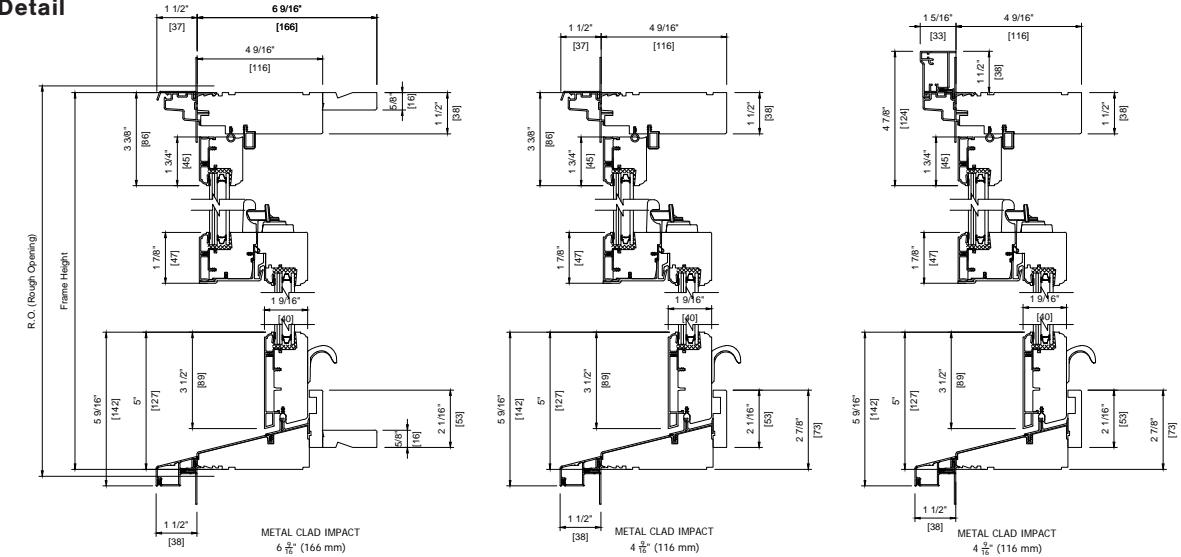
		Width									
Rough Opening		22 9/16" 573	26 9/16" 675	30 9/16" 777	32 9/16" 827	34 9/16" 878	36 9/16" 929	38 9/16" 980	42 9/16" 1081	46 9/16" 1183	
Frame		21 13/16" 554	25 13/16" 656	29 13/16" 758	31 13/16" 808	33 13/16" 859	35 13/16" 910	37 13/16" 961	41 13/16" 1062	45 13/16" 1164	
Visible Glass		15 1/16" 382	19 1/16" 484	23 1/16" 586	25 1/16" 636	27 1/16" 687	29 1/16" 738	31 1/16" 789	35 1/16" 890	39 1/16" 992	
22 9/16" 573	21 13/16" 554	15 1/16" 382	DT 1616	DT 2016	DT 2416	DT 2616	DT 2816	DT 3016	DT 3216	DT 3616	DT 4016
24 9/16" 624	23 13/16" 605	17 1/16" 433	DT 1618	DT 2018	DT 2418	DT 2618	DT 2818	DT 3018	DT 3218	DT 3618	DT 4018
26 9/16" 675	25 13/16" 656	19 1/16" 484	DT 1620	DT 2020	DT 2420	DT 2620	DT 2820	DT 3020	DT 3220	DT 3620	DT 4020

Product Code

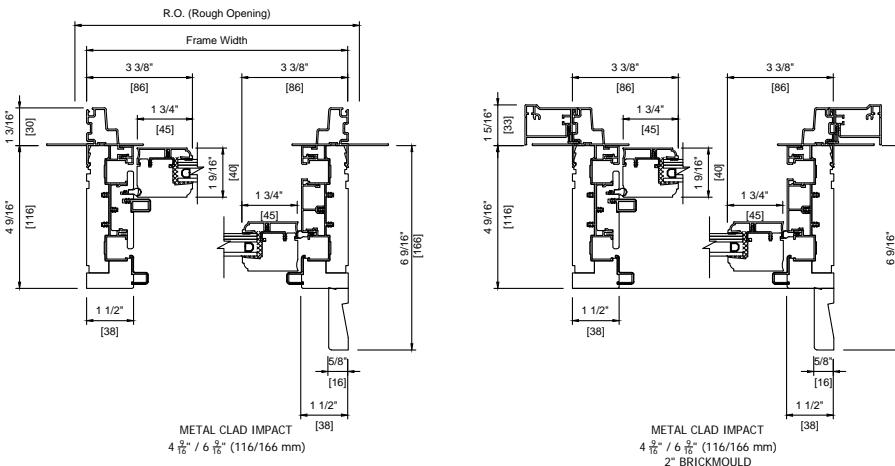
Only Available in Grand Sash
Glass Size = Visible Glass + 7/8" (22 mm)

StormForce Double/Single Hung - Liberty (Non-Tilting) Window Detail

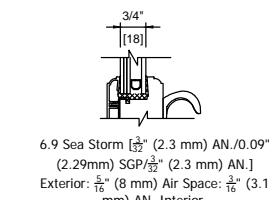
Head & Sill Detail



Plan View



Glazing Detail



6.9 Sea Storm $\frac{3}{16}$ " (2.3 mm) AN / 0.09"
(2.29mm) SGP $\frac{3}{16}$ " (2.3 mm) AN.]
Exterior: $\frac{1}{8}$ " (8 mm) Air Space: $\frac{1}{8}$ " (3.1 mm) AN. Interior.

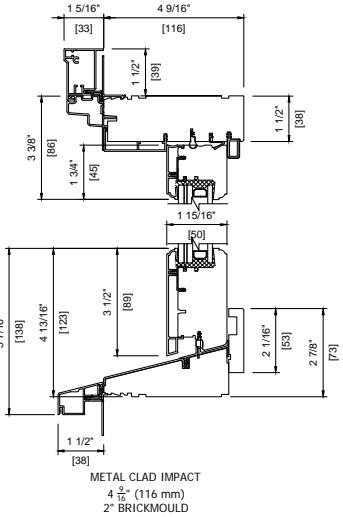
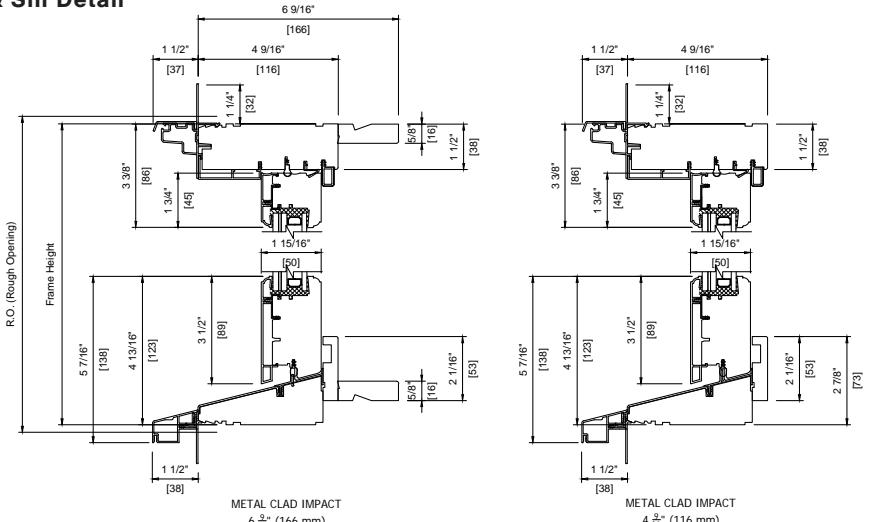
Standard sizes Shown. Additional sizes may be available. Custom sizes can be ordered.

- Note:
- Please check your local building codes for any variation in Egress Standards from those stated above. For egress information, contact your Authorized Loewen Dealer.
 - SDL/Grille patterns are dependent on SDL/Grille type and window size. Please verify SDL/Grille patterns before confirming your order.
 - Sizes are shown as Impact IG.

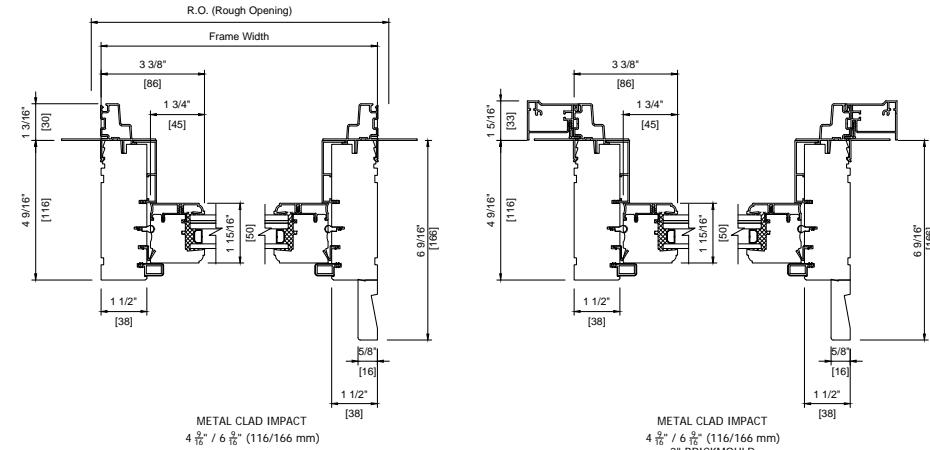
- Note:
- Other jamb widths available.
 - All dimensions to have +/- 1/16" (2 mm) tolerance.

StormForce Fixed Double Hung Window Detail

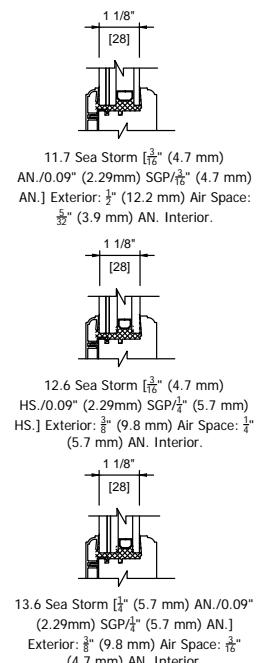
Head & Sill Detail



Plan View



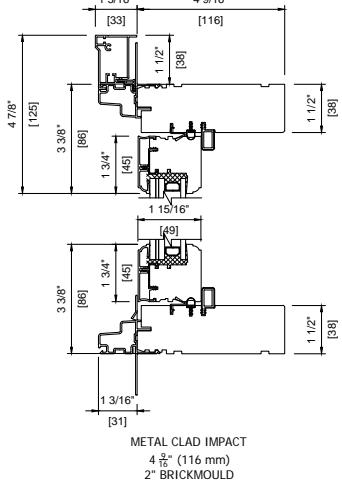
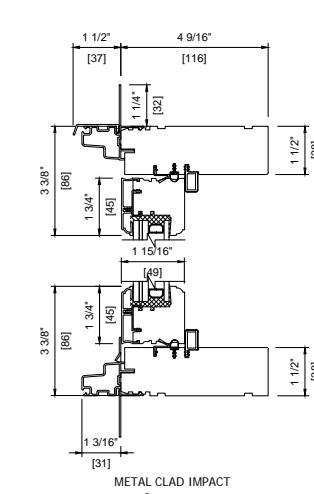
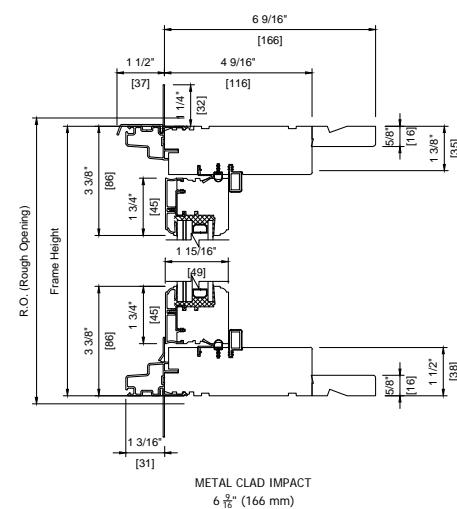
Glazing Detail



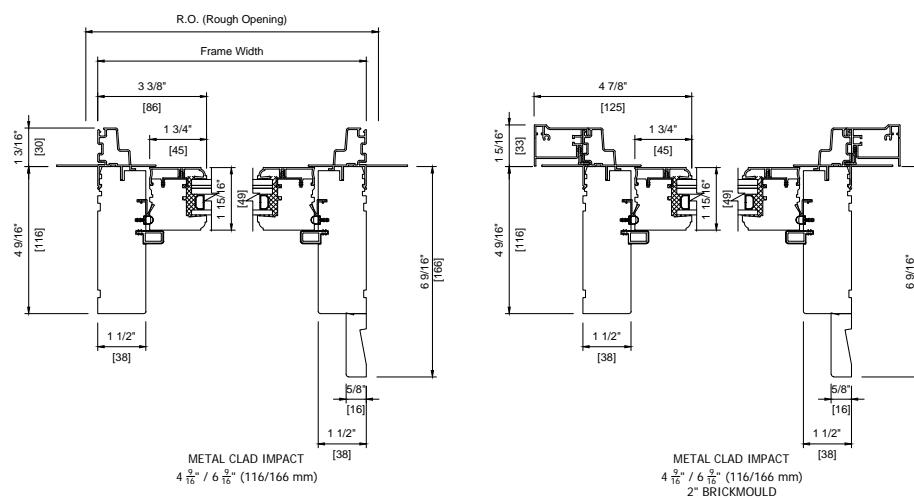
Note: • Other jamb widths available.
• All dimensions to have +/- 1/16" (2 mm) tolerance.

StormForce Double Hung Transom Window Detail

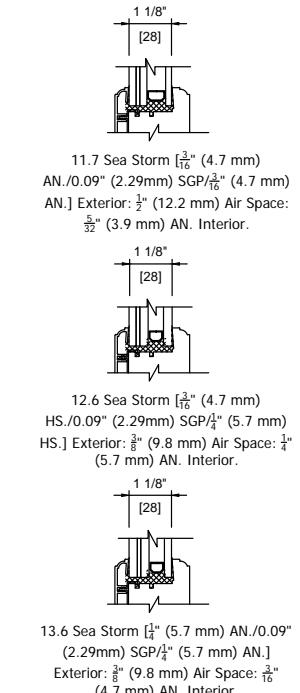
Head & Sill Detail



Plan View



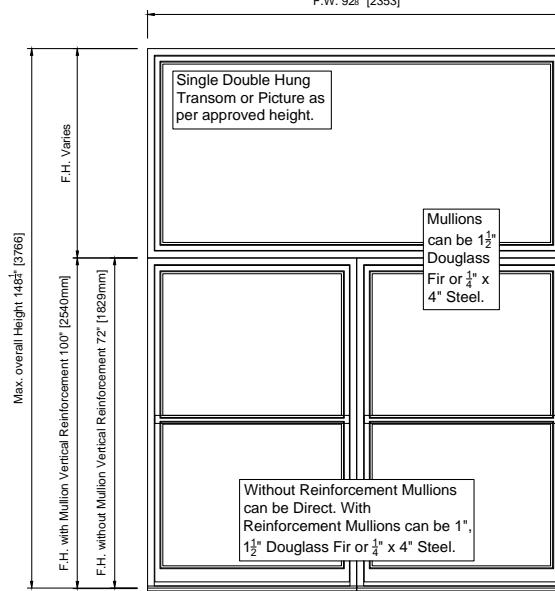
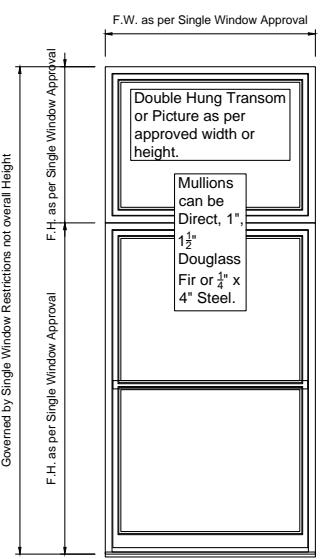
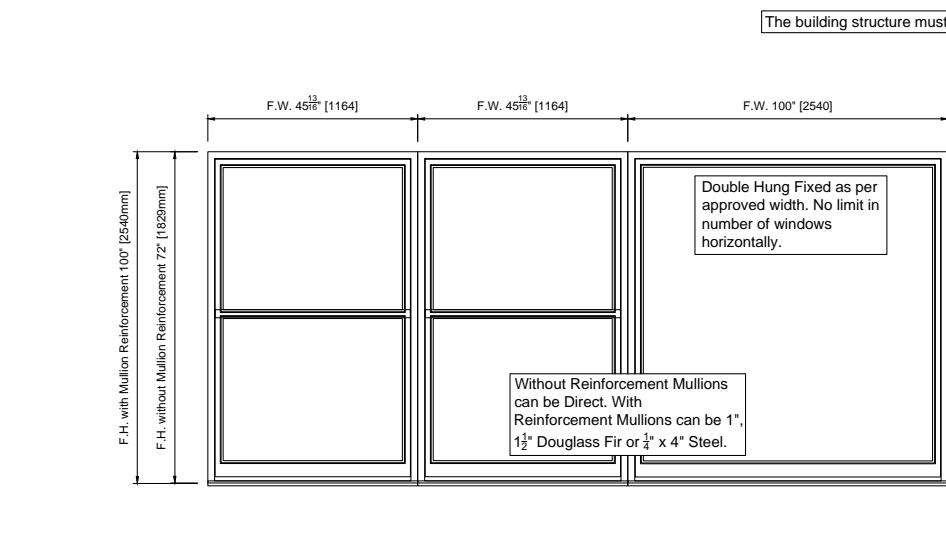
Glazing Detail



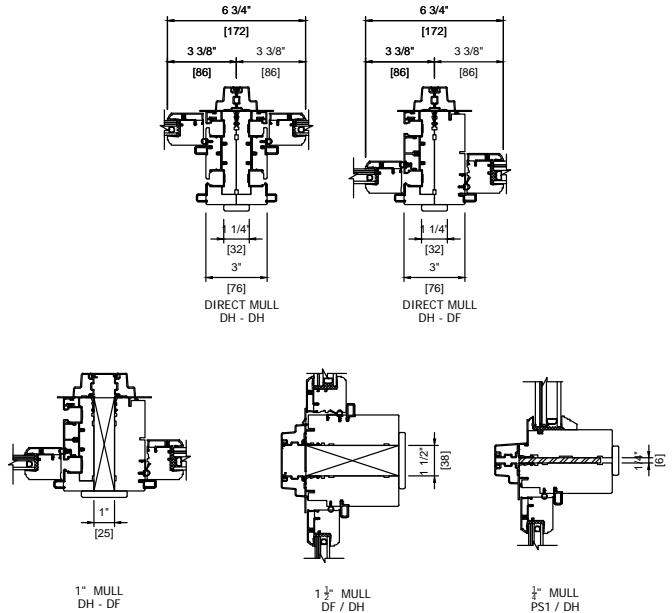
Note: • Other jamb widths available.
• All dimensions to have +/- 1/16" (2 mm) tolerance.

Double Hung Window Combinations Mullion Detail

Elevations



Section Detail (Mullion Examples)



Note: • Other jamb widths available.
• All dimensions to have +/- 1/16" (2 mm) tolerance.

Reference FL # 14692 for complete installation instructions and sizing restriction.
http://www.floridabuilding.org/upload/PR_Instl_Docs/FL14692_R0_II_Drawing%201740.pdf

StormForce Outswing Terrace Door Sizes

		Width							
		Rough Opening	18 7/16"	24 3/8"	31 1/4"	34 1/2"	37 1/8"	41 1/16"	44 5/8"
		Frame	469	619	793	876	943	1043	1134
Visible Glass		17 11/16"	450	23 5/8"	774	33 3/4"	857	40 5/16"	1115
16 5/16"	15 3/4"	182	* TDT1 0404	* TDT1 0604	* TDT1 0704	* TDT1 0804	* TDT1 0904	* TDT1 1004	* TDT1 1104
24 3/16"	23 5/8"	600	* TDT1 0406	* TDT1 0606	* TDT1 0706	* TDT1 0806	* TDT1 0906	* TDT1 1006	* TDT1 1106
80 1/8"	79 1/2"	1623	^ VTD1 0420	^ VTD1 0620	TD1 0720	TD1 0820	TD1 0920	TD1 1020	TD1 1120
81 7/8"	81 5/16"	1668	^ VTD1 0421	^ VTD1 0621	TD1 0721	TD1 0821	TD1 0921	TD1 1021	TD1 1121
86 9/16"	86"	2184	^ VTD1 0470	^ VTD1 0670	TD1 0770	TD1 0870	TD1 0970	TD1 1070	TD1 1170
95 1/16"	94 1/2"	2400	^ VTD1 0424	^ VTD1 0624	TD1 0724	TD1 0824	TD1 0924	TD1 1024	TD1 1124
99 5/8"	99 1/16"	2516	TD1 0725	TD1 0825	TD1 0925	TD1 1025	TD1 1125		
106 7/8"	106 5/16"	2700	TD1 0727	TD1 0827	TD1 0927				

Product Code

Glass Size = Visible Glass + 7/8" (22 mm)

Transom Units

Venting or Fixed

Standard sizes Shown. Additional sizes may be available. Custom sizes can be ordered.

Note: • SDL/Grille patterns are dependent on SDL/Grille type and window size. Please verify SDL/Grille patterns before confirming your order.
• Sizes are shown as Impact IG.

StormForce Outswing Cambertop Terrace Door Sizes

			Width				
Rough Opening			31 1/4" 793	34 1/2" 876	37 1/8" 943	41 1/16" 1043	44 5/8" 1134
Frame			30 1/2" 774	33 3/4" 857	36 3/8" 924	40 5/16" 1024	43 7/8" 1115
Visible Glass			19 15/16" 506	23 3/16" 589	25 13/16" 656	29 3/4" 756	33 3/8" 847
80 1/8" 2035	79 1/2" 2020	63 15/16" 1624	CTTD1 0720	CTTD1 0820	CTTD1 0920	CTTD1 1020	CTTD1 1120
81 7/8" 2080	81 5/16" 2065	65 11/16" 1668	CTTD1 0721	CTTD1 0821	CTTD1 0921	CTTD1 1021	CTTD1 1121
86 9/16" 2199	86" 2184	70 3/8" 1787	CTTD1 0770	CTTD1 0870	CTTD1 0970	CTTD1 1070	CTTD1 1170
95 1/16" 2415	94 1/2" 2400	78 7/8" 2003	CTTD1 0724	CTTD1 0824	CTTD1 0924	CTTD1 1024	CTTD1 1124
98" 2489	97 3/8" 2474	81 3/4" 2077	CTTD1 0780	CTTD1 0880	CTTD1 0980	CTTD1 1080	CTTD1 1180
99 5/8" 2531	99 1/16" 2516	83 7/16" 2119	CTTD1 0725	CTTD1 0825	CTTD1 0925	CTTD1 1025	CTTD1 1125
106 7/8" 2715	106 5/16" 2700	90 11/16" 2303	CTTD1 0727	CTTD1 0827	CTTD1 0927		

Product Code

Glass Size = Visible Glass + 7/8" (22 mm)

StormForce Outswing Quarter Round Terrace Door Sizes

			Width		
Rough Opening			31 1/4" 793	34 1/2" 876	37 1/8" 943
Frame			30 1/2" 774	33 3/4" 857	36 3/8" 924
Visible Glass			19 15/16" 506	23 3/16" 589	25 13/16" 656
80 1/8" 2035	79 1/2" 2020	63 3/8" 1610	CTTD1 0720	CTTD1 0820	
81 7/8" 2080	81 5/16" 2065	65 3/16" 1655	CTTD1 0721	CTTD1 0821	CTTD1 0921
86 9/16" 2199	86" 2184	69 7/8" 1774	CTTD1 0770	CTTD1 0870	CTTD1 0970
95 1/16" 2415	94 1/2" 2400	78 3/8" 1990	CTTD1 0724	CTTD1 0824	CTTD1 0924
99 5/8" 2531	99 1/16" 2516	82 15/16" 2106	CTTD1 0725	CTTD1 0825	CTTD1 0925
106 7/8" 2715	106 5/16" 2700	90 3/16" 2290	CTTD1 0727	CTTD1 0827	CTTD1 0927

Product Code

Glass Size = Visible Glass + 7/8" (22 mm)

Standard sizes Shown. Additional sizes may be available. Custom sizes can be ordered.

Note: • SDL/Grille patterns are dependent on SDL/Grille type and window size. Please verify SDL/Grille patterns before confirming your order.
• Sizes are shown as Impact IG.

Standard sizes Shown. Additional sizes may be available. Custom sizes can be ordered.

Note: • SDL/Grille patterns are dependent on SDL/Grille type and window size. Please verify SDL/Grille patterns before confirming your order.
• Sizes are shown as Impact IG.

StormForce Inswing Terrace Door Sizes

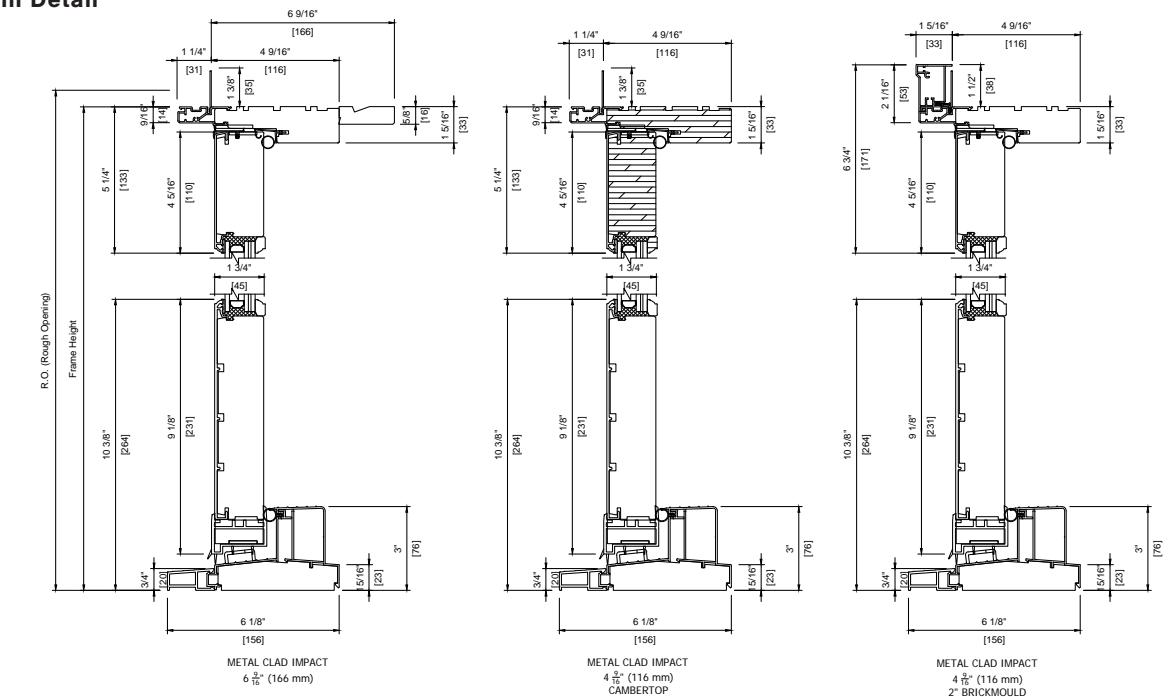
		Width		
		31 1/4" 793	34 1/2" 876	37 1/8" 943
Frame		30 1/2" 774	33 3/4" 857	36 3/8" 924
Visible Glass		19 15/16" 506	23 3/16" 589	25 13/16" 656
80 1/8" 2035	79 1/2" 2020	TD1 0720	TD1 0820	TD1 0920
81 7/8" 2080	81 5/16" 2065	TD1 0721	TD1 0821	TD1 0921
86 9/16" 2199	86" 2184	TD1 0770	TD1 0870	TD1 0970
95 1/16" 2415	94 1/2" 2400	TD1 0724	TD1 0824	TD1 0924

Product Code

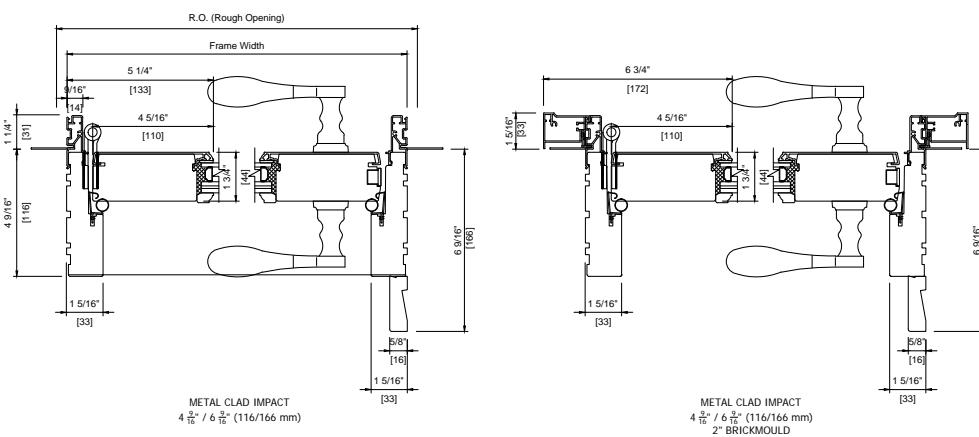
Glass Size = Visible Glass + 7/8" (22 mm)

StormForce Outswing Terrace Door Detail

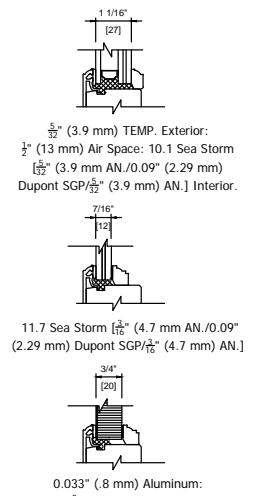
Head & Sill Detail



Plan View



Glazing Detail



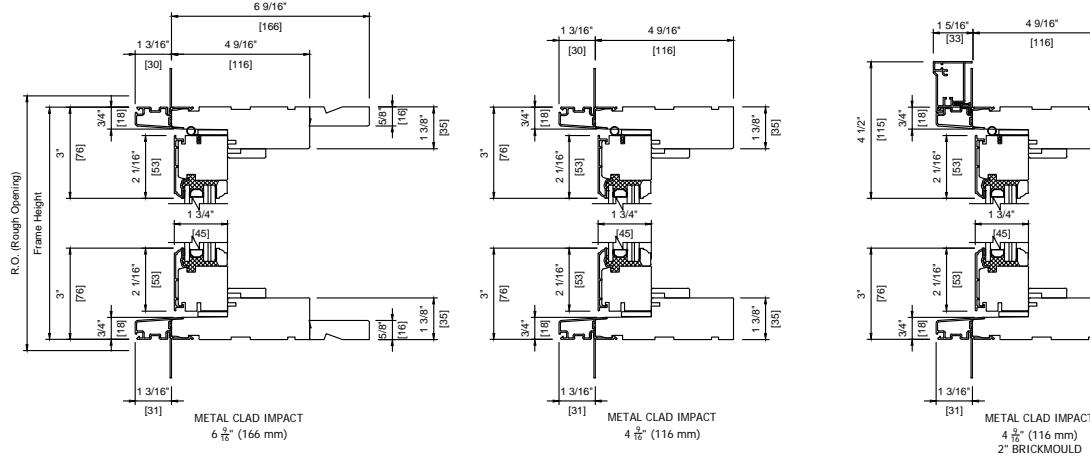
Standard sizes shown. Additional sizes may be available. Custom sizes can be ordered.

Note: • SDL/Grille patterns are dependent on SDL/Grille type and window size. Please verify SDL/Grille patterns before confirming your order.
• Sizes are shown as Impact IG.

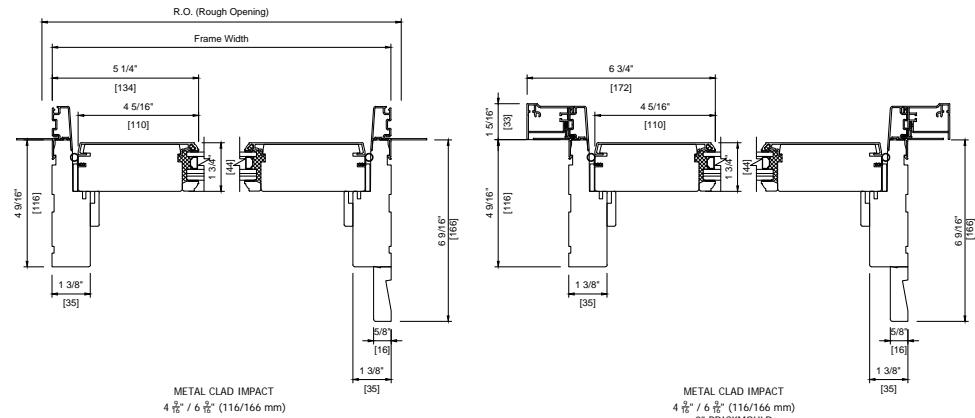
Note: • Other jamb widths available.
• All dimensions to have +/- 1/16" (2 mm) tolerance.

StormForce Terrace Door Transom Detail

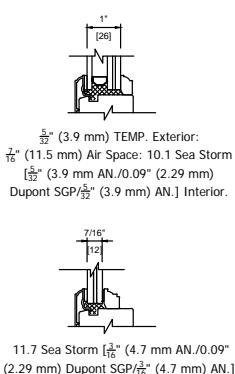
Head & Sill Detail



Plan View



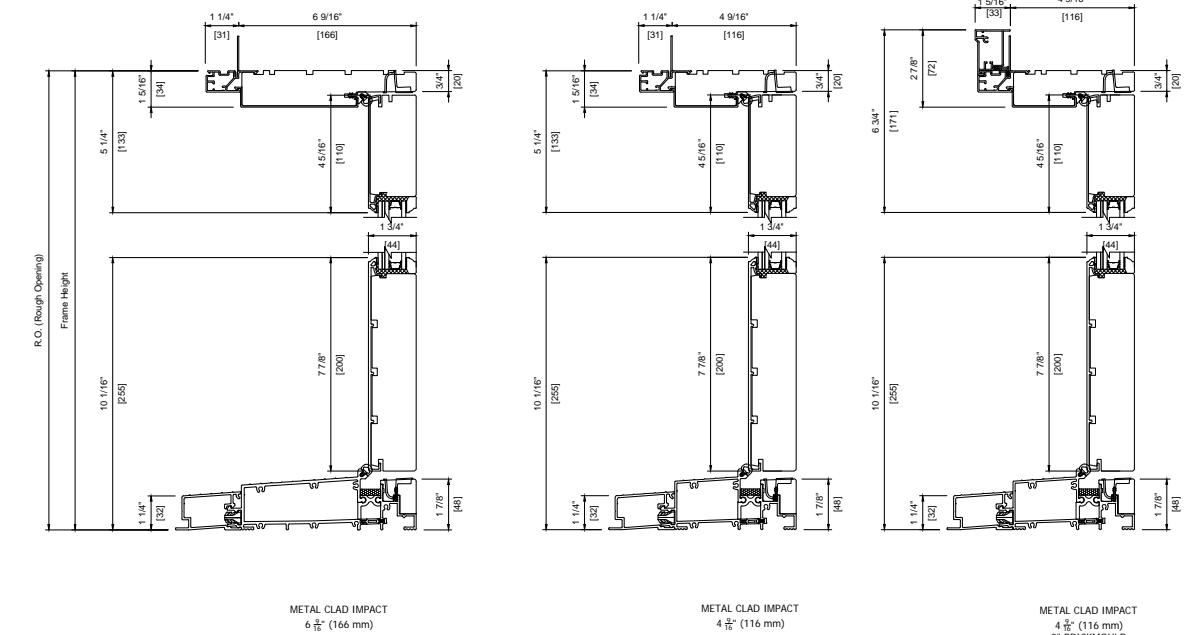
Glazing Detail



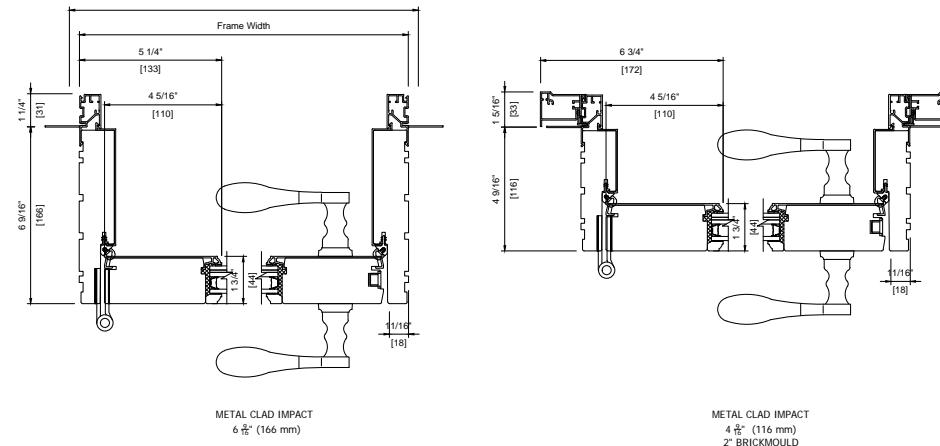
Note: • Other jamb widths available.
• All dimensions to have +/- 1/16" (2 mm) tolerance.

StormForce Outswing Terrace Door Detail

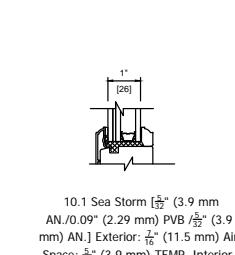
Head & Sill Detail



Plan View



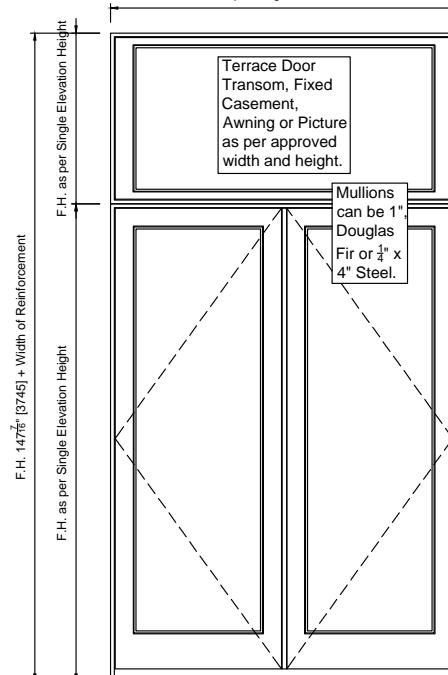
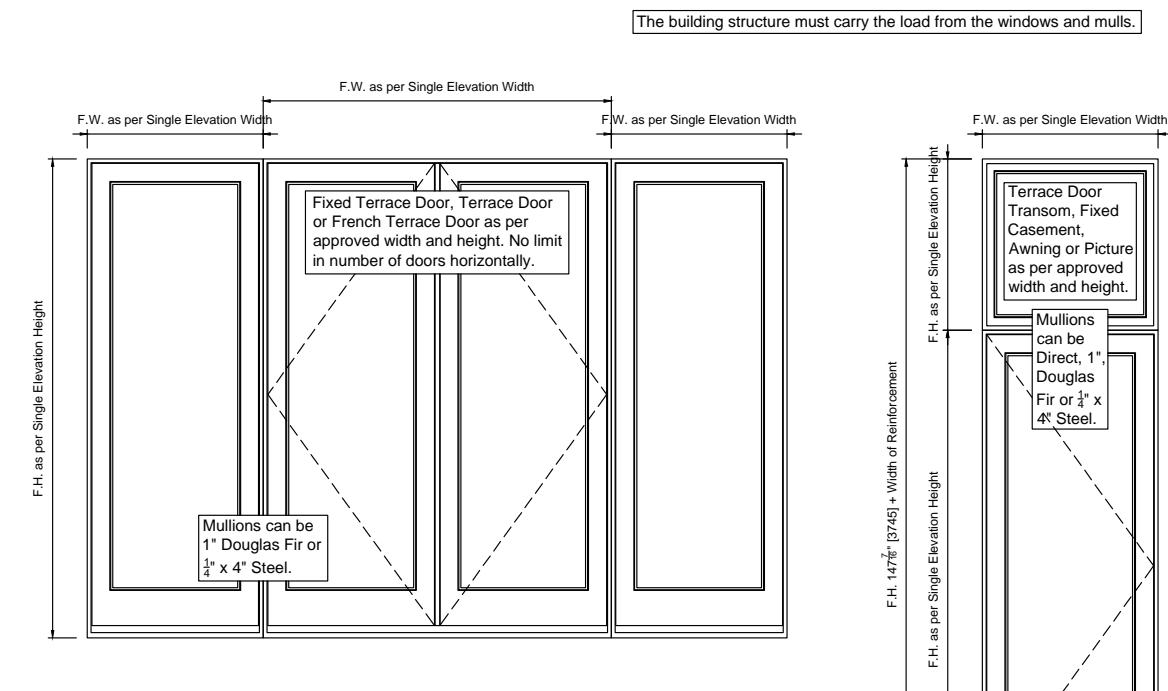
Glazing Detail



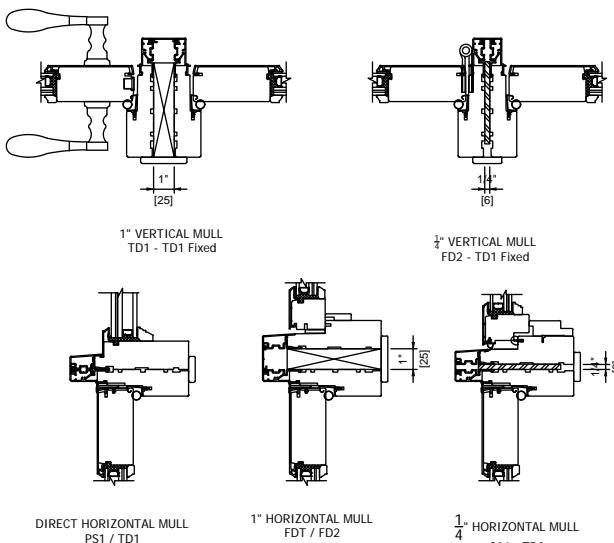
Note: • Other jamb widths available.
• All dimensions to have +/- 1/16" (2 mm) tolerance.

StormForce Outswing Terrace/French Terrace Door Combinations Mullion Detail

Elevations



Section Detail (Mullion Examples)



Note: • Other jamb widths available.
• All dimensions to have +/- 1/16" (2 mm) tolerance.

Reference FL # 14369 for complete installation instructions and sizing restriction.
http://www.floridabuilding.org/upload/PR_Instl_Docs/FL14369_R1_II_Drawing%20201640A.pdf

StormForce Outswing French Terrace Door Sizes

Rough Opening

Frame	47 1/4" 1200	60 15/16" 1548	67 1/2" 1714	72 3/4" 1848	80 5/8" 2048	87 13/16" 2230
Visible Glass	46 1/2" 1181	60 3/16" 1529	66 3/4" 1695	72" 1829	79 7/8" 2029	87 1/16" 2211
16 5/16" 415	15 3/4" 400	9 11/16" 246	*FDT2 1204	*FDT2 1504	* FDT2 1604	*FDT2 1804
24 3/16" 615	23 5/8" 600	17 9/16" 446	* FDT2 1206	*FDT2 1506	*FDT2 1606	* FDT2 1806
80 1/8" 2035	79 1/2" 2020	63 7/8" 1623	FD2 1220	FD2 1520	FD2 1620	FD2 1820
81 7/8" 2080	81 5/16" 2065	65 11/16" 1668	FD2 1221	FD2 1521	FD2 1621	FD2 1821
86 9/16" 2199	86" 2184	70 3/8" 1787	FD2 1270	FD2 1570	FD2 1670	FD2 1870
95 1/16" 2415	94 1/2" 2400	78 7/8" 2003	FD2 1224	FD2 1524	FD2 1624	FD2 1824
99 5/8" 2531	99 1/16" 2516	83 7/16" 2119	FD2 1225	FD2 1525	FD2 1625	FD2 1825
106 7/8" 2715	106 5/16" 2700	90 11/16" 2303	FD2 1227	FD2 1527	FD2 1627	FD2 1827

Product Code
Glass Size = Visible Glass + 7/8" (22 mm)
Transom Units

Standard sizes Shown. Additional sizes may be available. Custom sizes can be ordered.

Note: • SDL/Grille patterns are dependent on SDL/Grille type and window size. Please verify SDL/Grille patterns before confirming your order.
• Sizes are shown as Impact IG.

StormForce Outswing Cambertop French Terrace Door Sizes

Height

		Width						
Rough Opening		47 1/4" 1200	60 15/16" 1548	67 1/2" 1714	72 3/4" 1848	80 5/8" 2048	87 13/16" 2230	
Frame		46 1/2" 1181	60 3/16" 1529	66 3/4" 1695	72" 1829	79 7/8" 2029	87 1/16" 2211	
	Visible Glass	13 1/16" 332	19 15/16" 506	23 3/16" 589	25 13/16" 656	29 3/4" 756	33 3/8" 847	
80 1/8" 2035	79 1/2" 2020	63 3/4" 1619	FD2 1220	FD2 1520	FD2 1620	FD2 1820	FD2 2020	FD2 2220
81 7/8" 2080	81 5/16" 2065	65 1/2" 1664	FD2 1221	FD2 1521	FD2 1621	FD2 1821	FD2 2021	FD2 2221
86 9/16" 2199	86" 2184	70 3/16" 1783	FD2 1270	FD2 1570	FD2 1670	FD2 1870	FD2 2070	FD2 2270
95 1/16" 2415	94 1/2" 2400	78 3/4" 1999	FD2 1224	FD2 1524	FD2 1624	FD2 1824	FD2 2024	FD2 2224
99 5/8" 2531	99 1/16" 2516	83 5/16" 2115	FD2 1225	FD2 1525	FD2 1625	FD2 1825	FD2 2025	FD2 2225
106 7/8" 2715	106 5/16" 2700	90 1/2" 2299	FD2 1227	FD2 1527	FD2 1627	FD2 1827		

Product Code

Glass Size = Visible Glass + 7/8" (22 mm)

Standard sizes Shown. Additional sizes may be available. Custom sizes can be ordered.

Note: • SDL/Grille patterns are dependent on SDL/Grille type and window size. Please verify SDL/Grille patterns before confirming your order.
• Sizes are shown as Impact IG.

S54 | StormForce Technical Guide

StormForce Inswing French Terrace Door Sizes

Height

		Width			
Rough Opening		47 1/4" 1200	60 15/16" 1548	67 1/2" 1714	72 3/4" 1848
Frame		46 1/2" 1181	60 3/16" 1529	66 3/4" 1695	72" 1829
	Visible Glass	13 1/16" 332	19 15/16" 506	23 3/16" 589	25 13/16" 656
80 1/8" 2035	79 1/2" 2020	63 7/8" 1623	FD2 1220	FD2 1520	FD2 1620
81 7/8" 2080	81 5/16" 2065	65 11/16" 1668	FD2 1221	FD2 1521	FD2 1621
86 9/16" 2199	86" 2184	70 3/8" 1787	FD2 1270	FD2 1570	FD2 1670
95 1/16" 2415	94 1/2" 2400	78 7/8" 2003	FD2 1224	FD2 1524	FD2 1624

Product Code

Glass Size = Visible Glass + 7/8" (22 mm)

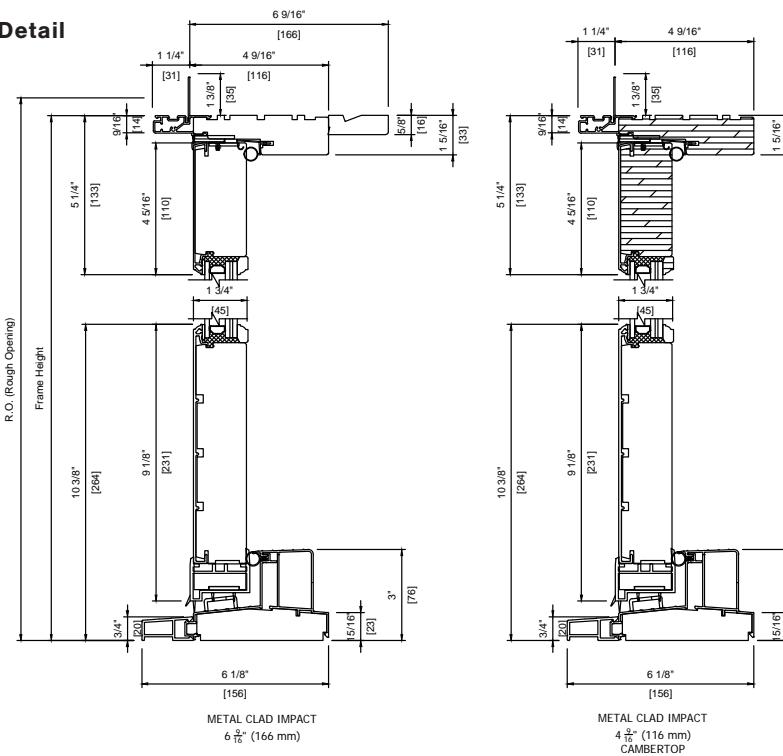
Standard sizes Shown. Additional sizes may be available. Custom sizes can be ordered.

Note: • SDL/Grille patterns are dependent on SDL/Grille type and window size. Please verify SDL/Grille patterns before confirming your order.
• Sizes are shown as Impact IG.

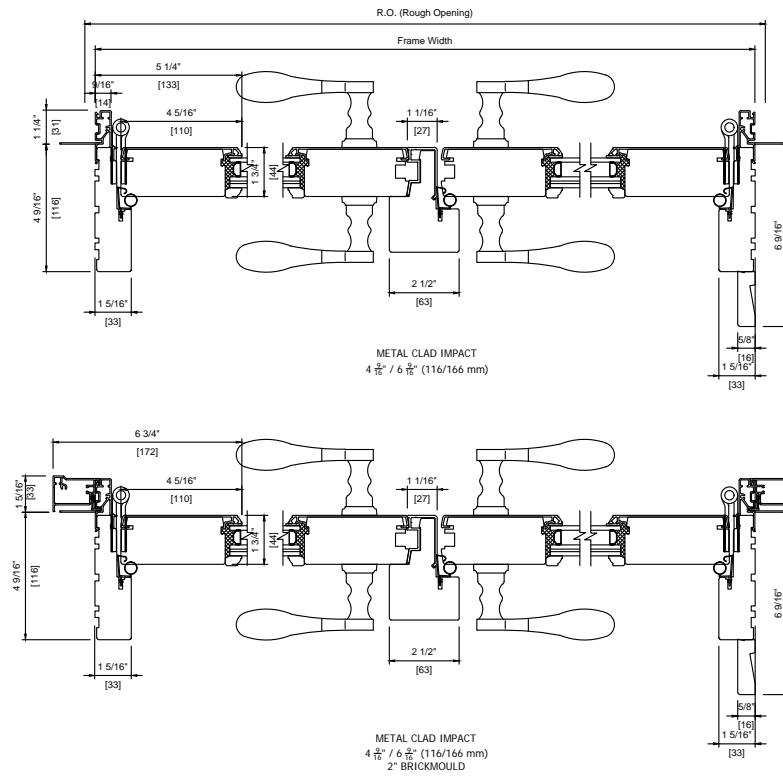
StormForce Technical Guide | S55

StormForce Outswing French Terrace Door Detail

Head & Sill Detail



Plan View

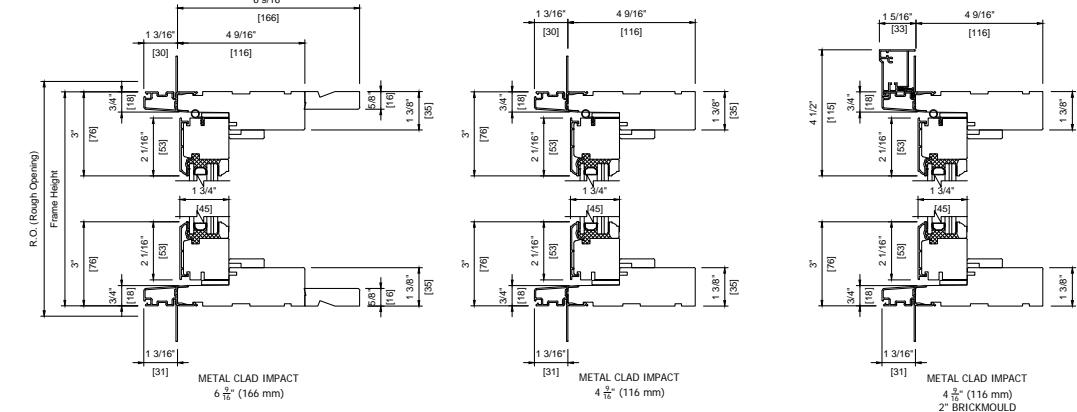


Note:

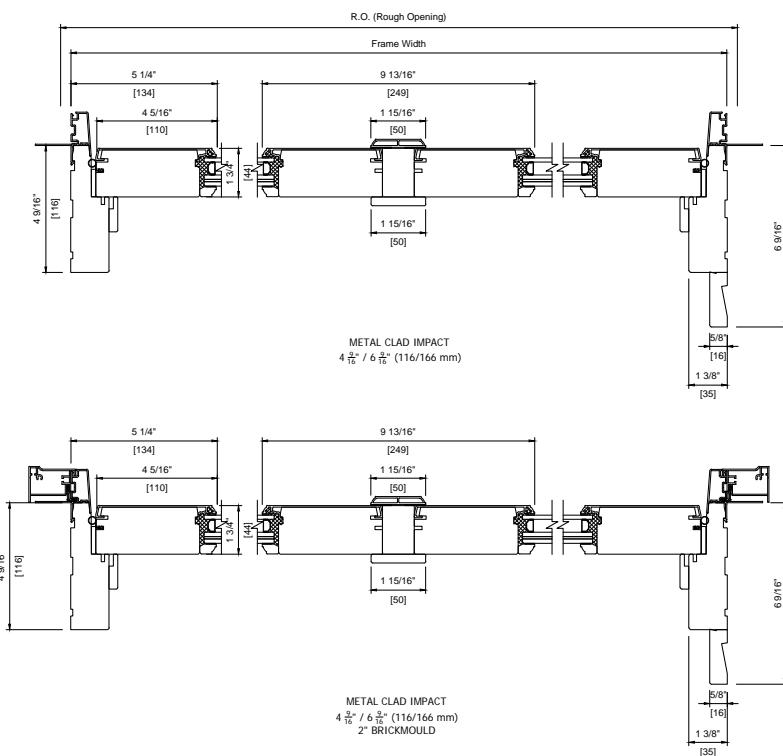
- Other jamb widths available.
- All dimensions to have +/- 1/16" (2 mm) tolerance.

StormForce French Terrace Door Transom Detail

Head & Sill Detail



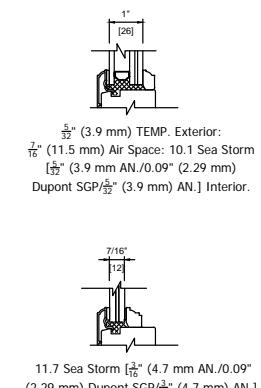
Plan View



Note:

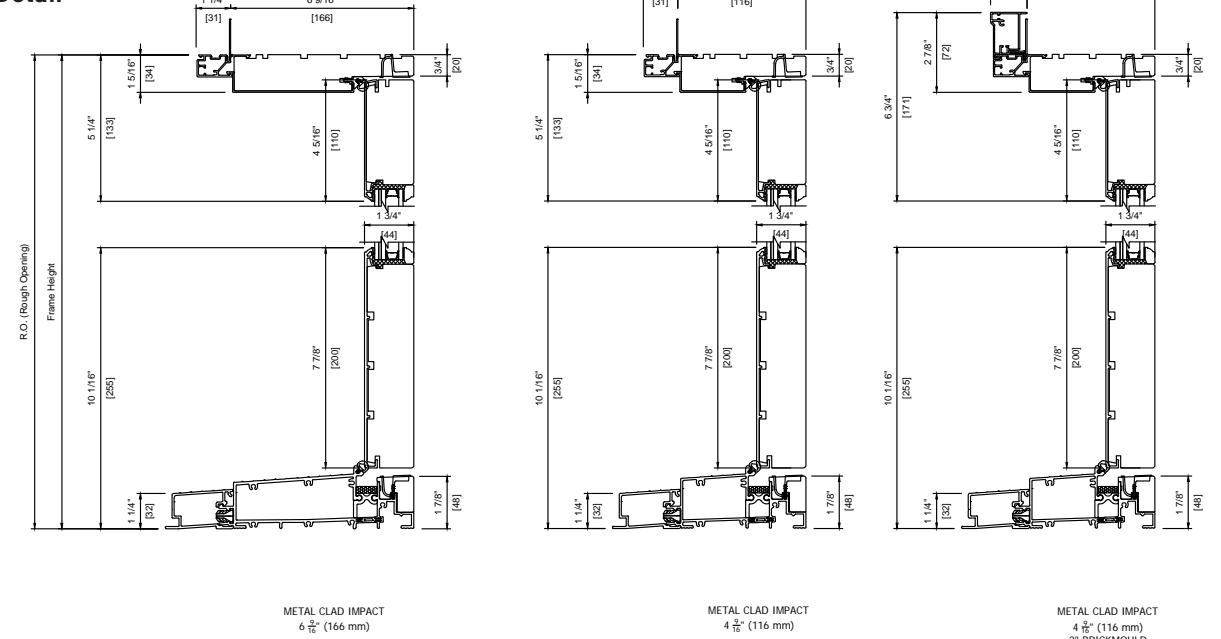
- Other jamb widths available.
- All dimensions to have +/- 1/16" (2 mm) tolerance.

Glazing Detail

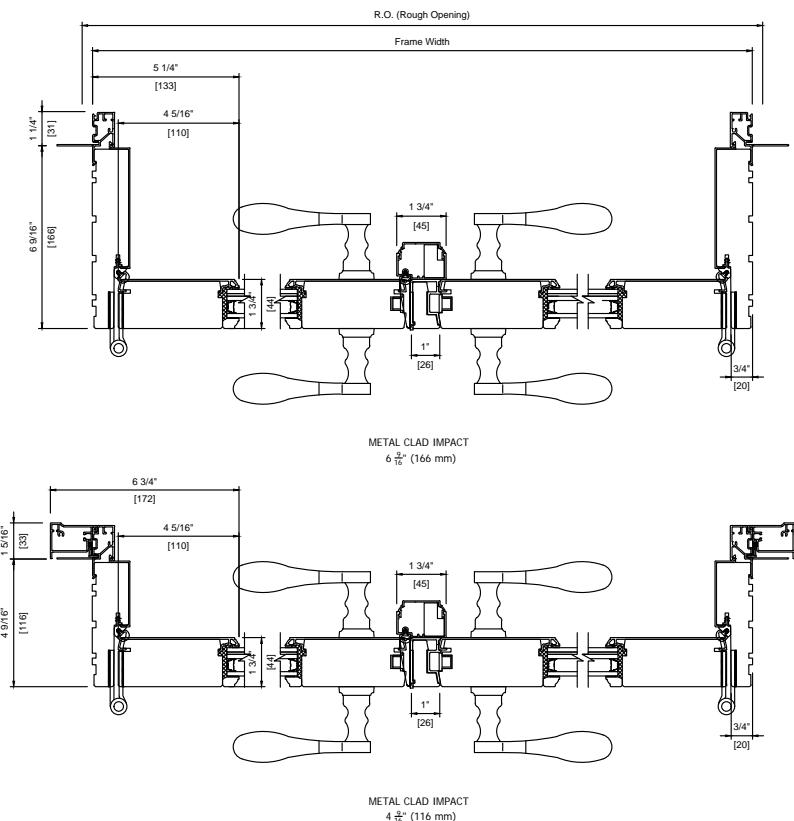


StormForce Inswing Terrace Door Detail

Head & Sill Detail



Plan View



Note: • Other jamb widths available.
• All dimensions to have +/- 1/16" (2 mm) tolerance.

StormForce Outswing 10' Terrace/French Terrace Door Sizes

Rough Opening

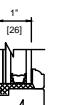
	31 1/4" 793	34 1/2" 876	38 5/8" 981	47 1/4" 1200	60 15/16" 1548	67 1/2" 1714	75 3/4" 1924
Frame	30 1/2" 774	33 3/4" 857	37 7/8" 962	46 1/2" 1181	60 3/16" 1529	66 3/4" 1695	75" 1905
Visible Glass	19 15/16" 506	23 3/16" 589	24 1/4" 616	13 1/16" 332	19 15/16" 506	23 3/16" 589	24 1/4" 616
80 1/8" 2035	79 1/2" 2020	TD1 0732	TD1 0832	TD1 0932			
81 7/8" 2080	81 5/16" 2065	65 11/16" 1668			FD2 1232	FD2 1532	FD2 1632
							FD2 1832

Glass Size = Visible Glass + 7/8" (22 mm)

— Height —

Product Code

Glazing Detail



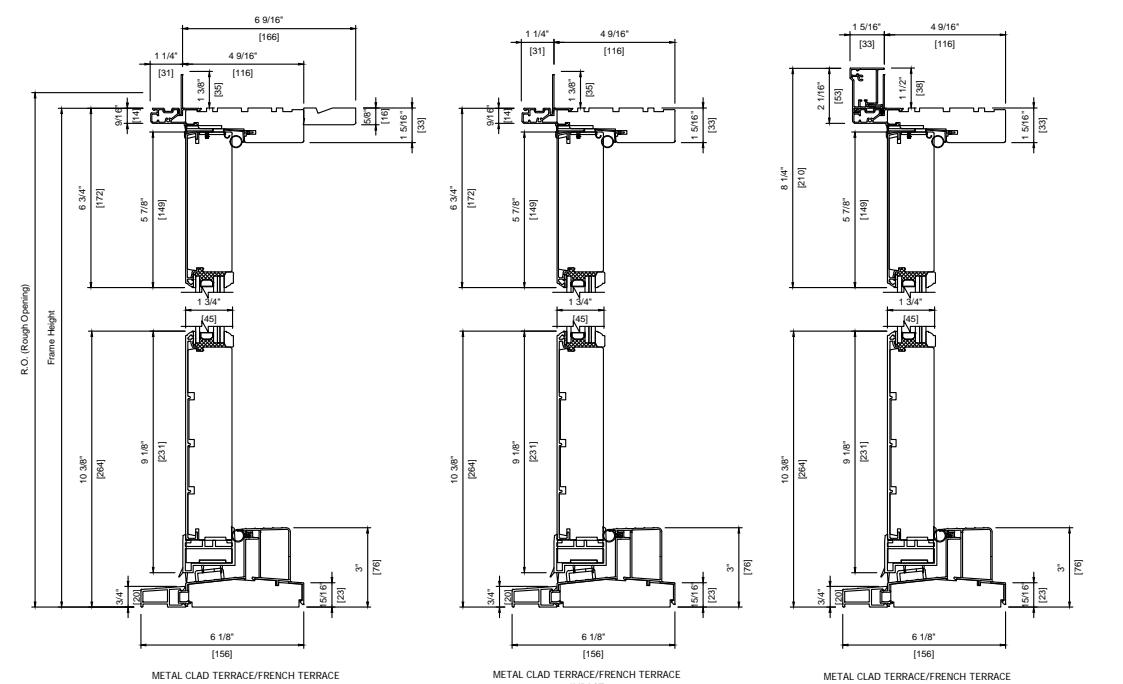
10.1 Sea Storm $\frac{1}{16}$ " (3.9 mm)
AN./0.09" (2.29 mm) PVB $\frac{1}{32}$ " (3.9 mm)
AN.] Exterior: $\frac{1}{16}$ " (11.5 mm) Air
Space: $\frac{5}{32}$ " (3.9 mm) TEMP. Interior.

Standard sizes Shown. Additional sizes may be available. Custom sizes can be ordered.

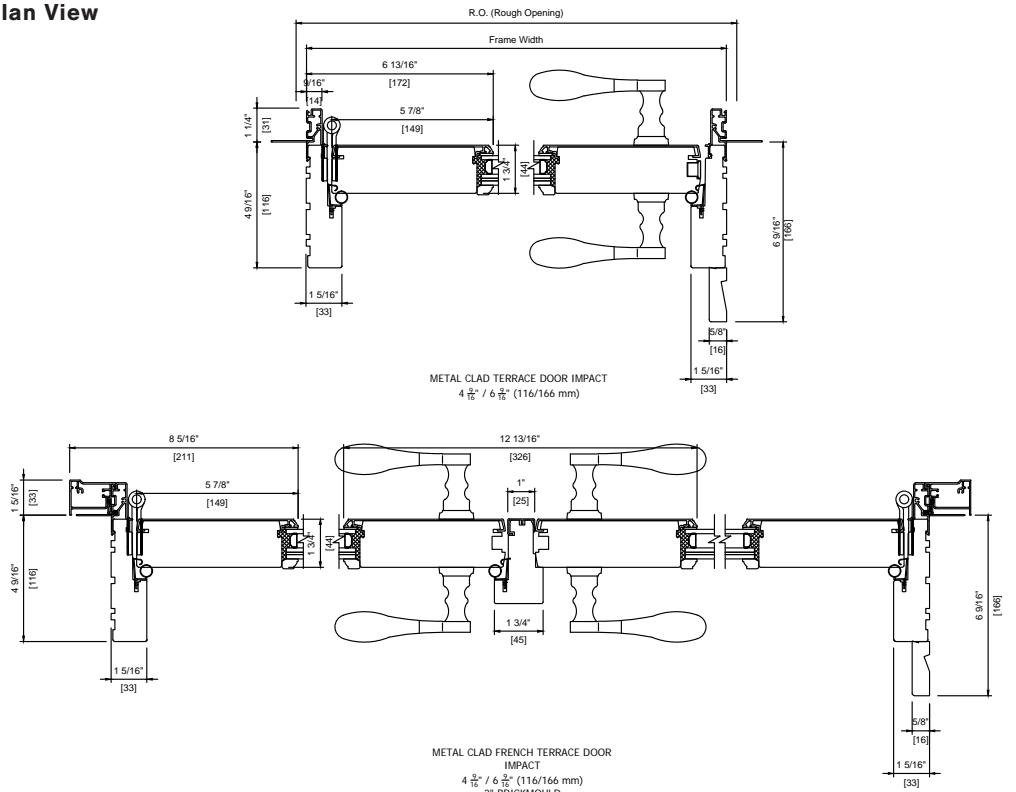
Note: • Other jamb widths available.
• All dimensions to have +/- 1/16" (2 mm) tolerance.

StormForce Outswing 10' Terrace/French Terrace Door Detail

Head & Sill Detail



Plan View



Note: • Other jamb widths available.
• All dimensions to have +/- 1/16" (2 mm) tolerance.

StormForce Patio Door 2-Wide Door Sizes

Width

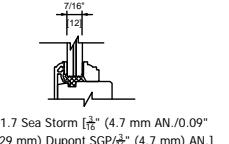
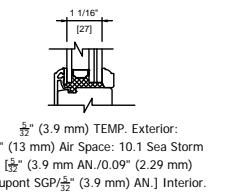
Rough Opening		59 13/16"	71 5/8"	95 1/4"
		1519	1819	2419
Frame	Visible Glass			
80 1/8"	79 1/2"	WP2	WP2	WP2
2035	2020	1520	1820	2420
81 7/8"	81 5/16"	WP2	WP2	WP2
2080	2065	1568	1868	2468
83 1/4"	82 11/16"	WP2	WP2	WP2
2115	2100	1521	1821	2421
86 9/16"	86"	WP2	WP2	WP2
2199	2184	1570	1870	2470
95 1/16"	94 1/2"	WP2	WP2	WP2
2415	2400	1524	1824	2424

Product Code

Glass Size = Visible Glass + 7/8" (22 mm)

Height

Glazing Detail

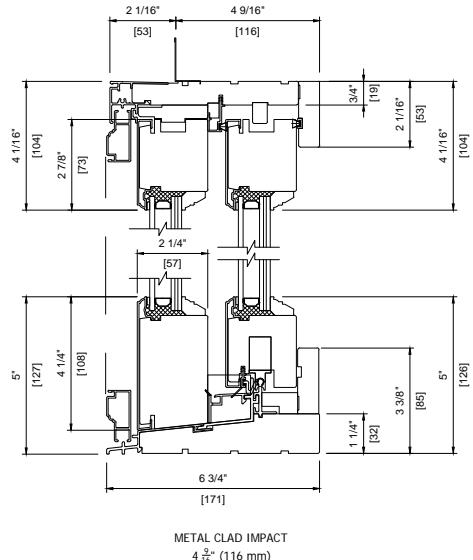
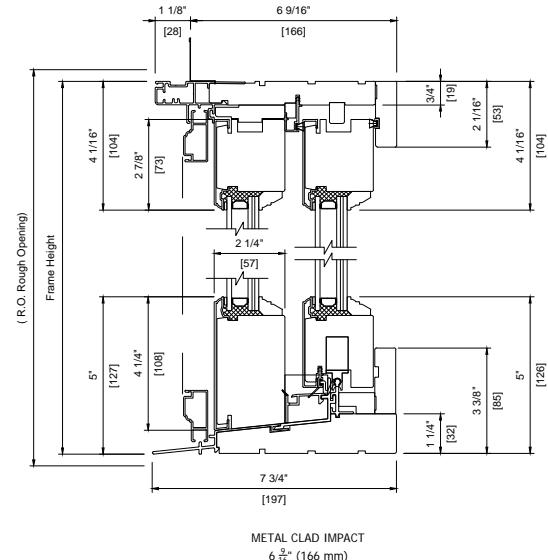


Standard sizes Shown. Additional sizes may be available. Custom sizes can be ordered.

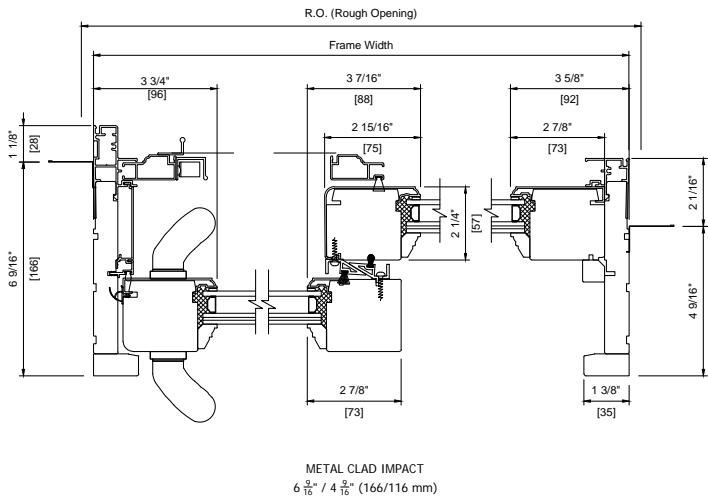
Note: • SDL/Grille patterns are dependent on SDL/Grille type and window size. Please verify SDL/Grille patterns before confirming your order.

StormForce Patio Door Detail

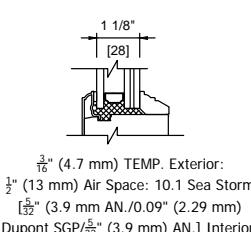
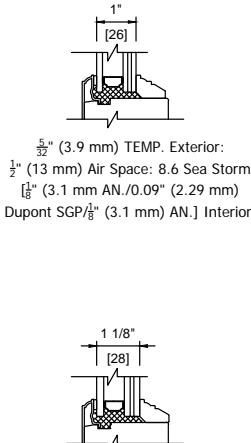
Head & Sill Detail



Plan View



Glazing Detail



Note: • SDL/Grille patterns are dependent on SDL/Grille type and window size. Please verify SDL/Grille patterns before confirming your order.
• O = Fixed, X = Operating

StormForce French Patio Door 2-Wide Door Sizes

Width

Rough Opening	59 13/16" 1519	71 5/8" 1819	95 1/4" 2419
Frame	59 1/16" 1500	70 7/8" 1800	94 1/2" 2400
Visible Glass	21 13/16" 538	27 1/16" 688	38 7/8" 988
80 1/8" 2035	79 1/2" 2020	64" 1626	FP2 1520
81 7/8" 2080	81 5/16" 2065	65 13/16" 1671	FP2 1568
83 1/4" 2115	82 11/16" 2100	67 3/16" 1706	FP2 1521
86 9/16" 2199	86" 2184	70 1/2" 1790	FP2 1570
95 1/16" 2415	94 1/2" 2400	79" 2006	FP2 1524
106 7/8" 2715	106 5/16" 2700	90 13/16" 2306	FP2 1527

Product Code

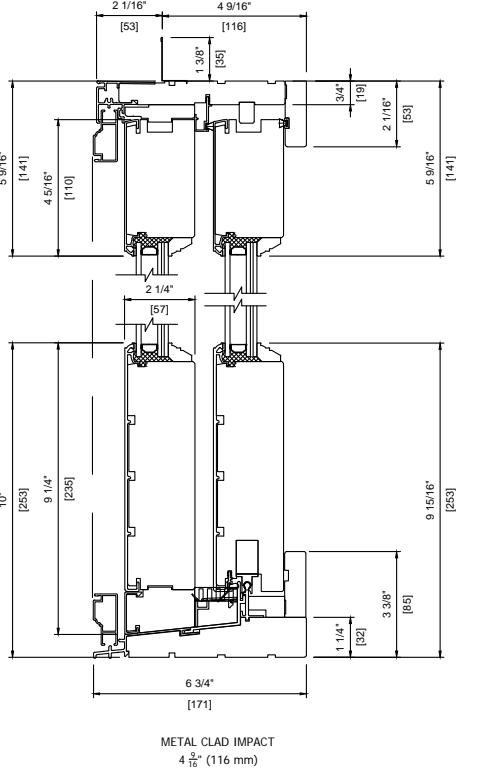
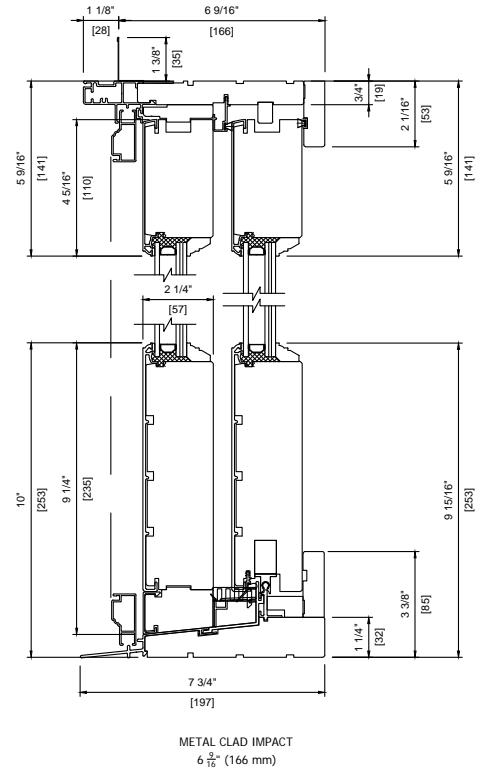
Glass Size = Visible Glass + 7/8" (22 mm)

Standard sizes Shown. Additional sizes may be available. Custom sizes can be ordered.

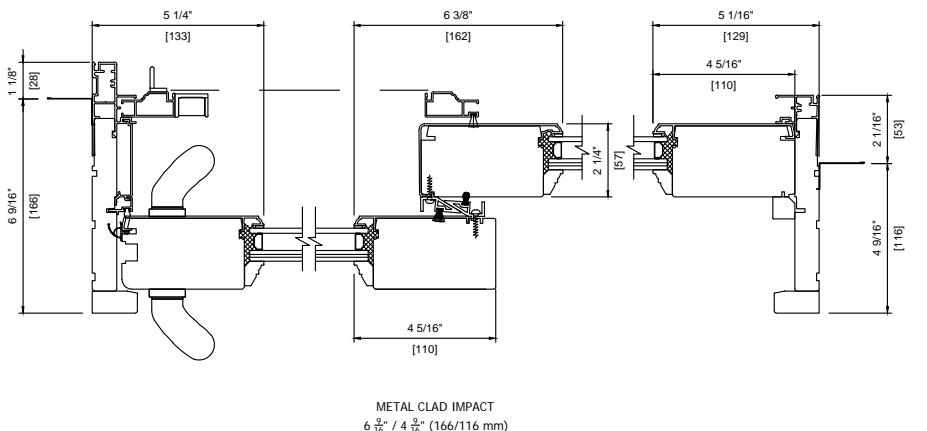
Note: • Other jamb widths available.
• All dimensions to have +/- 1/16" (2 mm) tolerance.

StormForce French Patio Door 2 Wide Detail

Head & Sill Detail

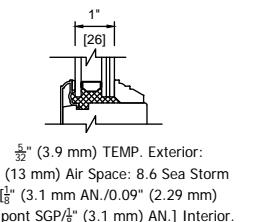


Plan View



Note: • Other jamb widths available.
• All dimensions to have +/- 1/16" (2 mm) tolerance.

Glazing Detail



• $\frac{5}{32}$ " (3.9 mm) TEMP. Exterior:
• $\frac{1}{8}$ " (13 mm) Air Space: 8.6 Sea Storm
• $\frac{1}{8}$ " (3.1 mm AN./.09" (2.29 mm)
Dupont SGP/ $\frac{1}{8}$ " (3.1 mm) AN.] Interior.

StormForce LiftSlide Stacking Door Sizes

Rough Opening		Width					Maximum Width				
System	Panel	73"	106"	139"	172"	205"	121"	178	235	292	349
		1859	2692	3531	4369	5207	3074	1/16"	5970	7419	8867
Jamb	88	87	84"	Height					Product Code		
	7/16"	7/16"	2134	OX XO	OXX XXO	XXXX XXXO	XXXXX XXXXO	XXXXXXX XXXXXO	OX XO	OXX XXO	XXXX XXXO
	52246	2221	99	OX XO	OXX XXO	XXXX XXXO	XXXXX XXXXO	XXXXXXX XXXXXO	OX XO	OXX XXO	XXXX XXXO
	100	7/16"	2438	100	7/16"	2551	2856	3161	144"	143"	3658
	7/16"	2526	111	7/16"	2831	108"	123	120"	139	143"	3545

Glass Size = Visible Glass + 1 3/8" (35 mm)

See Chart for Allowable DP

DP 70 Allowable

(See Cross Section for Still Riser Restrictions)

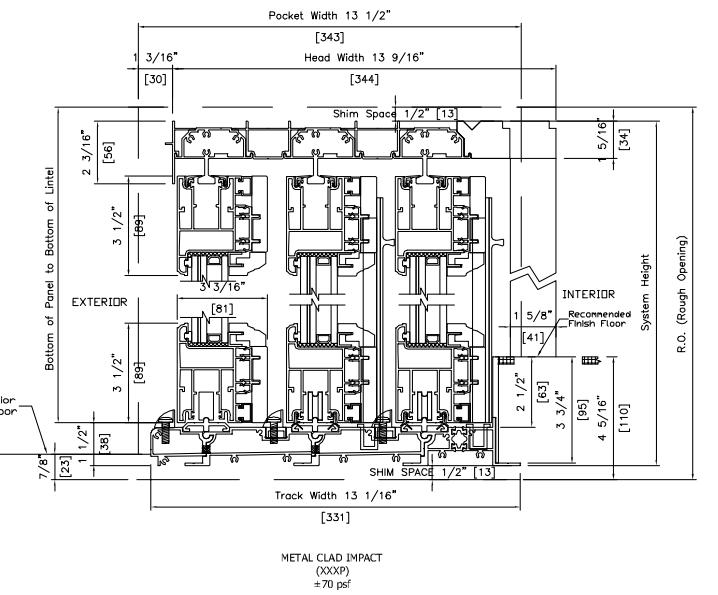
Custom Sizes Available.

- Note:
- Sizes shown are typical details.
 - Additional sizes and configurations available.
 - Screen options may be available depending on size and configuration.
 - Raised threshold available with a maximum of 6 panels per sill (12 in a bi-parting configuration; 2 per track).
 - Consult your Authorized Dealer for details.
 - All dimensions to have +/- 1/16" (2 mm) tolerance.
 - O = Fixed, X = Operating, P = Pocketing

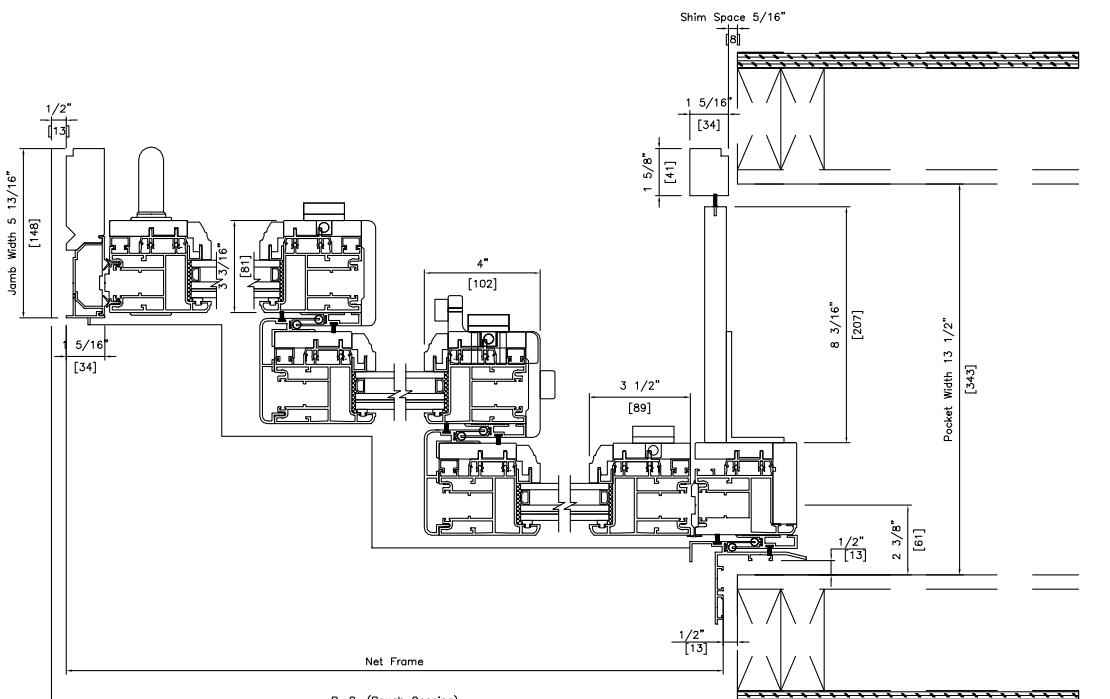
- The preparation of the rough opening for large openings such as those required by, but not limited to, LiftSlide doors have unique requirements. Structural headers that allow for deflection no greater than 1/8" along the unsupported length once the header is fully loaded are required. Special care needs to be taken when installing any unit including transoms above such large opening units. Loewen is not responsible for site measurements or the determination of structural and architectural requirements for the installation of large opening products such as but not limited to, Liftslide doors. Site specifications are the responsibility of building professionals or engineers to determine.

StormForce LiftSlide Door Pocket Detail

Head & Sill Detail



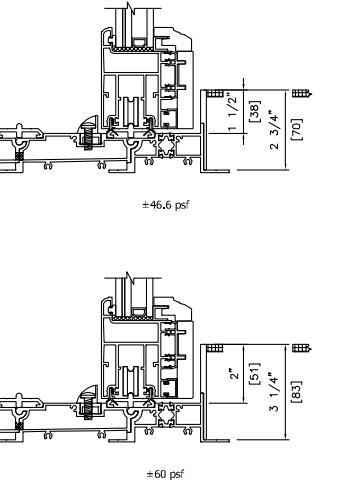
Plan View



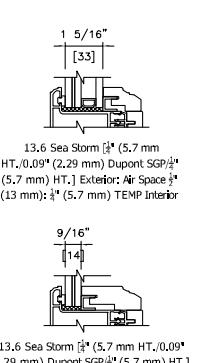
Note: • Other jamb widths available.
• All dimensions to have +/- 1/16" (2 mm) tolerance.

Notes

Optional Risers



Glazing Detail





Information subject to change without notice.

Distributed by Loewen Inc. in the USA and C.P. Loewen Enterprises Ltd. in Canada and internationally. Trade Marks owned by C.P. Loewen Enterprises Ltd. Used under license. © C.P. Loewen Enterprises Ltd. All rights reserved. P2995A_0818



Loewen

loewen.com