

Part 1 - GENERAL

Scope

Work Included: Furnish materials, labour and equipment for the complete installation of aluminum entrance and window frames as detailed on the drawings and specified herein.

Work Not Included: Structural support for framing, interior building trims, and as specified by drawings and customer requirements per contract or purchase agreement.

Quality Assurance:

Drawings and specification for work in this section are based upon Metro "DGF" Series framing system.

Design & Performance

Framing to fully comply with applicable standard specifications as typically referenced to the following requirement criteria: Air and water tightness, wind and other load resistance. See detail test report included in this section.

Maintenance and Warranty

Upon request, Metro will provide instructions for proper cleaning and maintenance. Metro Glass Metal Products come with a two year warranty which shall begin from the day the product is shipped or from substantial completion of the installation. The warranty covers materials and workmanship as specified by drawings and customer requirements per contract or purchase agreement.

Part 2 - PRODUCTS

Materials

All materials to meet design and material specifications as applicable. Extruded aluminum shall be 6063 T6 alloy and temper. Any defects impairing strength, durability or appearance are not acceptable.

Fasteners shall be of sufficient size and strength and made of corrosion-resistant and compatible materials.

Glazing gaskets shall be extruded black santoprene designed and sized to perform their intended function.

Fabrication

Frame assembly to provide accurately fit tight hairline joints only. Extruded profiles to be of sizes and profiles indicated in the contract or the purchase agreement. Corner joints shall be secured with concealed shear blocks with fastening by means of anticorrosive steel screws, and as specified by drawings and customer requirements per contract or purchase agreement.

Finish - Anodized 6063 Material Code Identification

Exposed surfaces shall be finished as specified by customer:

Satin Clear 14 AA-M12C22A41

Satin Medium Bronze 30 AA-M12C22A44

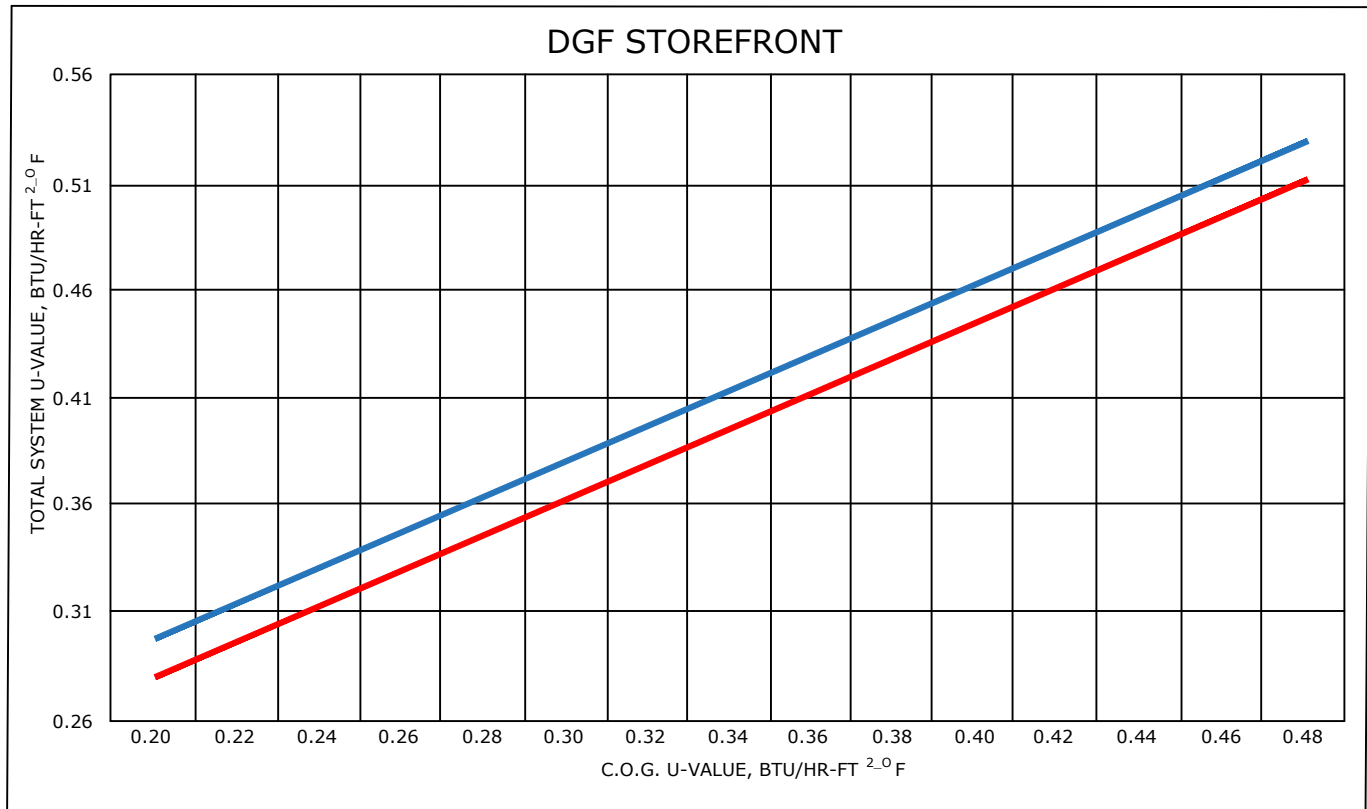
Satin Black 29 AA-M12C22A44

Powdercoated and various other finishes (including shades of Bronze) available upon request.

Installation

Framing to be installed plumb, level and square and glazed by an experienced crew in prepared openings in accordance to the manufacturers instructions and approved shop drawings, and as specified by drawings and customer requirements per contract or purchase agreement.

NFRC SIMULATION REPORT

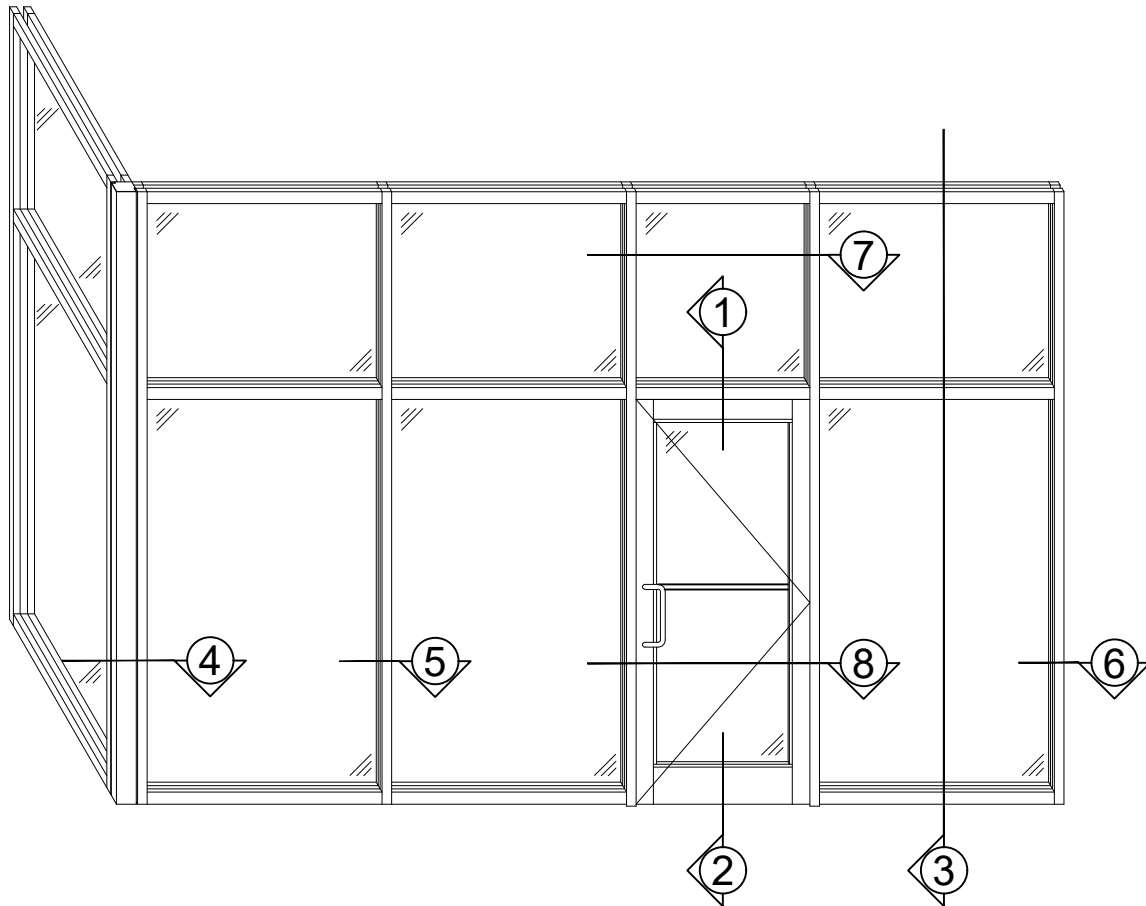


1" OA IGU, 6mm glass and Cold Aluminum Spacer

1" OA IGU, 6mm glass and Warm Non-Aluminum Spacer

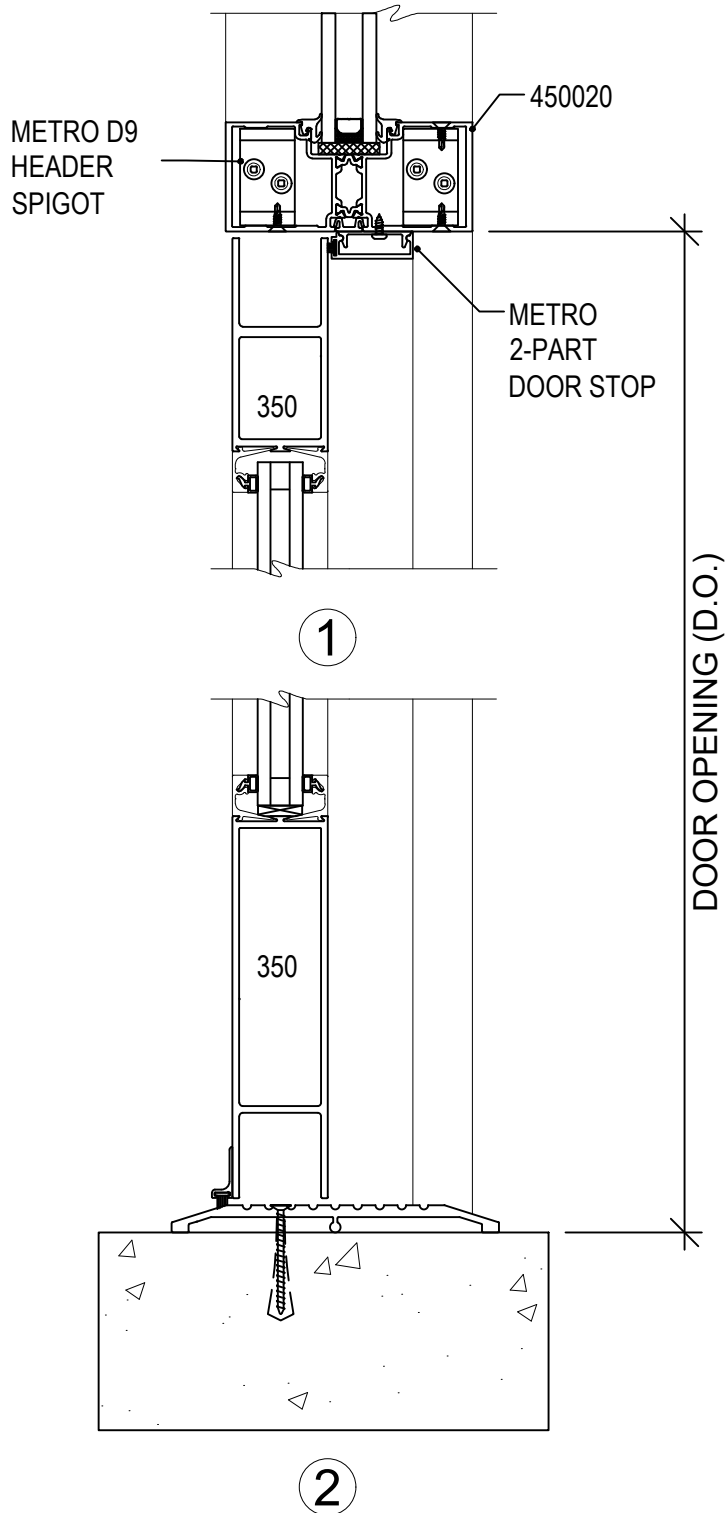
SIMULATION METHOD: ANSI/NFRC 100, Procedure for Determining Fenestration Product U-Factors (2014)
 ANSI/NFRC 200, Procedure for Determining Fenestration Product Solar Heat Gain Coefficients at Normal Incidence (2014)
 NFRC 500, Procedure for Determining Fenestration Product Condensation Resistance Values (2014)
 Technical Interpretation Manual (2010)

SIMULATION SIZE: 2000mm x 2000mm (79in x 79in)



DGF STOREFRONT SYSTEM

AN AFFORDABLE THERMALLY BROKEN FRAMING SYSTEM SOLUTION FOR EXTERIOR & INTERIOR APPLICATIONS, CAN BE USED WITH SINGLE OR SEALED UNIT DOUBLE GLAZING, CAN BE FABRICATED TO SUIT MOST OPENING REQUIREMENTS. FEATURES THERMAL STRUTTING FOR EXCEPTIONAL THERMAL PERFORMANCE AND STRENGTH, SILL TRAY AND HEAD DEFLECTOR FOR EASY INSTALLATION, SHEAR BLOCK FABRICATION, CONFIGURATION CORNER SOLUTION, TESTED TO INDUSTRY STANDARD AND CODES



DOOR OPTIONS
 METRO 150 SERIES
 METRO 350 SERIES
 METRO 500 SERIES
 METRO HP TB-350
 METRO HP TB-500

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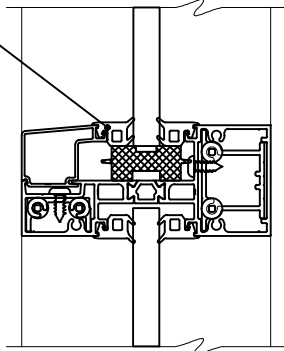
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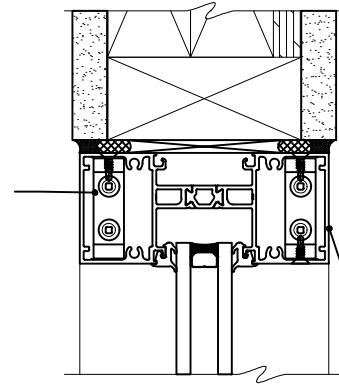


450244



12mm GLASS
ALSO AVAILABLE

METRO D9
MULLION
SPIGOT



450010

EXTERIOR
GLAZING GASKET

SETTING BLOCK

450050

450120

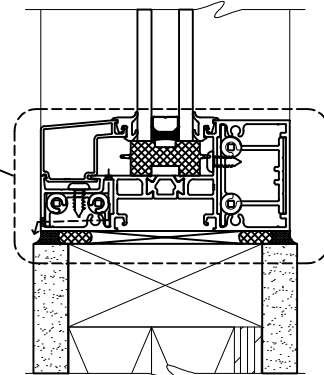
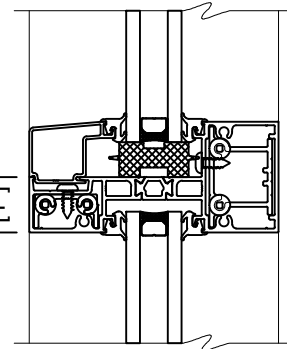
450180-A

DRAINAGE PATH

450110-A

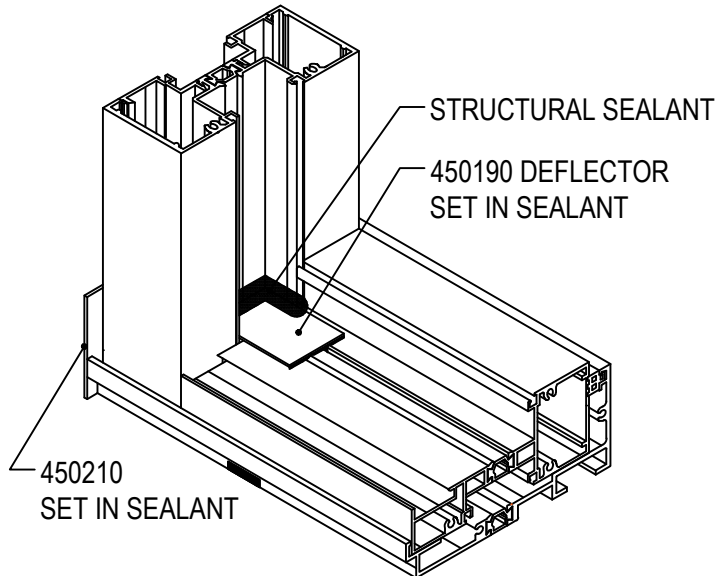
25.5
[1"]

51.0
[2"]

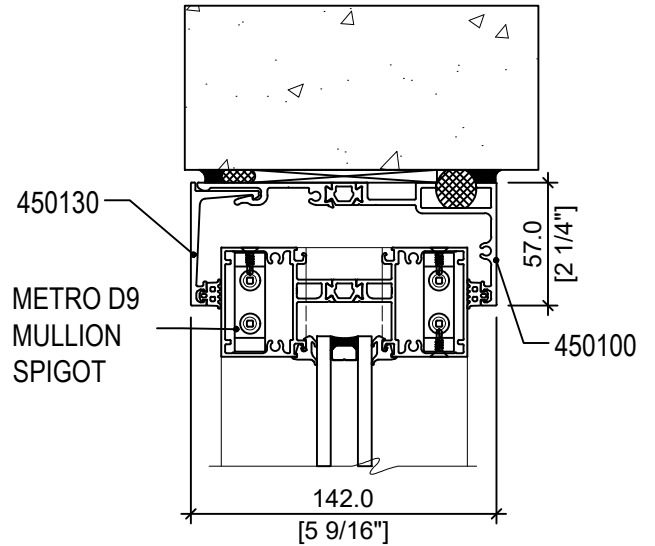


INTERIOR GLAZING

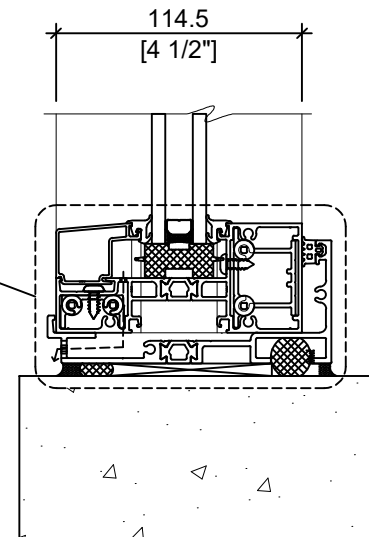
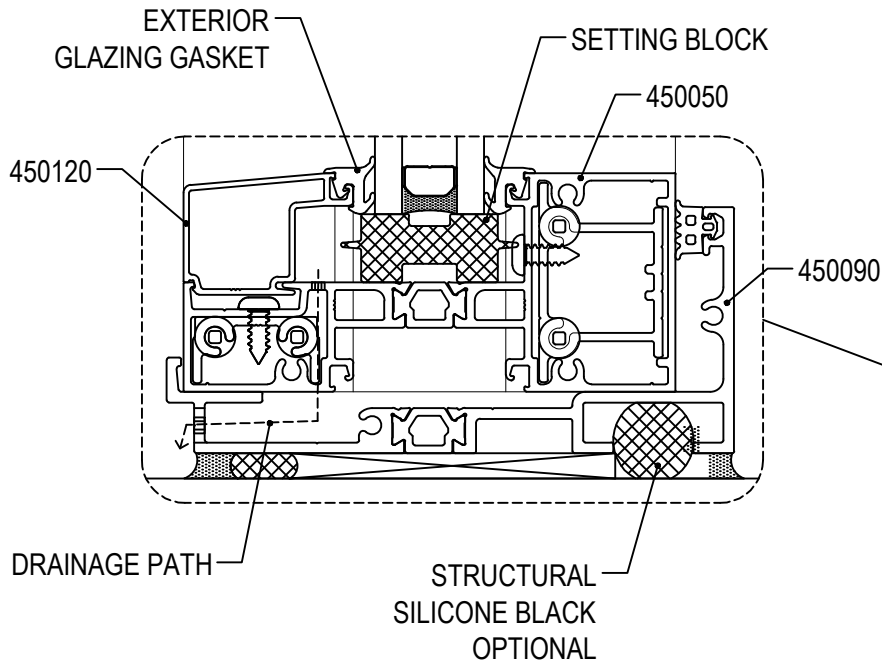
3



SUPPLEMENTARY PROFILES



TWO-PART
HEAD-RECEPTOR



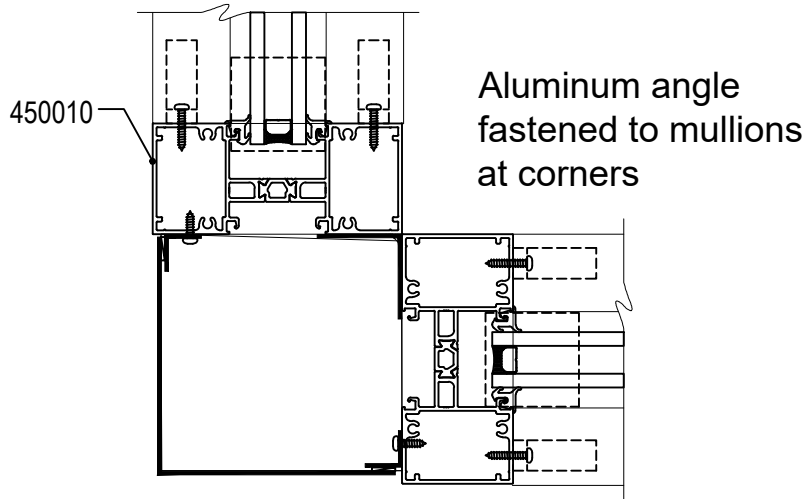
SILL TRACK

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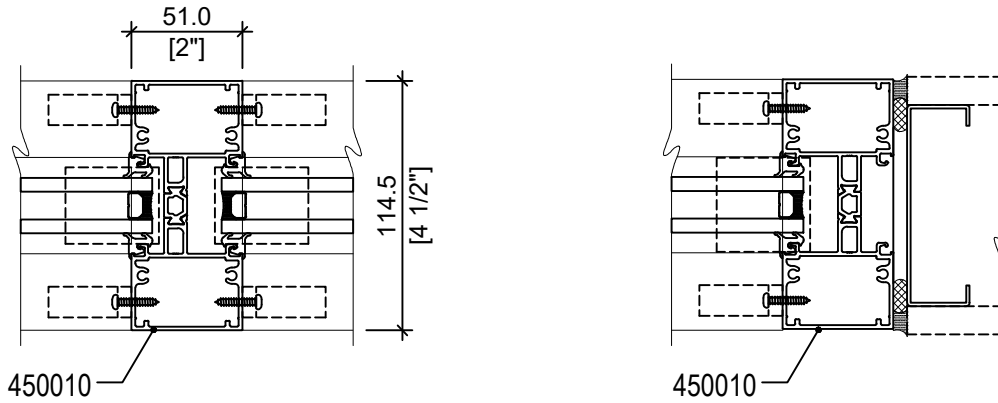
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TYPICAL CORNER DETAIL

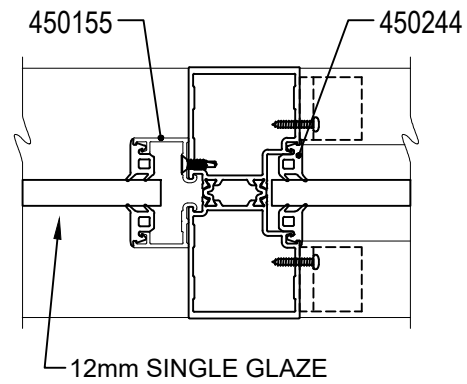
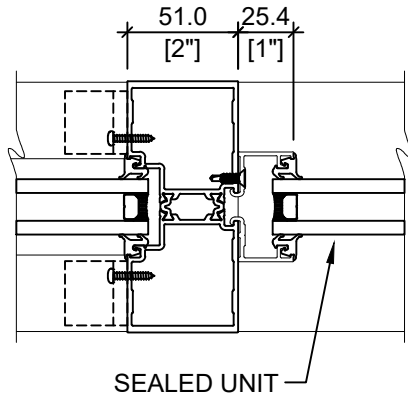
4



TYPICAL MULLIONS

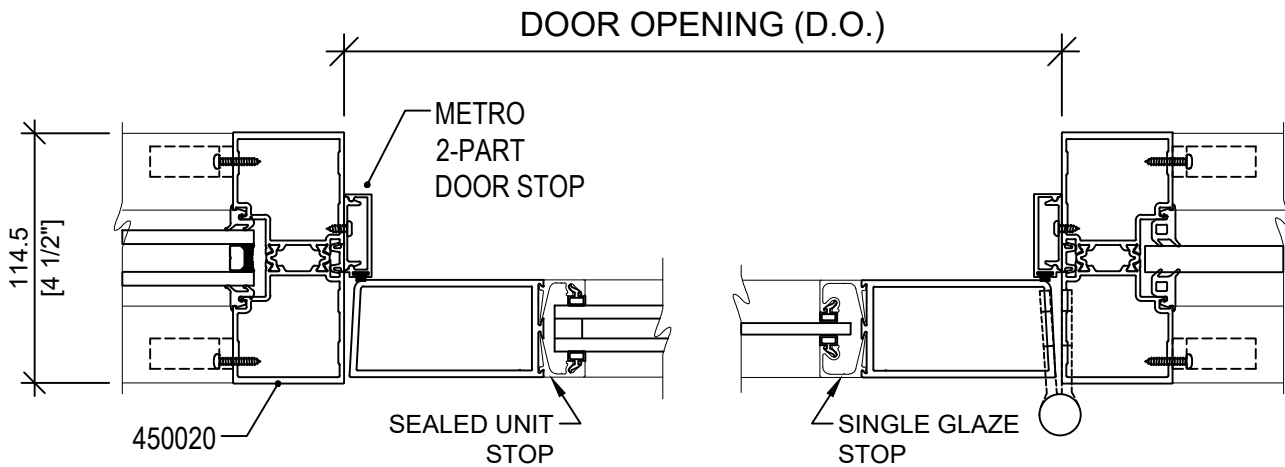
5

6



DOOR JAMBS, ABOVE HEADER

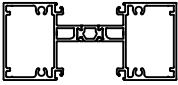
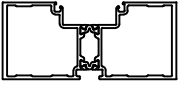

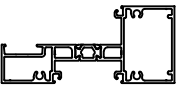
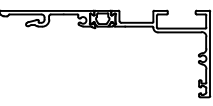

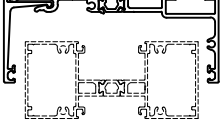

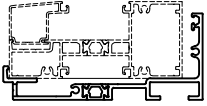



7



DOOR JAMBS

8




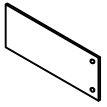
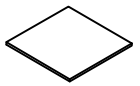






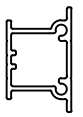

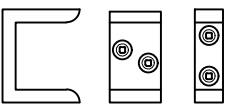
CROSS SECTION	PART #	DESCRIPTION	STOCK LENGTH	CLEAR ANODIZED	BRONZE ANODIZED	BLACK ANODIZED
	450010	50.8mm X 114.3mm (2" X 4 1/2") STANDARD MULLION	7.315 m	✓	✓	✓
	450020	50.8mm X 114.3mm (2" X 4 1/2") DOOR MULLION	7.315 m	✓	✓	✓
	450120	25.4mm (1") GLASS TOP	7.315 m	✓	✓	✓
	450050	50.8mm X 114.3mm (2" X 4 1/2") HORIZONTAL MULLION	7.315 m	✓	✓	✓
	450100	HEAD-RECEPTOR BASE	7.315 m	✓	✓	✓
	450130	 SNAP-IN RETAINER CAP	7.315 m	✓	✓	✓
	450090	 SILL TRACK	7.315 m	✓	✓	✓
	D24	DOOR STOP BASE	4.6 m	✓		
	D26	1/2" DOOR STOP COVER	4.6 m	✓	✓	✓
	D27	5/8" DOOR STOP COVER	4.6 m	✓	✓	✓

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CROSS SECTION	PART #	DESCRIPTION	STOCK LENGTH	CLEAR ANODIZED	BRONZE ANODIZED	BLACK ANODIZED
	450155	GLASS STOP (25.4mm 1" GLASS)	7.315 m	✓	✓	✓
	450210	SILL TRACK END DAM PLATE	EACH	ALUMINUM		
	450190	DEFLECTOR PLATE 1 3/8" x 2 1/4" x 1/16"	EACH	ALUMINUM		
	450230	SEAL UNIT GLAZING GASKET	250' ROLLS	EPDM BLACK 70 DUROMETER		
	450240	HEAD-RECEPTOR GLAZING GASKET	250' ROLLS	EPDM BLACK 70 DUROMETER		
	450244	12mm GLAZING GASKET	250' ROLLS	EPDM BLACK 70 DUROMETER		
	450260	POCKET FILLER	2159 mm	PVC BLACK		
	3/16" x 1 1/8"	4" SETTING BLOCK	EACH	SILICONE 80		
	5/8" x 1 1/4"	4" SETTING BLOCK	EACH	SILICONE 80		
	450110-A	SPIGOT	4.6 m	MILL FINISH ALUMINUM ALLOY		
	450180-A	SPIGOT	4.6 m	MILL FINISH ALUMINUM ALLOY		
	D9	PREP SHEAR BLOCK FOR HEADER AND MULLION	4.6 m	MILL FINISH ALUMINUM ALLOY		

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WINDLOAD CHARTS

1. Deflection Limit: L/175 (Note: to convert to L/240 + ¼" deflection limit, multiply mullion spacings by 0.70. For example, if mullion can be spaced at 4 ft o.c., multiply by 0.7 = 2.80 ft spacing ok at L/240 + ¼")
2. Assume horizontal members (if any) provide lateral support for seismic loads
3. Value of mullion includes back section, thermal breaks and nosing
4. Steel reinforcing inertia value expressed in aluminum for total inertia value (i.e. steel value is factored up by ratio of steel / aluminum modulus values)

DEADLOAD CHARTS

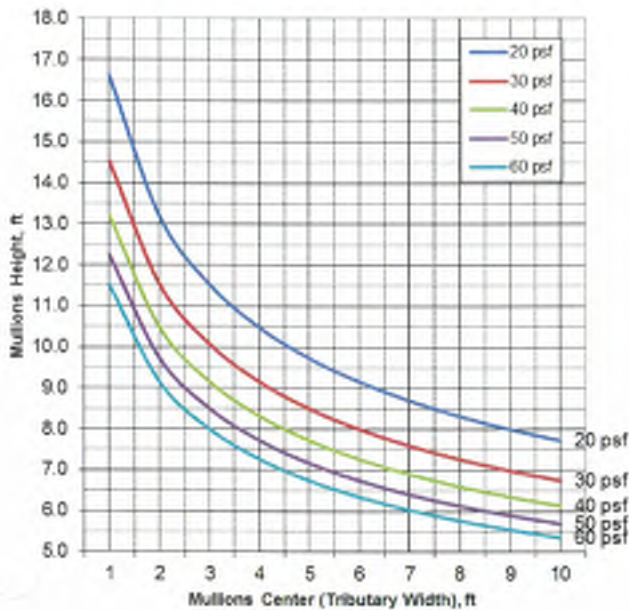
1. Deflection requirements comply with S157 - 05/S157.1-05 and AAMA TIR-A11-2015. Deflection Limit - 1/8".
2. Transom freely supported at ends with setting blocks at 1/4 or 1/8 of transom length.
3. Value of transom includes back section, thermal break and nosing.
4. All reinforcing shown in these charts considered that it is mechanically fastened to the aluminum extrusion. Fastening requirements to be reviewed and approved by Engineer.

**Charts are based on deflection analysis only and considered for estimation purposes only. Designer has to take necessary steps to make appropriate engineering calculations as per applicable Building Codes and regulations for complete design, i.e. stress, slenderness, local buckling.*

WINDLOAD SPAN CHART 1

*DRAWING TITLE: 450010

MULLION SECTION



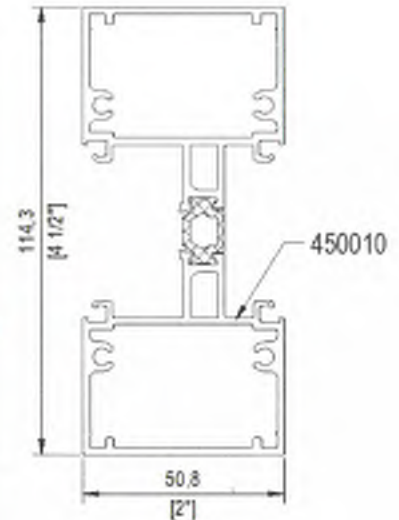
WINDLOAD CHART 1
450010

PROFILE QUALITIES

MULLION:
I_{xx} = 2.9990 in⁴
ALUMINUM ALLOY:
I_{xx} = in⁴
SECTION NUMBER:
6063-T6

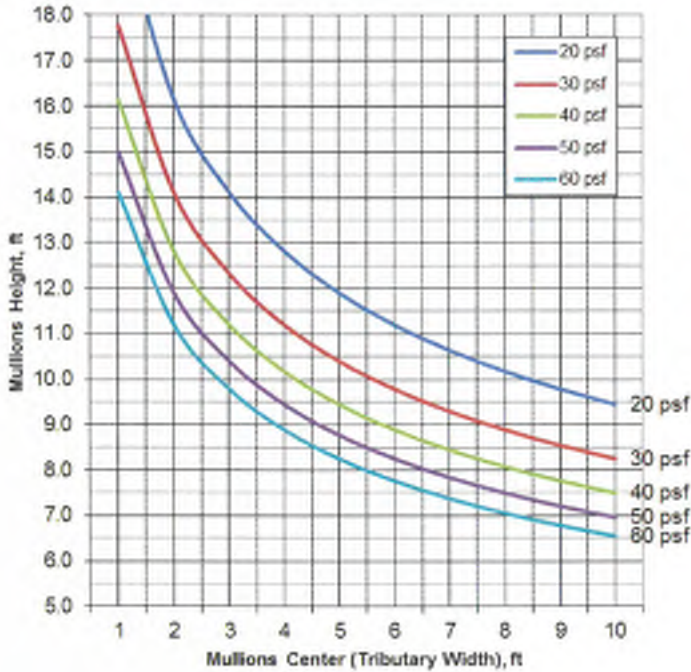
MATERIAL PROPERTIES

ALUMINUM MODULES:
E = 10,100,000 psi
STEEL MODULES:
E = 29,000,000 psi
6063-T6 YIELD STRENGTH:
F_y = 21,000 psi



WINDLOAD SPAN CHART 2 *DRAWING TITLE: 450010 WITH (2) 450110

MULLION SECTION



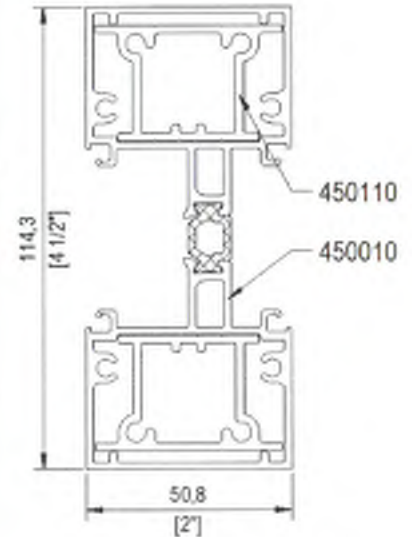
WINDLOAD CHART 2
450010 (2)

PROFILE QUALITIES

MULLION: $b_{xx} + 5.480 \text{ in}^4$
ALUMINUM ALLOY: $b_{xx} = \text{in}^4$
SECTION NUMBER: 6063-T6

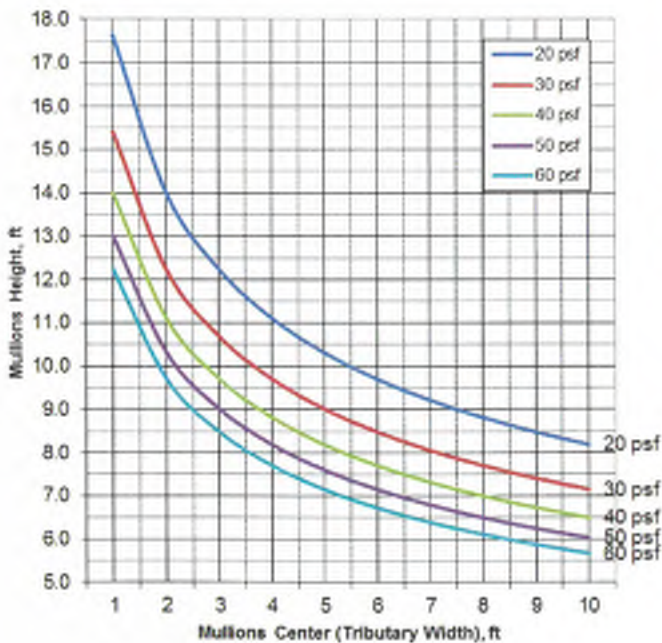
MATERIAL PROPERTIES

ALUMINUM MODULES:
 $E = 10,100,000 \text{ psi}$
STEEL MODULES:
 $E = 29,000,000 \text{ psi}$
6063-T6 YIELD STRENGTH:
 $F_y = 21,000 \text{ psi}$



WINDLOAD SPAN CHART 3 *DRAWING TITLE: 450020

MULLION SECTION



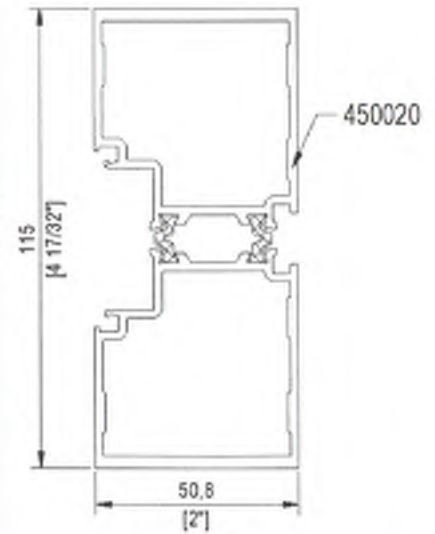
WINDLOAD CHART 3
450020

PROFILE QUALITIES

MULLION: $b_{xx} = 3.564 \text{ in}^4$
ALUMINUM ALLOY: $b_{xx} = \text{in}^4$
SECTION NUMBER: 6063-T6

MATERIAL PROPERTIES

ALUMINUM MODULES:
 $E = 10,100,000 \text{ psi}$
STEEL MODULES:
 $E = 29,000,000 \text{ psi}$
6063-T6 YIELD STRENGTH:
 $F_y = 21,000 \text{ psi}$



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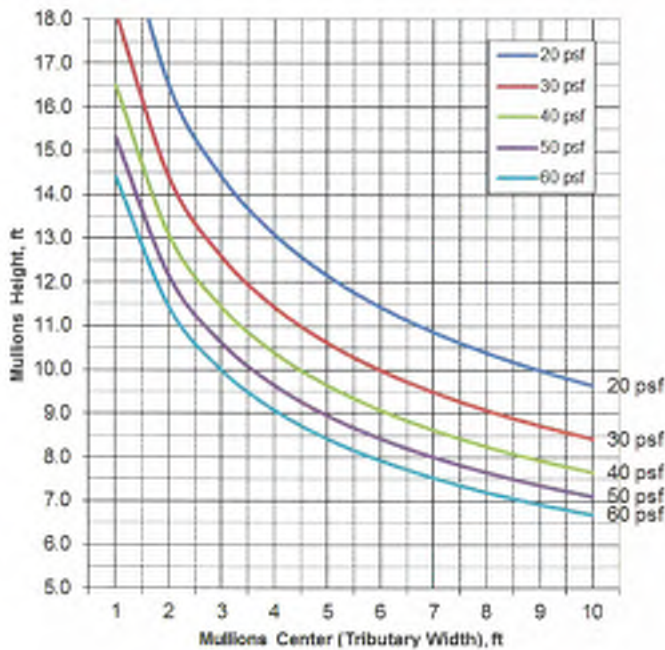
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WINDLOAD SPAN CHART 4

**DRAWING TITLE: 450020
WITH 2-450110*

MULLION SECTION



WINDLOAD CHART 4
450020 with (2) 450110

PROFILE QUALITIES

MULLION: $I_{xx} = 3.912 \text{ in}^4$
ALUMINUM ALLOY: $I_{xx} = \text{in}^4$
SECTION NUMBER: 6063-T6

MATERIAL PROPERTIES

ALUMINUM MODULES:

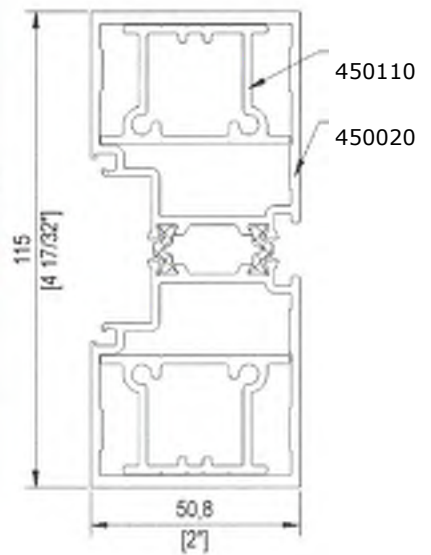
$E = 10,100,000 \text{ psi}$

STEEL MODULES:

$E = 29,000,000 \text{ psi}$

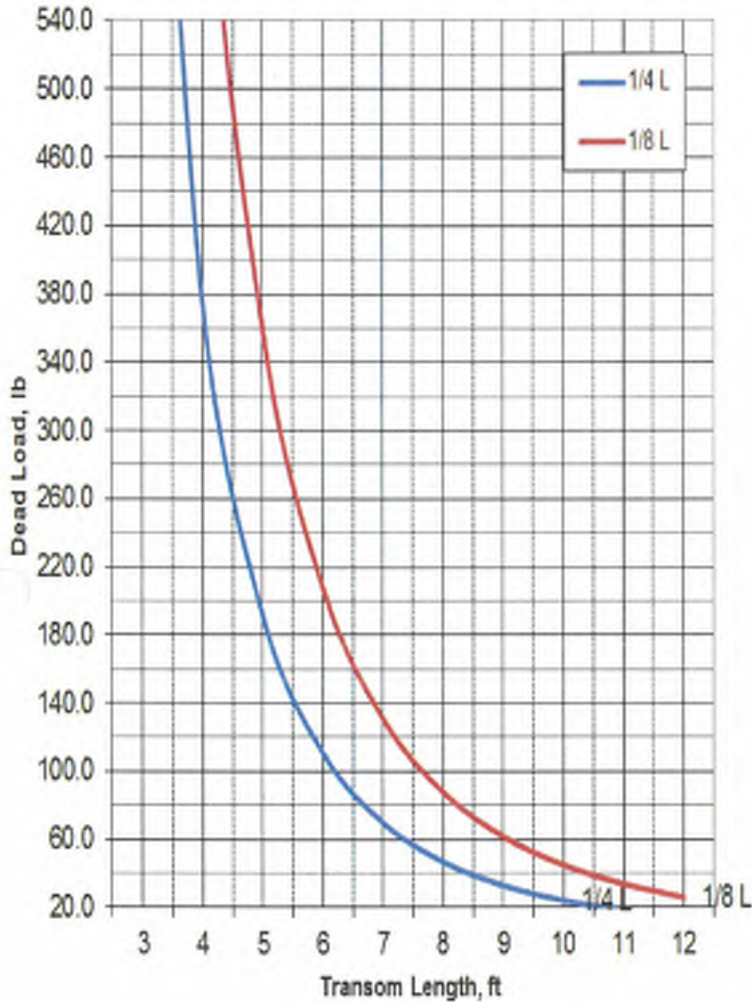
6063-T6 YIELD STRENGTH

$F_y = 21,000 \text{ psi}$

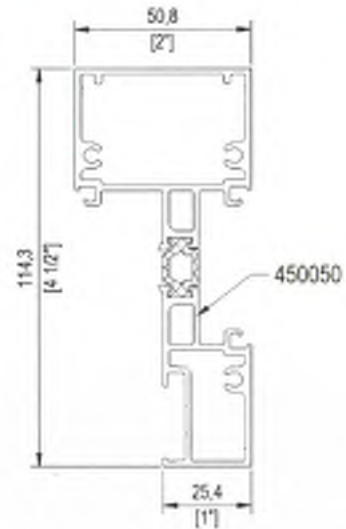




DEADLOAD 450050 SPAN CHART



MULLION SECTION



DEADLOAD CHART 1
450050

PROFILE QUALITIES
MULLION: $I_{yy} = 0.4705 \text{ in}^4$
 $S_{yy} = 0.3842 \text{ in}^3$

MATERIAL PROPERTIES
ALUMINUM MODULES:
 $E = 10,100,000 \text{ psi}$
STEEL MODULES:
 $E = 29,000,000 \text{ psi}$
6063-T6 YIELD STRENGTH:
 $F_y = 21,000 \text{ psi}$

*Please contact your local sales representative if you wish to access the full windload/deadload chart.