Features

- 1600 Wall System™4 is an inside glazed captured curtain wall and ribbon wall
- 1600 Wall System™4 has a narrow 2-1/4" (57.2) sight line
- Standard 6" (152.4) or 7-1/2" (190.5) depth systems for curtain wall and 6" depth (152.4) depth for ribbon wall
- IsoStrut™ thermal barrier provides superior structural and thermal performance
- Integral vertical exterior cover and thermal barrier reduce installed cost
- Horizontals have removable snap on stops to allow for easy re-glazing from the exterior
- Standard infill options are 1/8" (3.2), 1/4" (6.4), and 1" (25.4)
- Concealed fastener joinery creates smooth, monolithic appearance
- Shear block fabrication method or screw spline option for ribbon windows
- Standard 90 and 135 degree inside and outside corners available
- Offers integrated entrance framing systems
- Peroxide-cure high performance EPDM silicone compatible glazing materials for long lasting seals
- Two color option
- Permanodic™ anodized finishes in seven choices
- Painted finishes in standard and custom choices

Optional Features

- Optional pressure plate system
- Optional IsoLock™ pour and debridge thermal break horizontals
- Integrates with standard Kawneer windows and GLASSvent™ windows for curtain wall
- Steel reinforcing available
- Profit$Maker™ Plus die sets available

Product Applications

- Ideal for low-rise to high-rise curtain wall applications where inside glazing and high performance is desired or multi-lite punched openings and ribbon windows in both new and remodel construction projects

Laws and building and safety codes governing the design and use of glazed entrance, window, and curtain wall products vary widely. Kawneer does not control the selection of product configurations, operating hardware, or glazing materials, and assumes no responsibility therefor.

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For specific product applications,
Consult your Kawneer representative.

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Architects – Most extrusion and window types illustrated in this catalog are standard products for Kawneer. These concepts have been expanded and modified to afford you design freedom. Some miscellaneous details are non-standard and are intended to demonstrate how the system can be modified to expand design flexibility. Please contact your Kawneer representative for further assistance.

PICTORIAL VIEW **5**
1/4 SIZE DETAILS (Typical IsoStrut™) **6, 7**
1/4 SIZE DETAILS (Pressure Plate Option) **8, 9**
1/4 SIZE DETAILS (Pour and Debridge Horizontal Option) **10, 11**
ENTRANCE ADAPTERS **12**
CORNERS **12**
ANCHORING **13**
WIND LOAD CHARTS **14-16**
DEADLOAD CHARTS **17-22**
THERMAL CHARTS **23-28**

LAWS AND BUILDING AND SAFETY CODES GOVERNING THE DESIGN AND USE OF GLAZED ENTRANCE, WINDOW, AND CURTAIN WALL PRODUCTS VARY WIDELY. KAWNEER DOES NOT CONTROL THE SELECTION OF PRODUCT CONFIGURATIONS, OPERATING HARDWARE, OR GLAZING MATERIALS, AND ASSUMES NO RESPONSIBILITY THEREFOR.

Metric (SI) conversion figures are included throughout these details for reference. Numbers in parentheses ( ) are millimeters unless otherwise noted.

The following metric (SI) units are found in these details:

m – meter
cm – centimeter
mm – millimeter
s – second
Pa – pascal
MPa – megapascal

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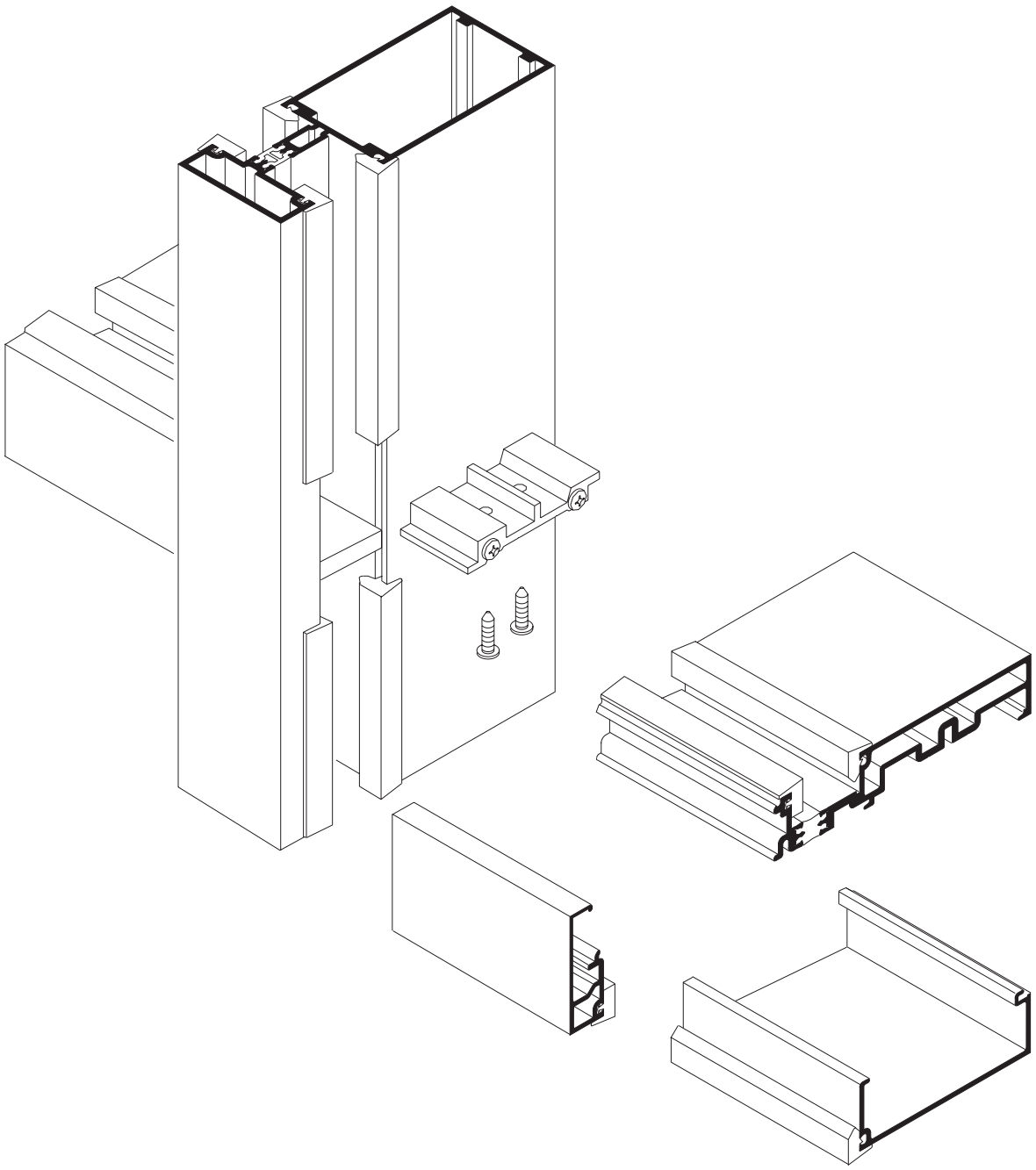
1600 Wall System™4 Curtain Wall



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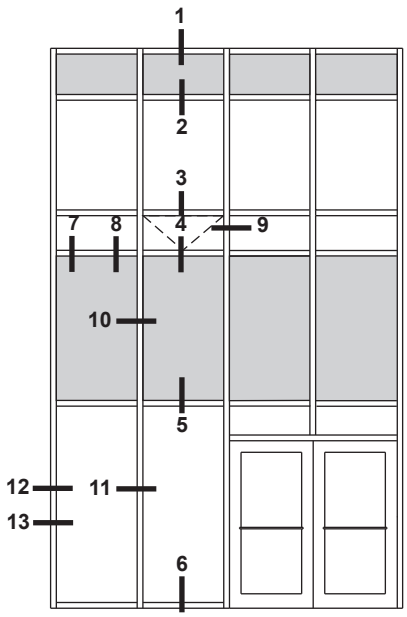
1600 Wall System™4 Curtain Wall

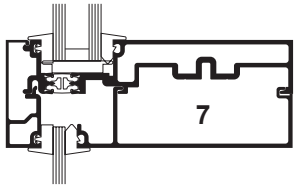
1/4 SIZE DETAILS (IsoStrut™)

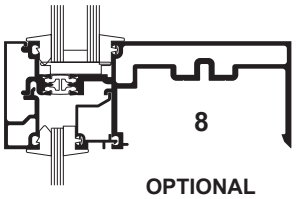
SCALE 3" = 1'-0"



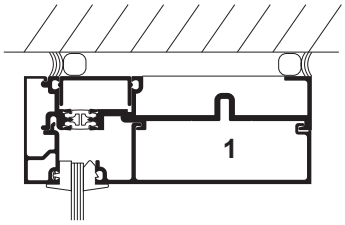
ELEVATION IS NUMBER KEYED TO DETAILS

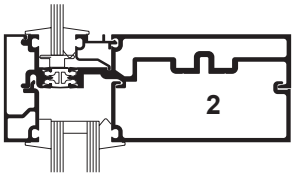
NOTE:
6" SYSTEM SHOWN, 7-1/2" SIMILAR.

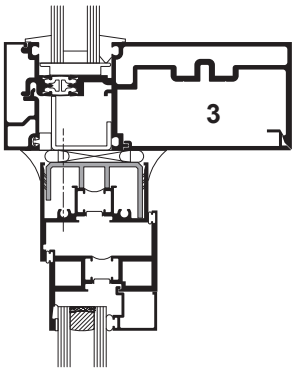


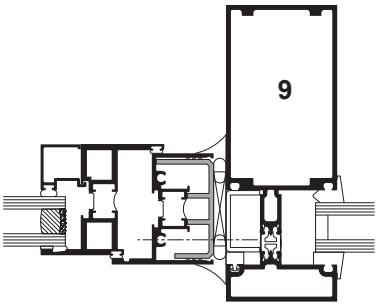


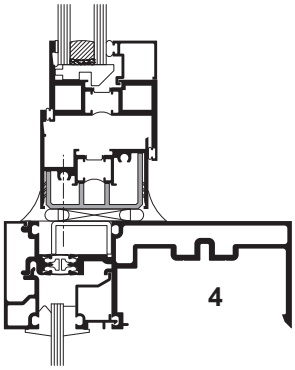
OPTIONAL HORIZONTAL

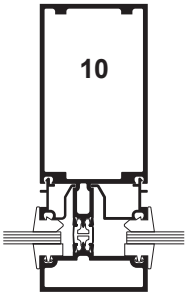




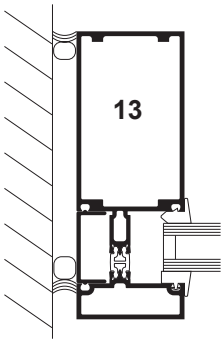


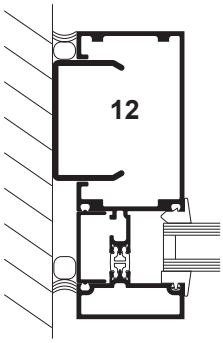


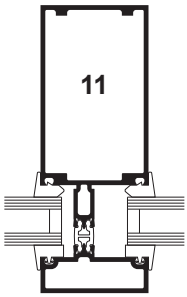


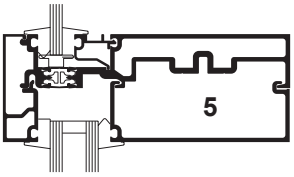


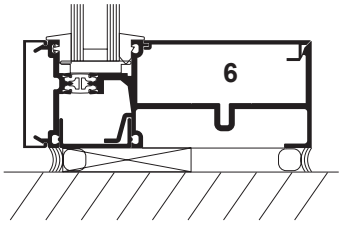
ALTERNATE JAMB











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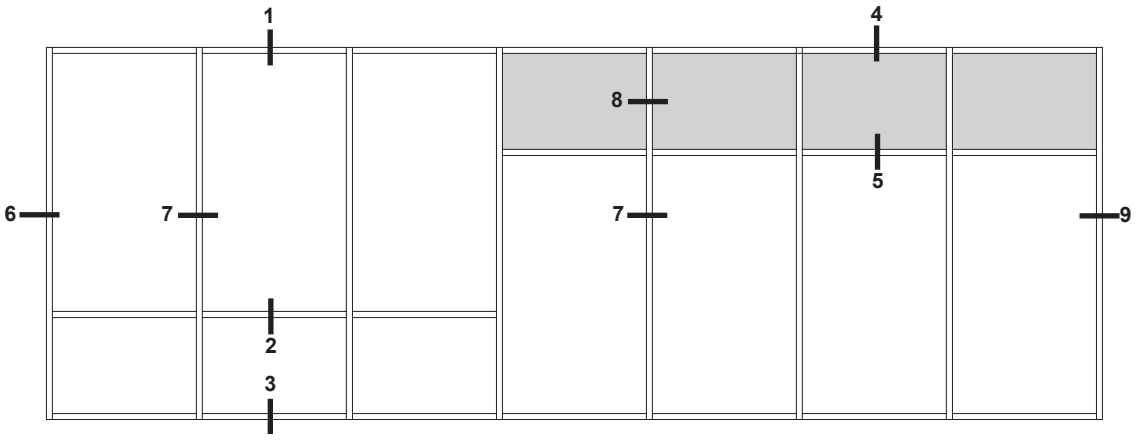
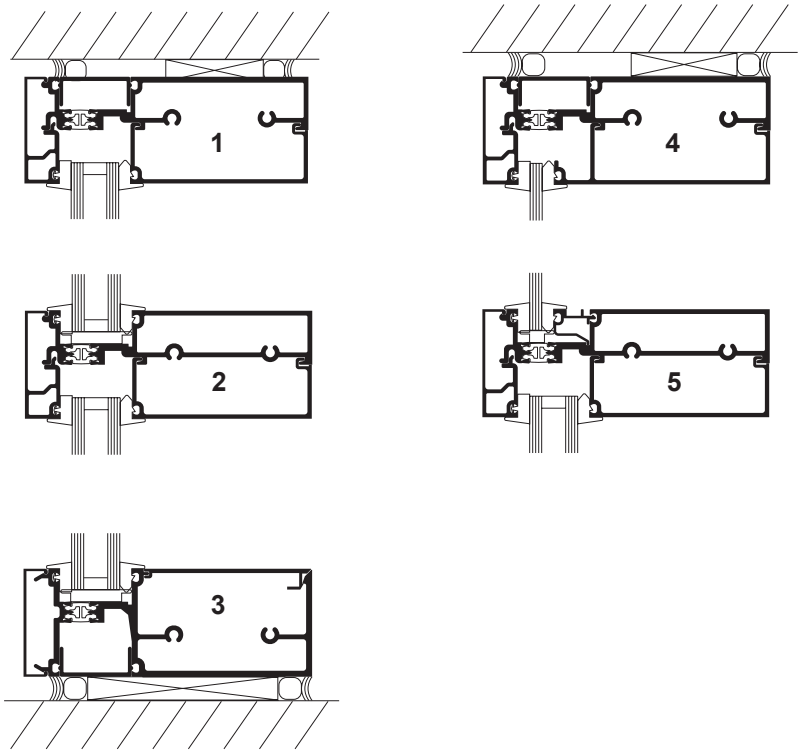
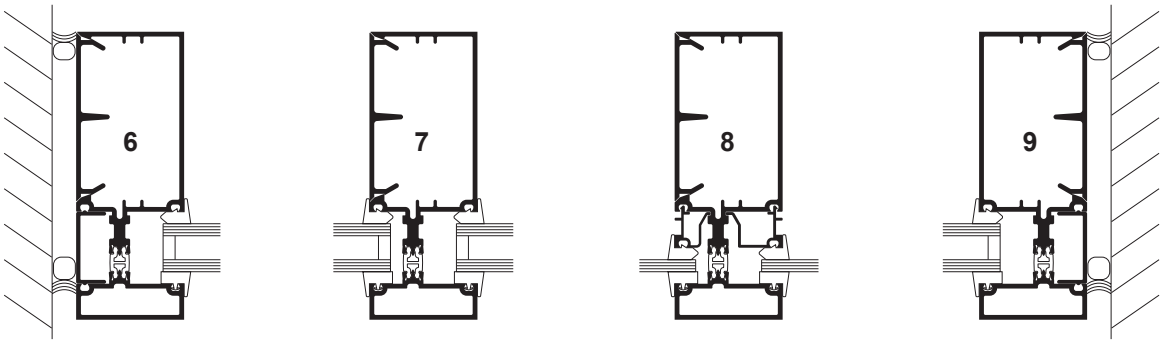
SCALE 3" = 1'-0"



RIBBON ELEVATION

ELEVATION IS NUMBER KEYED TO DETAILS





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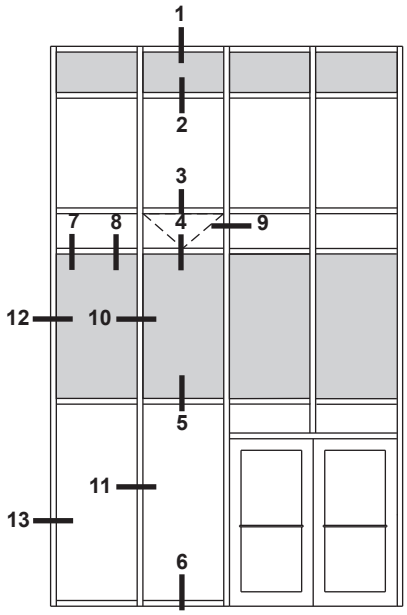
1600 Wall System™4 Curtain Wall

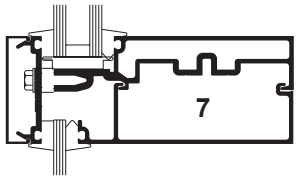
1/4 SIZE DETAILS (Pressure Plate Option)

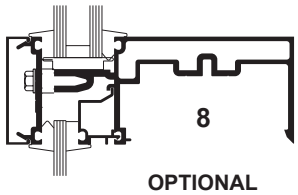
SCALE 3" = 1'-0"



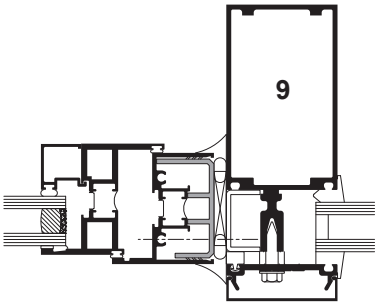
ELEVATION IS NUMBER KEYED TO DETAILS

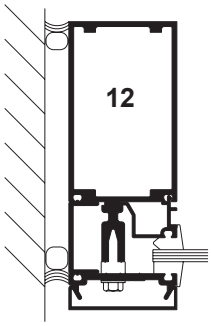
NOTES:
6" SYSTEM SHOWN, 7-1/2" SIMILAR.
APPLIED PRESSURE PLATE OPTION SHOWN.

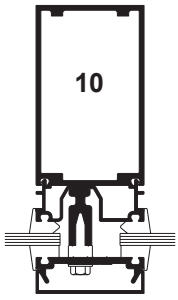


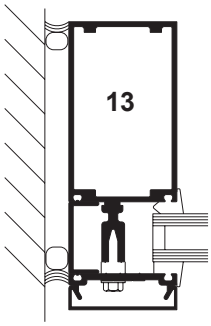


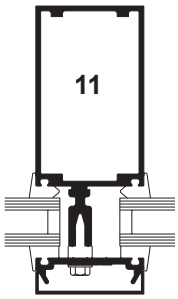
OPTIONAL HORIZONTAL

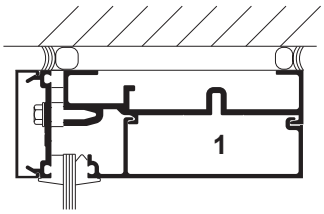


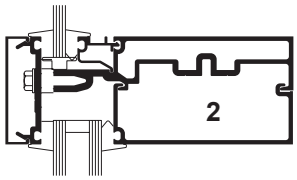


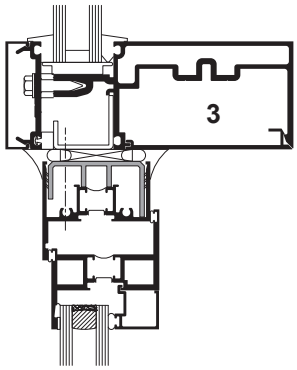


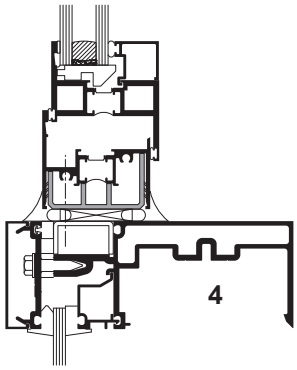


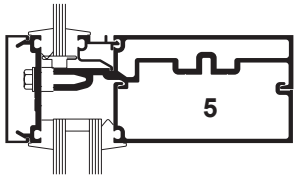


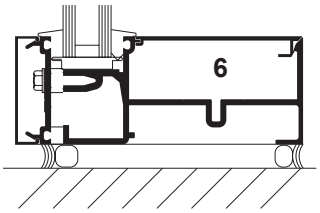












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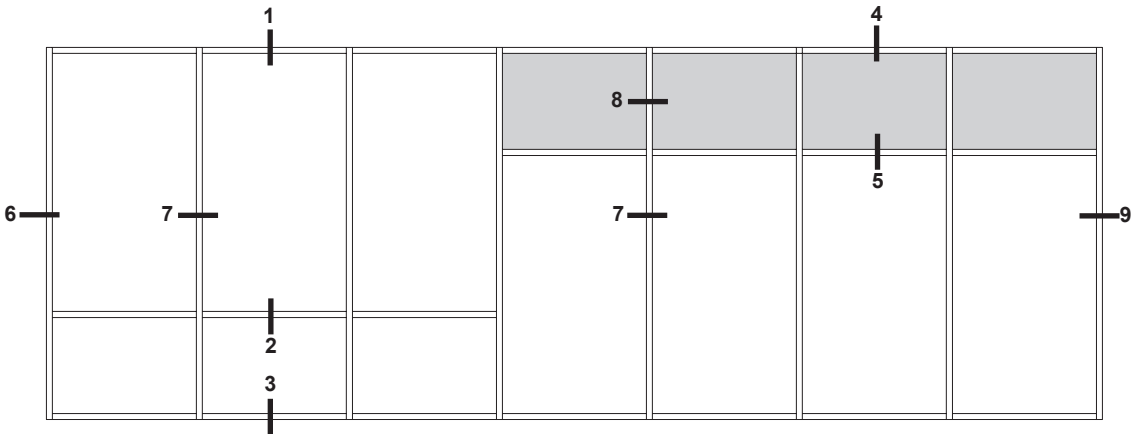
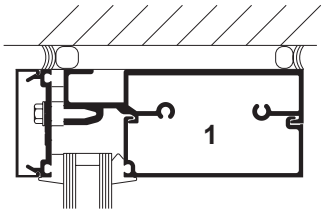
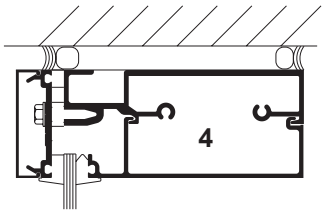
SCALE 3" = 1'-0"

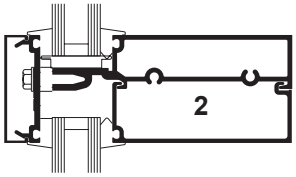


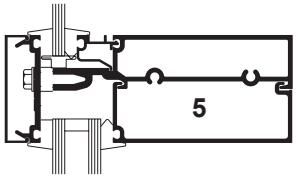
RIBBON ELEVATION

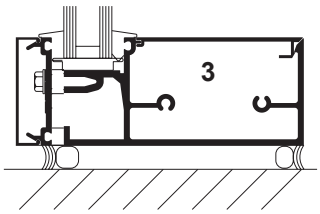
ELEVATION IS NUMBER KEYED TO DETAILS

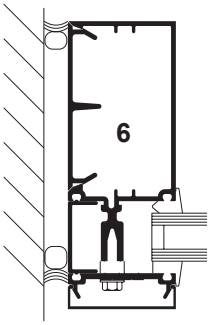


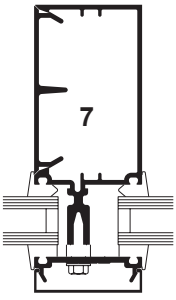


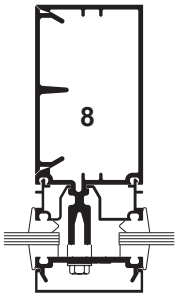


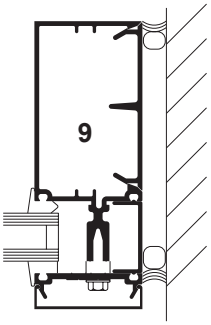












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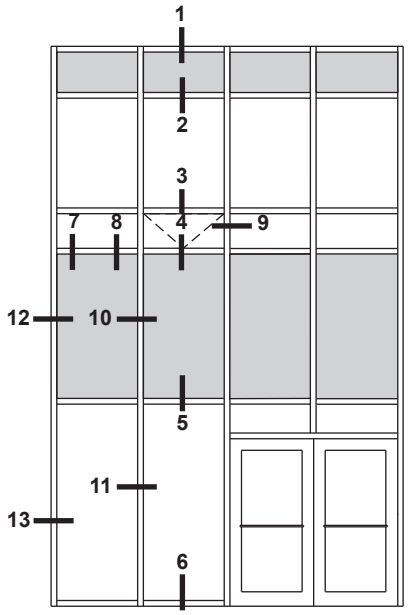
1600 Wall System™4 Curtain Wall

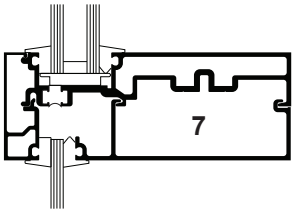
1/4 SIZE DETAILS (Pour and Debridge Horizontal Option)

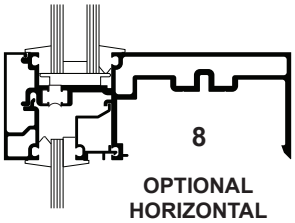
SCALE 3" = 1'-0"



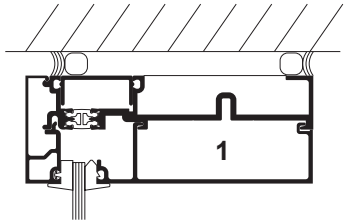
ELEVATION IS NUMBER KEYED TO DETAILS

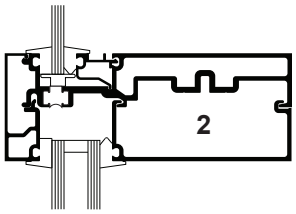
NOTE:
6" SYSTEM SHOWN, 7-1/2" SIMILAR.

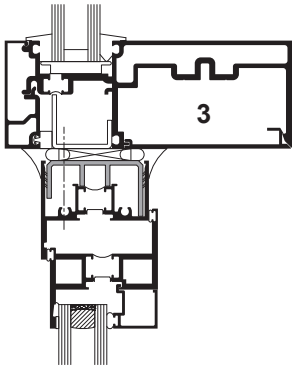


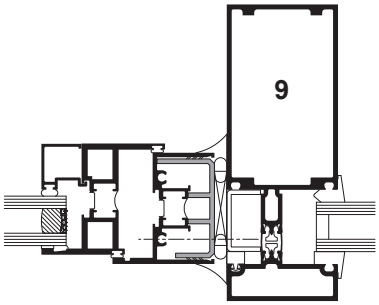


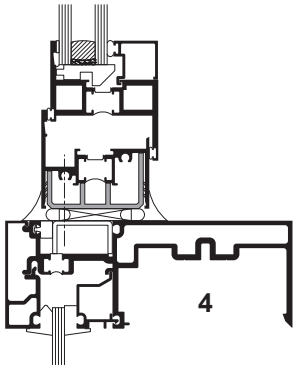
OPTIONAL HORIZONTAL

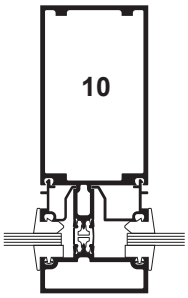


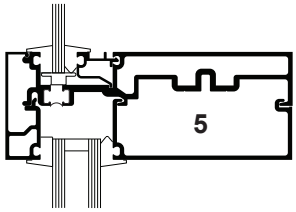




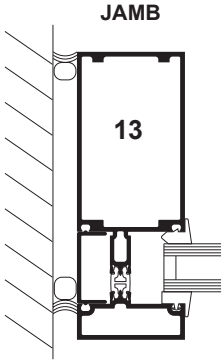


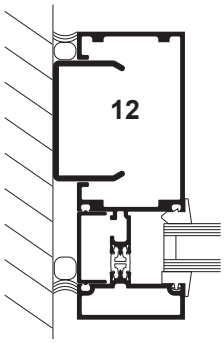


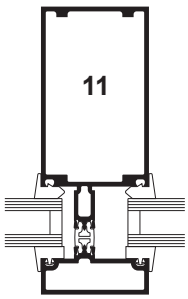


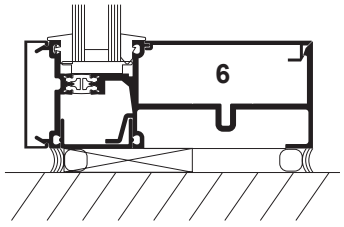


ALTERNATE JAMB









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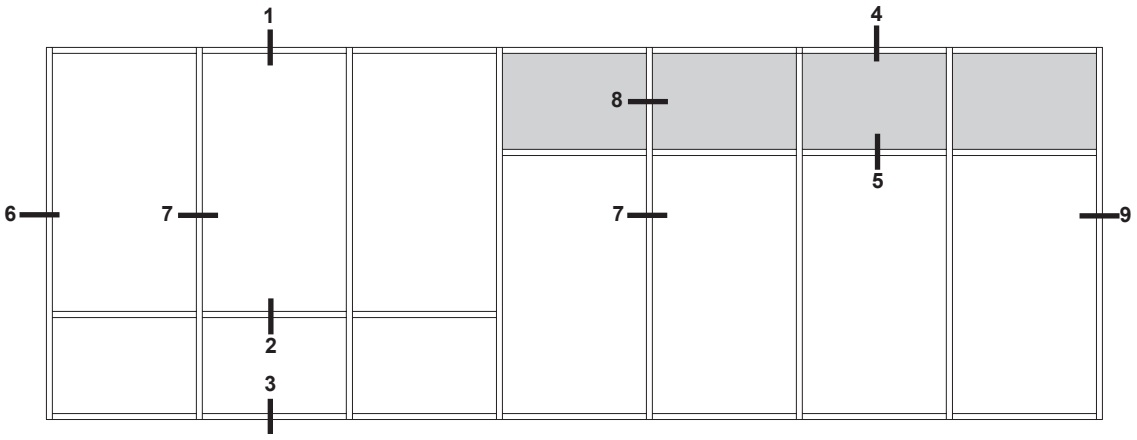
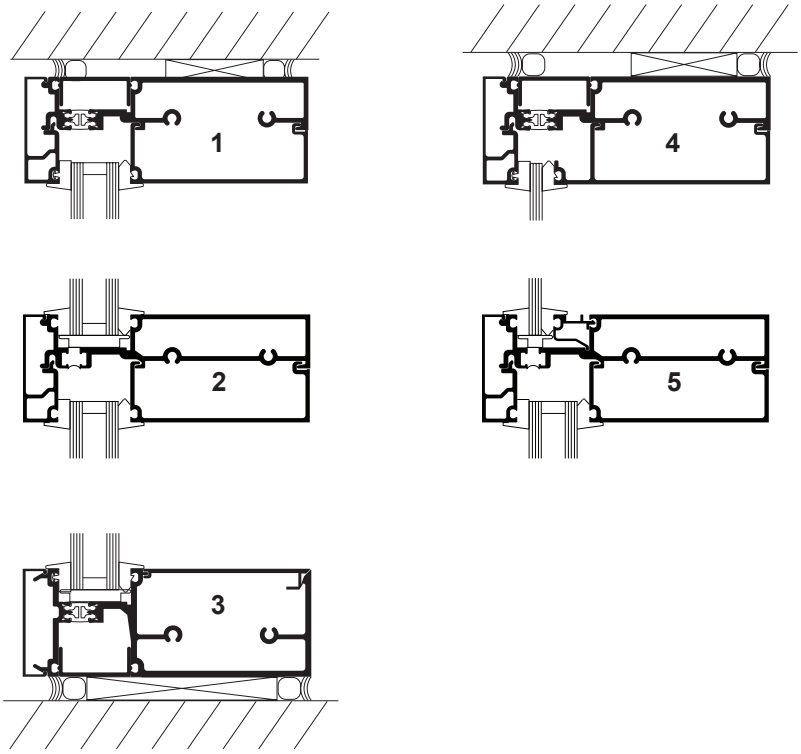
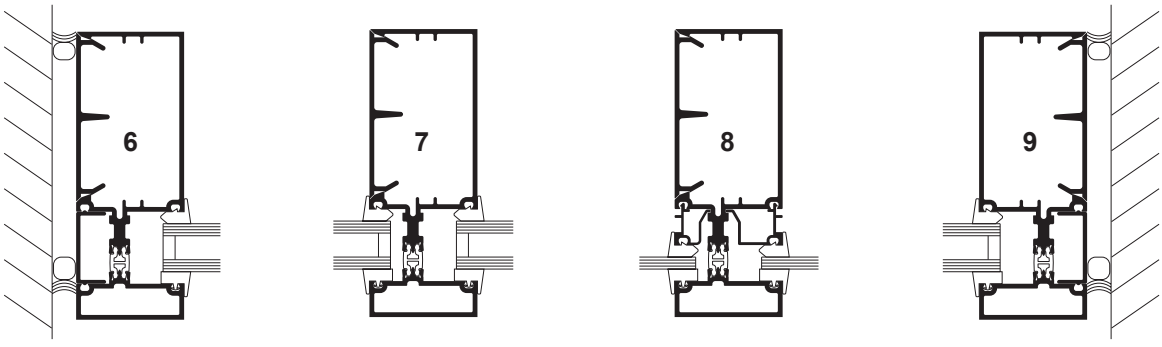
SCALE 3" = 1'-0"



RIBBON ELEVATION

ELEVATION IS NUMBER KEYED TO DETAILS





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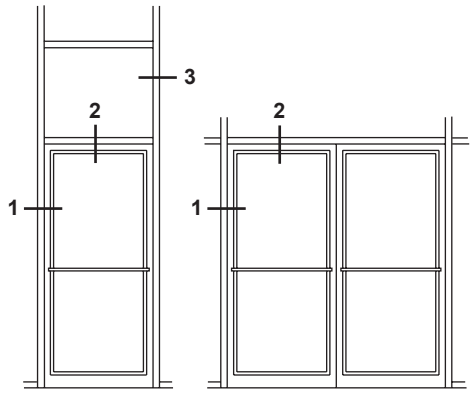
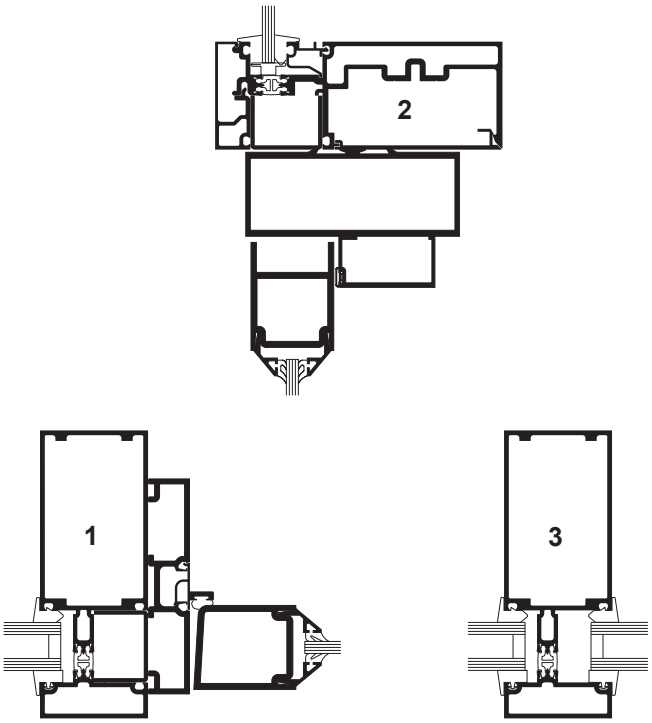
SCALE 3" = 1'-0"

ENTRANCE ADAPTERS

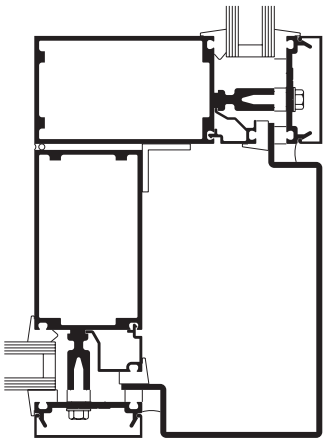


ELEVATION IS NUMBER KEYED TO DETAILS

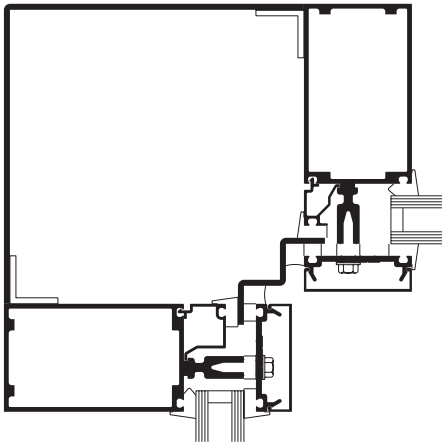
NOTE:
OFFSET PIVOT/BUTT HUNG ENTRANCE SHOWN.
ALSO AVAILABLE FOR CENTER HUNG



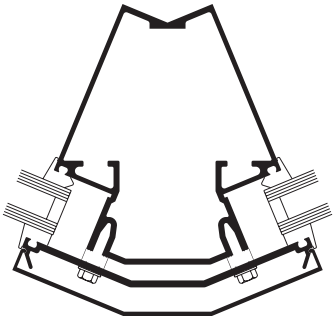
CORNERS



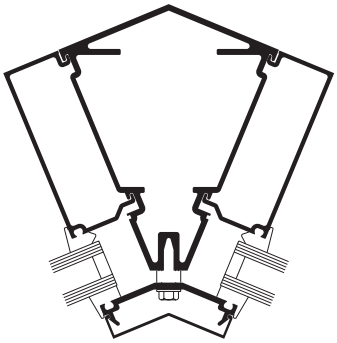
OUTSIDE 90° CORNER



INSIDE 90° CORNER



OUTSIDE 135° CORNER



INSIDE 135° CORNER

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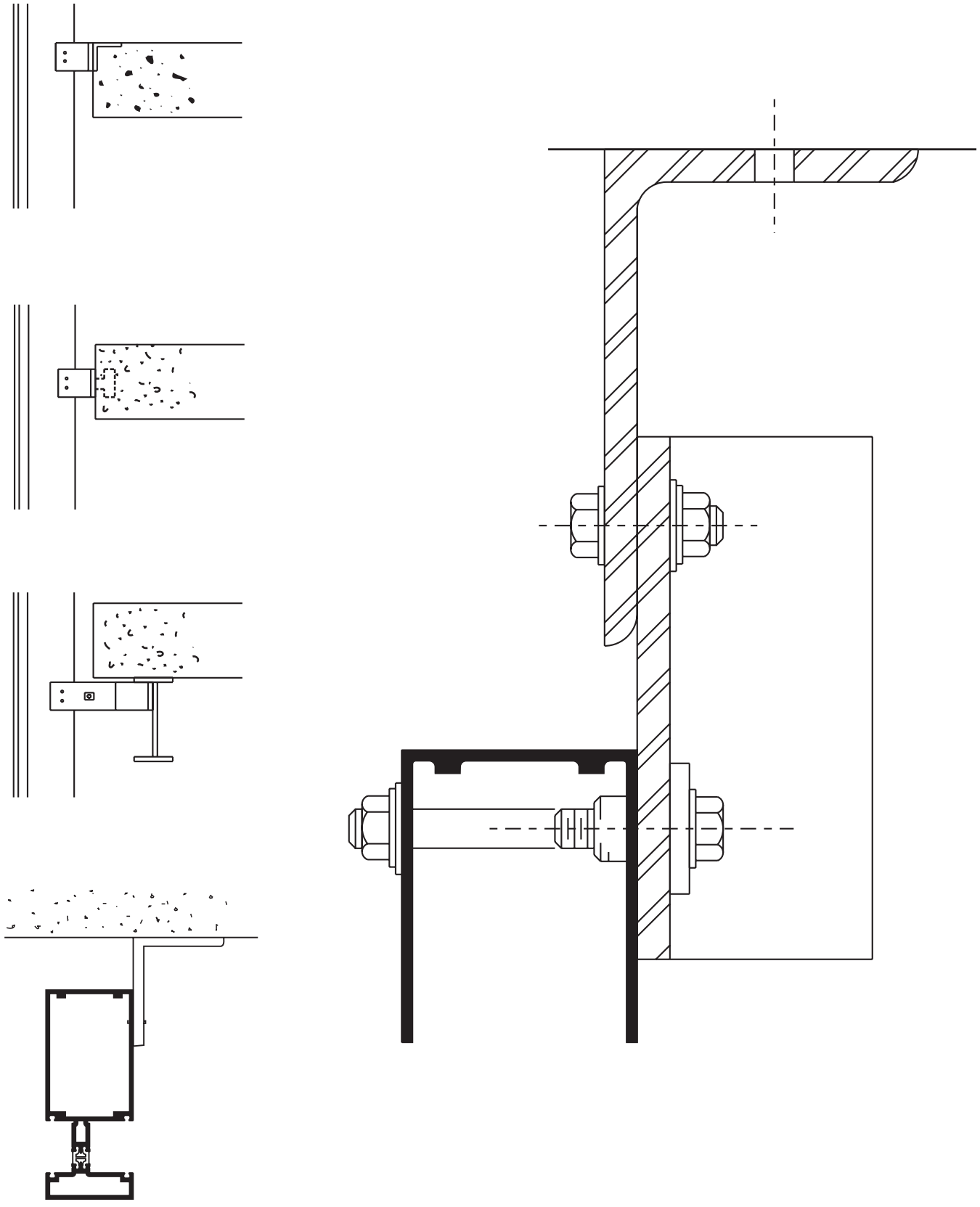

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WIND LOAD CHARTS

Mullions are designed for deflection limitations in accordance with AAMA TIR-A11 of L/175 up to 13'-6" and L/240 +1/4" above 13'-6". These curves are for mullions WITH HORIZONTALS and are based on engineering calculations for stress and deflection. Allowable wind load stress for ALUMINUM 15,152 psi (104 MPa), STEEL 30,000 psi (207 MPa). Charted curves, in all cases are for the limiting value. Wind load charts contained herein are based upon nominal wind load utilized in allowable stress design. A conversion from Load Resistance Factor Design (LRFD) is provided. To convert ultimate wind loads to nominal loads, multiply ultimate wind loads by a factor of 0.6 per ASCE/SEI 7. A 4/3 increase in allowable stress has not been used to develop these curves. For special situations not covered by these curves, contact your Kawneer representative for additional information.

DEADLOAD CHARTS

Horizontal or deadload limitations are based upon 1/8" (3.2) maximum deflection at the center of an intermediate horizontal member. The accompanying charts are calculated for 1/4" (6.4) and 1" (25.4) thick glass supported on two setting blocks placed at the loading points shown.

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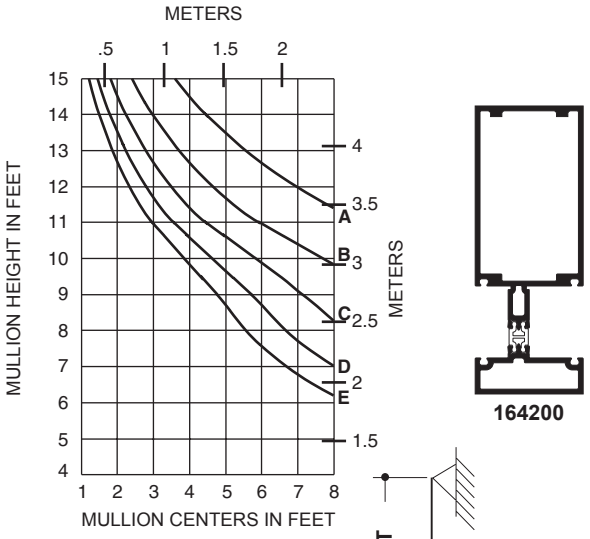
	Allowable Stress Design Load	LRFD Ultimate Design Load
A =	20 PSF (960)	33 PSF (1580)
B =	30 PSF (1440)	50 PSF (2400)
C =	40 PSF (1920)	67 PSF (3200)
D =	50 PSF (2400)	83 PSF (4000)
E =	60 PSF (2880)	100 PSF (4790)

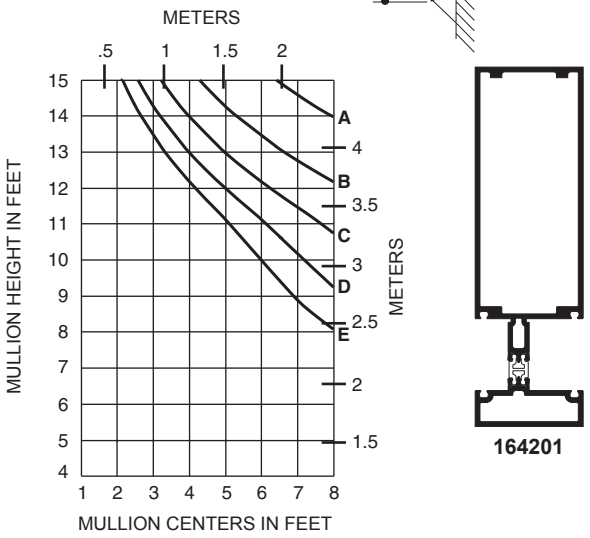
SINGLE SPAN



164200

MULLION HEIGHT

SINGLE SPAN



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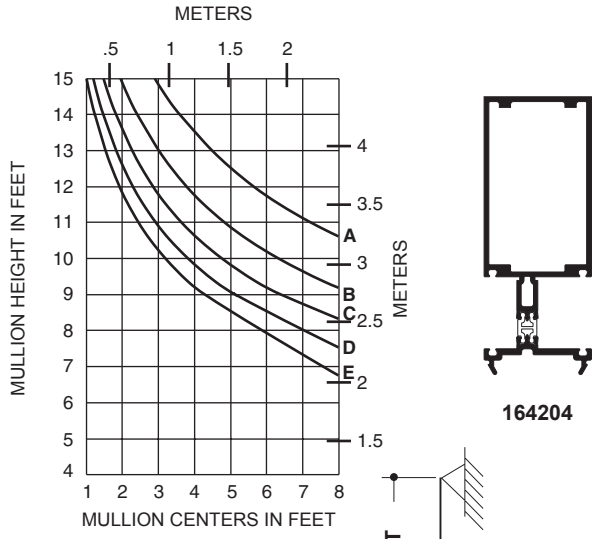
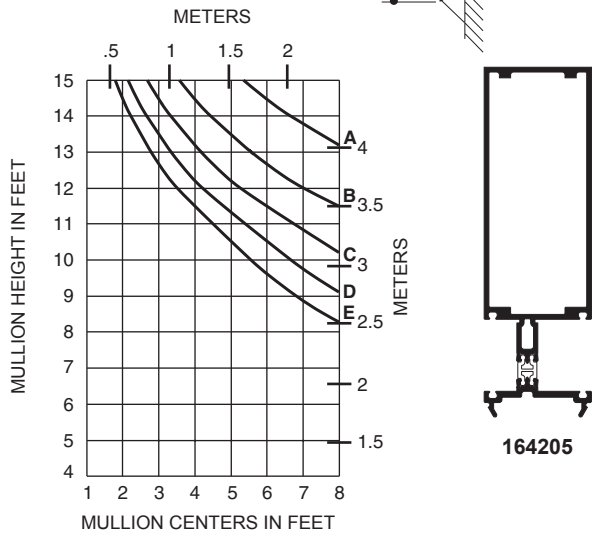


164204

MULLION HEIGHT

SINGLE SPAN



164205

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	Allowable Stress Design Load	LRFD Ultimate Design Load
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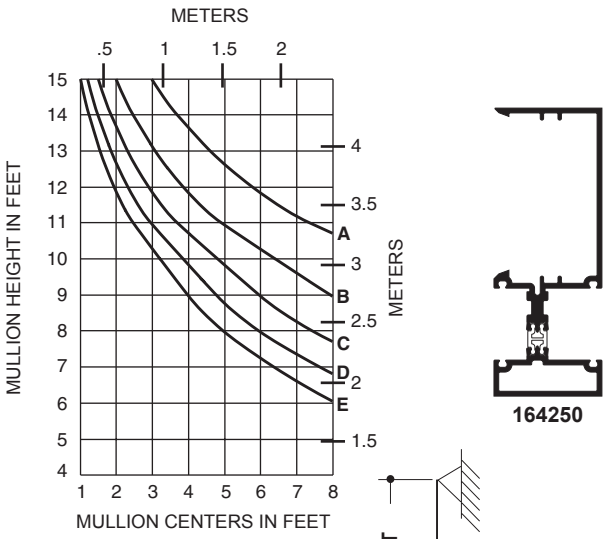
D =	50 PSF (2400)	83 PSF (4000)
E =	60 PSF (2880)	100 PSF (4790)

SINGLE SPAN



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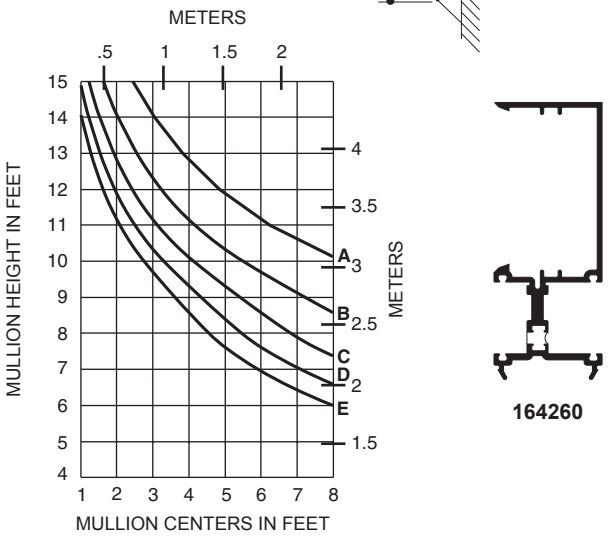
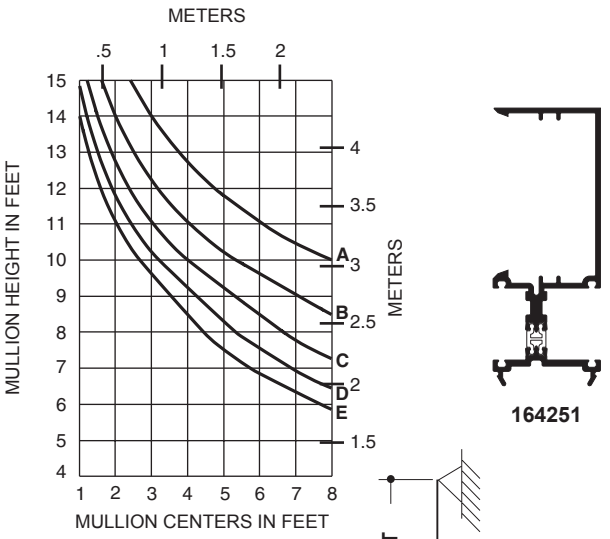
SINGLE SPAN



164260

SINGLE SPAN



164251

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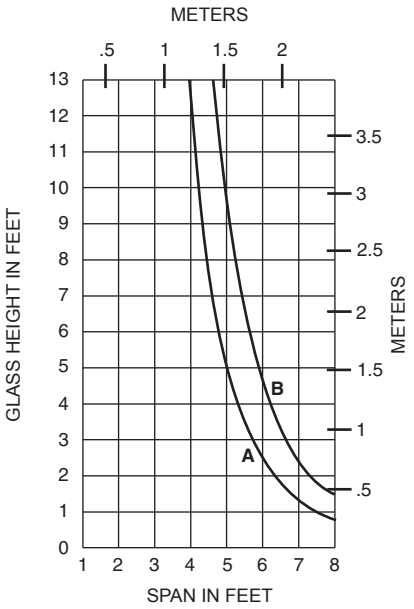
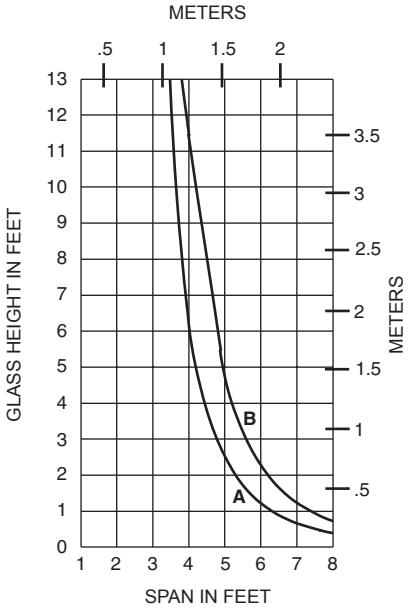
A = 1/4 POINT LOADING
B = 1/8 POINT LOADING

1/4" GLASS

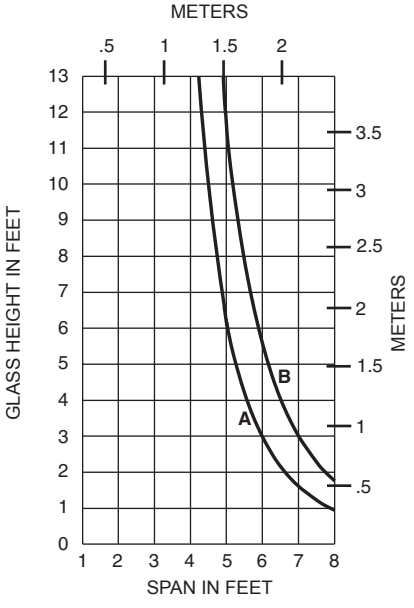


163208

1" GLASS

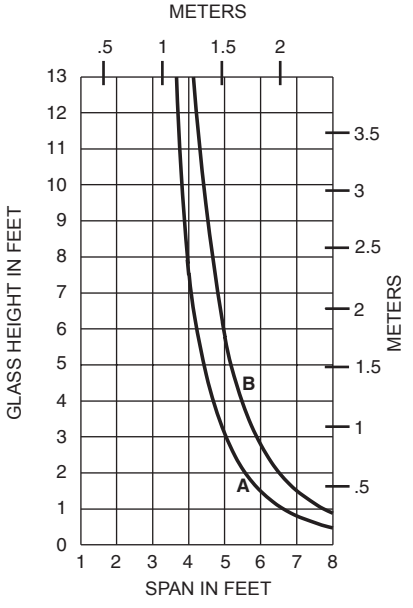


1/4" GLASS



164209

1" GLASS



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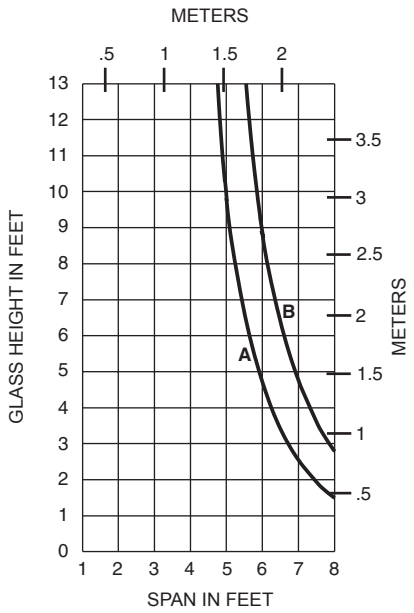
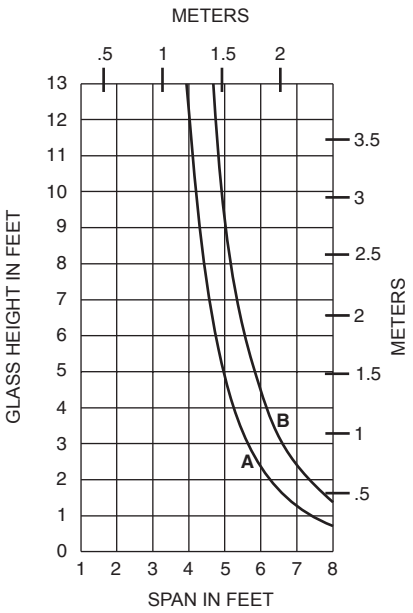
A = 1/4 POINT LOADING
B = 1/8 POINT LOADING

1/4" GLASS

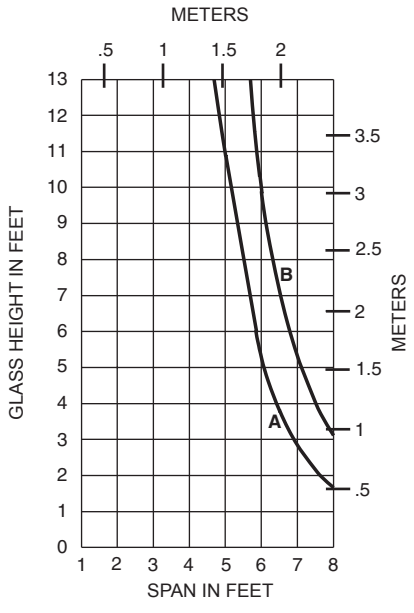


164208
164009

1" GLASS



1/4" GLASS



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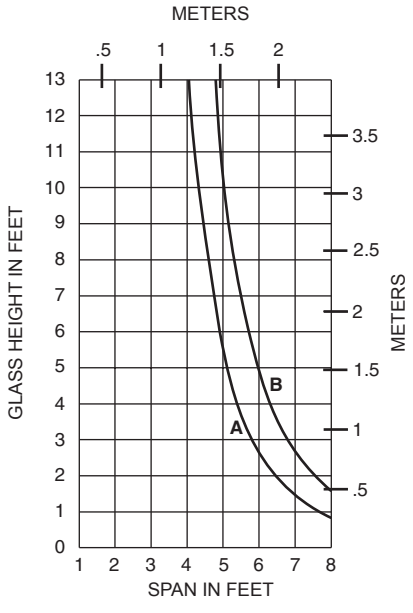
164009

1" GLASS



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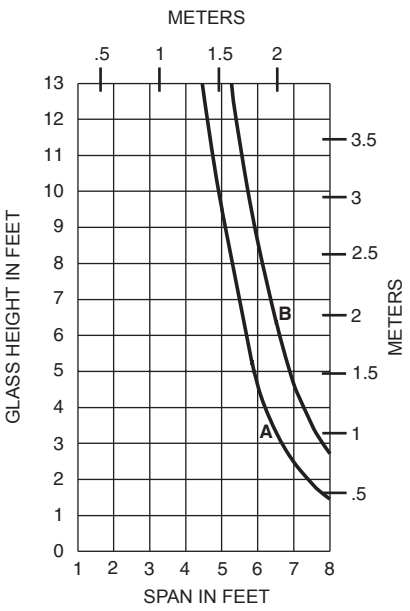
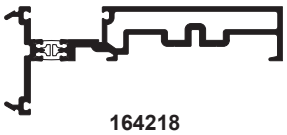
B = 1/8 POINT LOADING

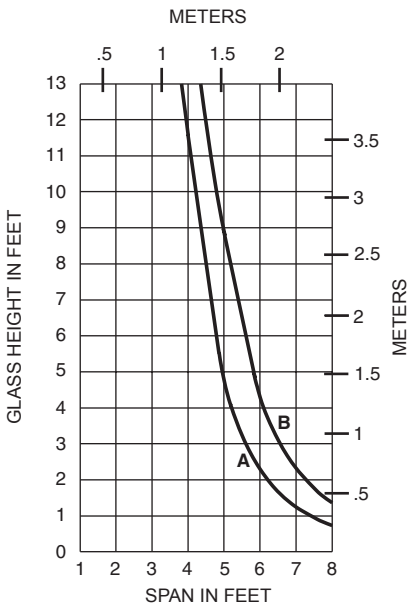
1/4" GLASS



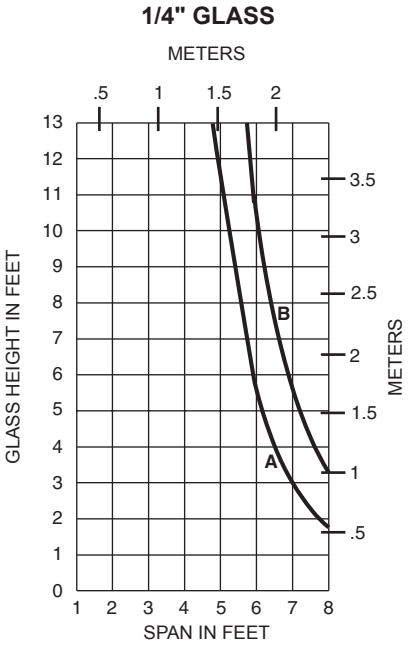


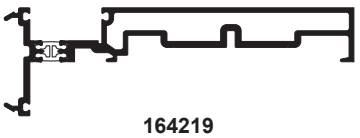
164218

1" GLASS



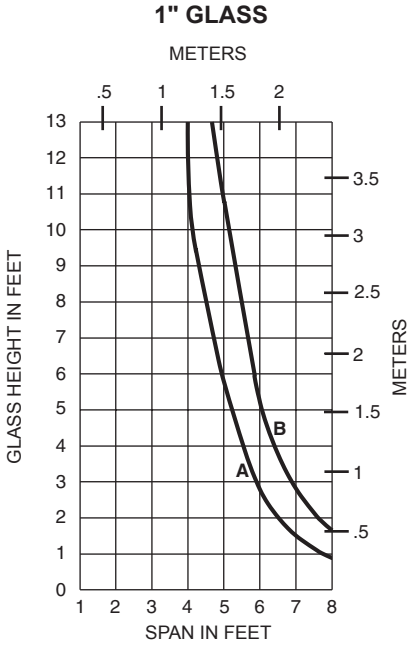
1/4" GLASS





164219

1" GLASS



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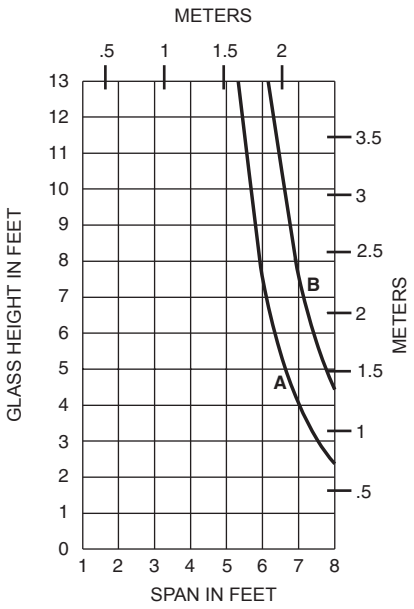
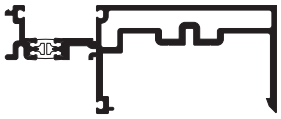
B = 1/8 POINT LOADING

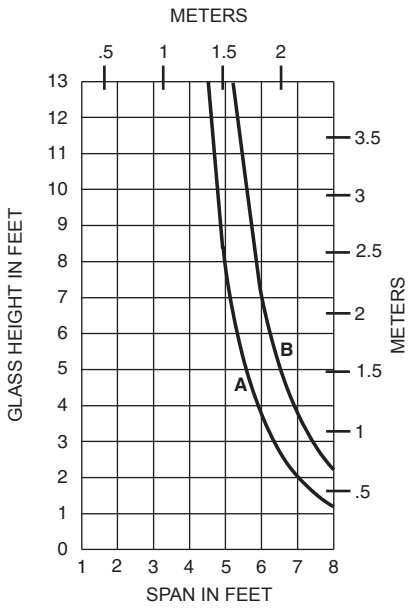
1/4" GLASS



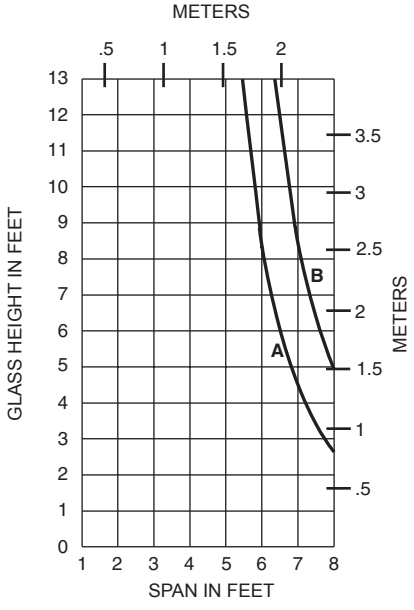


164214

1" GLASS

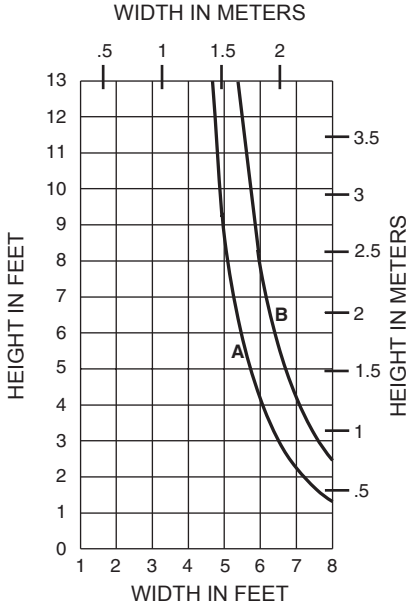


1/4" GLASS



164215

1" GLASS



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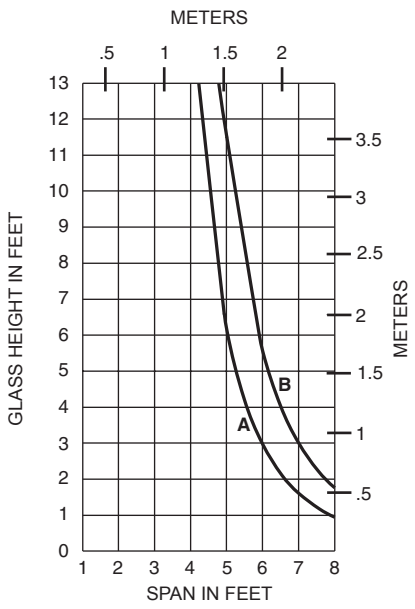
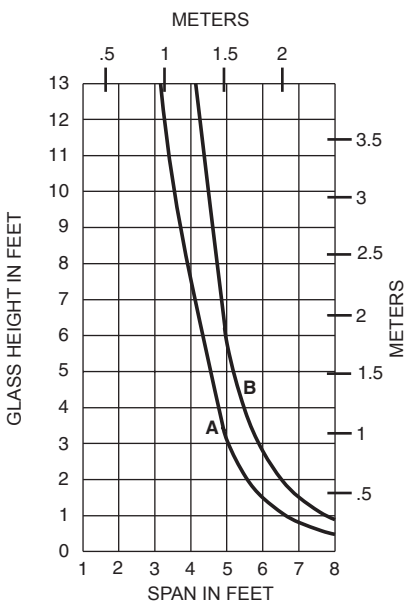
A = 1/4 POINT LOADING
B = 1/8 POINT LOADING

1/4" GLASS

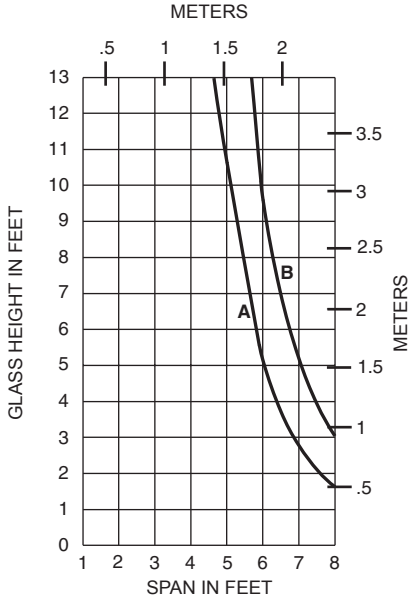


164253

1" GLASS

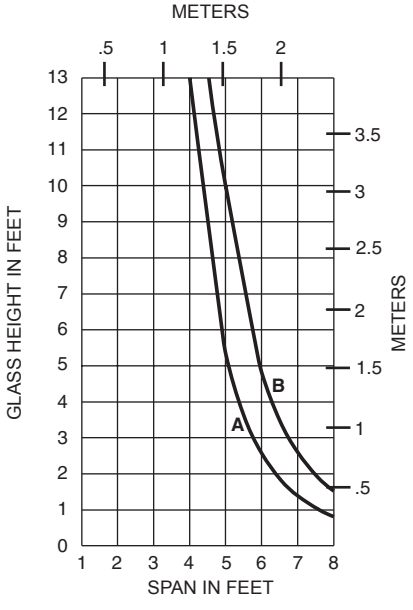


1/4" GLASS



164256

1" GLASS



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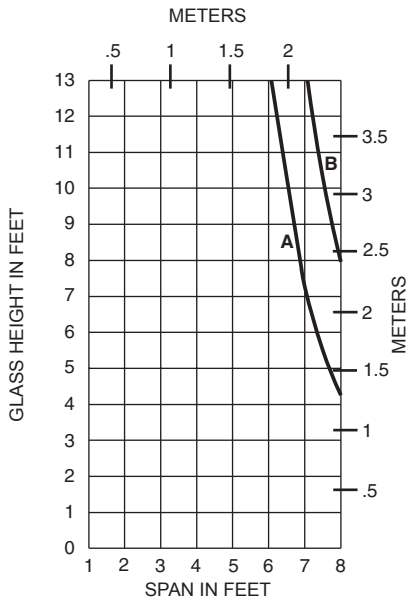
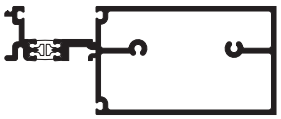
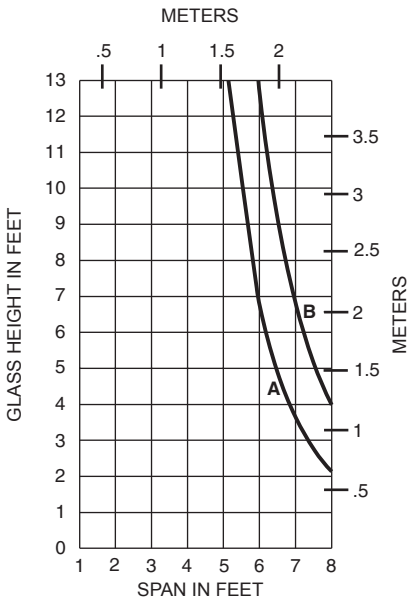
1/4" GLASS





164257

1" GLASS



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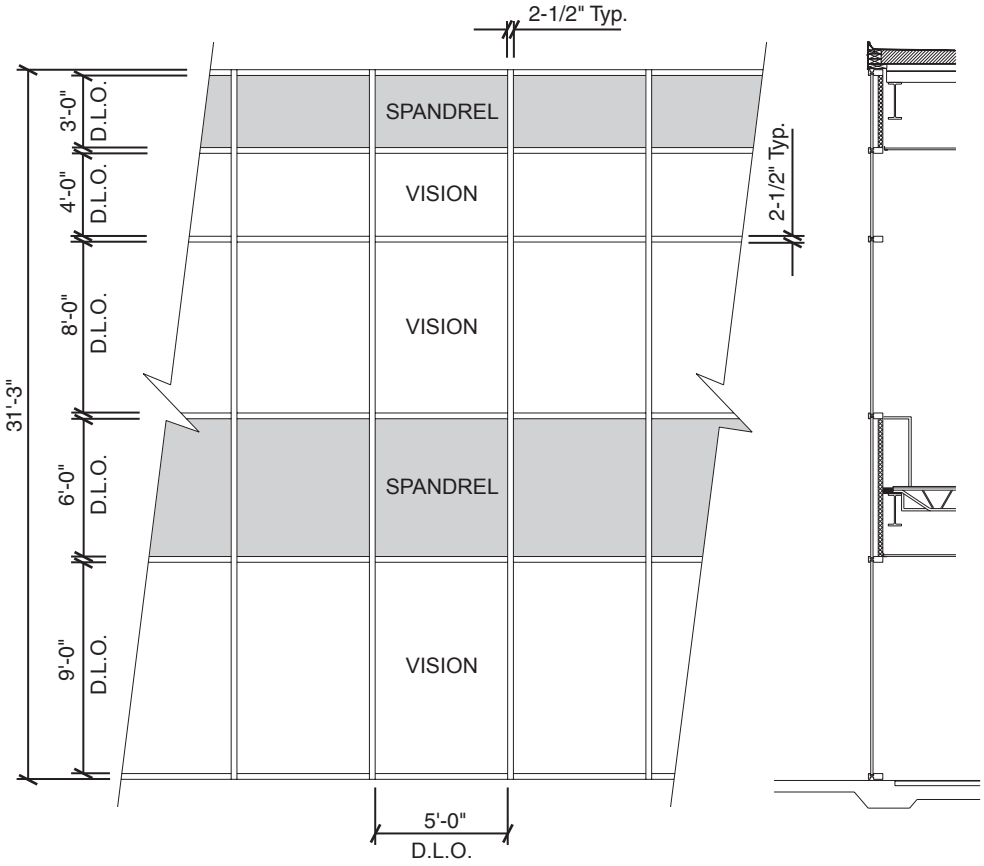
Project Specific U-factor
Example Calculation
(Based on single bay of Curtain Wall/Window Wall)



Vision Area

Example Glass U-factor	= 0.48 Btu/(ft² · h · °F)
Vision Area	= 5(9 + 8 + 4) = 105.0 ft²
Total Area (Vision)	= 5' 2-1/2" (9' 3-3/4" + 8' 2-1/2" + 4' 2-1/2") = 113.2 ft²
Percentage of Vision Glass	= (Vision Area ÷ Total Area)100 = (105.0 ÷ 113.2)100 = 93%

Spandrel Area

Example Spandrel R-value	= 15 (ft² · h · °F)/Btu
Spandrel Area	= 5(6 + 3) = 45.0 ft²
Total Area (Spandrel)	= 5' 2-1/2" (6' 2-1/2" + 3' 3-3/4") = 49.6 ft²
Percent of Spandrel	= (Spandrel Area ÷ Total Area)100 = (49.0 ÷ 49.6)100 = 91%

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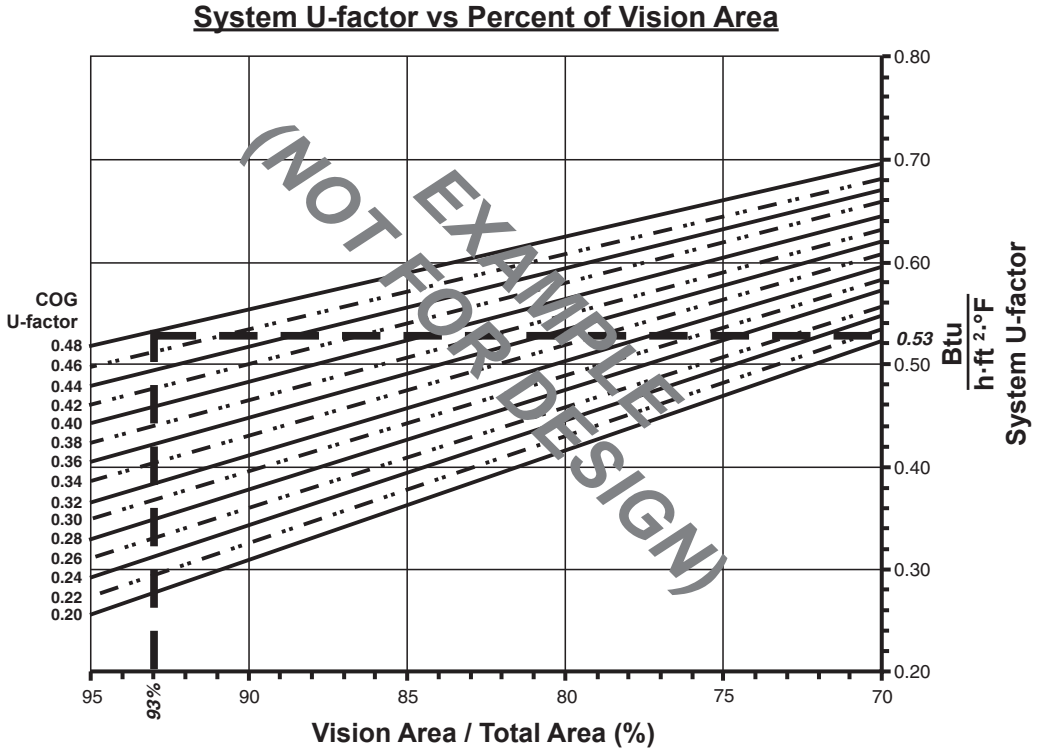
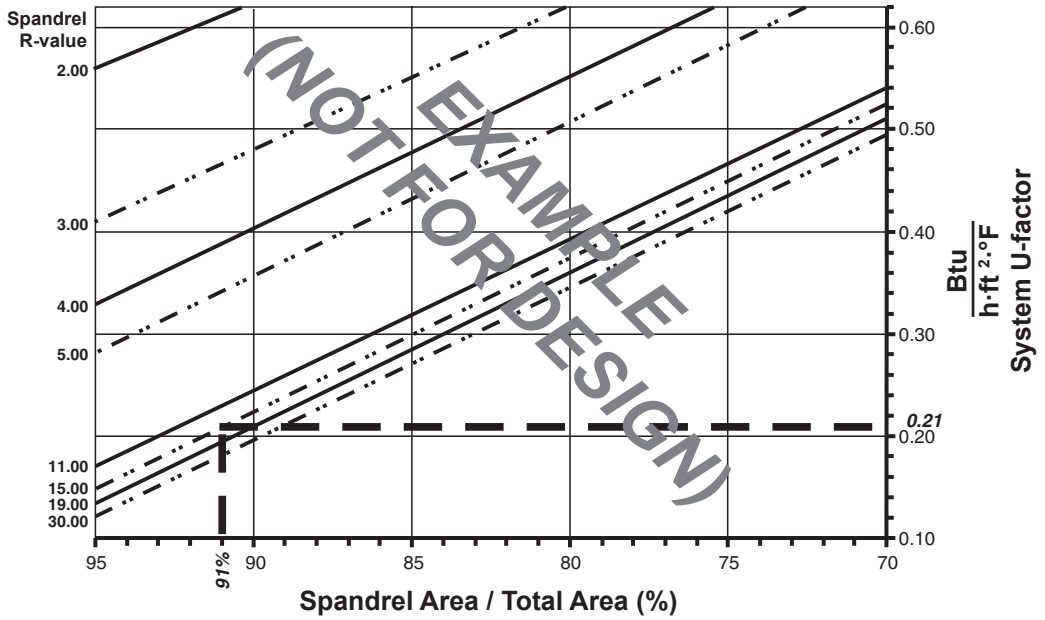
Vision Area Chart



Based on a single curtain wall bay of 93% vision glass and center of glass U-factor of 0.48, System U-factor is equal to 0.53 Btu/(h·ft ²·°F)

Spandrel Area Chart



Based on a single curtain wall bay of 91% spandrel and center of spandrel R-value of 15, system U-factor is equal to 0.21 Btu/(h·ft ²·°F)

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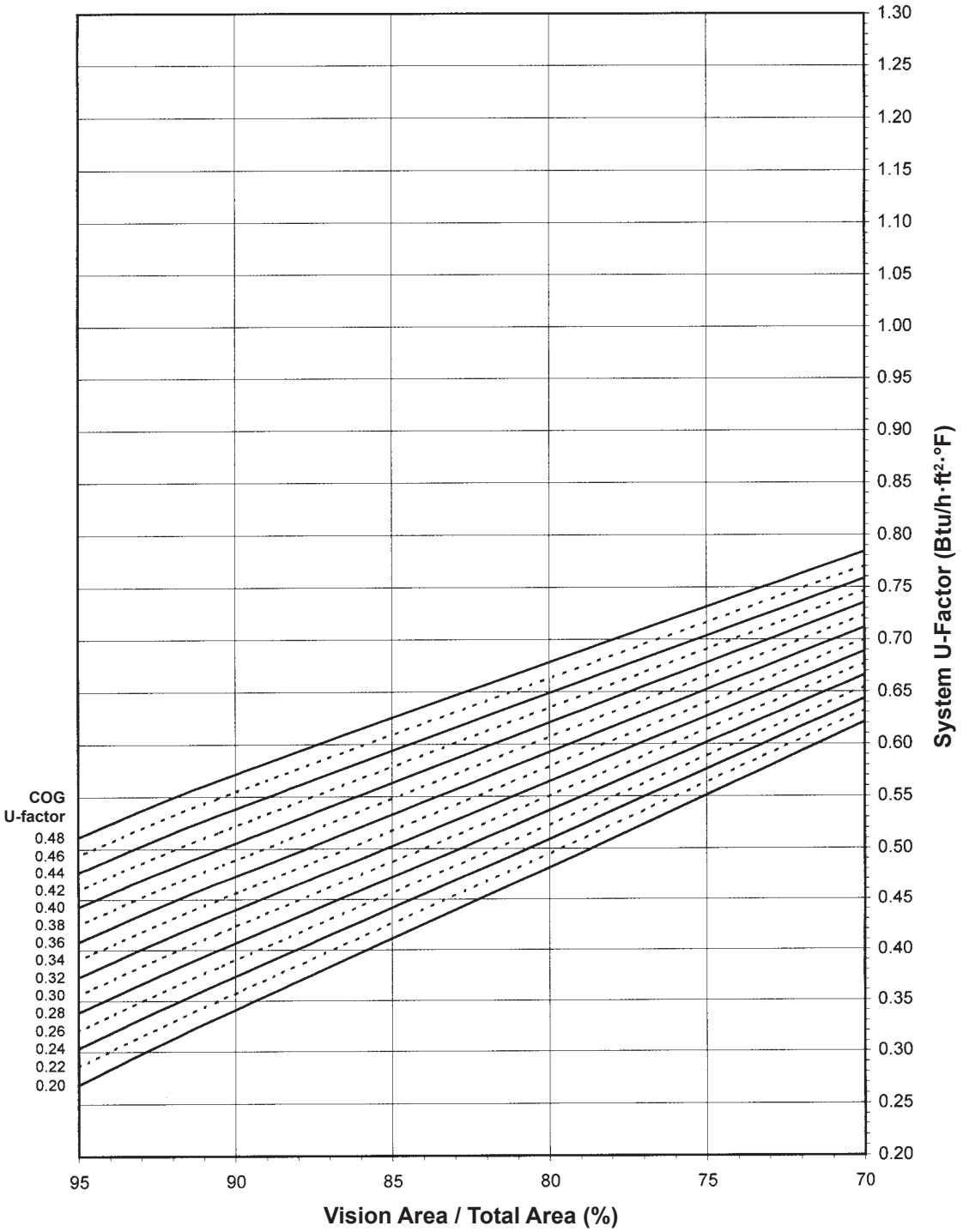
Note:
Values in parentheses are metric.
COG=Center of Glass.
Charts are generated per AAMA 507.

System U-Factor for Vision Glass



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COG=Center of Glass.
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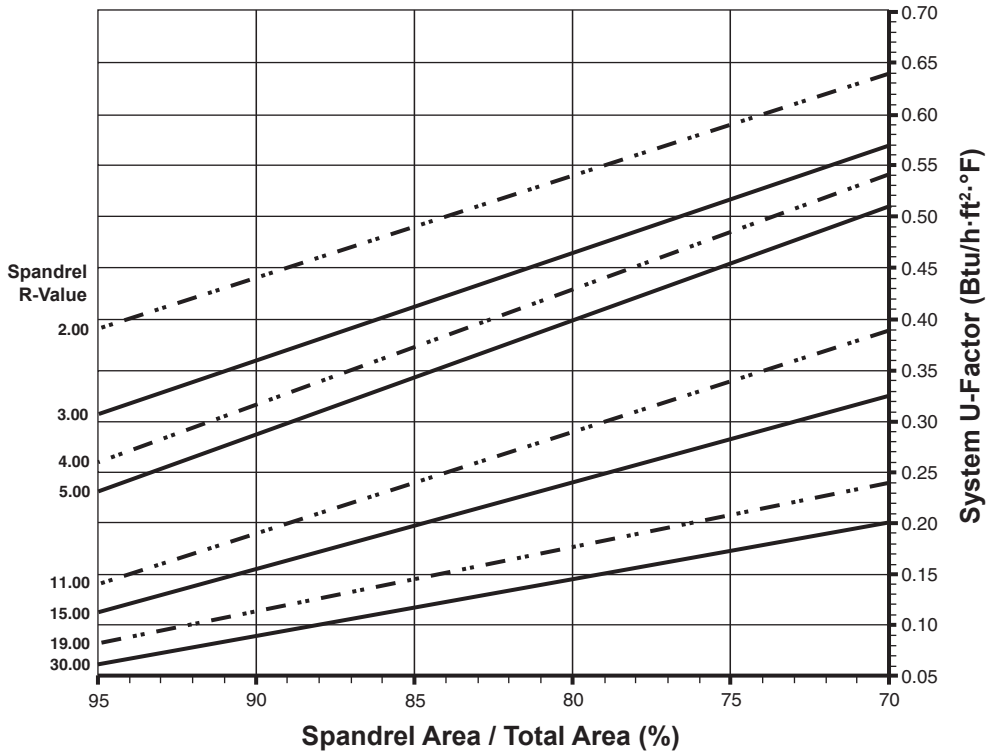
System U-Factors for Spandrel Glass



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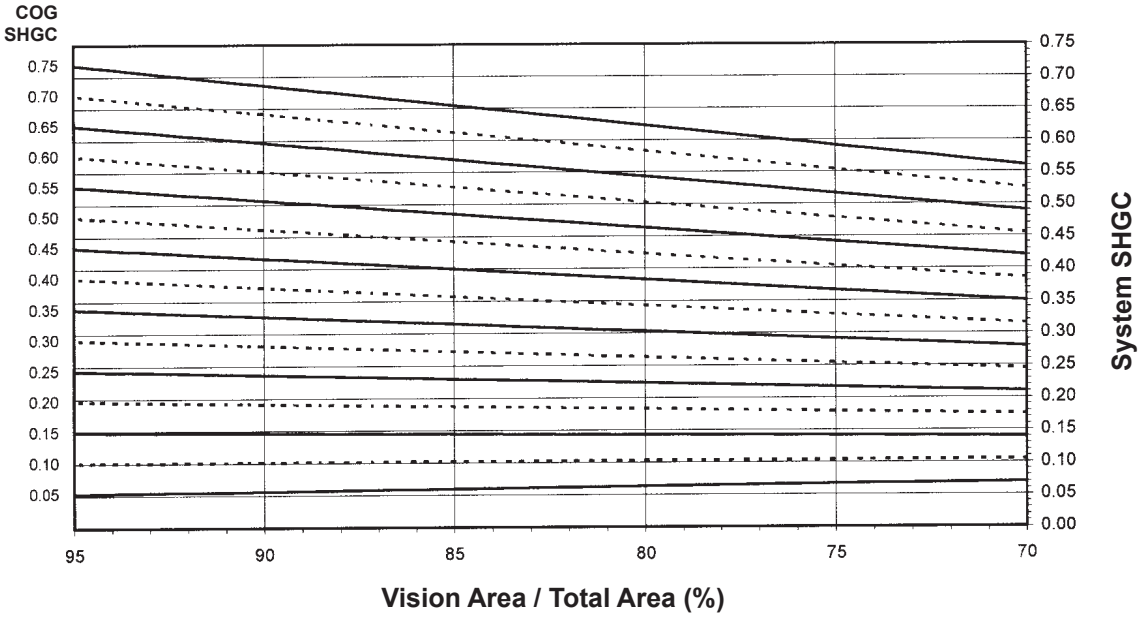
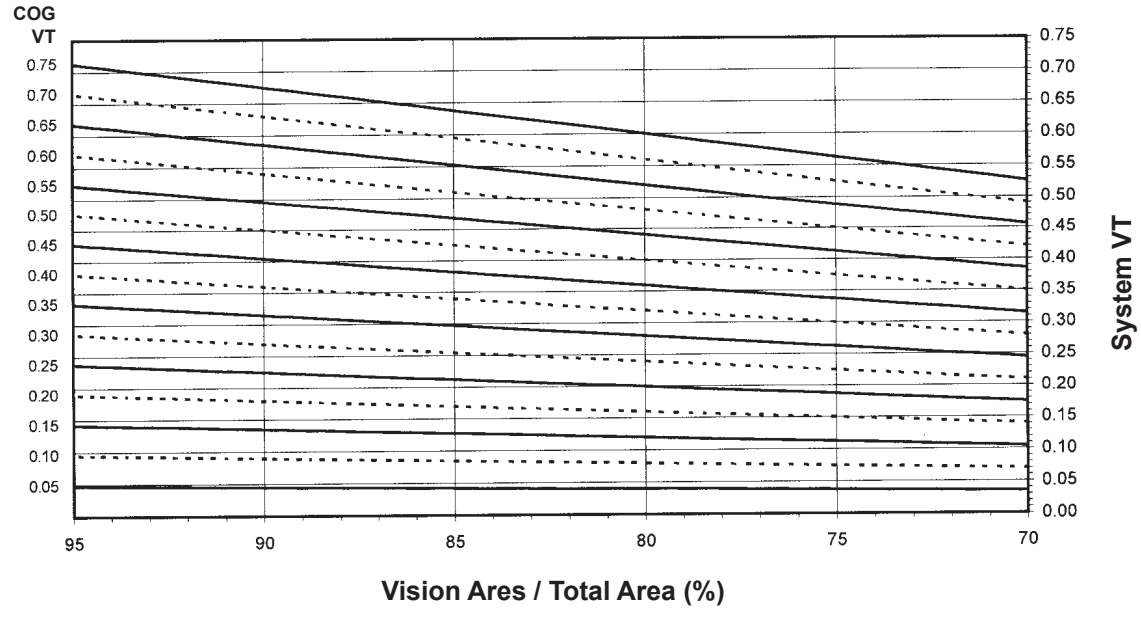
System Solar Heat Gain Coefficient (SHGC) vs Percent of Vision Area



Charts are generated per AAMA 507.

System Visible Transmittance (VT) vs Percent of Vision Area



Charts are generated per AAMA 507.

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Thermal Transmittance[1] (BTU/h • ft [2] • °F)

Glass U-Factor [3]	Overall U-Factor [4]
0.48	0.57
0.46	0.55
0.44	0.53
0.42	0.52
0.40	0.50
0.38	0.48
0.36	0.47
0.34	0.45
0.32	0.43
0.30	0.42
0.28	0.40
0.26	0.38
0.24	0.37
0.22	0.35
0.20	0.33

NOTE: For glass values that are not listed, linear interpolation is permitted.

1. U-Factors are determined in accordance with NFRC 100.
2. SHGC and VT values are determined in accordance with NFRC 200.
3. Glass properties are based on center of glass values and are obtained from your glass supplier.
4. Overall U-Factor, SHGC, and VT Matricies are based on the standard NFRC specimen size of 2,000 mm wide by 2,000 mm high (78-3/4" by 78-3/4").

SHGC Matrix [2]

Glass SHGC [3]	Overall SHGC [4]
0.75	0.69
0.70	0.64
0.65	0.60
0.60	0.55
0.55	0.51
0.50	0.46
0.45	0.42
0.40	0.37
0.35	0.33
0.30	0.28
0.25	0.24
0.20	0.19
0.15	0.15
0.10	0.10
0.05	0.06

Visible Transmittance [2]

Glass VT [3]	Overall VT [4]
0.75	0.68
0.70	0.63
0.65	0.59
0.60	0.54
0.55	0.50
0.50	0.45
0.45	0.41
0.40	0.36
0.35	0.32
0.30	0.27
0.25	0.23
0.20	0.18
0.15	0.14
0.10	0.09
0.05	0.05

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