GLOBAL WINDOWS AND DOORS

3500 Series

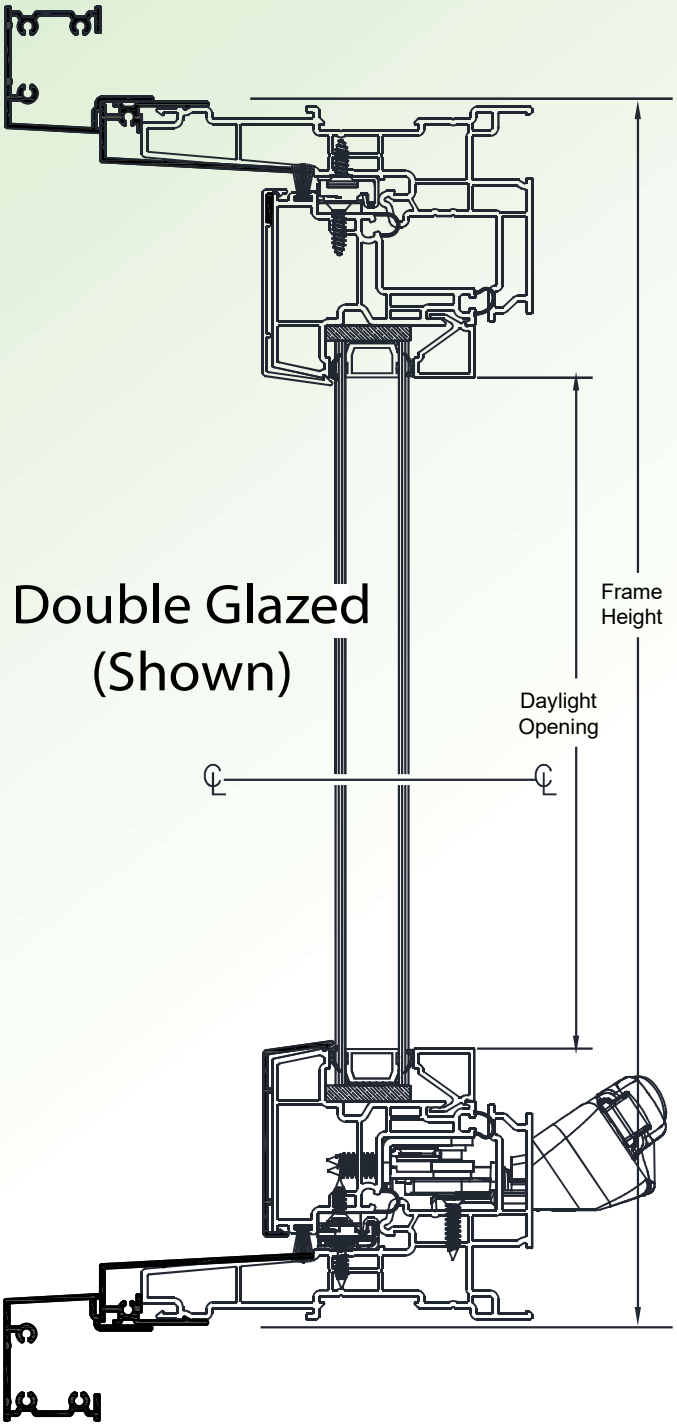
Architectural Specifications
Chapter 2

Casement Hybrid

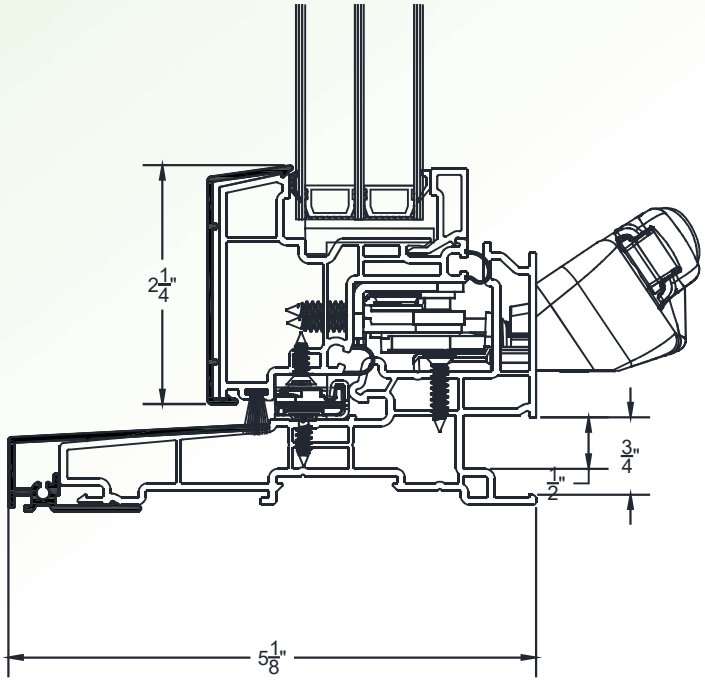
Global Windows and Doors manufactured products are structurally tested in accordance with AAMA/WDMA/CSA 101/I.S.2/A440-08 and -11 'NAFS' with the A440S1-09 Canadian Supplement. And energy performance tested in accordance with ANSI/NFRC 100, NFRC 200 and NFRC 500 as determined by the NFRC Standards accreditation agency.

This energy efficient side hinged, outward projecting to a full 90 degree Aluminum Clad Hybrid Casement style window, complete with a finished geared ratio folding crank for ease of operation was conceptualized at Global Windows and Doors with durability and performance as our primary engineering design criteria. Incorporating durability and performance while exceeding Building Code of Canada and regional building code standards.

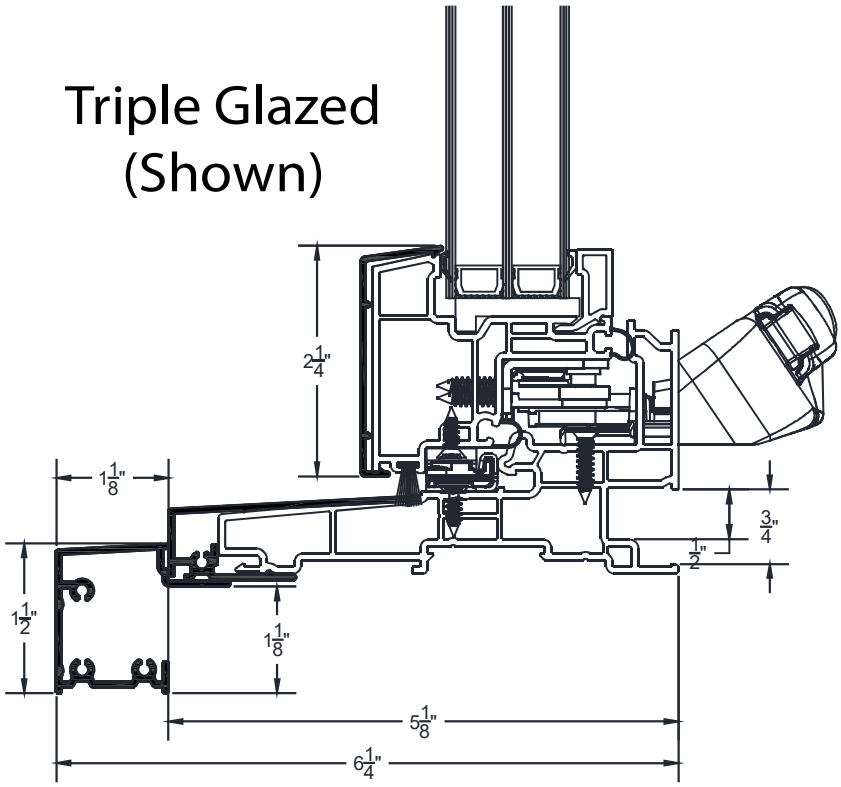
Casement Hybrid



Double Glazed (Shown)



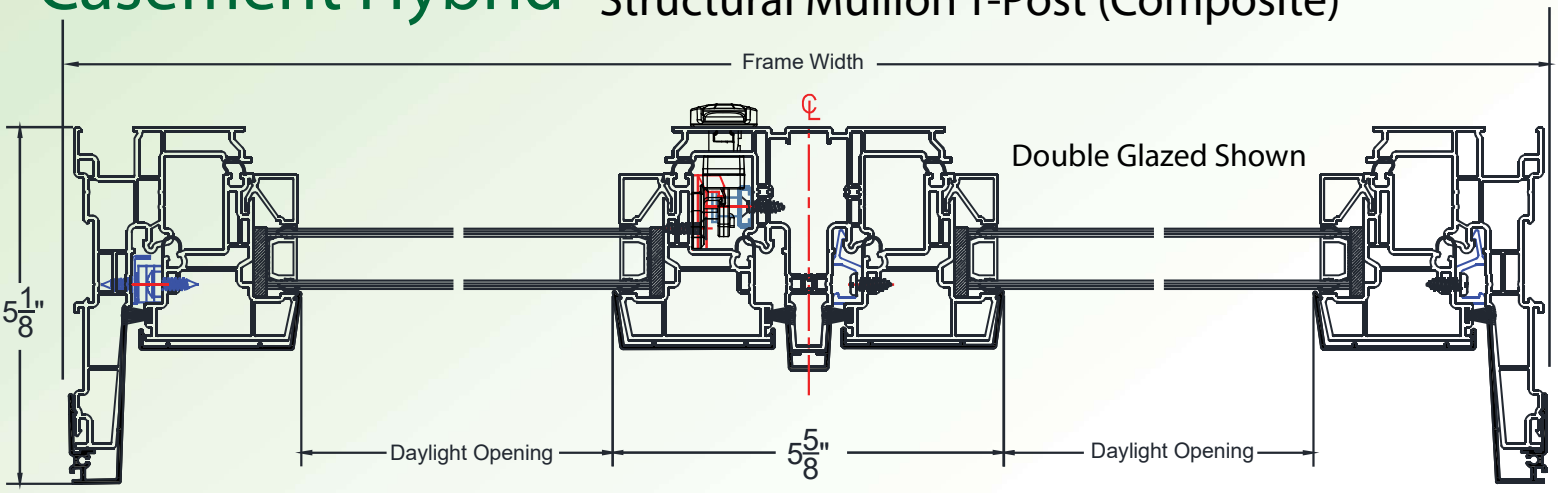
Triple Glazed (Shown)



Brickmould Option

Casement Hybrid

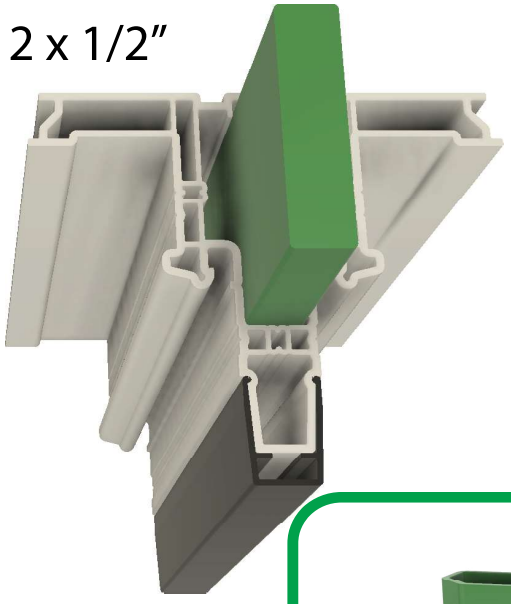
Structural Mullion T-Post (Composite)



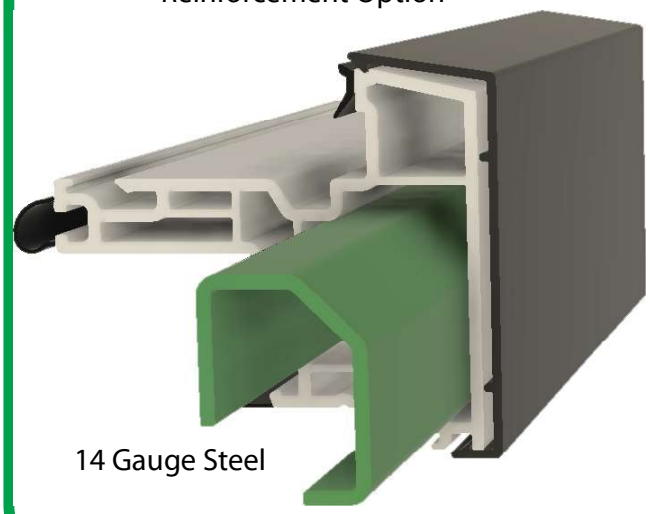
Reinforcement Option

T-Post
Reinforcement Option

2 x 1/2"



Sash
Reinforcement Option

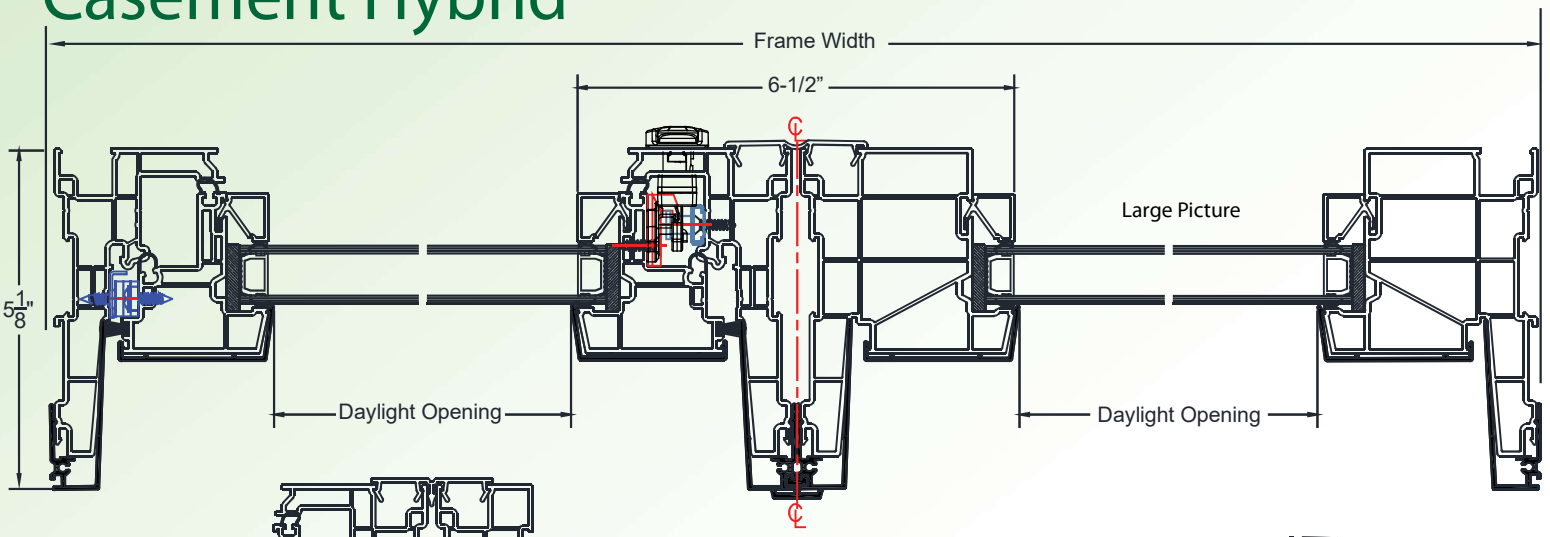


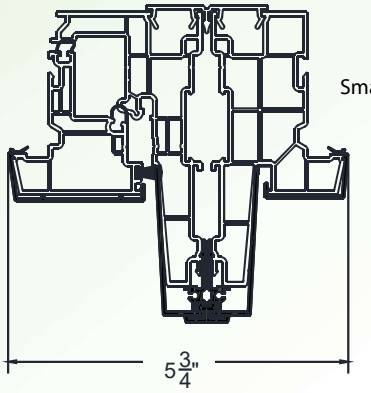
14 Gauge Steel

Nominal 0.050"
6063 Grade Aluminum
Cladding

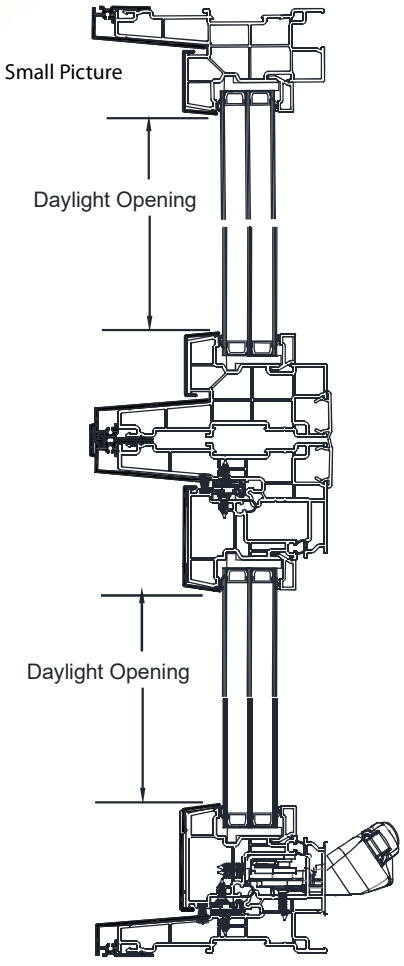
Casement Hybrid

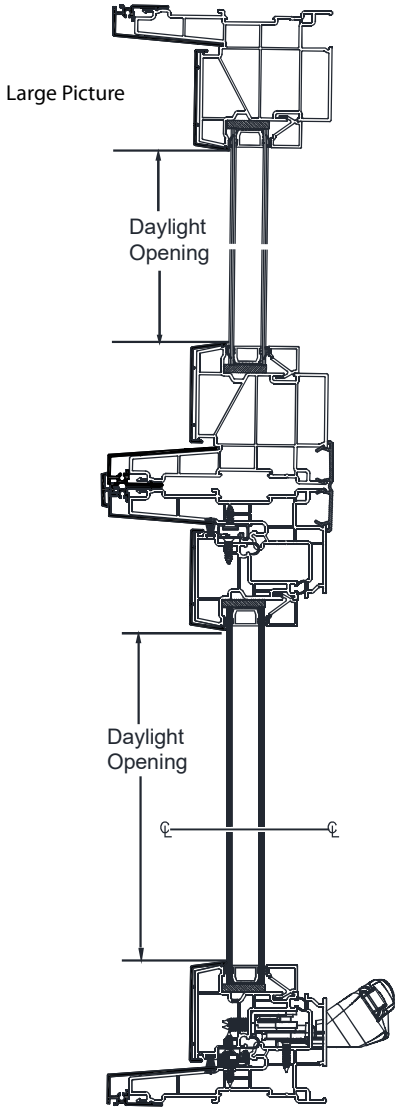
Mulled Combination



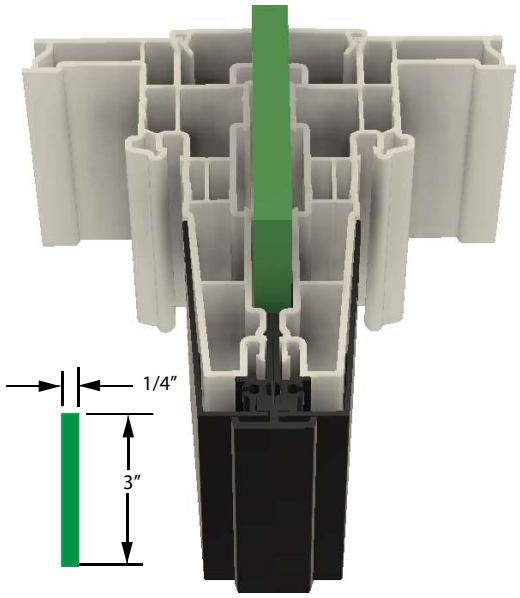


Double
and
Triple Glazed Options





Reinforcement Option



Casement Hybrid

NAFS

Based on the results of the testing summarized in Table 1, Global Windows and Doors, "3000 Series Casement" Window Unit, Exova Specimen No.: 13-06-M0432-9 met the following requirements as outlined in the NAFS - AAMA/WDMA/CSA 101/I.S.2/A440-08 and -11 "NAFS" with the Canadian Suppliment A440S1-09 Window Standard:

Sizes Tested

SERIE #	REPORT #	DESCRIPTIONS	REINF.		DIM	RATING		NAFS
			Y	N		AIR	WATER	CLASSE
3500 (3¼'')								
3000	AI-04878-B	Fixed window (architectural)		X	78 x 72	A3	730Pa	CW-PG60-FW
3500 (4⅝'')								
3000	13-06-M0432-9	Casement window		X	32 x 60	A3	730Pa	LC-PG75-C
3000	13-06-M0432-11	Casement window		X	24 x 60	A3	730Pa	R-PG100-C
3000	AI-04196-B2	Casement window		X	32 x 72	A3	730Pa	CW-CP55-C
3000	AI-04878-A	Casement window		X	36 x 72	A3	730Pa	LC-CP65-C
3000	AI-04196-B1	Casement window (4 keepers)		X	32 x 72	A3	730Pa	LC-CP65-C
3000	AI-04533-A1	Casement (Radisson hardware)		X	36 x 72	A3	730Pa	LC-CP65-C
3000	AI-04533-B1	Casement (Interlock hardware)		X	36 x 72	A3	730Pa	LC-CP65-C
3000	AI-04196-C1	Casement XOX (4 keepers)		X	100 X 72	A3	730Pa	LC-CP30-C
3000	AI-04196-R1	Casement XOX with top light		X	100 x 108	A3	730Pa	R-CP20-C

Reference: Test Report 13-06-M0432-9
Primary product designator:
Optional Secondary designator:

(Non-reinforced)

Class LC-PG75-C size tested 800 x 1,500 mm (32 x 60")
Positive Design Pressure (DP) = 3,600 Pa (75.0 Psf)
Negative Design Pressure (DP) = -3,600 Pa (-75.0 Psf)
Water Penetration Resistance = 730Pa (15.0 Psf)
Air Leakage Resistance = A3 Level Canadian

Reference: Test Report 13-06-M0432-11
Primary product designator:
Optional Secondary designator:

(Non-reinforced)

Class R-PG100-C size tested 600 x 1,500 mm (24 x 60")
Positive Design Pressure (DP) = 4,800 Pa (100.00 Psf)
Negative Design Pressure (DP) = -4,800 Pa (-100.0 Psf)
Water Penetration Resistance = 730Pa (15.0 Psf)
Air Leakage Resistance = A3 Level Canadian

Fixed (Sash) Casement

Reference: Test Report 13-06-M0432-4
Primary product designator:
Optional Secondary designator:

(Non-Reinforced)

Class R-PG80-FW size tested 1,500 x 1,500 mm (60 x 60")
Positive Design Pressure (DP) = 3,840 Pa (80.0 Psf)
Negative Design Pressure (DP) = -3,840 Pa (-80.0 Psf)
Water Penetration Resistance = 730 Pa (15.0 Psf)
Air Leakage Resistance = A3 Level Canadian

Casement Hybrid

NFRC SIMULATION IN ACCORDANCE WITH
ANSI/NFRC 100, ANSI/NFRC 200 AND NFRC 500

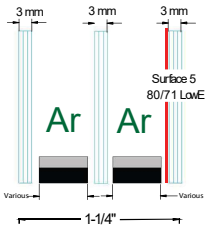
Our IG's are Hermetically sealed, using Guardian Float Clear and ClimaGuard 80/71, 70/36 and IS 20 LowE insulating glass with minimum 90% plus Argon and/or Krypton gas fill. Combined with a primary seal made of pressure sensitive acrylic adhesive Super Spacer® Premium warm edge high performance silicone with integrally incorporated desiccant. Our perimeter Secondary seal is made of Butyl Hotmelt all tested and IGMAC Certified (cert. No. 021141G) in accordance with CAN/CGSB 12.8 Standard.

Glazing Options

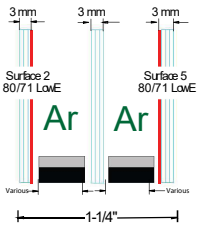
Ar = Argon 39.95 Kr = Krypton 84.80

Surface 1 2 3 4 5 6

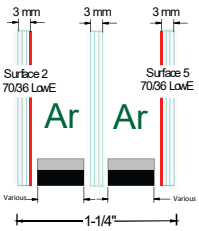
Triple Glazed Configurations



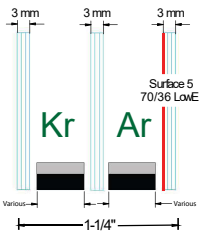
GWS-M-55-



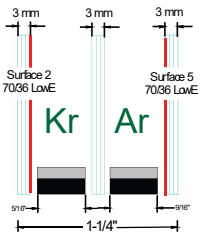
GWS-M-55-



GWS-M-55-



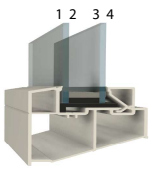
GWS-M-55-



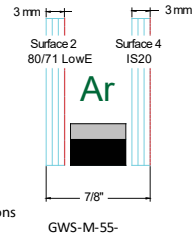
GWS-M-55-

NRCan Searchable Product List	Option Name	Insulating Glass Unit		Overall Product					
		Glazing Layers	Grid	U Factor W/m2-K	U Factor Btu/hr-ft2-F	SHGC	VT	CR	Energy Rating
GWS-M-54-	SP_3mm_8070#2-Arg90-ClrGuard-Arg90-8070#5	3	N	1.08	0.19	0.38	0.48		37
GWS-M-54-	SP_3mm_8070#2-Arg90-ClrGuard-Arg90-8070#5_Georgian8x18_Cover	3	G	1.1	0.19	0.35	0.43		35
GWS-M-54-	SP_3mm_7036#2-Arg90-ClrGuard-Arg90-7036#5	3	N	1.02	0.18	0.22	0.36		29
GWS-M-54-	SP_3mm_7036#2-Arg90-ClrGuard-Arg90-7036#5_Georgian8x18_Cover	3	G	1.04	0.18	0.20	0.32		28
				NRCan Most Efficient					
				Meets NRCan Certification					

Surface 1 2 3 4



Double Glazed Configurations



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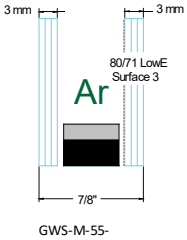

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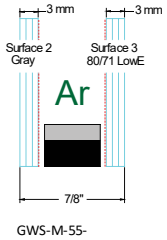

GWS-M-55-

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Canada
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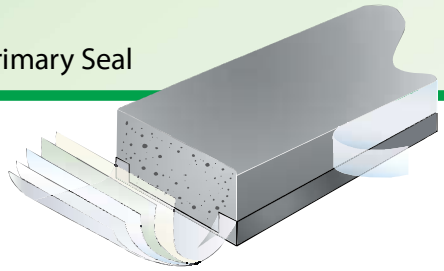
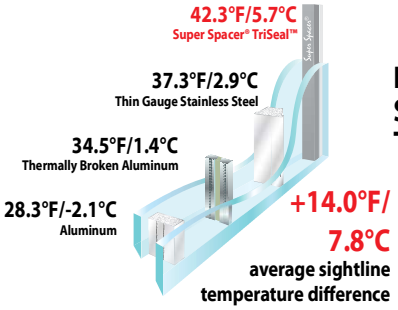
NRCan Searchable Product List	Option Name	Insulating Glass Unit		Overall Product					
		Glazing Layers	Grid	U Factor W/m2-K	U Factor Btu/hr-ft2-F	SHGC	VT	CR	Energy Rating
GWS-M-54-	SP_3mm_ClrGuard-Arg90-8070#3	2	N	1.58	0.28	0.46	0.53		32
GWS-M-54-	SP_3mm_ClrGuard-Arg90-8070#3_Georgian8x18_Cover	2	G	1.58	0.28	0.42	0.48		30
GWS-M-54-	SP_3mm_ClrGuard-Arg90-8070#3_Rectangular	2	G	1.58	0.28	0.42	0.48		30

Casement Hybrid

Primary Seal



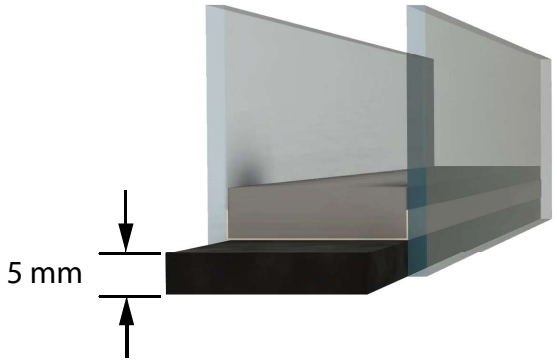
Quanex Super Spacer



Improves Glass Surface Temperature

Secondary Seal

H.B. Fuller HL5130-149 Hotmelt butyl provides excellent adhesion to glass and resistance to moisture vapor for long term IG performance.



Code Compliant Child Safety Window Restrictor

Maximum Opening

4" (101.6 mm)

Screens:

Rigid aluminum overlap bar frame assembled with PVC corners. Screen removable from interior. 16 x 18 Mesh Fibreglass screen cloth.

Paint:

This High Performance Paint system is designed for rigid uPVC and and Aluminum and is offered in a wide variety of colors that can be formulated to meet customers specifications. This paint features superior abrasion and chalking resistance as well as excellent protection from salt exposure, industrial pollutants and acts as an efficient heat barrier that prevents substrates from warping.

Casement Hybrid

Casement Hardware Options (Default)

NOVA® Casement Family

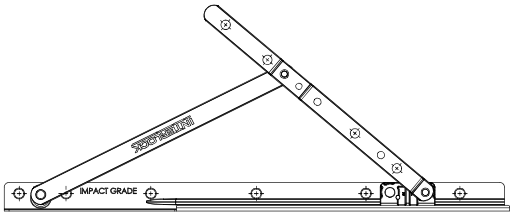
INTERLOCK ASSA ABLOY

NOVA® Casement Operator Specs

Optional Chrome Handle and Cover

- Hardware Load testing capabilities (40" X 84"):
  - Dual-Arm w/10" NOVA® Clean hinge supports 128 lbs
  - Dual-Arm w/13" NOVA® Clean hinge supports 148 lbs
- All NOVA® operators pass cycle testing for **Architectural Grade 40** with a minimum factor of safety of 2 (16K+ cycles)
  - highest industry rating
- In combination with NOVA® 2-bar hinges, the NOVA® casement hardware load capability is also the highest in the industry
- All powder coated parts are pretreated with zinc chromate and UV resistant powder coating surpassing 750 hours Neutral Salt Spray resistance
- External connecting points are 304 stainless steel for maximum Neutral Salt Spray resistance
- Ability to achieve 5 lbs operational force on sash weights of up to 125 lbs

NOVA® Casement Hinges



- Hinges Available in 10" Washability and NBCC 9.9 compliant Egress 10" for window sash widths up to 32". And 13" for window sash widths in excess of 32".
- NOVA ® Clean opens 90 degrees for full ventilation and cleaning position
- Eccentric pivot stud adjustment feature allows for convenient sash adjustment of +/- 2 mm (0.08") with the window open or closed (fig. A below)
- All pivot points use a non-corrosive material for superior corrosion resistance
- Arm assemblies are available in a 304 stainless steel option
  - The average hardware load test failure mode changes from the hinge slide & track failing (with window sash falling out of the frame) to a less catastrophic failure of the operator arm assembly
  - Capable of withstanding loads over 325 lbs in negative air testing
- Industry-leading hardware load test capability
  - 10" Hinge supporting sash sizes of 40" W X 84" H with 128 lbs sash weight
  - 13" Hinge supporting sash sizes of 40" W X 84" H with 148 lbs sash weight

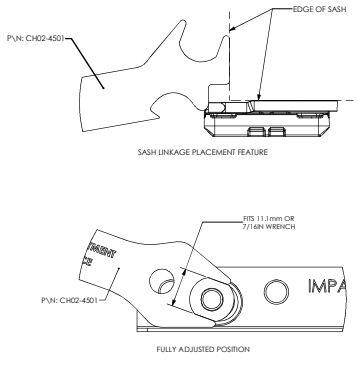


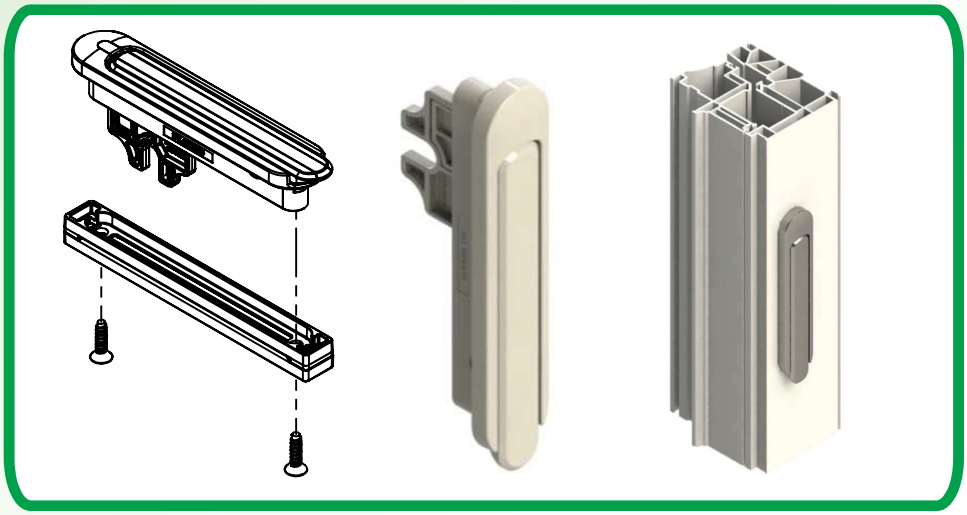
Figure A

Casement Hybrid

NOVA® Slim Casement Locking Handles

NOVA® Slim Handle

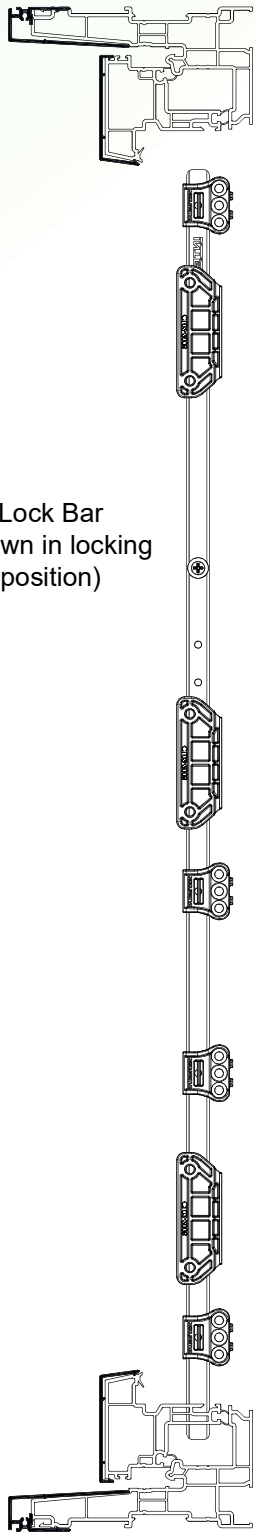
- Super low profile with only 8 mm projection
- Offering 48 mm [1.89”] of fork motion
- Handle retainer features brush gasket to provide insect barrier
- Available in powder coat and architectural finishes



NOVA® Casement Locking Bars

- 48 mm [1.89”] of lock bar travel provides secure multi-point locking and progressive locking action
- Self-locating guides provide quick and easy installation
- +/- 1.1 mm [0.043”] adjustable mushroom-headed roller pins to overcome manufacturing tolerances
  - Simple Phillips-head adjustment
- High-strength design for impact-certified applications
  - 227 kg (500 lbs) maximum load per locking point
- Stainless steel pins are standard on all locking bar series and finishes for maximum corrosion protection
- Available in all stainless steel or powder-coated finish
- Cycle tested to 10K cycles at 15 lbs handle force

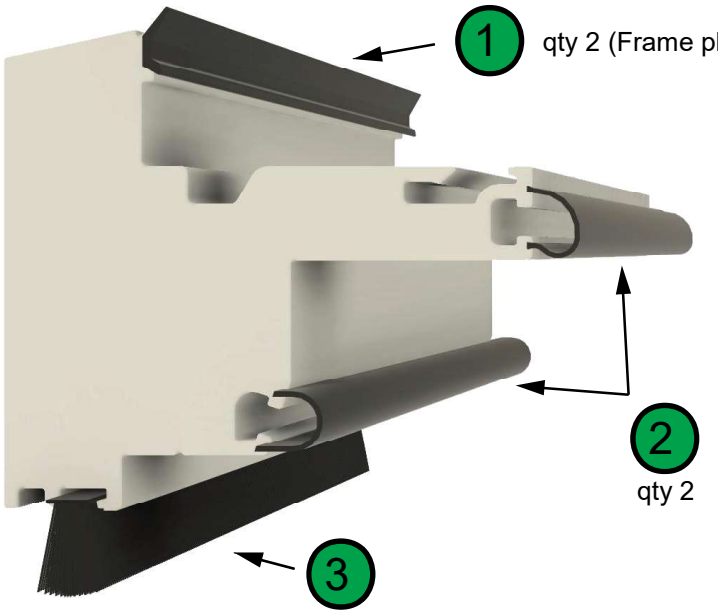
NOTES:
- GUIDES SELF LOCATE ON LOCK BAR.
- LOCKBARS ARE 304 SERIES STAINLESS STEEL OR POWDER COATED STEEL.
- STRIKES AND GUIDES ARE ACETAL.
- LOCKPIN ADJUSTMENT = ±.039" (1mm).
- PULL-IN AMOUNT = .46" (11.6mm).
- STRIKES ARE PROGRESSIVELY OFFSET.

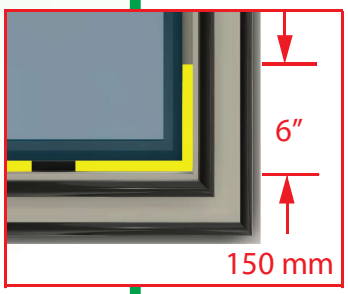


Lock Bar
(shown in locking position)

Casement Hybrid

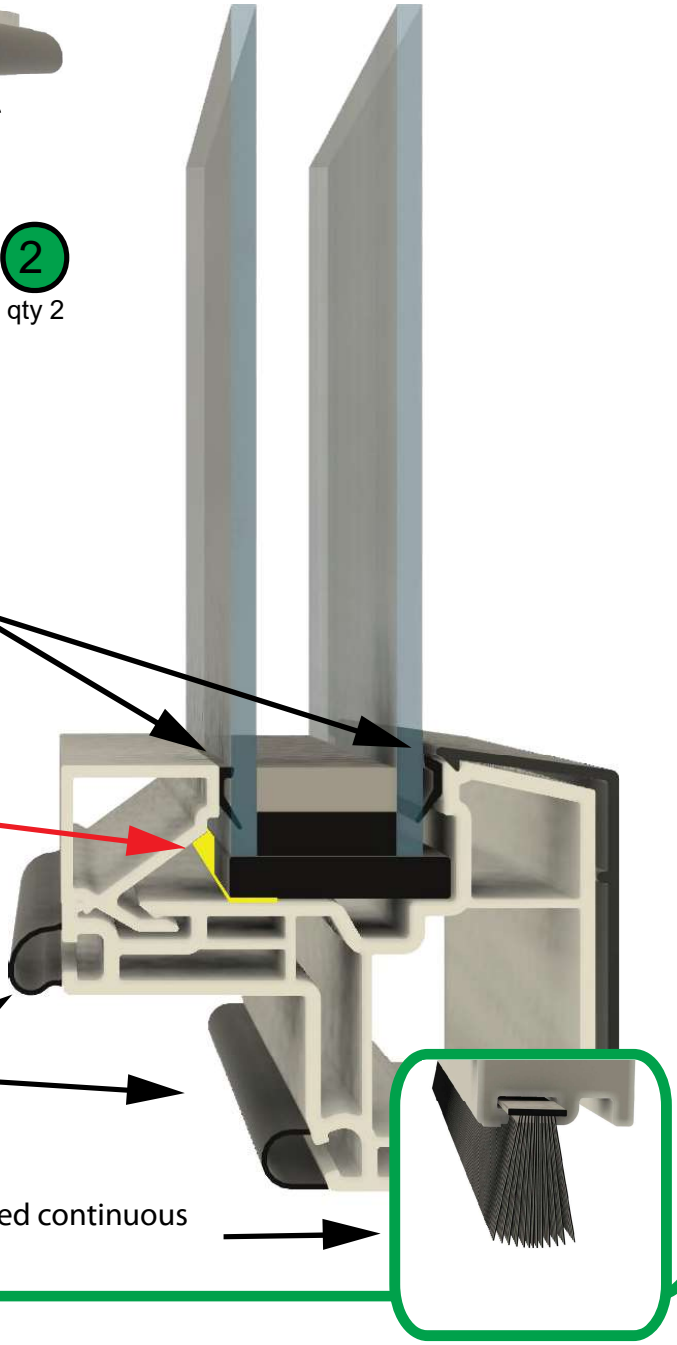
Weatherstrip - Sealing





1 Primary non-apparent coextruded tension linear seal on both sides of glazing.

Tertiary high quality ASTM C 1184 compliant Structural Silicone Sealant Back-bead across the bottom and at least 150 mm up each side.



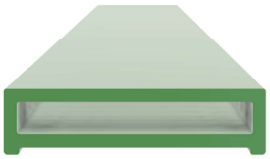
2 Double Interior coextruded compression bulb seals.

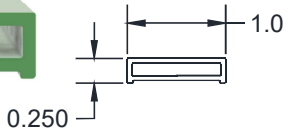
3 T-Slot mount extruded continuous at corners fibre pile.

Casement Hybrid

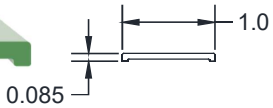
SDL Options

Interior

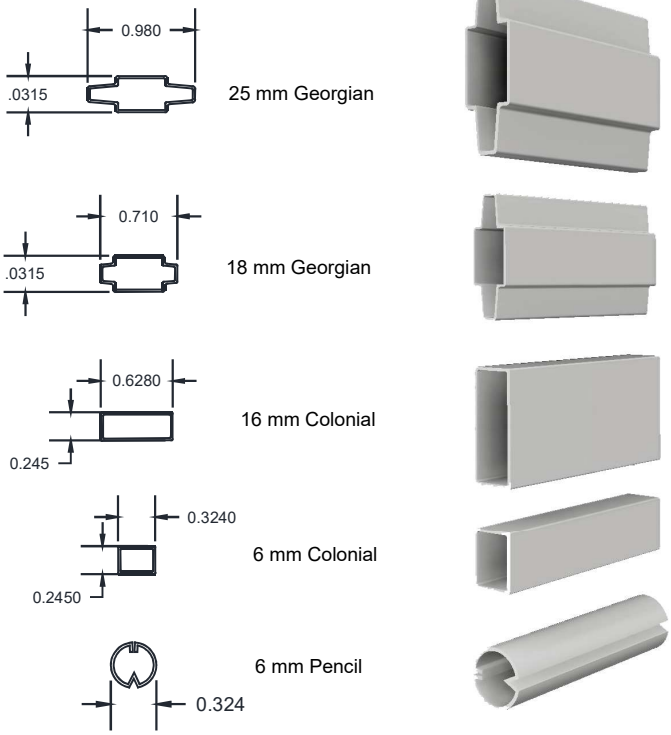




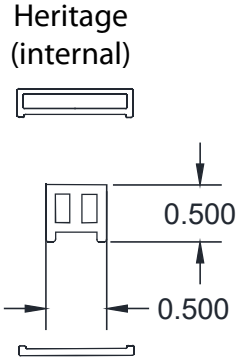
Exterior



Grill Options



Heritage (internal)



Casement Hybrid

NBCC 9.9 Compliant

Specification/Standards - built in accordance with:

Canadian General Standards Board (CGSB)

.1 CAN/CGSB-12.1-M90 - Tempered or Laminated Safety Glass.

.2 CAN/CGSB-12.2-M91 - Flat, Clear Sheet Glass.

.3 CAN/CGSB-12.3-M91 - Flat, Clear Float Glass.

.4 CAN/CGSB-12.8-M90 - Insulating Glass Units.

Canadian Standards Association (CSA)

.1 AAMA/WDMA/CSA 101/I.S.2/A440-[08][11] - NAFS - North American Fenestration Standard / Specification for Windows, Doors, and Skylights; including A440S1-09 - Canadian Supplement.

.2 AAMA/NWWDA 101/I.S. 2-97, Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors.

Insulating Glass Manufacturers Alliance (IGMA)

.1 IGMAC Certification Program for manufacturers of insulating glass units.

National Fenestration Rating Council (NFRC)

.1 ANSI/NFRC 100 – Procedure for Determining Fenestration Product U-Factors.

.2 ANSI/NFRC 200 – Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmissionat Normal Incidence.

.3 NFRC 500 – Procedure for Determining Fenestration Product Condensation Resistance Values.

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