



VISIT US ONLINE FOR OUR
COMPLETE SERIES OF WINDOWS & DOORS
OptimumWindow.com

Vol 0319

AMERICA'S MOST DIVERSIFIED STEEL WINDOW & DOOR MANUFACTURER

A low-angle, upward-looking photograph of several modern skyscrapers with glass and steel facades, creating a sense of height and architectural scale. The buildings are arranged in a way that they appear to converge towards the top of the frame.

OPTIMUM WINDOW

FIRE-RATED STEEL

THE ONLY COMPANY WITH A COMPLETE LINE OF OPERABLE FIRE-RATED WINDOWS



FIRE-RATED

Window & Door Systems

Units available
with fire-ratings ranging from
45 to 90 Minutes

UL Approved

Features:

- Cold or Hot-Rolled Steel
- Warranty on Finish
up to 10 years
- Glazing from 3/16" up to 1" in
overall thickness
- Insulated glass available



FOUNDER: CANDIDO PEREZ

ABOUT OPTIMUM WINDOW

Established in 1985, Optimum Window Manufacturing has made its mark in the Steel Window industry as the largest and most diversified manufacturer of Fire-Rated Windows & Doors in the United States.

Competitive drive being the motivation for all entrepreneurs, Optimum has continued its growth with a series of custom, high-tech metal window and door systems designed for commercial, high-end residential and landmark applications.

With our versatility and knowledge in engineering, manufacturing and customer service, Optimum has its focus on producing top of the line products in steel, bronze and stainless steel.

Optimum continues to work with architects that require custom designs for their applications. We bring high performance and structural excellence together with beauty and style, making every idea a reality.



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OptimumWindow.com



SELF-CLOSING OPERABLE WINDOWS & RATINGS RANGE



Optimum has revolutionized the construction industry by offering the most comprehensive line of steel fire-rated windows.

Today, we are the largest and most efficient manufacturer in our field.

Utilized in openings where it is necessary to restrict the spread of fire between buildings, fire-rated windows and glass can be the most pertinent and reliable form of fire-protection for any structure where this is necessary; whether it be a home, school or place of business.

With fire-ratings ranging from 45 to 90 minutes, Optimum's Fire-Rated windows are put through rigorous testing. Initially a "heat test" is performed, where the window is exposed to temperatures up to 1600 degrees Fahrenheit. Fire-Rated Windows also endure the "Hose Stream Test", in which the glass holds fast even during this extreme change in temperature. When other windows made from materials such as aluminum, vinyl and wood are placed under these extreme conditions; they will poorly react in a Thermal Shock. Optimum Fire-Rated windows will hold their integrity. Optimum's multiple window and door series are used in non-temperature rise applications and through various glazing options can be modified to address applications such as:

- **Thermal Performance (Most units meet and/or exceed NYC energy codes, ask an Optimum representative for more information)**
- **Impact Resistance (Category 2)**
- **Sound Transmission**
- **Ballistics**



SELF-CLOSING OPERABLE WINDOWS & RATINGS RANGE

Optimum's window and door series can be installed in both interior and exterior applications and are fully tested and listed by UL (Underwriters Laboratories). Our fire-rated windows and doors are MEA/BSA approved for use in the City of New York and meet all pertinent fire-rated window codes as outlined by the International Building Council.

Optimum's windows and doors are produced from 100% recycled steel. Our units are available in a variety of standard colors as well as the option for custom colors. All Fire-Rated Series are shipped completely assembled, painted and glazed; eliminating additional labor on site.

The systems are designed to assist in the containment of fire for a set period of time, dictated by the glass type and rating chosen. Aside from the spread of fire, there are other reasons to install fire-rated window assemblies such as visibility, ventilation and retrofitting. Our fire-rated frames allow architects and designers to rethink ways to address areas within a building that would normally be restricted from natural daylight and ventilation due to fire-rating applications, combining safety and style. Modern designs are featuring more open floor plans than ever before. Our various fire-rated window & door products offer designers the option of embracing that aesthetic while still maintaining the fire-ratings.

THE DIFFERENCES BETWEEN COLD-ROLLED STEEL & HOT-ROLLED STEEL

Hot-rolled steel windows and doors are made from solid steel sections which are produced from new billet steel into shapes specifically designed for window, door frames and ventilators. Cold-rolled steel windows and doors are made from hollow steel sections, which have been mechanically formed from flat coil stock into specially designed profiles.



FIRE-RATED

WINDOWS & DOORS

POWDER COATING CHARACTERISTICS

FINISH

GREEN DESIGN

COLOR CUSTOMIZATION

CERTIFIED QUALITY



POWDER COATING FINISH

Pre-treatment options include marine galvanization, zinc-enriched primer & E-coat (upon request). Finish paints include enamels, polyurethane, & powder coat paints. Consult OWM's sales staff for more specific information.

POWDER COATING CHARACTERISTICS

- Proven track record of hardness and durability
- Inherently resistant to damage
- Resilient to chemical and corrosive breakdown
- Provides maximum protection of the substrate
- Excellent results with salt spray and humidity testing
- Limited 10 year warranty on finish (Extended Warranties Available)

FINISH

- Pre-treatment (Std.)
Options: Marine galvanizing, E-coating
- Paint - Super Durable Powder Coat (Std.)
Options: Enamels & Polyurethane

GREEN DESIGN

- Environmentally friendly
- Integral to contemporary building design/construction
- Ideal for government compliance
- Green alternative to liquid coatings
- Powder does not require high VOC solvents as used in liquid paints
- Zero VOC's (Volatile Organic Compounds)
- Unparalleled high quality and durable finish

COLOR CUSTOMIZATION

- Wide range of colors
- Optimum's standard colors meet AAMA 2604

CERTIFIED QUALITY

- Optimum applies its powder coatings in house, allowing for better quality control of its finishes
- Optimum is a certified Powder Coat Applicator



ES OTIS SCHOOL

ACCESSIBLE
ENTRANCE



FR4700

CASEMENT WINDOW

UL APPROVED AND CERTIFIED | UP TO 45 MINUTE FIRE-RATING

45 minute fire-rating

Hot-Rolled Steel Sections
 UL (Underwriters Laboratories) Listed and Certified
 Fully Weather-Stripped
 2 1/8" exterior frame depth
 Mitered and fully welded frame construction
 Glazing is held in place via mechanically fastened steel glazing beads
 Can accommodate glazing ranging from 3/16" to 1" in O.A. thickness
 Insulated glazing available for this series
 All FR4700 series casement windows will be factory glazed
 1 cam lock at center of sash up to 36", 2 locks thereafter
 Standard Optimum Window colors (refer to OWM color chart)
 Units are supplied with installation straps
 All units will receive Zinc Enriched Primer and Powder Coated finish

OPTIONS

RAL colors available as option & available upon request
 Non-metallic color matches are optional & available upon request
 Steel Break Metal trim
 Screens for in-swing casements
 Screens for out-swing casements
 Clear fire-rated glass/wireless
 Insulated glass
 Applied flat grids
 White Bronze Hardware is OWM's Standard
 (other options/finishes available)
 Monolithic Glazing Available

GENERAL TEST RESULTS & DIMENSIONAL LIMITATIONS

HOURLY RATING	MINIMUM FRAME DIM.	MAXIMUM FRAME DIM.	(Air) ASTM E283 @ 6.24psf	(Water) ASTM E331 @ 5.0gph / ft2	Uniform Design Load ASTM E330	MAXIMUM VENT DIM.	MAXIMUM WIRE GLASS DIM.	MAXIMUM SAFETY GLASS	MAXIMUM CERAMIC GLASS
3/4	18" x 24"	36" x 60"	.12 cfm / ft2	6.24 psf	73.3 psf	36" x 60"	1,296 sq in	optional	4,515 sq in

SHGC: Solar Heat Gain Coefficient

CR: Condensation Resistance

VT: Visible Transmittance

THIS INFORMATION IS INTENDED FOR GENERAL REFERENCE ONLY. FOR CURRENT LISTING DETAILS, PLEASE CALL OPTIMUM WINDOW MFG. CORP.

* NOTE: TEST SPECIMEN SIZE 36" X 60"

THERMAL PERFORMANCE VALUE CHART FOR FIRE-RATED PRODUCTS THAT HAVE BEEN SIMULATED					
WINDOW TYPE	"U" VALUE	"SHGC"	"CR"	"VT"	GLASS CONFIGURATION THAT MEETS THE NYCECC (NYC ENERGY CONSERVATION CODE)
FR4700 Fixed Windows	0.42 BTU/hr/ft2/°F	0.42 BTU/hr/ft2/°F	17	0.49	1" I.G.U. (1/4" Wire Glass [R.W.G. or P.W.G.] over 3/16" Pilkington Solar E [A type of hard coat LoE] Glass)
	0.42 BTU/hr/ft2/°F	0.42 BTU/hr/ft2/°F	17	0.49	1" I.G.U. (3/16" Polished Ceramic Glass or 3/16" Polished Safety Ceramic Glass w/ Surface Applied Film over 3/16" Pilkington Solar E [A type of hard coat LoE] Glass)
	0.42 BTU/hr/ft2/°F	0.42 BTU/hr/ft2/°F	18	0.48	1" I.G.U. (5/16" Polished Safety Laminated Ceramic Glass over 3/16" Pilkington Solar E [A type of hard coat LoE] Glass)
FR4700 Casement Windows	0.55 BTU/hr/ft2/°F	0.35 BTU/hr/ft2/°F	16	0.40	1" I.G.U. (1/4" Wire Glass [R.W.G. or P.W.G.] over 3/16" Pilkington Solar E [A type of hard coat LoE] Glass)
	0.55 BTU/hr/ft2/°F	0.35 BTU/hr/ft2/°F	16	0.40	1" I.G.U. (3/16" Polished Ceramic Glass or 3/16" Polished Safety Ceramic Glass w/ Surface Applied Film over 3/16" Pilkington Solar E [A type of hard coat LoE] Glass)
	0.56 BTU/hr/ft2/°F	0.35 BTU/hr/ft2/°F	16	0.39	1" I.G.U. (5/16" Polished Safety Laminated Ceramic Glass over 3/16" Pilkington Solar E [A type of hard coat LoE] Glass)

LISTINGS

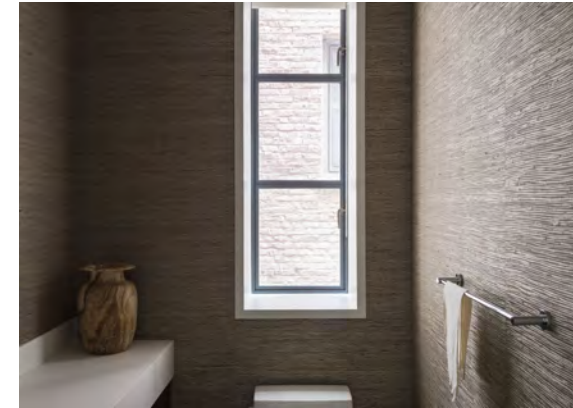
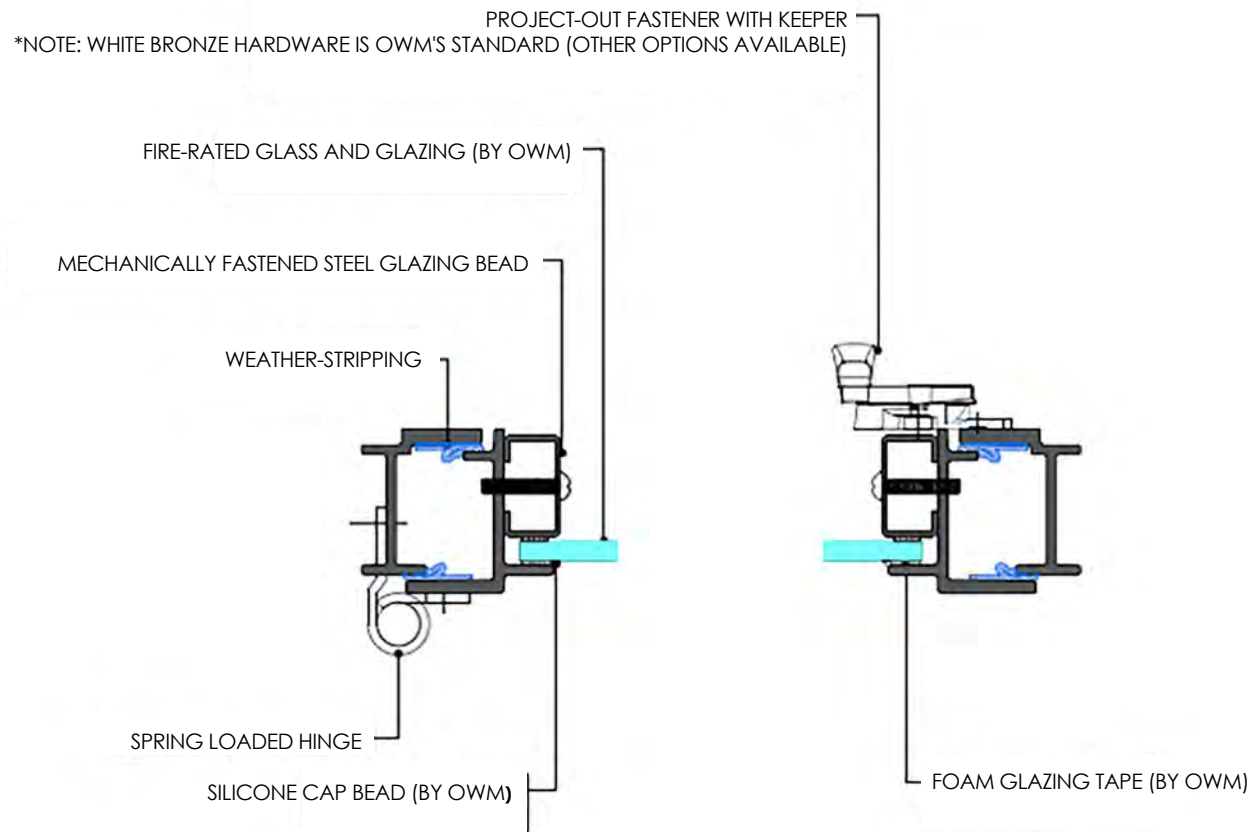
Listed and labeled by Underwriters Laboratories Inc. and Underwriters' Laboratories of Canada. Test report for labeled 45 minute fire-rated frame assemblies is UL file NO. R-12349. Frame tests performed in accordance with ASTM E283, ASTM E331 & ASTM E330. Approved for use in New York City, MEA# 151-91-M

* 1/4" Wire Glass 1296 sq. in. max width or height - not to exceed 54"



FIRE-RATED
WINDOWS & DOORS

KEY (TYPICAL)



45 MINUTE FIRE-RATED FRAMES

Optimum's multiple window and door series are used in non-temperature rise applications. Various glazing options can be modified to address most fire-rated applications.

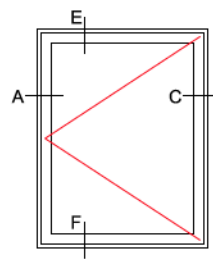


FIRE-RATED
WINDOWS & DOORS

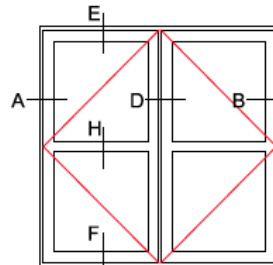
FR4700

SELF-CLOSING OUT-SWING CASEMENT

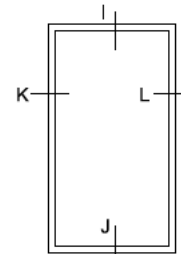
UL APPROVED AND CERTIFIED | UP TO 45 MINUTE FIRE-RATING



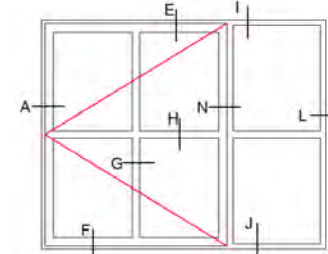
FR4700 SERIES OUT-SWING
CASEMENT



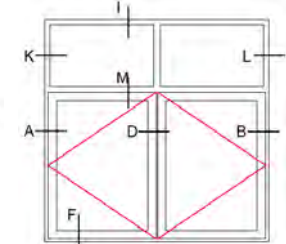
FR4700 SERIES DOUBLE
OUT-SWING CASEMENT



FR4700 SERIES
FIXED



FR4700 SERIES
CASEMENT W/ SIDELITE

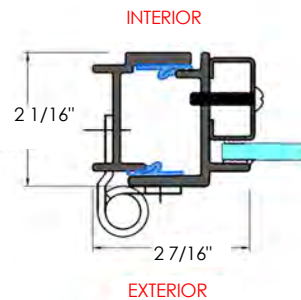


FR4700 SERIES
DOUBLE OUT-SWING
CASEMENT W/ TRANSOM

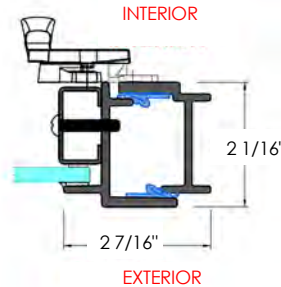
MAXIMUM ALLOWABLE SINGLE CASEMENT SASH/VENT DIMENSIONS 36" X 60"

MAXIMUM ALLOWABLE DOUBLE CASEMENT DIMENSIONS 72" X 60"

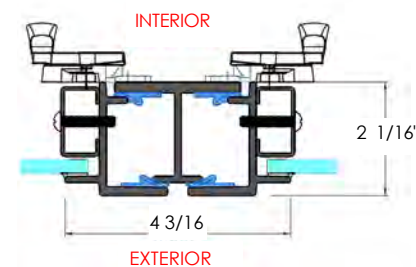
A&B TYPICAL HINGED JAMB
1" FIRE-RATED GLASS



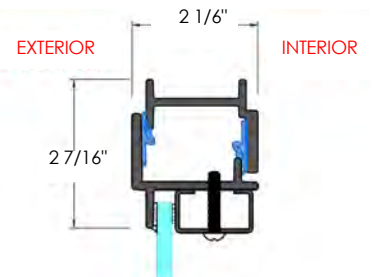
C TYPICAL LOCKING JAMB
1" FIRE-RATED GLASS



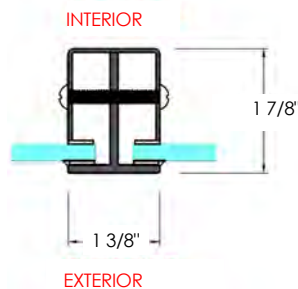
D TYPICAL MEETING RAIL
1" FIRE-RATED GLASS



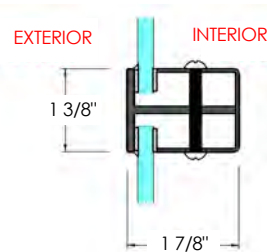
E&F TYPICAL HEAD & SILL
1" FIRE-RATED GLASS



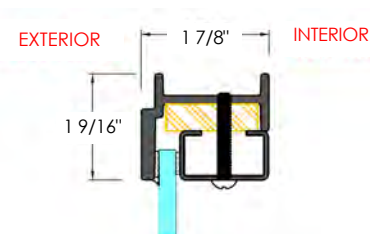
G TYPICAL VERTICAL MUNTIN
1" FIRE-RATED GLASS



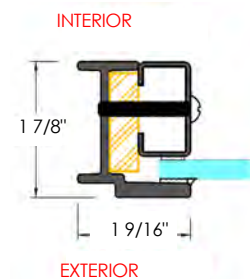
H TYPICAL HORIZONTAL MUNTIN
1" FIRE-RATED GLASS



I&J TYPICAL FIXED HEAD & SILL
1" FIRE-RATED GLASS

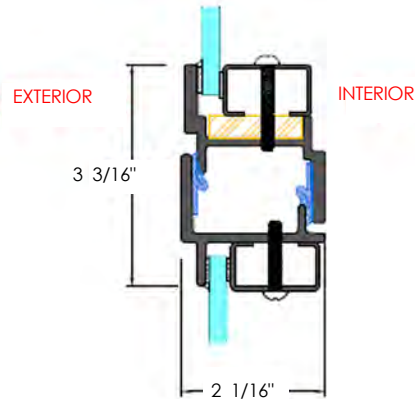
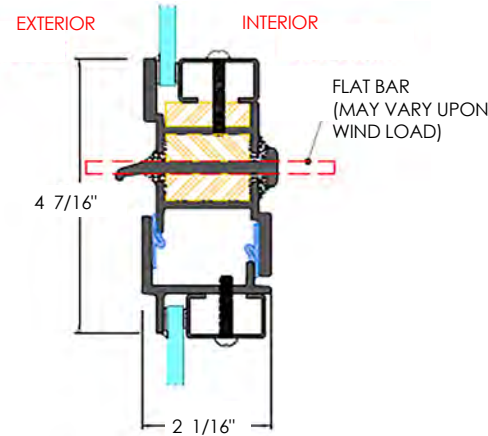
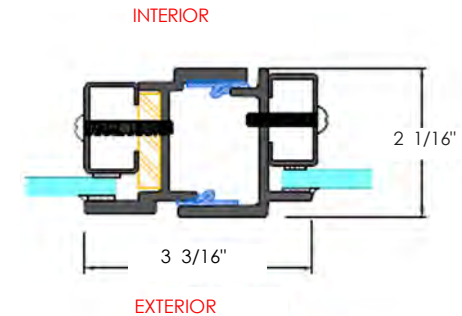
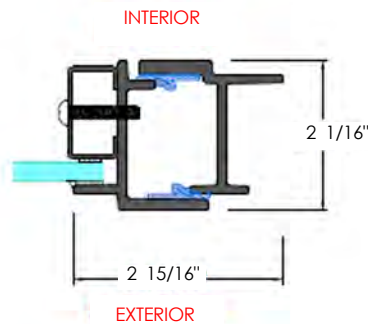
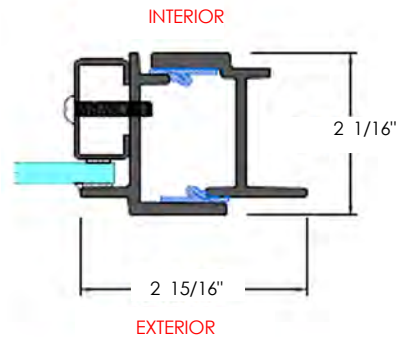
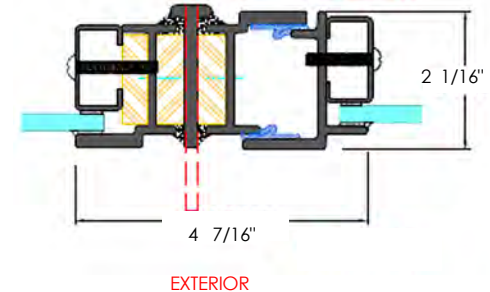
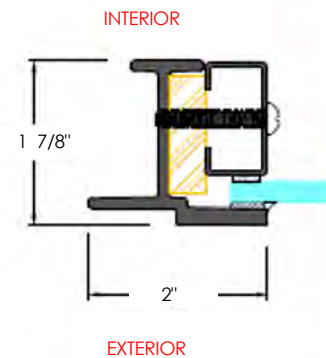


K&L TYPICAL FIXED JAMB
1" FIRE-RATED GLASS



SELF-CLOSING OUT-SWING CASEMENT

UL APPROVED AND CERTIFIED | UP TO 45 MINUTE FIRE-RATING

FIRE-RATED
WINDOWS & DOORS**M** TYPICAL HEAD W/ TRANSOM
1" FIRE-RATED GLASS**M** TYPICAL STACKING MULLION
1" FIRE-RATED GLASS**N** TYPICAL JAMB W/ SIDELITE
1" FIRE-RATED GLASS**N** TYPICAL MULLIONFLAT BAR
(MAY VARY UPON
WIND LOAD)**1** TYPICAL JAMB INTERIOR FLANGE
1" FIRE-RATED GLASS**2** TYPICAL JAMB EXTERIOR FLANGE
1" FIRE-RATED GLASS**3** TYPICAL FIXED JAMB EXTERIOR FLANG
1" FIRE-RATED GLASS



FR6000 / FR55

FIXED WINDOW

45 minute to 90 minute rating

All Cold-Rolled sections are formed from GALVANIZED STEEL
 UL (Underwriters Laboratories) Listed and Certified
 2 1/2" exterior frame depth
 Frames are coped and mechanically assembled
 Mitered, corner keyed frame and sash joinery
 Glazing is held in place via mechanically fastened steel glazing beads
 Can accommodate glazing ranging from 3/16" to 1" in O.A. thickness
 Insulated glazing available for this series
 All FR6000 windows will be factory glazed
 Uniformed sight lines
 Standard Optimum Window colors (refer to OWM color chart)
 Units can be supplied with installation straps

OPTIONS

RAL colors available as option & available upon request
 Non-metallic color matches are optional & available upon request
 Steel Break Metal trim
 Clear fire-rated glass/wireless
 Insulated glass
 Applied flat grids
 Monolithic Glazing Available

UL APPROVED AND CERTIFIED

45 MINUTE FIRE-RATED WHEN GLAZED WITH 1/4" WIRE GLASS

90 MINUTE FIRE-RATED WHEN GLAZED WITH 3/16" CERAMIC & FIRE-RATED GLAZING TAPE

GENERAL TEST RESULTS & DIMENSIONAL LIMITATIONS

HOUR RATING	MINIMUM FRAME DIM.	MAXIMUM FRAME DIM.	[Air] ASTM E283 @ 6.25psf	[Water] ASTM E331 @ 5.0gph / ft2	Uniform Design Load ASTM E330	MAXIMUM VENT DIM.	MAXIMUM WIRE GLASS DIM.	MAXIMUM SAFETY GLASS	MAXIMUM CERAMIC GLASS
1 1/2	n/a	n/a	.03 cfm / ft ²	WTP @ 12.00 psf	60 psf	n/a	n/a	2,627 ln ²	4,515 ln ²
1	n/a	n/a	.03 cfm / ft ²	no	interior	n/a	n/a	3,325 ln ²	4,515 ln ²
3/4	18" x 18"	69" x 120"	.03 cfm / ft ²	leakage	exterior	n/a	1296 sq in	optional	n/a

THIS INFORMATION IS INTENDED FOR GENERAL REFERENCE ONLY. FOR CURRENT LISTING DETAILS, PLEASE CALL OPTIMUM WINDOW MFG. CORP.

* NOTE: TEST SPECIMEN SIZE 48" X 96"

THERMAL PERFORMANCE VALUE CHART FOR FIRE-RATED PRODUCTS THAT HAVE BEEN SIMULATED					
WINDOW TYPE	"U" VALUE	"SHGC"	"CR"	"VT"	GLASS CONFIGURATION THAT MEETS THE NYCECC (NYC ENERGY CONSERVATION CODE)
FR6000 / FR55	0.47 BTU/hr/ft2/°F	0.40 BTU/hr/ft2/°F	22	0.46	1" I.G.U. (1/4" Wire Glass [R.W.G. or P.W.G.] over 3/16" Pilkington Solar E [A type of hard coat LoE] Glass)
	0.47 BTU/hr/ft2/°F	0.40 BTU/hr/ft2/°F	22	0.46	1" I.G.U. (3/16" Polished Ceramic Glass or 3/16" Polished Safety Ceramic Glass w/ Surface Applied Film over 3/16" Pilkington Solar E [A type of hard coat LoE] Glass)
	0.46 BTU/hr/ft2/°F	0.40 BTU/hr/ft2/°F	23	0.45	1" I.G.U. (5/16" Polished Safety Laminated Ceramic Glass over 3/16" Pilkington Solar E [A type of hard coat LoE] Glass)

SHGC: Solar Heat Gain Coefficient CR: Condensation Resistance VT: Visible Transmittance

LISTINGS

Listed and labeled by Underwriters Laboratories Inc. and Underwriters' Laboratories of Canada. Test report for labeled 45 to 90 minute fire-rated frame assemblies is UL file NO. R-12349. Frame tests performed in accordance with ASTM E283, ASTM E331 & ASTM E330. Approved for use in New York City, MEA# 151-91-M

FR6000 / FR55

FIXED WINDOW


FIRE-RATED
WINDOWS & DOORS

FIXED

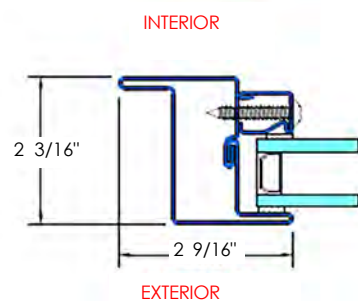
UL APPROVED AND CERTIFIED

45 MINUTE FIRE-RATED WHEN GLAZED WITH 1/4" WIRE GLASS

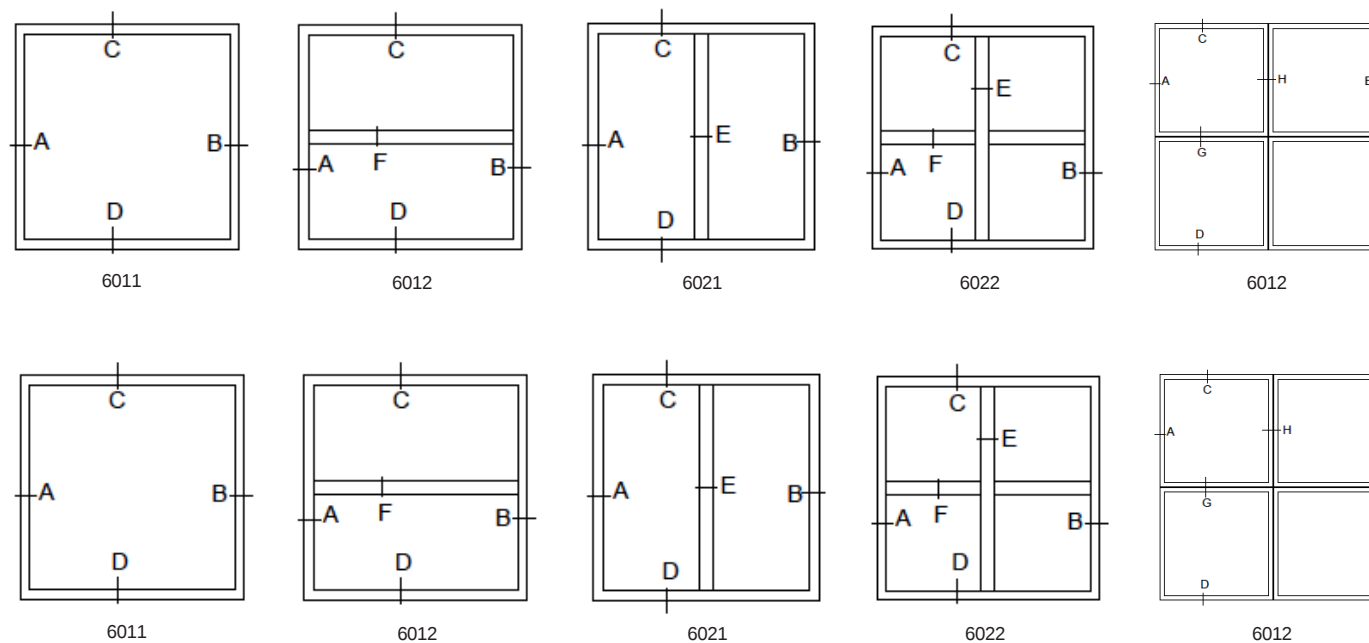
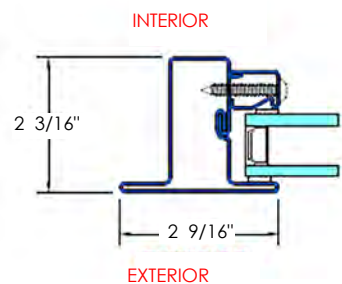
90 MINUTE FIRE-RATED WHEN GLAZED WITH 3/16" CERAMIC & FIRE-RATED GLAZING TAPE

OPTIONAL FLANGE FRAME

1 TYPICAL FIXED INTERIOR FLANGE

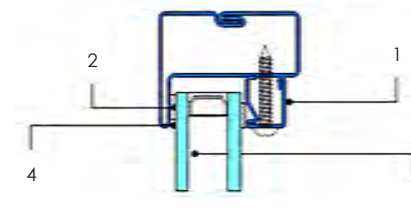
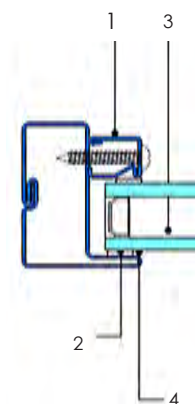


2 TYPICAL FIXED EXTERIOR FLANGE



KEY (TYPICAL)

1. MECHANICALLY FASTENED STEEL GLAZING BEAD
2. FOAM GLAZING TAPE
3. FIRE-RATED GLASS AND GLAZING
4. SILICONE CAP BEAD





FIRE-RATED
WINDOWS & DOORS

FR6000 / FR55

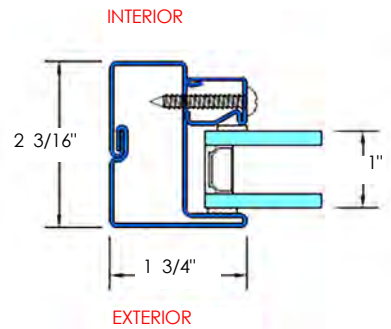
FIXED

UL APPROVED AND CERTIFIED

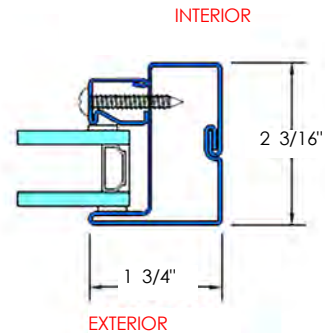
45 MINUTE FIRE-RATED WHEN GLAZED WITH 1/4" WIRE GLASS

90 MINUTE FIRE-RATED WHEN GLAZED WITH 3/16" CERAMIC & FIRE-RATED GLAZING TAPE

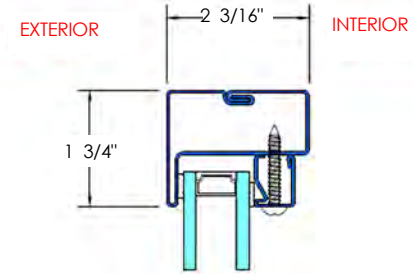
A TYPICAL LEFT JAMB 1" FIRE-RATED GLASS



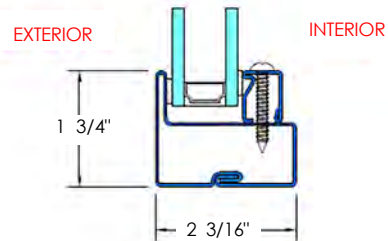
B TYPICAL RIGHT JAMB 1" FIRE-RATED GLASS



C TYPICAL FIXED HEAD 1" FIRE-RATED GLASS



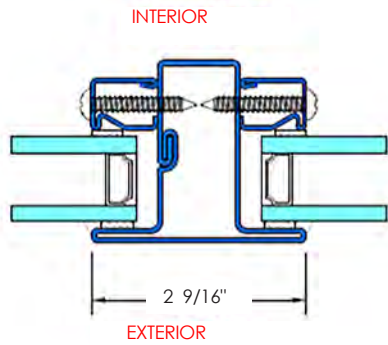
D TYPICAL FIXED SILL 1" FIRE-RATED GLASS



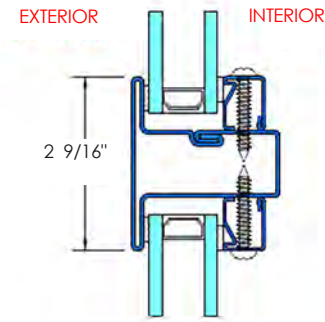


FIRE-RATED
WINDOWS & DOORS

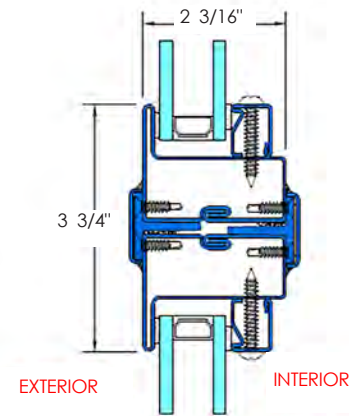
E TYPICAL VERTICAL MUNTIN 1" FIRE-RATED GLASS



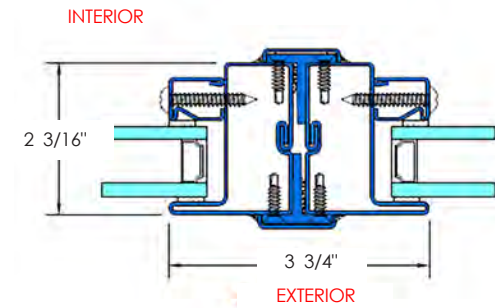
F TYPICAL HORIZONTAL MUNTIN 1" FIRE-RATED GLASS



G TYPICAL STACKING MULLION 1" FIRE-RATED GLASS



H TYPICAL JOINING MULLION 1" FIRE-RATED GLASS





FR7650TDH

SELF-CLOSING DOUBLE HUNG WINDOW

45 minute rating w/ Wire Glass; 90 minute rating w/ Ceramic Glazing

All Cold-Rolled sections are formed from GALVANIZED STEEL
 UL (Underwriters Laboratories) Listed and Certified
 EPDM and Silicone Pile Weather-Stripping
 Frames are coped and mechanically assembled
 4 1/4" exterior frame depth
 Glazing is held in place via mechanically fastened steel glazing beads
 Can accommodate glazing ranging from 3/16" to 3/4" in O.A. thickness
 Insulated glazing available
 All FR7650TDH windows will be factory glazed
 1 Sweep lock at center of sash up to 30", two sweep locks thereafter 2
 Lift handles per lower sash
 Balances are calibrated based upon sash weight and height
 Standard Optimum Window colors (refer to OWM color chart)

Units can be supplied with installation straps

OPTIONS

RAL colors available as option
 Non-metallic color matches are optional & available upon request
 Steel Break Metal trim
 Half screens for operable sash is available
 Limited Stops are available (option)
 Monolithic Glazing Available

UL APPROVED AND CERTIFIED

45 MINUTE FIRE-RATED WHEN GLAZED WITH 1/4" WIRE GLASS

90 MINUTE FIRE-RATED WHEN GLAZED WITH 3/16" CERAMIC & FIRE-RATED GLAZING TAPE

GENERAL TEST RESULTS & DIMENSIONAL LIMITATIONS

HOURLY RATING	MINIMUM FRAME DIM.	MAXIMUM FRAME DIM.	(Air) ASTM E283 @ 6.25psf	(Water) ASTM E331 @ 5.0gph / ft2	Uniform Design Load ASTM E330	MAXIMUM VENT DIM.	MAXIMUM WIRE GLASS DIM.	MAXIMUM SAFETY GLASS	MAXIMUM CERAMIC GLASS
1 1/2	20" x 30"	56 1/2" x 120"	.33 cfm / ft ²	WTP @ 6.75 psf	90 psf	52" x 56"	n/a	optional	4,515 In ²
1	20" x 30"	56 1/2" x 120"	.33 cfm / ft ²	no	interior	52" x 56"	n/a	optional	4,515 In ²
3/4	20" x 30"	66" x 126"	.33 cfm / ft ²	leakage	exterior	62" x 59"	1,296 sq in	optional	4,515 In ²

U Factor	CRF	SHGC	VT	GLAZING CONFIGURATION
.50	24	.35	.39	3/4" I.G.U (3/16" Polished Ceramic Glass or 3/16" Polished Safety Ceramic Glass w/ Surface Applied Film over 3/16" Pilkington Solar E [A type of hard coat LoE] Glass)

* NOTE: TEST SPECIMEN SIZE 48" X 96"

THIS INFORMATION IS INTENDED FOR GENERAL REFERENCE ONLY. FOR CURRENT LISTING DETAILS, PLEASE CALL OPTIMUM WINDOW MFG. CORP.

THERMAL PERFORMANCE VALUE CHART FOR FIRE-RATED PRODUCTS THAT HAVE BEEN SIMULATED					
WINDOW TYPE	"U" VALUE	"SHGC"	"CR"	"VT"	GLASS CONFIGURATION THAT MEETS THE NYCECC (NYC ENERGY CONSERVATION CODE)
FR7650 Hung Windows	0.51 BTU/hr/ft ² /°F	0.35 BTU/hr/ft ² /°F	24	0.39	3/4" I.G.U. (1/4" Wire Glass [R.W.G. or P.W.G.] over 3/16" Pilkington Solar E [A type of hard coat LoE] Glass)
	0.50 BTU/hr/ft ² /°F	0.35 BTU/hr/ft ² /°F	24	0.39	3/4" I.G.U (3/16" Polished Ceramic Glass or 3/16" Polished Safety Ceramic Glass w/ Surface Applied Film over 3/16" Pilkington Solar E [A type of hard coat LoE] Glass)
	0.52 BTU/hr/ft ² /°F	0.34 BTU/hr/ft ² /°F	24	0.38	3/4" I.G.U (5/16" Polished Safety Laminated Ceramic Glass over 3/16" Pilkington Solar E [A type of hard coat LoE] Glass)

SHGC: Solar Heat Gain Coefficient CR: Condensation Resistance VT: Visible Transmittance

LISTINGS

Listed and labeled by Underwriters Laboratories Inc. and Underwriters' Laboratories of Canada. Test report for labeled 45/60/90 minute fire-rated frame assemblies is UL file NO. R-12349. Frame tests performed in accordance with ASTM E283, ASTM E331 & ASTM E330. Approved for use in New York City, MEA# 151-91-M

FR7650TDH

SELF-CLOSING DOUBLE HUNG

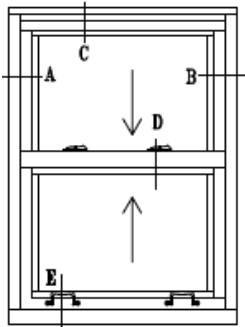
UL APPROVED AND CERTIFIED

45 MINUTE FIRE-RATED WHEN GLAZED WITH 1/4" WIRE GLASS

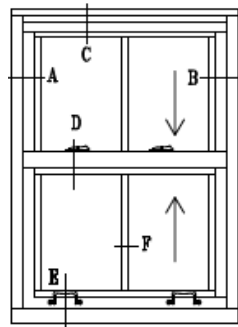
90 MINUTE FIRE-RATED WHEN GLAZED WITH 3/16" CERAMIC & FIRE-RATED GLAZING TAPE



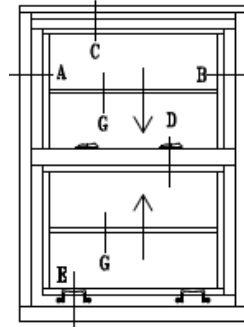
FIRE-RATED
WINDOWS & DOORS



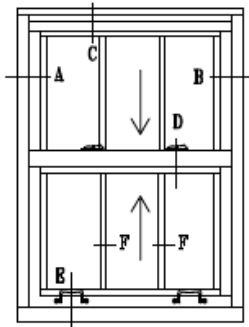
7650 TDH 1/1



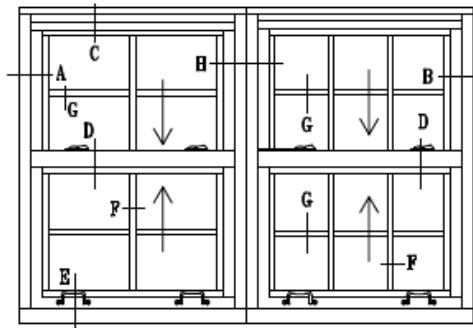
7650 TDH 2/2V



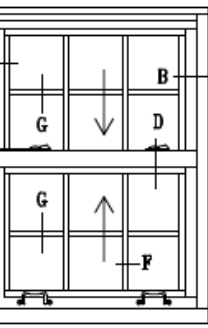
7650 TDH 2/2H



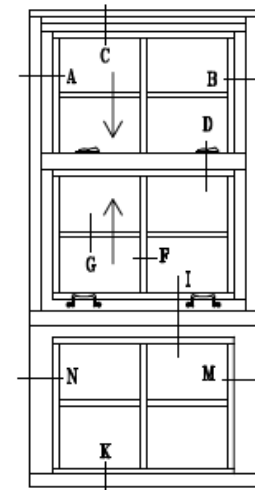
7650 TDH 3/3



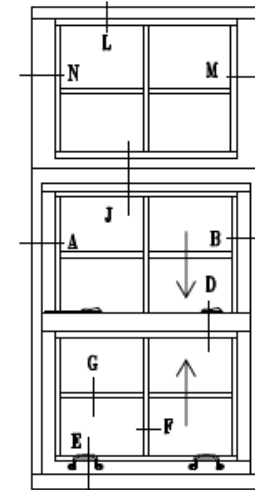
7650 TDH 4/4



7650 TDH 6/6



7650 TDH 4/4
- LT - 4



7650 TDH 4/4
- UT - 4

Windows with a width over 36" will receive 2 handles and 2 sweep locks

Windows with a width of 24"-36" will receive 2 handles and 1 sweep lock



FIRE-RATED
WINDOWS & DOORS

FR7650TDH

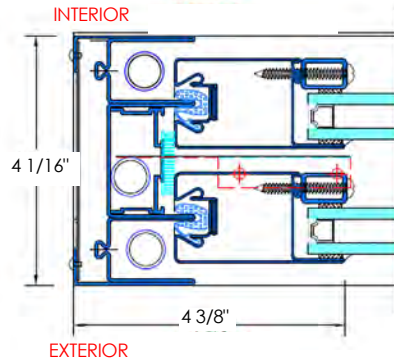
SELF-CLOSING DOUBLE HUNG

UL APPROVED AND CERTIFIED

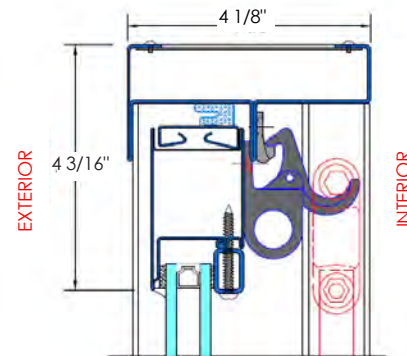
45 MINUTE FIRE-RATED WHEN GLAZED WITH 1/4" WIRE GLASS

90 MINUTE FIRE-RATED WHEN GLAZED WITH 3/16" CERAMIC & FIRE-RATED GLAZING TAPE

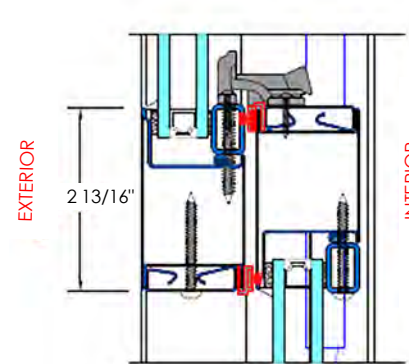
A & B TYPICAL JAMB
3/4" FIRE-RATED GLASS



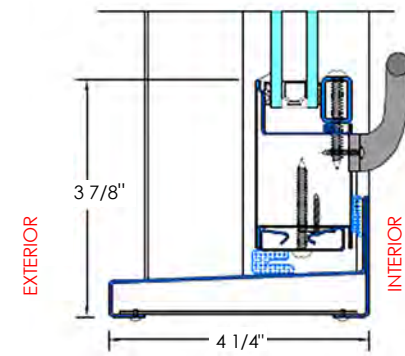
C TYPICAL HEAD
3/4" FIRE-RATED GLASS



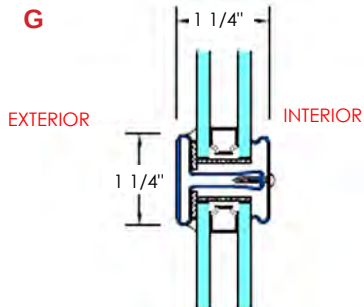
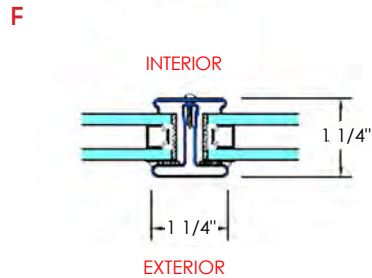
D TYPICAL MEETING RAIL
3/4" FIRE-RATED GLASS



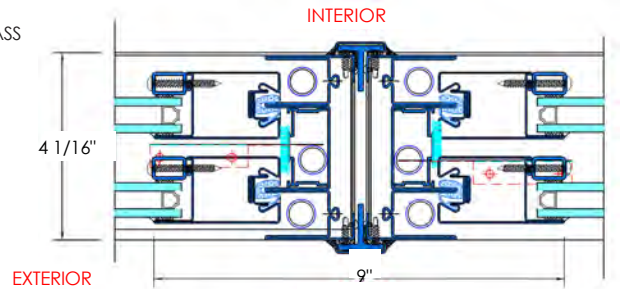
E TYPICAL SILL
3/4" FIRE-RATED GLASS



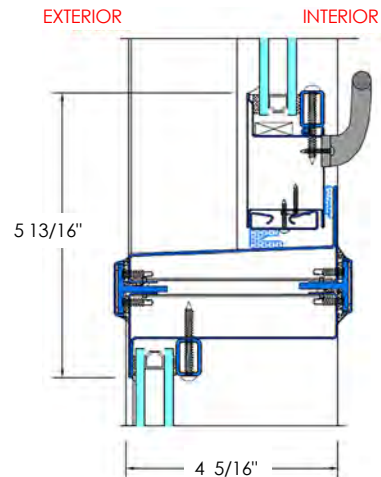
F & G TYPICAL MUNTIN
3/4" FIRE-RATED GLASS



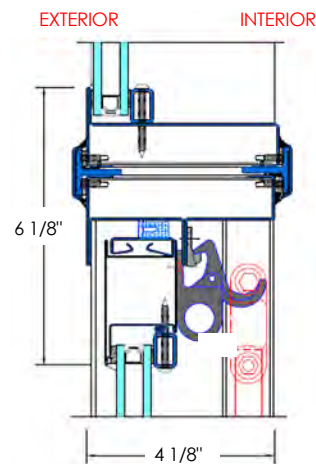
H TYPICAL MULLION
1/4" FIRE-RATED GLASS



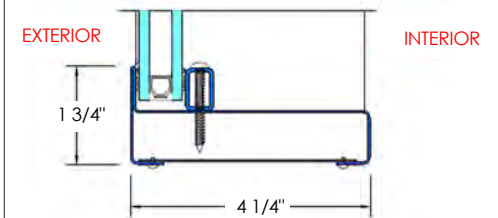
I TYPICAL STACKING MULLION WITH LOWER TRANSOM
3/4" FIRE-RATED GLASS



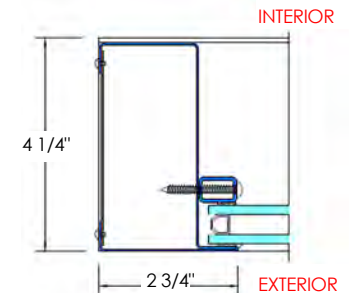
J TYPICAL STACKING MULLION WITH UPPER TRANSOM
3/4" FIRE-RATED GLASS



K & L TYPICAL TRANSOM HEAD & SILL
3/4" FIRE-RATED GLASS



M & N TYPICAL TRANSOM JAMB
3/4" FIRE-RATED GLASS







FIRE-RATED
WINDOWS & DOORS

FR7650TSH

SELF-CLOSING SINGLE HUNG WINDOW

UL APPROVED AND CERTIFIED

45 MINUTE FIRE-RATED WHEN GLAZED WITH 1/4" WIRE GLASS

90 MINUTE FIRE-RATED WHEN GLAZED WITH 3/16" CERAMIC & FIRE-RATED GLAZING TAPE

45 minute rated with Wire Glass; 90 minute rated w/ Ceramic Glazing

All Cold-Rolled sections are formed from GALVANIZED STEEL

UL (Underwriters Laboratories) Listed and Certified

EPDM and Silicone Pile Weather-Stripping

Frames are coped and mechanically assembled

4 1/4" exterior frame depth

Glazing is held in place via mechanically fastened steel glazing beads

Can accommodate glazing ranging from 3/16" to 3/4" in O.A. thickness

Insulated glazing available for this series

All FR7650TSH windows will be factory glazed

1 Sweep lock at center of sash up to 30", two sweep locks thereafter 2

Lift handles per lower sash

Balances are calibrated based upon sash weight

Standard Optimum Window colors (refer to OWM color chart)

Units can be supplied with installation straps

OPTIONS

RAL colors available as option

Non-metallic color matches are optional & available upon request

Steel Break Metal trim

Half screens for operable sash are available

Limit Operation Stops are available

Applied Grid

Monolithic Glazing Available

GENERAL TEST RESULTS & DIMENSIONAL LIMITATIONS

HOUR RATING	MINIMUM FRAME DIM.	MAXIMUM FRAME DIM.	(Air) ASTM E283 @ 6.25psf	(Water) ASTM E331 @ 5.0gph / ft2	Uniform Load ASTM E330	MAXIMUM VENT DIM.	MAXIMUM WIRE GLASS DIM.	MAXIMUM SAFETY GLASS	MAXIMUM CERAMIC GLASS
1 1/2	20" x 30"	56 1/2" x 120"	.26 cfm / ft ²	WTP @ 6.24 psf	75 psf	52" x 56"	n/a	optional	4,518 In ²
1	20" x 30"	56 1/2" x 120"	.26 cfm / ft ²	no	interior	52" x 56"	n/a	optional	4,518 In ²
3/4	20" x 30"	66" x 126"	.26 cfm / ft ²	leakage	exterior	62" x 59"	1,296 sq in	optional	4,518 In ²

U Factor	CRF	SHGC	VT	GLAZING CONFIGURATION
.50	24	.35	.39	3/4" I.G.U (3/16" Polished Ceramic Glass or 3/16" Polished Safety Ceramic Glass w/ Surface Applied Film over 3/16" Pilkington Solar E [A type of hard coat LoE] Glass)

THIS INFORMATION IS INTENDED FOR GENERAL REFERENCE ONLY. FOR CURRENT LISTING DETAILS, PLEASE CALL OPTIMUM WINDOW MFG. CORP.

* NOTE: TEST SPECIMEN SIZE 48" X 96"

THERMAL PERFORMANCE VALUE CHART FOR FIRE-RATED PRODUCTS THAT HAVE BEEN SIMULATED					
WINDOW TYPE	"U" VALUE	"SHGC"	"CR"	"VT"	GLASS CONFIGURATION THAT MEETS THE NYCECC (NYC ENERGY CONSERVATION CODE)
FR7650 Hung Windows	0.51 BTU/hr/ft ² /°F	0.35 BTU/hr/ft ² /°F	24	0.39	3/4" I.G.U. (1/4" Wire Glass [R.W.G. or P.W.G.] over 3/16" Pilkington Solar E [A type of hard coat LoE] Glass)
	0.50 BTU/hr/ft ² /°F	0.35 BTU/hr/ft ² /°F	24	0.39	3/4" I.G.U (3/16" Polished Ceramic Glass or 3/16" Polished Safety Ceramic Glass w/ Surface Applied Film over 3/16" Pilkington Solar E [A type of hard coat LoE] Glass)
	0.52 BTU/hr/ft ² /°F	0.34 BTU/hr/ft ² /°F	24	0.38	3/4" I.G.U (5/16" Polished Safety Laminated Ceramic Glass over 3/16" Pilkington Solar E [A type of hard coat LoE] Glass)

SHGC: Solar Heat Gain Coefficient CR: Condensation Resistance VT: Visible Transmittance

LISTINGS

Listed and labeled by Underwriters Laboratories Inc. and Underwriters' Laboratories of Canada. Test report for labeled 20/45/60/90 minute fire-rated frame assemblies is UL file NO. R-12349. Frame tests performed in accordance with ASTM E283, ASTM E331 & ASTM E330. Approved for use in New York City, MEA# 151-

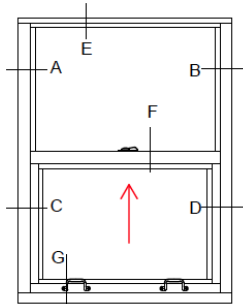
FR7650TSH

SELF-CLOSING SINGLE HUNG WINDOW UL APPROVED AND CERTIFIED

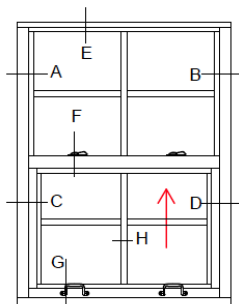
45 MINUTE FIRE-RATED WHEN GLAZED WITH 1/4" WIRE GLASS
90 MINUTE FIRE-RATED WHEN GLAZED WITH 3/16" CERAMIC & FIRE-RATED GLAZING TAPE



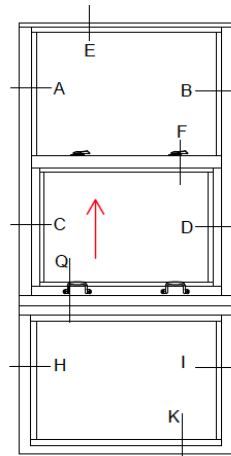
FIRE-RATED
WINDOWS & DOORS



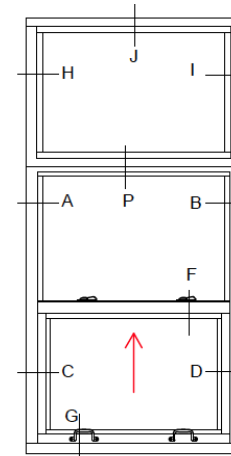
7650 TSH 1/1



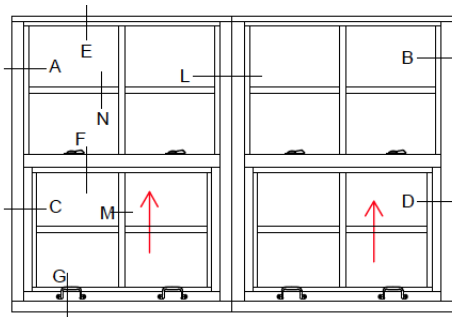
7650 TSH 2/2V



7650 TSH 6/6
-LT-6



7650 TSH 9/9
-UT-6



7650 TSH 4/4

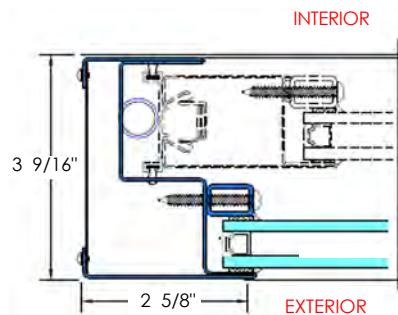
7650 TSH 9/9

Windows with a width over 36" will receive 2 handles and 2 sweep locks

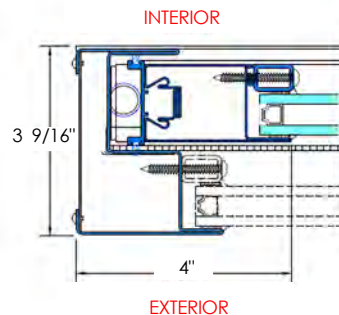
Windows with a width of 24"-36" will receive 2 handles and 1 sweep lock



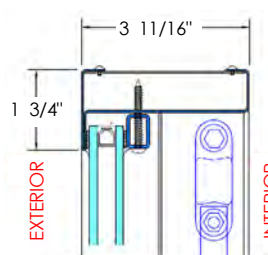
A & B TYPICAL FIXED JAMB
3/4" FIRE-RATED
GLASS



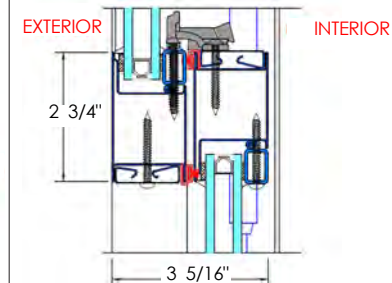
C & D TYPICAL OPERABLE JAMB
3/4" FIRE-RATED GLASS



E TYPICAL HEAD
3/4" FIRE-RATED GLASS



F TYPICAL MEETING RAIL
3/4" FIRE-RATED GLASS





FIRE-RATED
WINDOWS & DOORS

FR7650TSH

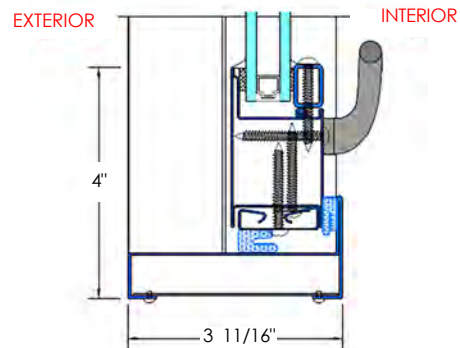
SELF-CLOSING SINGLE HUNG

UL APPROVED AND CERTIFIED

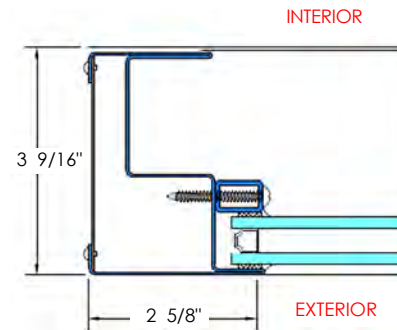
45 MINUTE FIRE-RATED WHEN GLAZED WITH 1/4" WIRE GLASS

90 MINUTE FIRE-RATED WHEN GLAZED WITH 3/16" CERAMIC & FIRE-RATED GLAZING TAPE

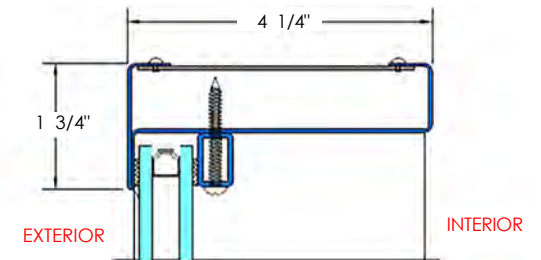
G TYPICAL SILL
3/4" FIRE-RATED GLASS



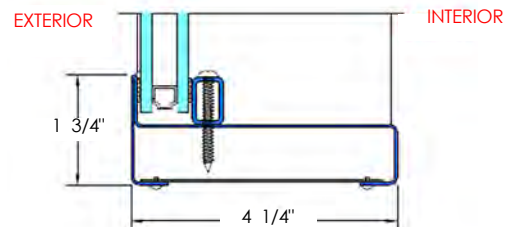
H & I TYPICAL TRANSOM JAMB
3/4" FIRE-RATED GLASS



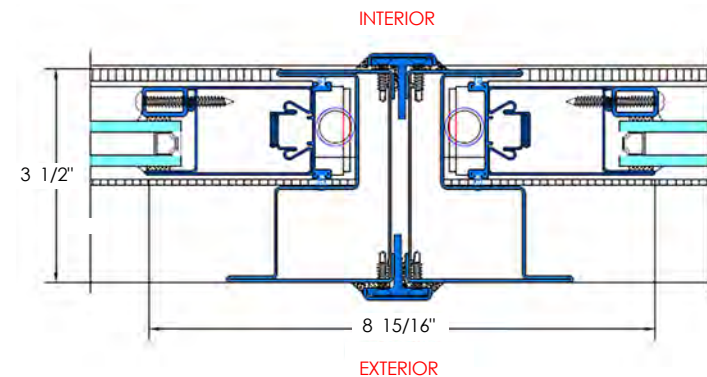
J TYPICAL TRANSOM HEAD
3/4" FIRE-RATED GLASS



K TYPICAL TRANSOM SILL
3/4" FIRE-RATED GLASS



L TYPICAL JOINING MULLION
3/4" FIRE-RATED GLASS



FR7650TSH

SELF-CLOSING SINGLE HUNG

UL APPROVED AND CERTIFIED

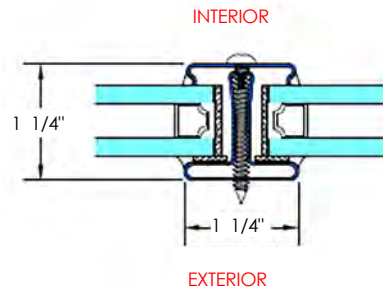
45 MINUTE FIRE-RATED WHEN GLAZED WITH 1/4" WIRE GLASS

90 MINUTE FIRE-RATED WHEN GLAZED WITH 3/16" CERAMIC & FIRE-RATED GLAZING TAPE

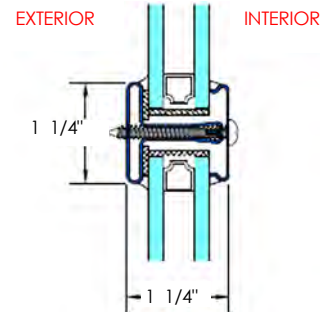


FIRE-RATED
WINDOWS & DOORS

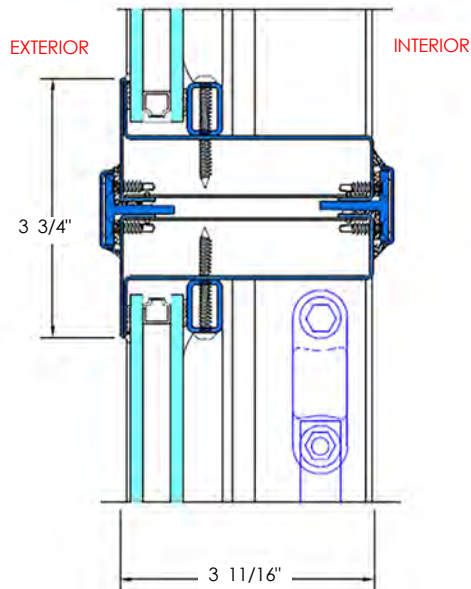
M TYPICAL VERTICAL MUNTIN
3/4" FIRE-RATED GLASS



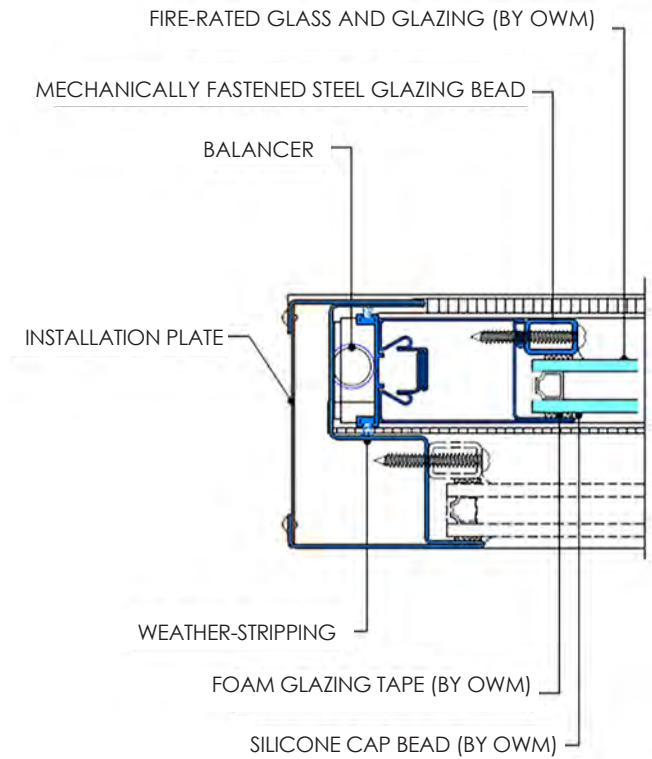
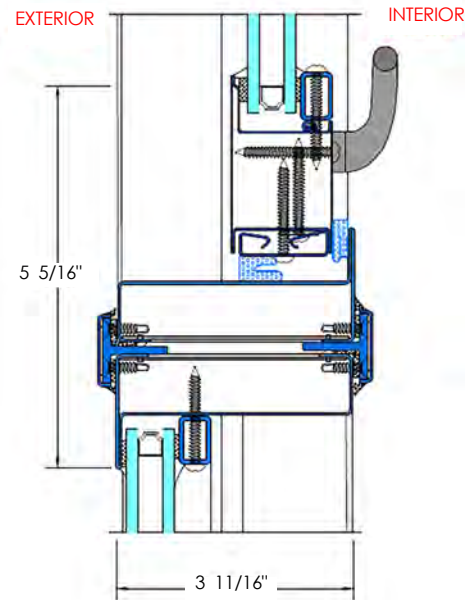
N TYPICAL HORIZONTAL MUNTIN
3/4" FIRE-RATED GLASS



O TYPICAL STACKING MULLION W/ TRANSOM ABOVE
3/4" FIRE-RATED GLASS



P TYPICAL STACKING MULLION W/ TRANSOM BELOW
3/4" FIRE-RATED GLASS





FIRE-RATED
WINDOWS & DOORS

FR8600

PROJECTED WINDOW

UL APPROVED AND CERTIFIED

45 MINUTE FIRE-RATED WHEN GLAZED WITH 1/4" WIRE GLASS

45 minute fire-rating

All Cold-Rolled sections are formed from GALVANIZED STEEL

UL (Underwriters Laboratories) Listed and Certified

EPDM and Silicone Pile Weather-Stripping

Mitered, corner keyed frame and sash joinery

2 3/16" exterior frame depth

Glazing is held in place via mechanically fastened steel glazing beads

Can accommodate glazing ranging from 3/16" to 1" in O.A. thickness

Insulated glazing available for this series

All FR8600 Projected windows will be factory glazed

1 cam lock at center of sash up to 34", two cam locks thereafter

Standard Optimum Window colors (refer to OWM color chart)

Units can be supplied with installation straps

OPTIONS

Custom color from RAL colors.

Non-metallic color matches are optional & available upon request

Steel Break Metal trim

Limited Operation Stops are available

Fixed screens for project in windows

Applied Grid

Monolithic Glazing Available

GENERAL TEST RESULTS & DIMENSIONAL LIMITATIONS

HOURLY RATING	MINIMUM FRAME DIM.	MAXIMUM FRAME DIM.	(Air) ASTM E283 @ 6.25psf	(Water) ASTM E331 @ 5.0gph / ft2	Uniform Load ASTM E330	MAXIMUM VENT DIM.	MAXIMUM WIRE GLASS DIM.	MAXIMUM SAFETY GLASS	MAXIMUM CERAMIC GLASS
3/4	20" x 30"	54" x 120"	.27 cfm / ft2	WTP @ 2.86 psf	60 psf	54" x 48"	1,296 sq in	optional	2,096 sq in

THERMAL PERFORMANCE VALUE CHART FOR FIRE-RATED PRODUCTS THAT HAVE BEEN SIMULATED

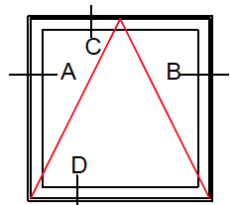
WINDOW TYPE	"U" VALUE	"SHGC"	"CR"	"VT"	GLASS CONFIGURATION THAT MEETS THE NYCECC (NYC ENERGY CONSERVATION CODE)
FR8600 (Single Projected Vent Only)	0.61 BTU/hr/ft2/°F	0.32 BTU/hr/ft2/°F	23	0.34	1" I.G.U. (1/4" Wire Glass [R.W.G. or P.W.G.] over 3/16" Pilkington Solar E [A type of hard coat LoE] Glass)
	0.61 BTU/hr/ft2/°F	0.32 BTU/hr/ft2/°F	23	0.34	1" I.G.U. (3/16" Polished Ceramic Glass or 3/16" Polished Safety Ceramic Glass w/ Surface Applied Film over 3/16" Pilkington Solar E [A type of hard coat LoE] Glass)
	0.61 BTU/hr/ft2/°F	0.31 BTU/hr/ft2/°F	23	0.34	1" I.G.U. (5/16" Polished Safety Laminated Ceramic Glass over 3/16" Pilkington Solar E [A type of hard coat LoE] Glass)
FR8600 (Project-In / Fixed Unit)	0.54 BTU/hr/ft2/°F	0.36 BTU/hr/ft2/°F	23	0.40	1" I.G.U. (1/4" Wire Glass [R.W.G. or P.W.G.] over 3/16" Pilkington Solar E [A type of hard coat LoE] Glass)
	0.54 BTU/hr/ft2/°F	0.36 BTU/hr/ft2/°F	23	0.40	1" I.G.U. (3/16" Polished Ceramic Glass or 3/16" Polished Safety Ceramic Glass w/ Surface Applied Film over 3/16" Pilkington Solar E [A type of hard coat LoE] Glass)
	0.54 BTU/hr/ft2/°F	0.35 BTU/hr/ft2/°F	23	0.40	1" I.G.U. (5/16" Polished Safety Laminated Ceramic Glass over 3/16" Pilkington Solar E [A type of hard coat LoE] Glass)
FR8600 (Project-Out / Fixed Unit)	0.53 BTU/hr/ft2/°F	0.35 BTU/hr/ft2/°F	21	0.40	1" I.G.U. (1/4" Wire Glass [R.W.G. or P.W.G.] over 3/16" Pilkington Solar E [A type of hard coat LoE] Glass)
	0.53 BTU/hr/ft2/°F	0.35 BTU/hr/ft2/°F	21	0.40	1" I.G.U. (3/16" Polished Ceramic Glass or 3/16" Polished Safety Ceramic Glass w/ Surface Applied Film over 3/16" Pilkington Solar E [A type of hard coat LoE] Glass)
	0.53 BTU/hr/ft2/°F	0.35 BTU/hr/ft2/°F	21	0.40	1" I.G.U. (5/16" Polished Safety Laminated Ceramic Glass over 3/16" Pilkington Solar E [A type of hard coat LoE] Glass)

SHGC: Solar Heat Gain Coefficient **CR:** Condensation Resistance **VT:** Visible Transmittance

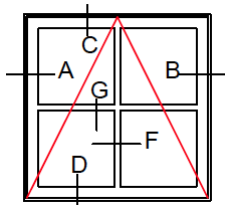
* NOTE: TEST SPECIMEN SIZE 48" X 96"

LISTINGS

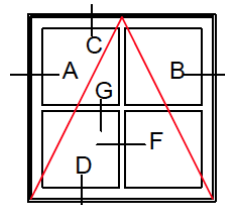
Listed and labeled by Underwriters Laboratories Inc. and Underwriters' Laboratories of Canada. Test report for labeled 45 minute fire-rated frame assemblies is UL file NO. R-12349. Frame tests performed in accordance with ASTM E283, ASTM E331 & ASTM E330. Approved for use in New York City, MEA# 151-91-M

FR8600**PROJECTED WINDOW**
UL APPROVED AND CERTIFIED**FIRE-RATED**
WINDOWS & DOORS

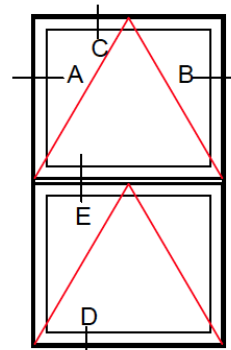
8621-PO



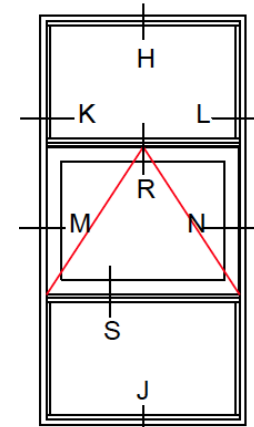
8611-PO



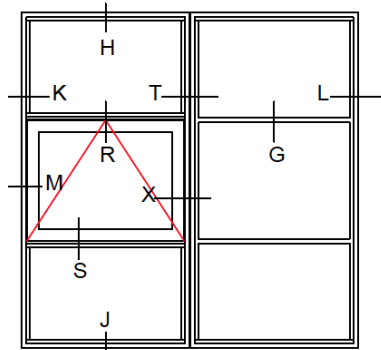
8622-PO



8612-PO/PO

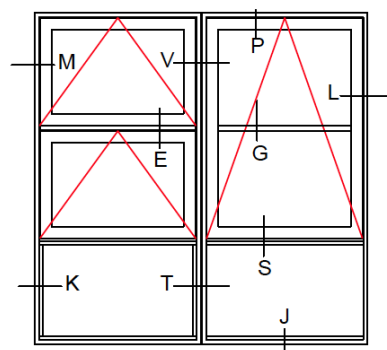


8613-FX/PO/FX



8613-FX/PO/FX

8613-FX



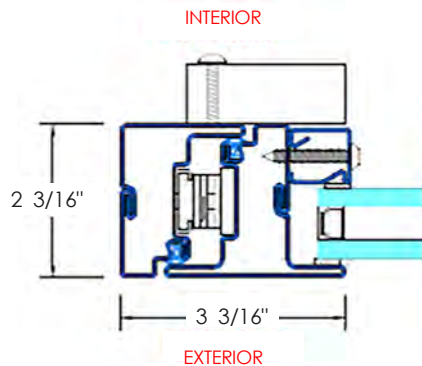
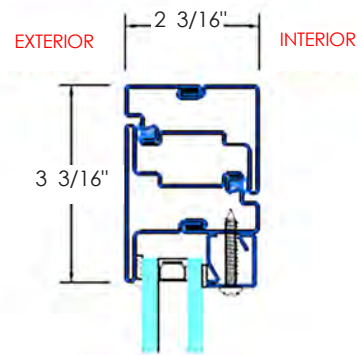
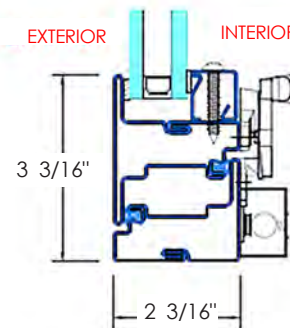
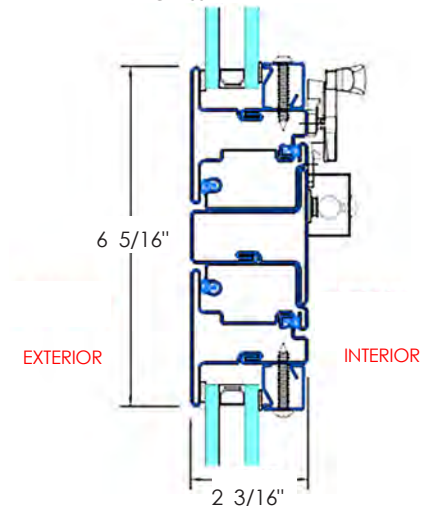
8613-FX/PO/FX

8613-FX/PO/FX

Windows with a width over 34" will receive
2 handles and 2 keepers

Windows with a width under 34" will receive
1 handles and 1 keeper

All units restricted to open 4"

**A&B** TYPICAL HINGED JAMB
1" FIRE-RATED GLASS**C** TYPICAL HEAD
1" FIRE-RATED GLASS**D** TYPICAL SILL
1" FIRE-RATED GLASS**E** TYPICAL STACKING JOINT
1" FIRE-RATED GLASS



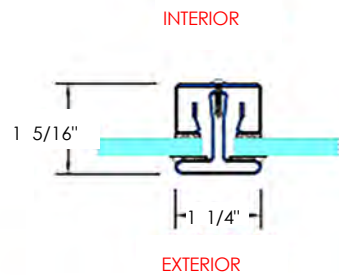
FIRE-RATED
WINDOWS & DOORS

FR8600

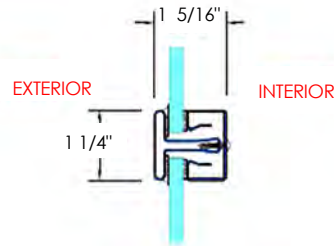
PROJECTED WINDOW

UL APPROVED AND CERTIFIED | 45 MINUTE FIRE-RATED

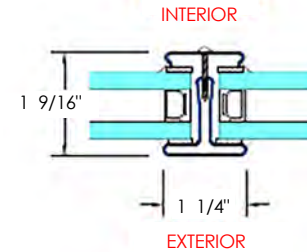
F TYPICAL VERTICAL MUNTIN
1" FIRE-RATED GLASS



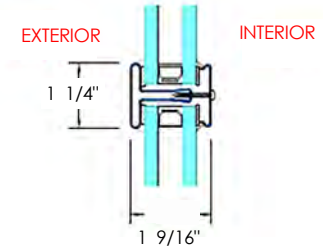
G TYPICAL HORIZONTAL MUNTIN 1"
FIRE-RATED GLASS



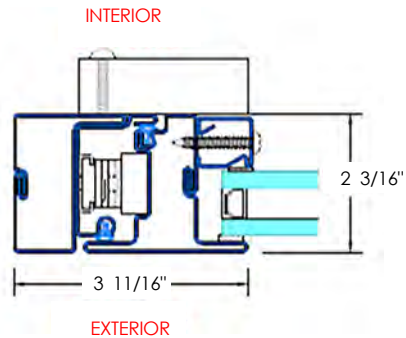
H & I TYPICAL VERTICAL 1"
FIRE-RATED GLASS



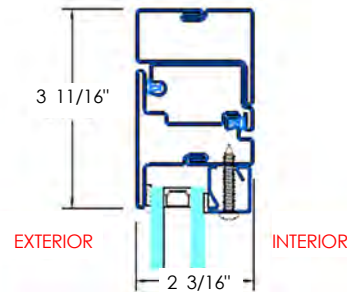
J & K TYPICAL HORIZONTAL MUNTIN
1" FIRE-RATED GLASS



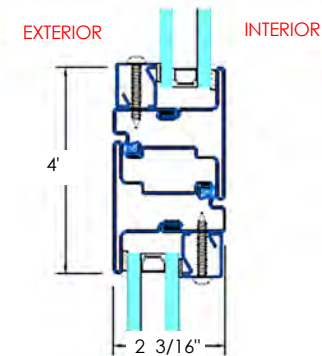
L & M TYPICAL STACKING JAMB
1" FIRE-RATED GLASS



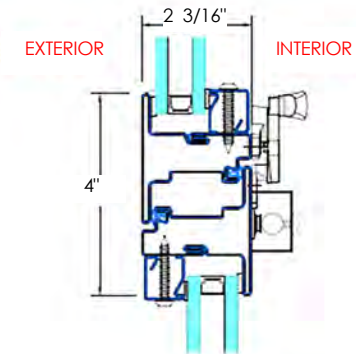
N TYPICAL STACKING HEAD
1" FIRE-RATED GLASS



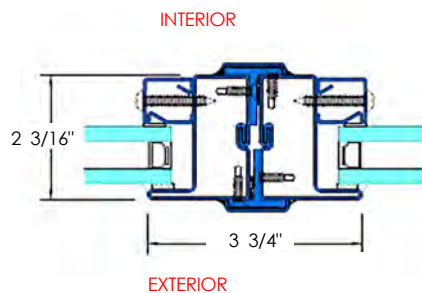
O TYPICAL STACKING MEETING RAIL
1" FIRE-RATED GLASS



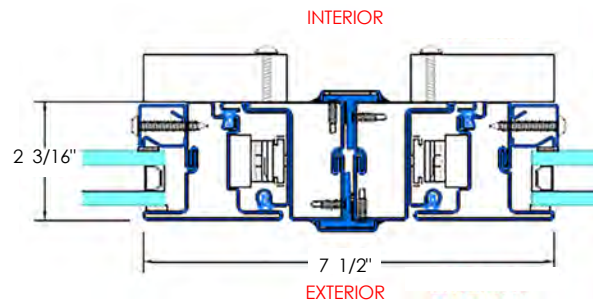
P TYPICAL LOCK STACKING MEETING RAIL
1" FIRE-RATED GLASS



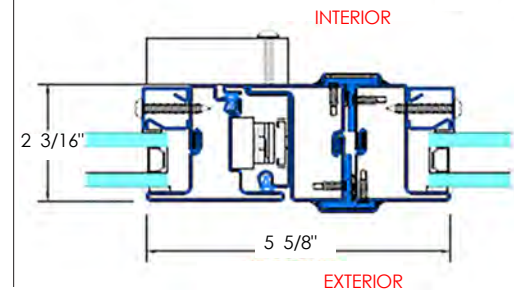
Q TYPICAL FIXED JOINING MULLION
1" FIRE-RATED GLASS



R TYPICAL OPERABLE JOINING MULLION
1" FIRE-RATED GLASS



S TYPICAL JOINING MULLION
1" FIRE-RATED GLASS



FR8600

PROJECTED WINDOW

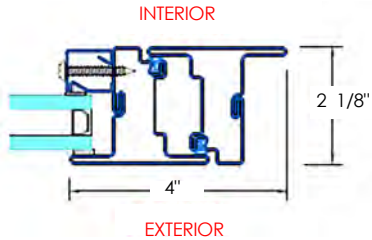
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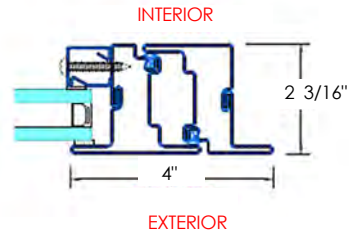
27

FIRE-RATED
WINDOWS & DOORS

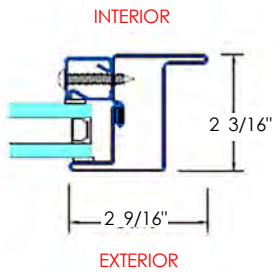
1 TYPICAL JAMB INTERIOR FLANGE
1" FIRE-RATED GLASS



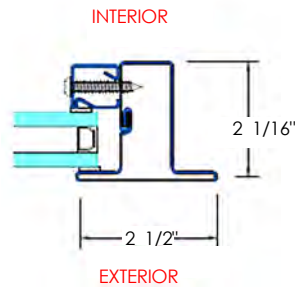
2 TYPICAL JAMB EXTERIOR FLANGE
1" FIRE-RATED GLASS



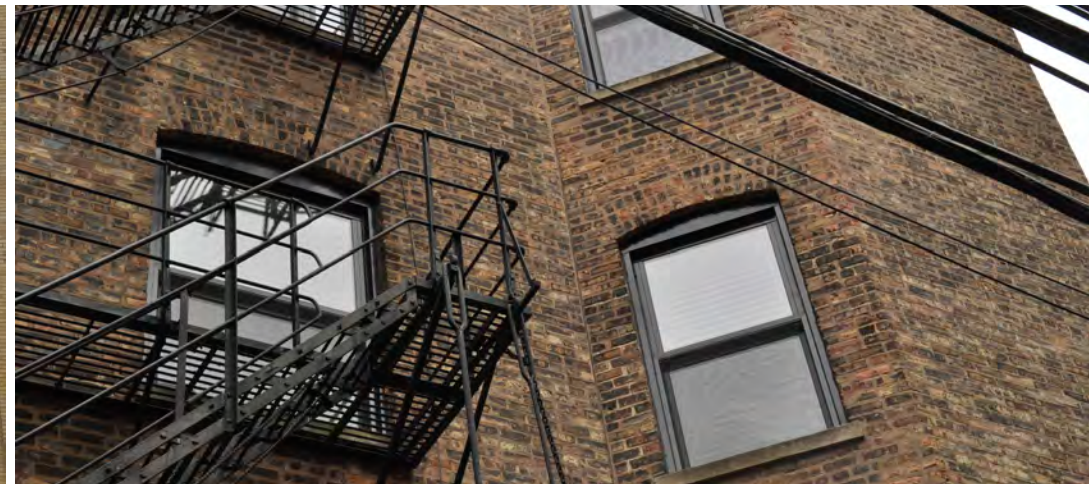
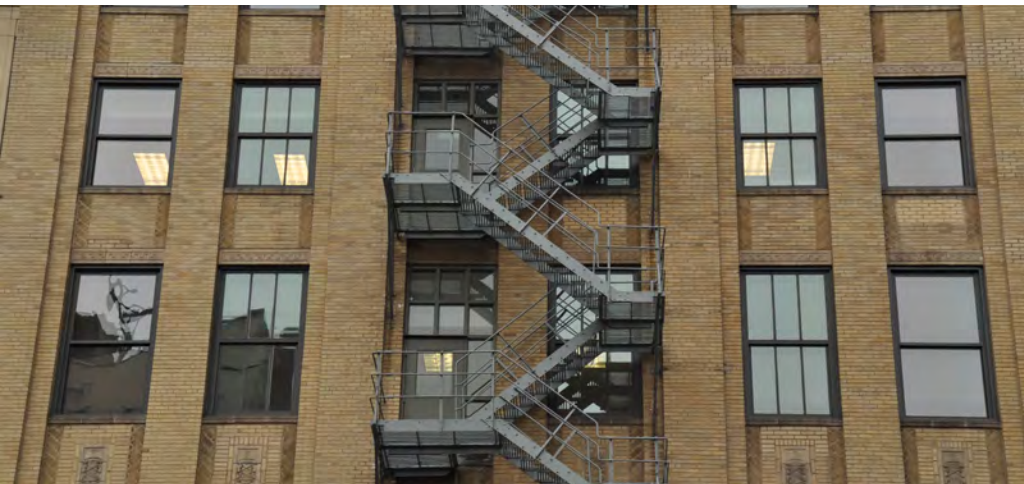
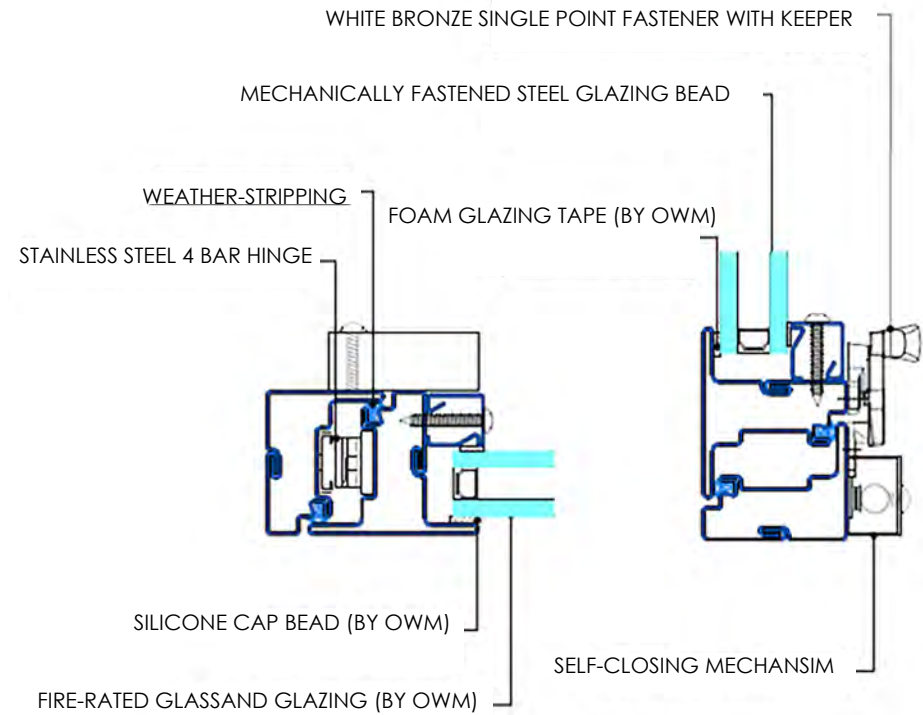
3 TYPICAL FIXED INTERIOR FLANGE
1" FIRE-RATED GLASS



4 TYPICAL FIXED EXTERIOR FLANGE
1" FIRE-RATED GLASS



KEY (TYPICAL)





FR7600TSS

SELF-CLOSING SINGLE SLIDER

UL APPROVED AND CERTIFIED | 45 MINUTE FIRE-RATED

45 minute fire-rating
All Cold-Rolled sections are formed from GALVANIZED STEEL
UL (Underwriters Laboratories) Listed and Certified
3 3/4" exterior frame depth
EPDM and Silicone Pile Weather-Stripping
Frames are coped and mechanically assembled
Glazing is held in place via mechanically fastened steel glazing beads
Can accommodate glazing ranging from 3/16" to 3/4" in O.A. thickness
Insulated glazing available for this series
All FR7600 TSS windows will be factory glazed
1 Sweep lock at center of sash up to 36", two sweep locks thereafter
1 Self Latching Lock
Standard Optimum Window colors (refer to OWM color chart)

Units can be supplied with installation straps

OPTIONS
RAL colors available as option & available upon request
Non-metallic color matches are optional & available upon request
Steel Break Metal trim
Half screens for operable sash is available
Limited Operation Stops are available
Monolithic Glazing Available

GENERAL TEST RESULTS & DIMENSIONAL LIMITATIONS

Hour Rating	Minimum Frame Dim.	Maximum Frame Dim.	(Air) ASTM E283 @ 6.25psf	(Water) ASTM E331 @ 5.0gph / ft2	Uniform Design Load ASTM E330	Maximum Vent Dim.	Maximum Wire Glass Dim.	Maximum Safety Glass	Maximum Ceramic Glass
3/4	30" x 20"	72" x 72"	.25 cfm / ft2	WTP @2.86psf	60psf	36" x 68"	1,296 sq in	optional	4,515 ln²

* NOTE: TEST SPECIMEN SIZE 48" X 96"

U Factor	CRF	SHGC	VT	GLAZING CONFIGURATION
.50	24	.35	.39	3/4" I.G.U (3/16" Polished Ceramic Glass or 3/16" Polished Safety Ceramic Glass w/ Surface Applied Film over 3/16" Pilkington Solar E [A type of hard coat LoE] Glass)

THIS INFORMATION IS INTENDED FOR GENERAL REFERENCE ONLY. FOR CURRENT LISTING DETAILS, PLEASE CALL OPTIMUM WINDOW MFG. CORP.
SHGC: Solar Heat Gain Coefficient **CR:** Condensation Resistance **VT:** Visible Transmittance

LISTINGS

Listed and labeled by Underwriters Laboratories Inc. and Underwriters' Laboratories of Canada. Test report for labeled 45 minute fire-rated frame assemblies is UL file NO. R-12349. Frame tests performed in accordance with ASTM E283, ASTM E331 & ASTM E330. Approved for use in New York City, MEA# 151-91-M

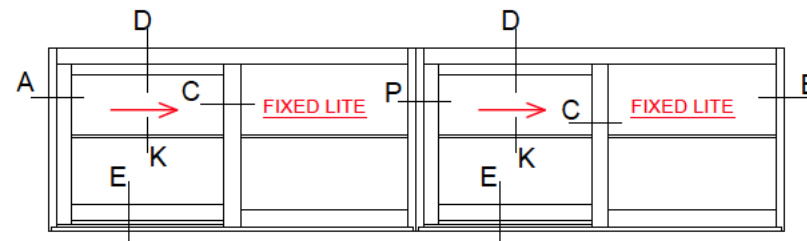
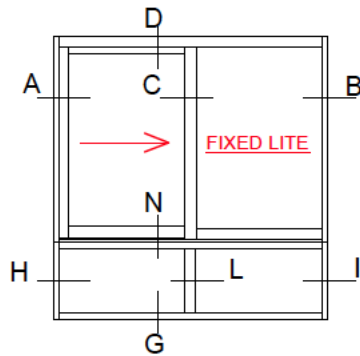
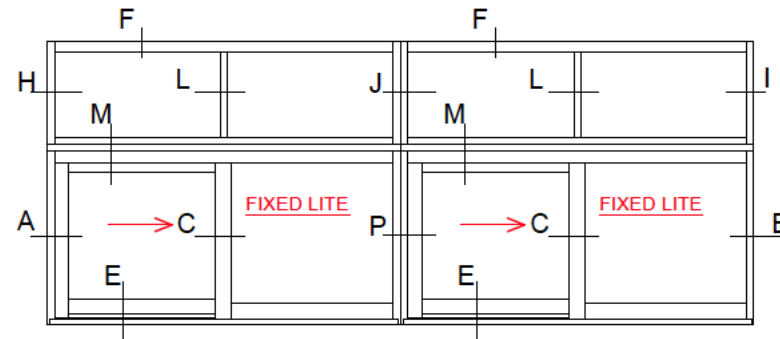
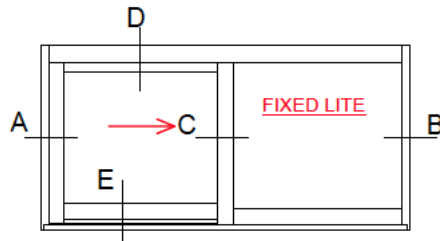
FR7600TSS

SELF-CLOSING SINGLE SLIDER

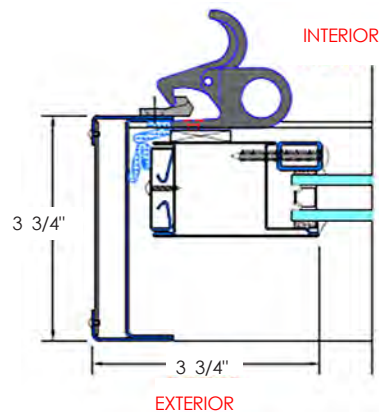
UL APPROVED AND CERTIFIED | 45 MINUTE FIRE-RATED



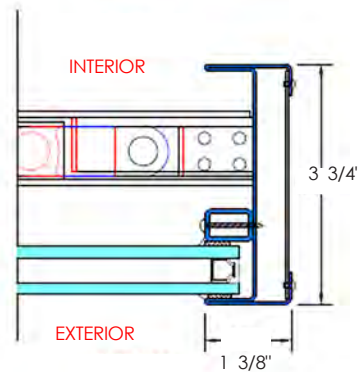
FIRE-RATED
WINDOWS & DOORS



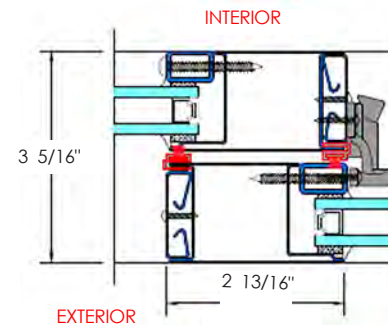
A TYPICAL LEFT JAMB 3/4"
FIRE-RATED GLASS



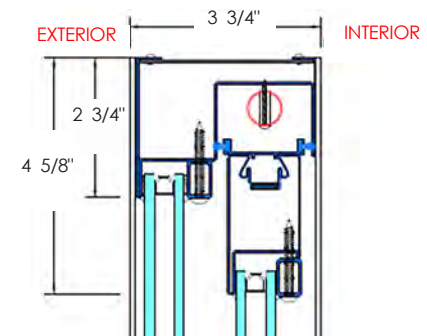
B TYPICAL RIGHT JAMB
3/4" FIRE-RATED GLASS



C TYPICAL MEETING RAIL
3/4" FIRE-RATED GLASS



D TYPICAL HEAD
3/4" FIRE-RATED GLASS



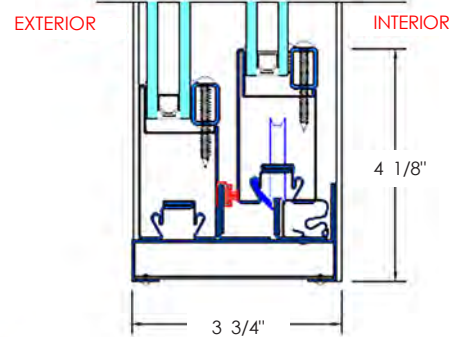


FIRE-RATED
WINDOWS & DOORS

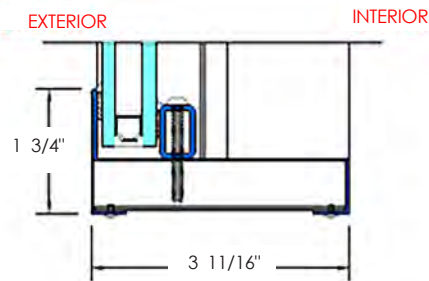
FR7600TSS SELF-CLOSING SINGLE SLIDER

UL APPROVED AND CERTIFIED | 45 MINUTE FIRE-RATED

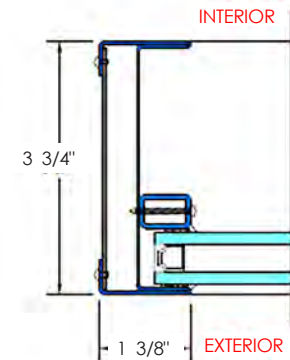
E TYPICAL SILL
3/4" FIRE-RATED GLASS



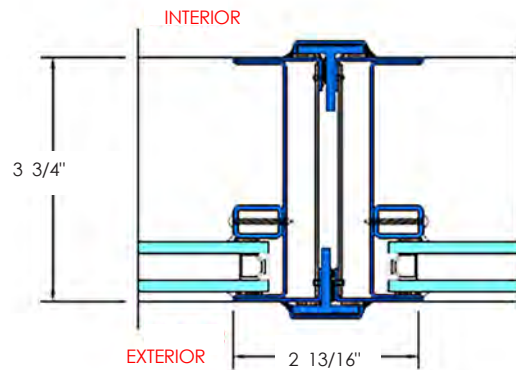
F & G TYPICAL TRANSOM HEAD & SILL
3/4" FIRE-RATED GLASS



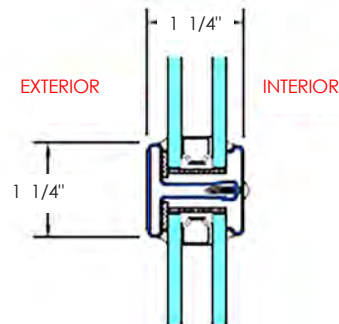
H & I TYPICAL TRANSOM JAMB
3/4" FIRE-RATED GLASS



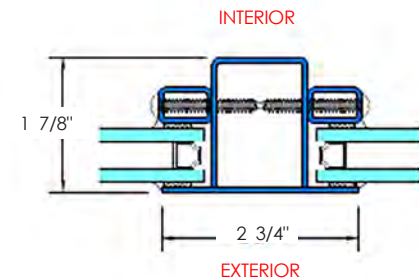
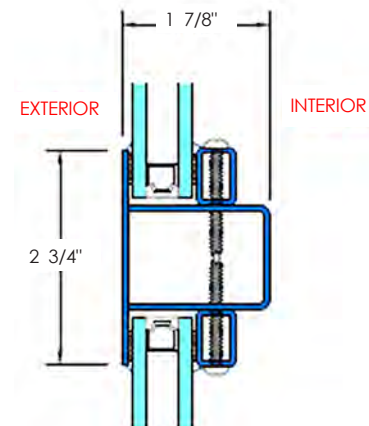
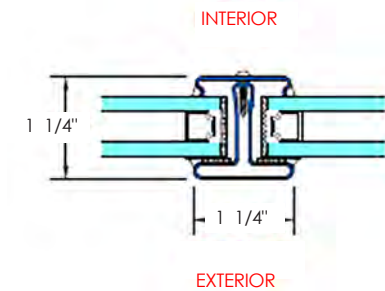
J TYPICAL JOINING MULLION
3/4" FIRE-RATED GLASS



K TYPICAL HORIZONTAL MUNTIN
3/4" FIRE-RATED GLASS



L TYPICAL VERTICAL MUNTIN
3/4" FIRE-RATED GLASS



FR7600TSS

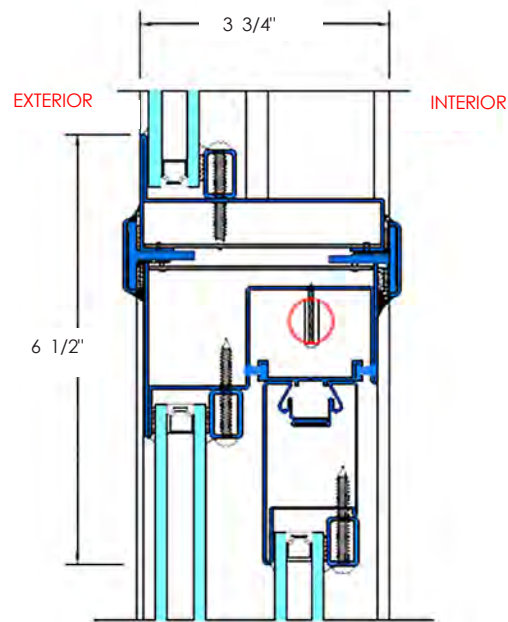
SELF-CLOSING SINGLE SLIDER

UL APPROVED AND CERTIFIED | 45 MINUTE FIRE-RATED

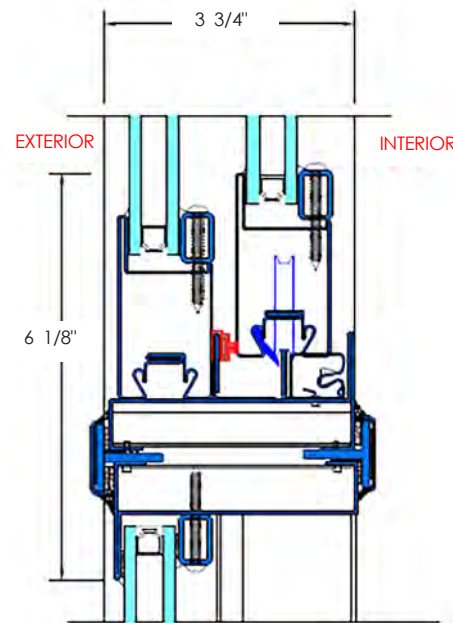


FIRE-RATED
WINDOWS & DOORS

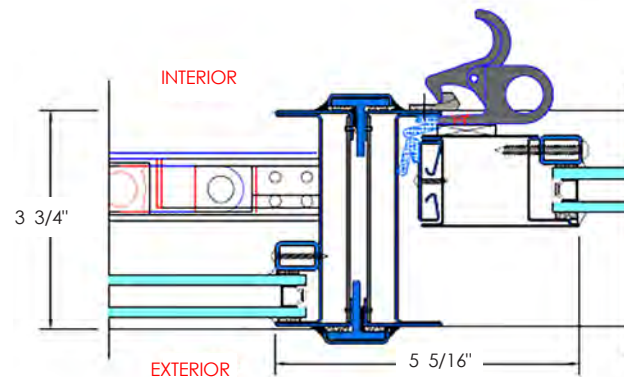
M TYPICAL STACKING MULLION W/ TRANSOM ABOVE
3/4" FIRE-RATED GLASS



N TYPICAL STACKING MULLION W/ TRANSOM BELOW
3/4" FIRE-RATED GLASS



O TYPICAL JOINING MULLION
3/4" FIRE-RATED GLASS





FIRE-RATED

WINDOWS & DOORS



FR55

SELF-CLOSING OUT-SWING DOOR

UL APPROVED AND CERTIFIED

45 - 90 MINUTE FIRE-RATED WHEN GLAZED WITH 3/16" CERAMIC GLASS

45 min rating; 90 min rating w/ Ceramic Glazing

All Cold Rolled sections are formed from GALVANIZED STEEL

UL (Underwriters Laboratories) Listed and Certified

EPDM and Silicone Pile Weather-Stripping

2 1/4" exterior frame depth

Glazing is held in place via mechanically fastened steel glazing beads

Can accommodate glazing ranging from 3/16" to 1" in O.A. thickness

Insulated glazing available for this series

All FR55 Fixed windows & doors will be factory glazed

Standard Optimum Window colors (refer to OWM color chart)

Units can be supplied with installation straps (upon request)

Fabricated in the United States of America

DOOR FEATURES

Mitered, corner keyed fully welded frame and sash joinery

Doors will arrive with fire resistant hinges and door closer

DOOR OPTIONS

RAL colors available as option

Non metallic color matches are optional & available upon request

Steel Break Metal trim

FIXED FEATURES

Mitered, corner keyed frame and sash joinery

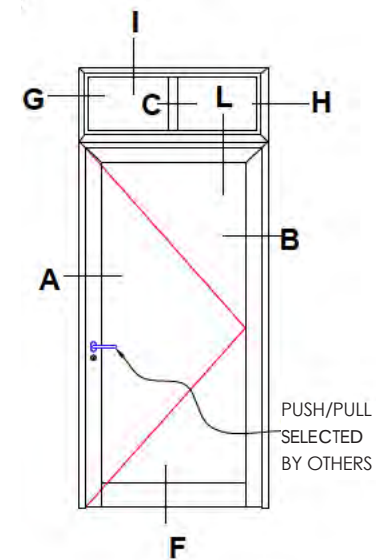
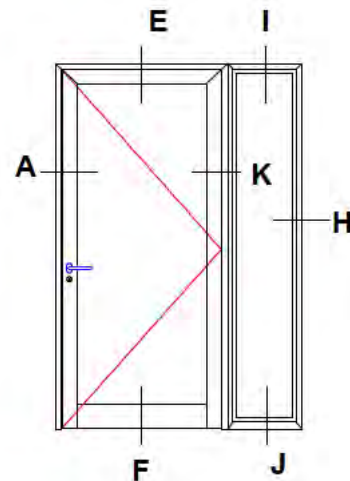
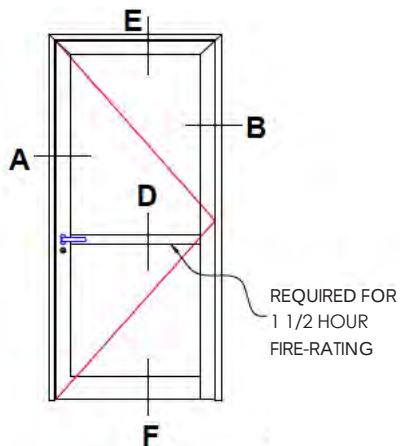
FIXED OPTIONS

RAL colors available as option

Non metallic color matches are optional & available upon request

Steel Break Metal trim

Monolithic Glazing Available





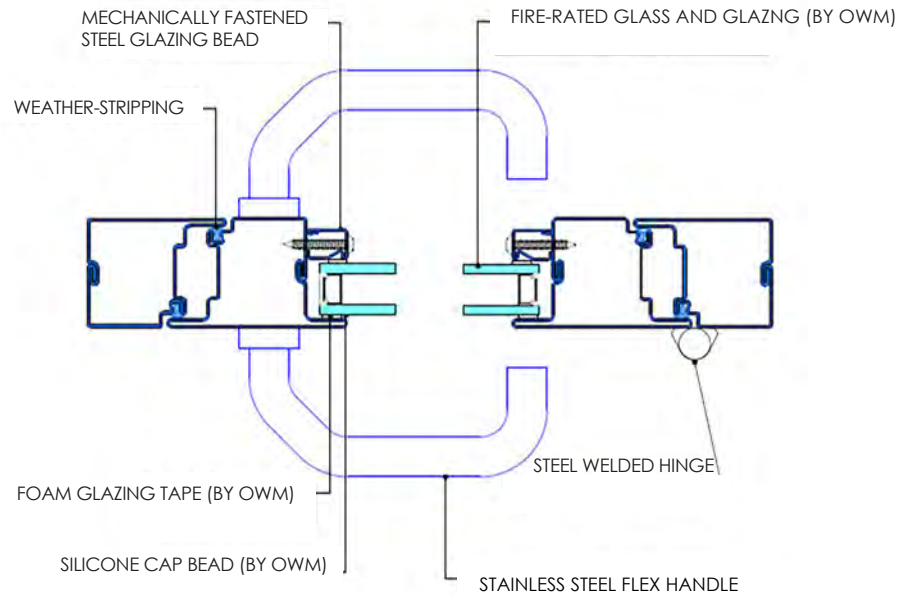
FIRE-RATED
WINDOWS & DOORS

FR55 SELF-CLOSING OUT-SWING DOOR

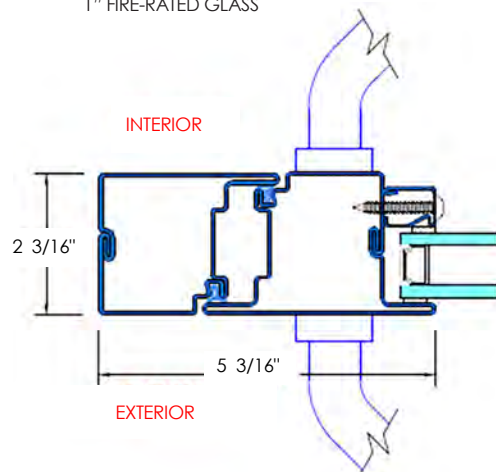
UL APPROVED AND CERTIFIED

45 - 90 MINUTE FIRE-RATED WHEN GLAZED WITH 3/16" CERAMIC GLASS

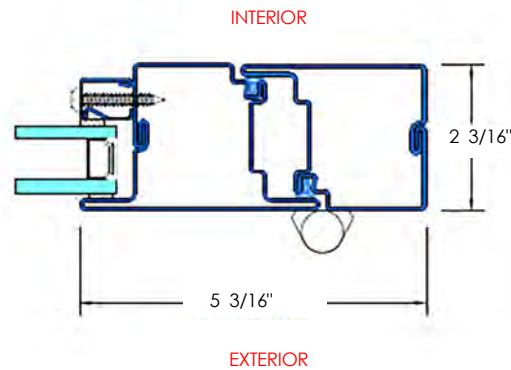
KEY (TYPICAL)



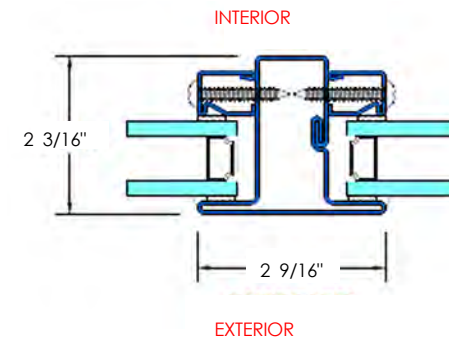
A TYPICAL LOCKING JAMB
1" FIRE-RATED GLASS



B TYPICAL HINGED JAMB
1" FIRE-RATED GLASS



C TYPICAL MUNTIN
1" FIRE-RATED GLASS





FIRE-RATED
WINDOWS & DOORS

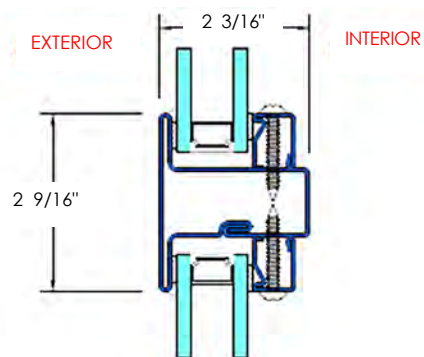
FR55

SELF-CLOSING OUT-SWING DOOR

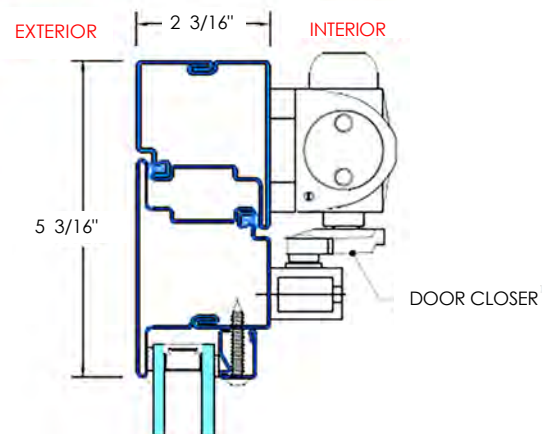
UL APPROVED AND CERTIFIED

45 - 90 MINUTE FIRE-RATED WHEN GLAZED WITH 3/16" CERAMIC GLASS

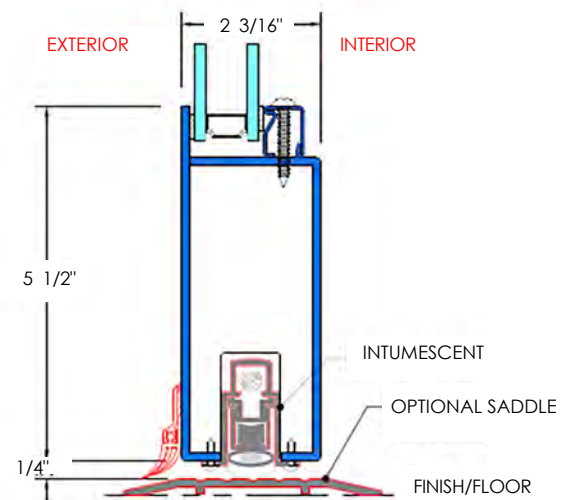
D TYPICAL MUNTIN



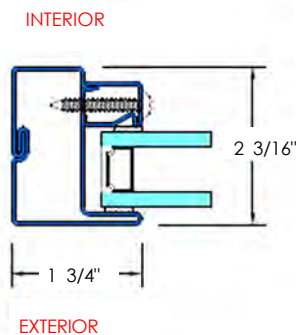
E TYPICAL HEAD W/ DOOR CLOSURE



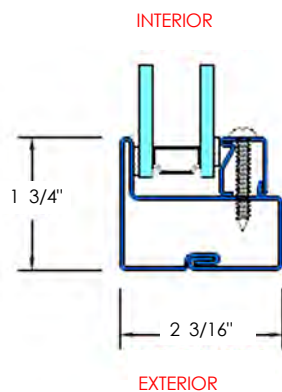
F TYPICAL KICKPLATE



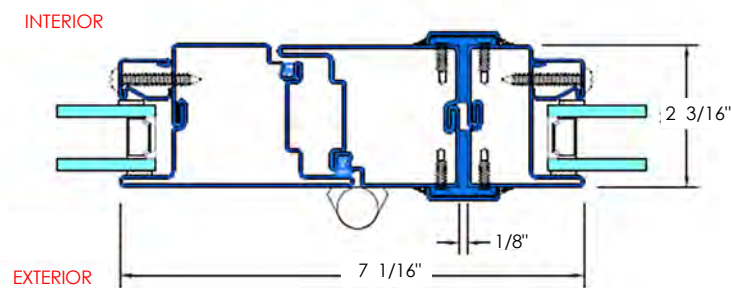
G & H TYPICAL FIXED JAMB



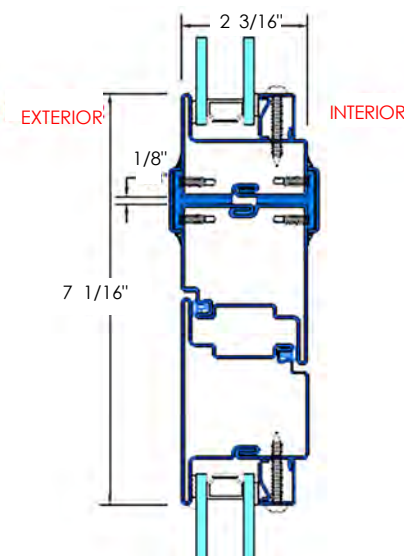
I & J TYPICAL FIXED HEAD & SILL



K TYPICAL JOINING SIDELITE/DOOR



L TYPICAL STACKING TRANSOM/DOOR



FR55-OD

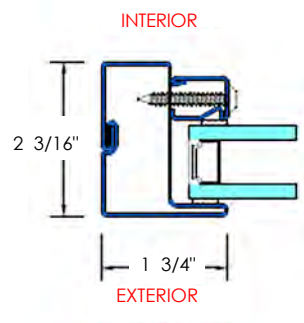
SELF-CLOSING OUT-SWING DOOR

UL APPROVED AND CERTIFIED
45 - 90 MINUTE FIRE-RATED WHEN GLAZED WITH 3/16" CERAMIC GLASS



FIRE-RATED
WINDOWS & DOORS

1 1" FIRE-RATED GLASS



LISTINGS

Listed and labeled by Underwriters Laboratories Inc. and Underwriters' Laboratories of Canada. Test report for labeled 45/60/90 minute fire-rated frame assemblies is UL file NO. R-12349. Frame tests performed in accordance with ASTM E283, ASTM E331 & ASTM E 330. Approved for use in New York City, MEA# 151-91-M
GENERAL TEST





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