

Series 680 Single Hung/Tilt • Series 690 Double Hung/Tilt* • Series 6600 Fixed* 3 7/8" Heavy Commercial Hung Thermal Window



CONFIGURATIONS

Single Hung/Single Tilt • Double Hung/Double Tilt • Fixed

This product family of hung windows retains an AAMA Architectural Grade rating to meet the most demanding specifications. This product is a proven performer in applications ranging from historical replication to new construction. This hung window series is an attractive product for a wide range of applications. Multiple glazing options provide flexibility to meet specific design requirements. A thermal barrier in the frame and sash improves thermal performance enhancing energy saving potential. Offered with a complete line of sub frames, mullions and architectural sills, this product family provides the complete solution for your fenestration needs.

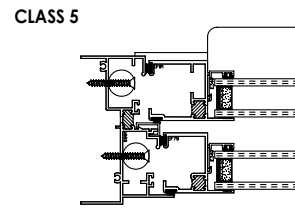
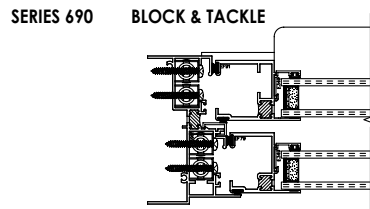
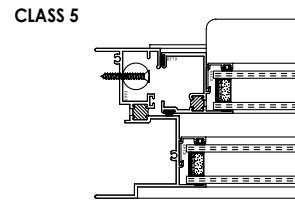
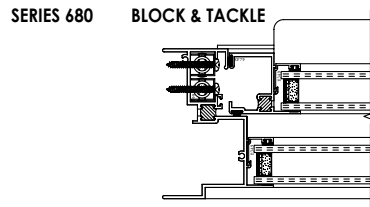
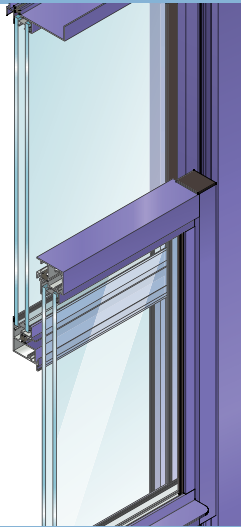
Features

Benefits

Thermal barrier in vent and frame	Improves U-Value performance Enhances energy saving potential
Sash tilts inward	Easier cleaning of exterior glass from the interior
Weather-stripped sash and sill	Provides superior air and water performance
Continuous interlock meeting rails	Improves air infiltration resistance
Accommodates glazing from 1/8" to 1 " depth	Expands design and energy saving options
Dual glazing with optional integral blinds	Improved energy savings and interior light or privacy control with low maintenance
Inside or outside glazed sash	Flexibility in design requirements for glazing
Automatic top and bottom sash locks available	Increased convenience
Variety of locking and operating hardware	Allows flexibility in design
Trim-All® panning available	Allows matching of existing sight lines in restoration projects
Screen frames of extruded aluminum alloy are available	Stronger, more durable screens
Accessory options include subframes, mullions, muntins, and architectural sills	Allows custom designs with standard product
Anodized or painted finishes available	Multiple options to answer economic and aesthetic concerns



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PERFORMANCE DATA

S-680 SINGLE HUNG TILT SASH ARCHITECTURAL GRADE

AAMA RATING (NAFS-02)	H-AW50
AIR INFILTRATION	<.10 CFM/SF @ 6.24 PSF
WATER	NO LEAKAGE @ 12.0 PSF
STRUCTURAL	±75.0 PSF
CRF-FRAME (1503-98)	.44 ^F
CRF-GLASS (1503-98)	.60 ^F

S-6600 CORRESPONDING FIXED WINDOW ARCHITECTURAL GRADE

AAMA RATING (NAFS-02)	F-AW80
AIR INFILTRATION	<.06 CFM/SF @ 6.24 PSF
WATER	NO LEAKAGE @ 15.0 PSF
STRUCTURAL	±120.0 PSF
CRF-FRAME (1503-98)	.68 ^D
CRF-GLASS (1503-98)	.59 ^D
U-VALUE (1503-98)	.61 ^D
U-VALUE (NFRC-97)	.57 ^D

A = Estimated values and/or designations
B = Non-standard size or configuration
C = Dual glazed
D = 1" Insulated - 1/4" clear, 1/2" air, 1/4" clear
E = 1" Insulated - 1/4" clear (Low Emissivity), 1/2" air, 1/4" clear
F = 1" Insulated - 1/4" clear (Low Emissivity), 1/2" argon, 1/4" clear
G = 1" Insulated - 1/4" clear, 1/2" air, 1/4" clear (Low Emissivity)

S-690 DOUBLE HUNG TILT SASH ARCHITECTURAL GRADE

AAMA RATING (101-97)	H-AW50
AIR INFILTRATION	<.11 CFM/SF @ 6.24 PSF
WATER	NO LEAKAGE @ 10.0 PSF
STRUCTURAL	±75.0 PSF
CRF-FRAME (1503.1)	.53 ^D
CRF-GLASS (1503.1)	.57 ^D

CENTER OF GLASS U-FACTOR	680 / 690 THERMAL U-FACTORS*			
	CONFIGURATION AND SIZE			
	SINGLE HUNG** 47" X 59"	SINGLE HUNG 48" X 82"	DBL HUNG** 47" X 59"	DBL HUNG 48" X 82"
0.47	0.64	0.61	0.63	0.61
0.34	0.55	0.51	0.54	0.52
0.29	0.51	0.48	0.51	0.48
0.25	0.49	0.45	0.48	0.45
0.20	0.45	0.41	0.45	0.42

* Based on NFRC 100
**NFRC Gateway size

S-680 SINGLE HUNG & S-690 DOUBLE HUNG HARDWARE CHART	SWEEP LOCK	AUTO HEAD LOCK	AUTO SILL LOCK	POLE RING SWEEP LOCK	POLE SOCKET	ACCESS CONTROLLED SWEEP HANDLE	2 OR 4 BLOCK & TACKLE BALANCES	2 OR 4 CLASS 5 BALANCES
SINGLE HUNG	S		O	O	O	O	S	O
DOUBLE HUNG	S	S	O	O	O	O	S	O

Some size restrictions may apply depending on hardware selected.

O - Optional
S - Standard
Blank - N/A

INSIDE GLAZED S-680 SINGLE HUNG & S-690 DOUBLE HUNG GLAZING CHART	POLYCARBONATE			GLASS OR PANEL																
	1/8"	3/16"	1/4"	1/8"	.156"	3/16"	.200"	1/4"	1/4"	1/2"	5/8"	3/4"	7/8"	1"	1-1/8"	1-1/4"	1-1/2"	1-3/4"	2"	
MONOLITHIC & INSULATED GLASS				A	A	A	A	A	A	A	A	A	A	A		A				
DUAL GLAZING	EXTERIOR LITE			I	I	I	I	I	A	A	A									
	INTERIOR LITE						A	A	A											

*Obscure glass thickness
**Laminated glass thickness

A - available glazing option
I - internal blinds can be used with this type of dual glazing
Blank - N/A

OUTSIDE GLAZED S-680 SINGLE HUNG & S-690 DOUBLE HUNG GLAZING CHART	POLYCARBONATE			GLASS OR PANEL																
	1/8"	3/16"	1/4"	1/8"	.156"	3/16"	.200"	1/4"	1/4"	1/2"	5/8"	3/4"	7/8"	1"	1-1/8"	1-1/4"	1-1/2"	1-3/4"	2"	
MONOLITHIC & INSULATED GLASS							A	A	A	A	A	A		A	A					

FIXED S-6600 GLAZING CHART	POLYCARBONATE			GLASS OR PANEL																
	1/8"	3/16"	1/4"	1/8"	.156"	3/16"	.200"	1/4"	1/4"	1/2"	5/8"	3/4"	7/8"	1"	1-1/8"	1-1/4"	1-1/2"	1-3/4"	2"	
MONOLITHIC & INSULATED GLASS		A	A			A	A	A	A	A	A	A		A	A	A	A	A	A	A
DUAL GLAZING	EXTERIOR LITE			I	I	I	I	I	I	I	I					A				
	INTERIOR LITE						A	A	A											



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Frame Construction

The frames have a depth of 3 7/8" and are constructed of 6063-T6 aluminum alloy. The nominal material wall thickness for the frame is .080" and the sill has a minimum wall thickness of .094". Corners are of screw spline construction and sealed. See Illustration 1.

Sash Frame Construction

The sash consists of aluminum members with .080" nominal material wall thickness of 6063-T6 alloy. Corners are of screw spline construction and sealed. Dual weather-stripped, continuous interlock at the sash meeting rail(s) offers superior weathering and structural performance. See Illustration 2.

Weather Stripping

All sash are weather-stripped with FIN-SEAL® or equal. Two holes or slots per sash through the window frame facilitate weepage.

Screens

Screen frames are extruded 6063-T6 aluminum alloy. Screens are easily removed by retracting two plungers located on the interior face of the screen frame near the sill at each jamb. Full or half screens are available. 18 x 16 mesh screens are available in fiberglass and .011" diameter aluminum. 18 x 18 mesh screens are available in .009" diameter stainless steel.

Thermal Barrier

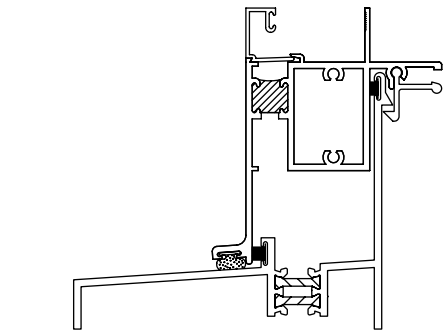
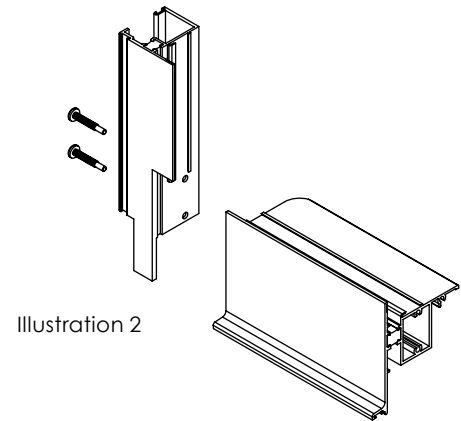
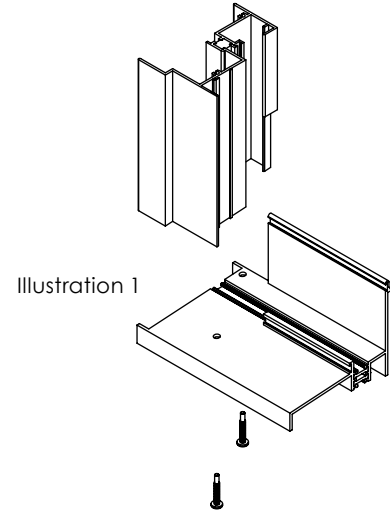
Sills are thermally isolated with two thermal struts, consisting of glass reinforced polyamide nylon, mechanically crimped in raceways extruded in the exterior and interior extrusions. All other frames and sash are thermally improved using the latest technology in two part, high density polyurethane. See Illustration 3.

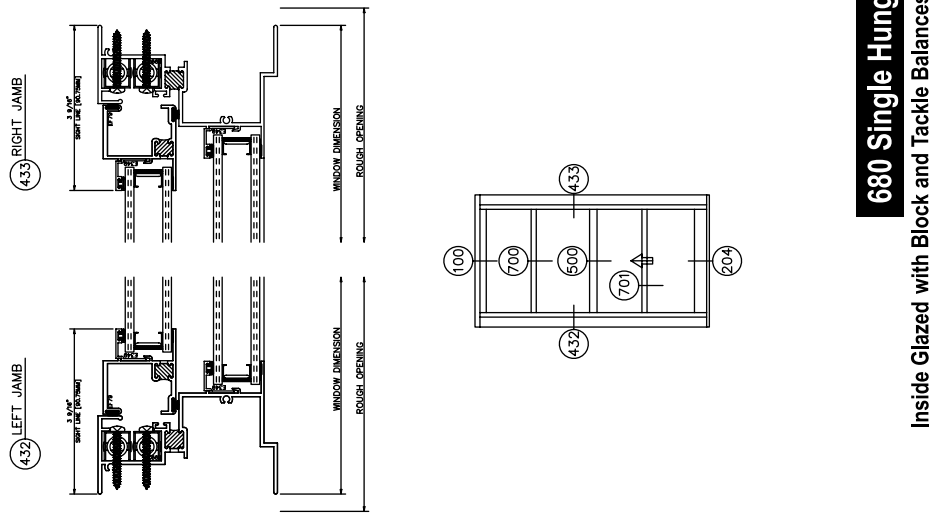
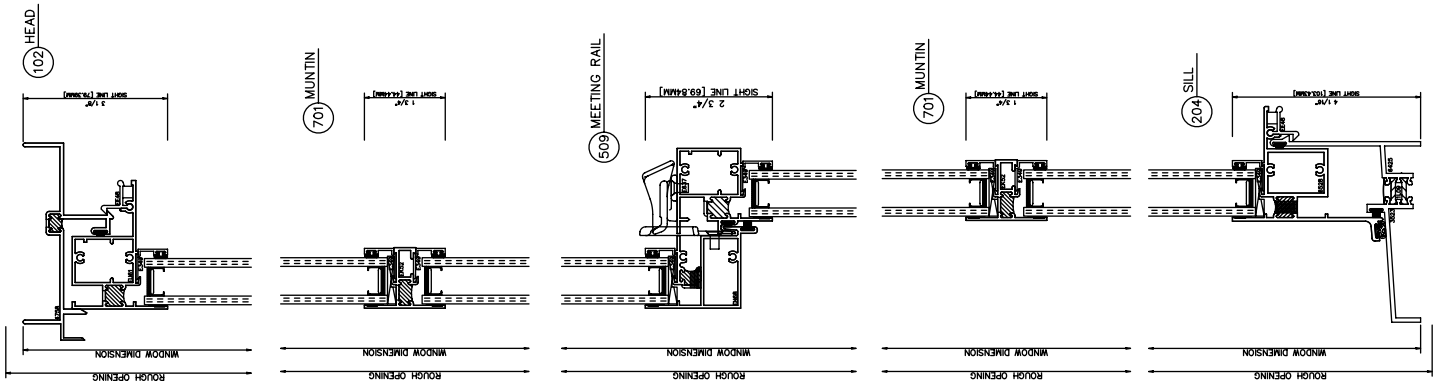
Hardware

Sweep locks, access controlled sweep locks, pole ring sweep locks, and keepers are of cast white bronze with a US25D finish. Automatic head and sill locks are fabricated of aluminum alloy and finished to match the window. Sash tilt locks are concealed injection molded nylon slide latches locked in place by recessed Allen keyed screws. Two types of balance systems are available. A spring loaded block and tackle balance rated Class 1 with a .70 MAF* ratio is standard. A high performance torsion spring and extension spring balance rated Class 5 with a .30 MAF* ratio is optional. EFCO reserves the right to substitute a higher performance balance as project conditions dictate, i.e., large, heavy sash requiring minimum operating force. See the Hardware Chart for available hardware types.

Glazing

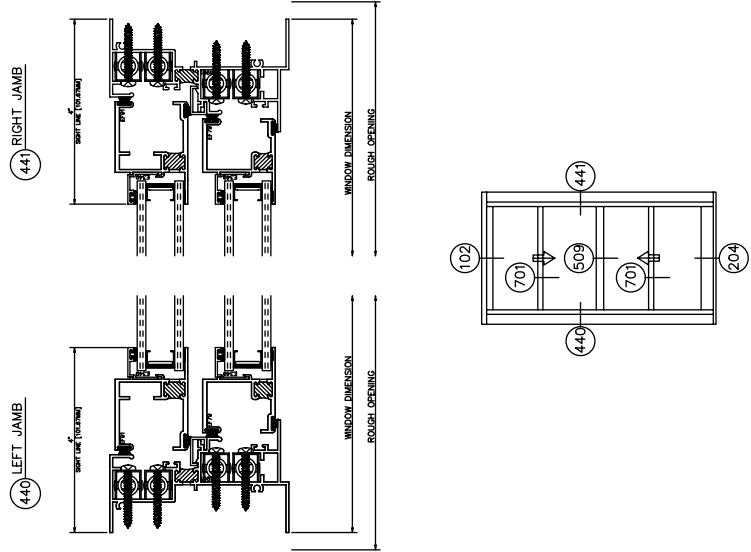
Sash is inside or outside glazed with an extruded aluminum snap-in glazing bead. Glazings of 1/8" to 1 1/4" can be accommodated. Dual glazing is also available in 1/8", 3/16", and 1/4" glass. Between the glass, 5/8" aluminum blinds are available with dual glazed windows. Series 6600 fixed frame windows accommodate glass or panels from 1/8" to 3 1/2" thick. See the Glazing Chart for the exact size.





680 Single Hung

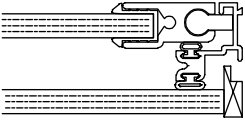
Inside Glazed with Block and Tackle Balances



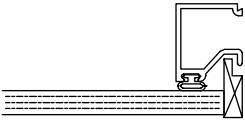
690 Double Hung

Inside Glazed with Block and Tackle Balances

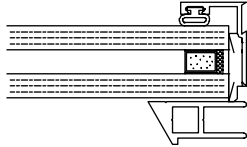
ER65 - 1/4"
INTERIOR PANEL
1/4" MONOLITHIC



1/4" MONOLITHIC



3/4" INSULATED
1/4"-1/4"
WITH GRID



ER65 - 1/4"
INTERIOR PANEL
1/4" MONOLITHIC

