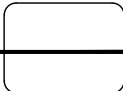
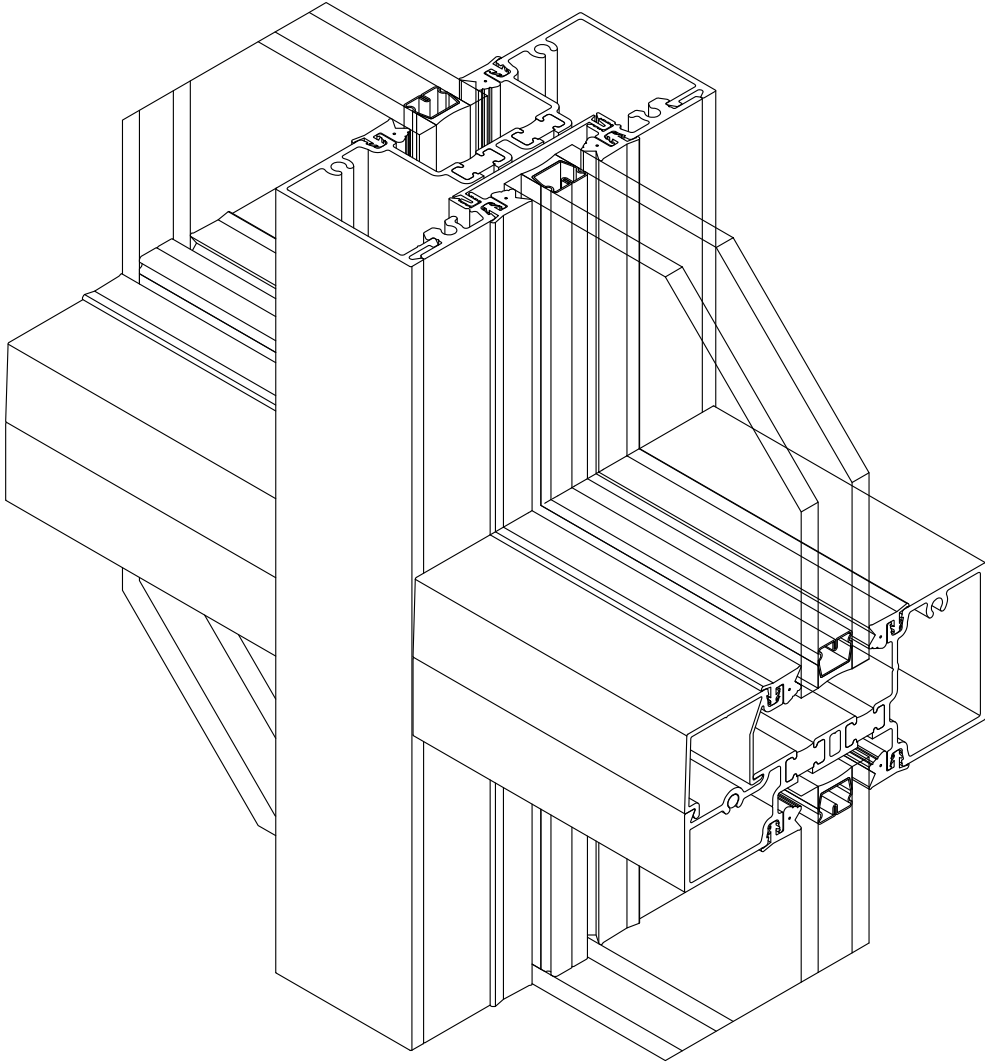
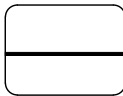


# TMS 114 XT TECHNICAL MANUAL





FEATURES

**FEATURES**

- TMS 114 XT is center set flush glazed systems that are 4 1/2" deep with a 2" wide sightline
- Glaze from the outside or inside
- Screw spline or shear block fabrication
- Glazing options up to 1-1/4" thick
- Available in anodized and standard or custom painted finishes
- Readily available from stock

**APPLICATIONS**

- Storefront, Punched Openings, or Ribbon Windows
- Single span
- Integrated entrance framing to allow Pittco standard entrances or other speciality entrances to be incorporated

**SYSTEM PERFORMANCE**

Description	Test Method	Allowed	Achieved	Test Report
Structural	ASTM E 330	N/A	30 psf	23-07b
Air	ASTM E 283	0.06 cfm/ft2 @ 6.24 psf	0.03 cfm/ft2 @ 6.24 psf	23-07b
Water (Static)	ASTM E 331	None @ 5 psf	None @ 10 psf	23-07b
Water (Dynamic)	AAMA 501.1	None @ 5 psf	None @ 10 psf	23-07b
CRF	SIM. ANALYSIS	N/A	65+	23-3
U Value	NFRC 100	N/A	0.37+	23-2
SHGC	NFRC 200	N/A	0.35+	23-2
CR	NFRC 500	N/A	46+	23-2
OITC	ASTM E 90/E 1433	N/A	30	19-03
STC	ASTM E 90/E 413	N/A	36	19-03

+ 1" IGU (1/4-1/2-1/4) Solarban 60 Low-E Annealed Glass, Air Filled, Aluminum Spacer.

FOR SPECIFIC PRODUCT APPLICATIONS PLEASE CONTACT YOUR PITCO REPRESENTATIVE



PRODUCT DESCRIPTION..... PAGES 4 TO 8  
EXPLODED VIEWS..... PAGE 9  
1/4 SIZE DETAILS..... PAGES D1 TO D3  
ENTRANCE DETAILS..... PAGE D4  
WINDLOAD CHARTS..... PAGES S1 TO S3  
DEADLOAD CHARTS..... PAGE S4  
SECTION PROPERTIES ..... PAGE S5  
THERMAL CHARTS..... PAGES T1 TO T2

- **BASIC USES / RELATED USES**

- Framing is designed for high thermal performance flush, center glazed storefront assembly
- Vertical mullions are typically open back aluminum members, with solid face and flush closure side plates forming tubular members
- Horizontal mullions are of hollow aluminum with removable glazing stops
- Glazing is insulating glass unit
- Corners are available for 90 and 135 degrees
- Glass may be transparent, opaque, or decorative types
- Framing is intended for one story applications
- Framed assembly may be fitted to most rigid and stable framed opening assemblies

- **PRODUCT ATTRIBUTES AND CHARACTERISTICS**

- Aluminum frame members are double thermal break design
- Framing and glazing stops are designed for glass and panels
- Wind pressure resistance and pressure equalization are standard within the frame assembly
- Weep containment and condensate water collection and drainage to the exterior at concealed weeps are standard
- Integral door frames are available

- **SELECTION CRITERIA**

- Quality, economy, and high thermal performance are provided at a reasonable cost
- Framing is designed for Interior or exterior environments

- **APPLICABLE STANDARDS, RELATED REFERENCES**

- AA (Aluminum Association) - Designation System for Aluminum Finishes
- AAMA SFM-1-14 - Aluminum Storefront and Entrance Manual
- AAMA 501.1-15 - Standard Test Method for Water Penetration of Windows, Curtain Walls and Doors using Dynamic Pressure
- AAMA 611-14 - Voluntary Specification for Anodized Architectural Aluminum
- AAMA 1503-09 - Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors, and Glazed Wall Sections
- AAMA 2604-17a - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels
- AAMA 2605-17a - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels
- ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
- ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
- ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wires, Profiles, and Tube
- ASTM E283 - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors Under Specified Pressure Differences Across the Specimen
- ASTM E330 - Standard Test Method for Structural Performance of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference
- ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference

**PRODUCT DESCRIPTION**

● **QUALITY, TESTS, CERTIFICATIONS, AND APPROVALS**

Air Infiltration: Maximum leakage of 0.03 cfm/sq ft (0.1 L/m<sup>2</sup>.s) when measured in accordance with ASTM E283 at a test pressure of 6.24 psf (300 Pa)

Static Water Leakage: No uncontrolled leakage, when measured in accordance with ASTM E331 at a test pressure difference of 10.0 psf (480 Pa)

Dynamic Water Leakage: No uncontrolled leakage, when measured in accordance with AAMA 501.1 at a test pressure difference of 10.0 psf (480 Pa)

Structural Performance: Maximum deflection less than 1/175 of the span length and no damage to the assembly, when measured in accordance with ASTM E330 at a test pressure of 30 psf (1200 Pa).

Condensation Resistance Factor (CRF): Frame is 66 when measured in accordance with AAMA 1503 with clear 1" insulated glass unit (1/4, 1/2, 1/4)

Insulation U-Factor: 0.52 BTU/hr/sq ft/degrees F when measured in accordance with AAMA 1503 with clear 1" insulated glass unit (1/4, 1/2, 1/4)

● **PACKAGING, HANDLING, AND PROTECTION INSTRUCTIONS**

Packaged in specially designed heavy cartons or shipped pre-fabricated and assembled

● **SPECIAL WARRANTY**

One (1) year

● **LIMITATIONS**

Framing is limited to applications of one story in height

Not intended for continuous members for multiple floor applications

● **SAFETY PRECAUTIONS**

Normal precautions required

● **AVAILABILITY**

Framing is available in all regions of USA

● **COST**

Varies with elevation, configuration and finish desired

## PRODUCT PROPERTIES

## ● MATERIAL, COMPOSITION AND DESIGN

Aluminum: 6063-T6 alloy and temper, to ASTM B221 or ASTM B221M

Fasteners: Stainless steel, or zinc plated carbon steel

Perimeter Anchors: Aluminum, or steel that will be isolated from aluminum components

Glazing Gaskets: Wedge-type, Ethylene Propylene Diene Monomer (EPDM) rubber with non-stretch cord

Glass Stops: Snap-in type

Thermal Barrier: Poured and Debridged Polyurethane and Thermal Slots

## ● SHAPE AND DIMENSIONS

Frame Size: 2 x 4-1/2 inch (51 x 114 mm)

Glass Edge Bite: 3/8 inch (9.5mm)

Glazing Thickness Accepted: 1/4 inch (3 mm) to 1-1/4 inch (32 mm) in increments of 1/16 inch (1.5 mm) except 9/16 inch (14 mm), 15/16 inch (24 mm)

## ● SHOP FABRICATION AND ASSEMBLY

Provide for flush glazing on all sides with no projecting stops

Configurations:

- Two-piece snap together mullions
- Solid tubular mullions, assembled to specially designed shear block clips

Accessories:

- Expansion Mullions
- Corner Mullions
- Open Back Perimeter Members
- Integral Door Frames
- Flashing, Subsills
- Head Receptor
- Heavy Duty Mullions
- Standard Steel Reinforcing

## ● COLORS AND TEXTURES

- Architectural anodic coating, in accordance with AAMA 611;

o Aluminum Association Designation.

- AA-M10C22A31 - Class II - (Pittco #42 Clear)
- AA-M10C22A41 - Class I - (Pittco #43 Clear)
- AA-M10C22A44 - Class I - (Pittco #59 Champagne)
- AA-M10C22A44 - Class I - (Pittco #60 Light Bronze)
- AA-M10C22A44 - Class I - (Pittco #61 Medium Bronze)
- AA-M10C22A44 - Class I - (Pittco #62 Dark Bronze)
- AA-M10C22A44 - Class I - (Pittco #63 Black)



**PRODUCT DESCRIPTION**

- Architectural organic coating, in accordance with AAMA 2604 (50% Kynar 500®);
  - o Finish of Exposed Aluminum shall be compliant with the performance standards set forth in AAMA Specification 2604, High Performance Organic Coatings on Aluminum
  - o Type: Factory Applied, High Performance, 50% Polyvinylidene Fluoride (PVDF) Coating formulated by a licensed paint manufacturer, and applied by Paint Manufacturer's Warranty-Approved Applicator
  - o Pretreatment: Applicator to pre-treat the aluminum with solutions to remove organic and inorganic surface soils, remove residual oxides, followed by a Chrome Phosphate or Chromate Coating to ensure adhesion to the aluminum
  - o Specify color code, e.g. UC 40577(Duranar Black)
  
- Architectural organic coating, in accordance with AAMA 2605 (70% Kynar 500®);
  - o Finish of Exposed Aluminum shall be compliant with the performance standards set forth in AAMA Specification 2605, Superior Performing Organic Coatings on Aluminum
  - o Type: Factory Applied, High Performance, 70% Polyvinylidene Fluoride (PVDF) Coating formulated by a licensed paint manufacturer, and applied by Paint Manufacturer's Warranty-Approved Applicator
  - o Pretreatment: Applicator to pre-treat the aluminum with solutions to remove organic and inorganic surface soils, remove residual oxides, followed by a Chrome Phosphate or Chromate Coating to ensure adhesion to the aluminum
  - o Specify color code, e.g. UC 40577(Duranar Black)

**PRODUCT PLACEMENT**

- **PREPARATION WORK**  
Ensure openings are of proper size, and are plumb, square, level and in the proper location and alignment
  
- **INSTALLATION**  
Align installed assembly plumb and level, free of warp or twist  
Maintain dimensional tolerances, aligning with adjacent work  
Seal joints between framing and building structure watertight  
Follow guidelines in Pittco Fabrication, Sealant and Erection Brochure
  
- **START-UP AND OPERATION**  
Not Applicable
  
- **OWNER'S MAINTENANCE INSTRUCTIONS**  
Wash surfaces with warm water and mild soap; wipe clean, at least once a year

### Corporate Identification

Pittco Architectural Metals, Inc  
1530 Landmeier Road  
Elk Grove Village, Illinois 60007  
Tel: (847) 593-3131  
Fax: (847) 593-9946  
Toll-Free: (800) 992-7488  
Internet: <http://www.pittcometals.com>  
E-mail: [info@pittcometals.com](mailto:info@pittcometals.com)

### Technical Services Available

Toll-Free: (800) 992-7488

### Classification and Filing

MasterFormat

Subset of Section 08410 - Metal Framed Storefronts

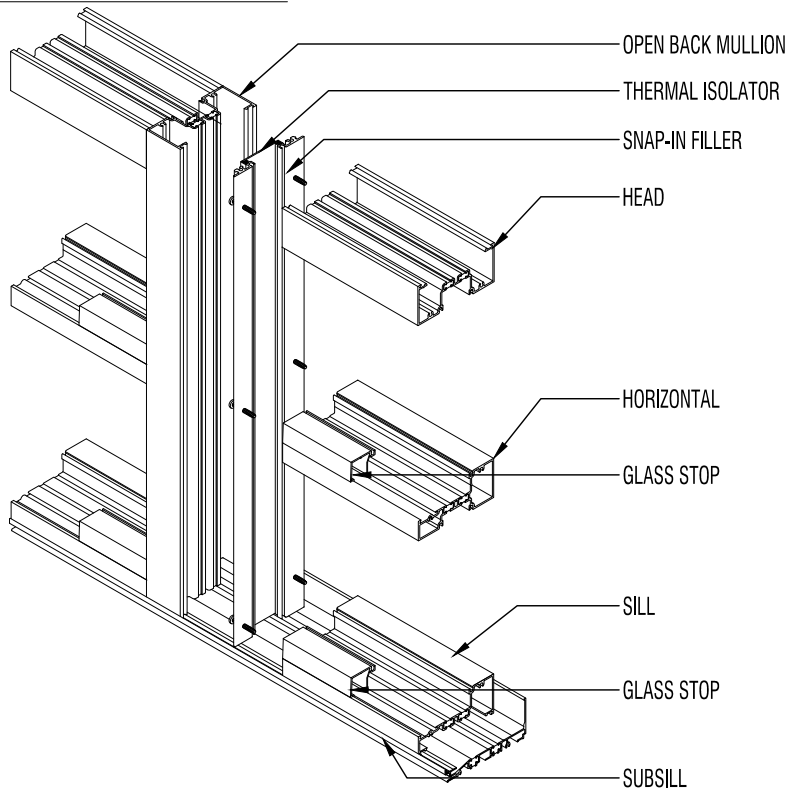
UniFormat

Section B2030 - (exterior entrance frames) or C1020 (interior entrance frames)

**EXPLODED VIEWS**

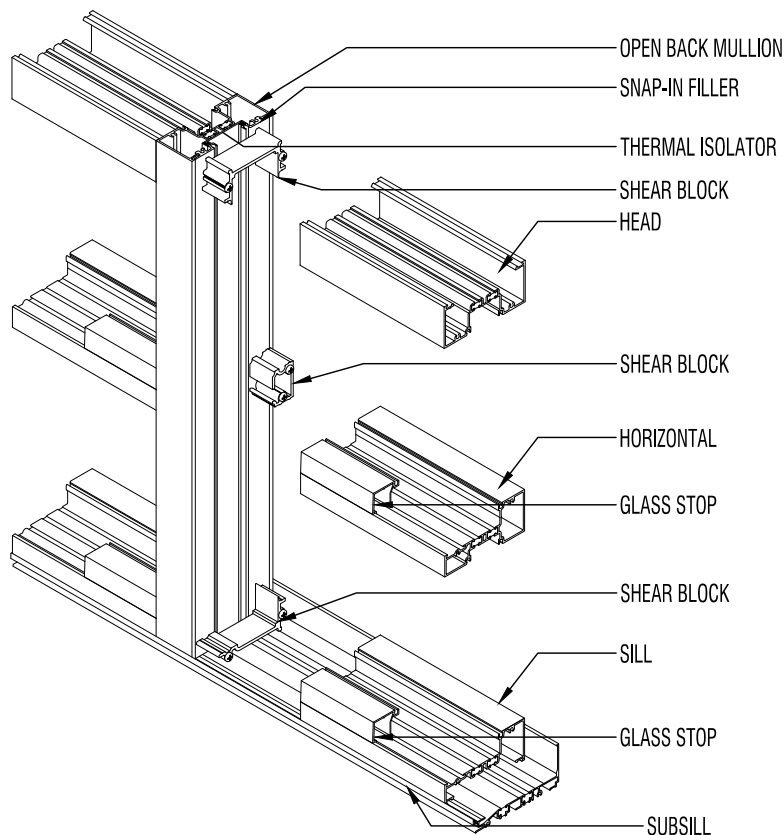
THE SCREW SPLINE SYSTEM ALLOWS A FRAME TO BE INSTALLED FROM UNITIZED ASSEMBLIES. SCREWS ARE DRIVEN THROUGH THE BACK OF THE VERTICALS INTO SPLINES EXTRUDED IN THE HORIZONTAL FRAMING MEMBERS. INDIVIDUAL UNITS ARE THEN SNAPPED TOGETHER TO FORM A COMPLETE FRAME

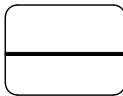
**SCREW SPLINE ASSEMBLY**



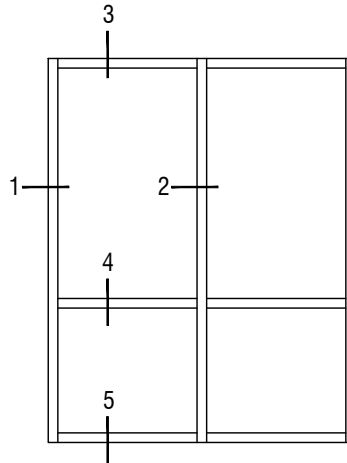
**SHEAR BLOCK ASSEMBLY**

THE SHEAR BLOCK METHOD OF FABRICATION IS AN ALTERNATE METHOD OF FABRICATION. HORIZONTALS ARE ATTACHED TO THE VERTICAL MULLIONS WITH SHEAR BLOCKS. THIS METHOD MUST BE USED WITH TUBULAR VERTICAL MULLIONS.



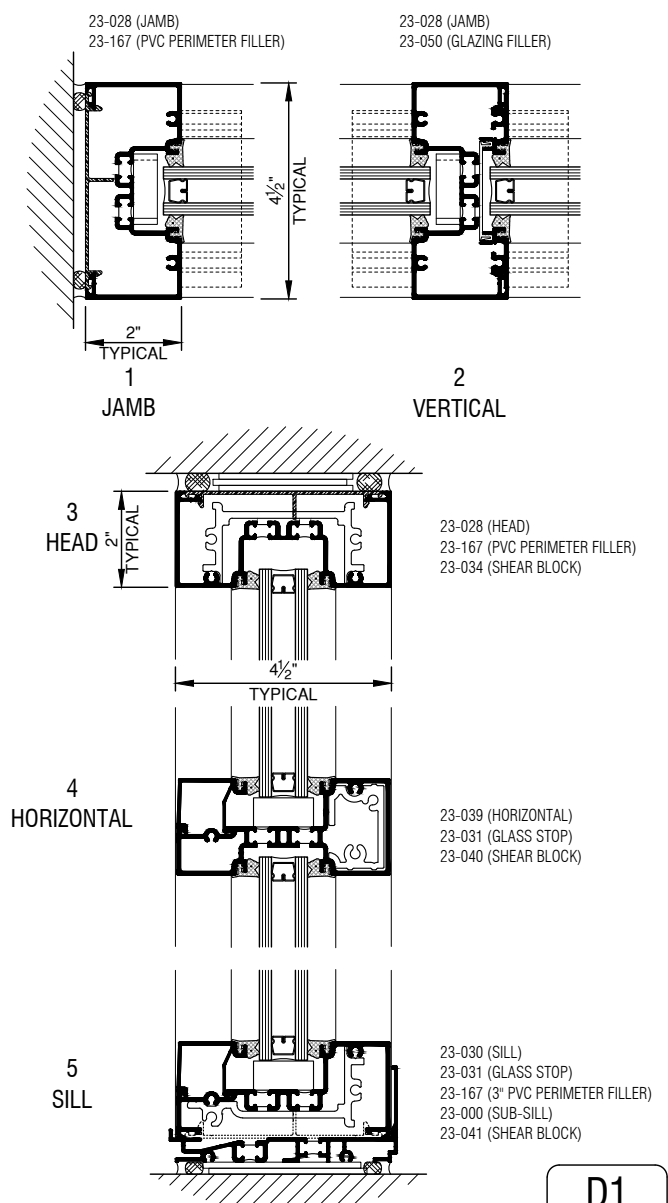
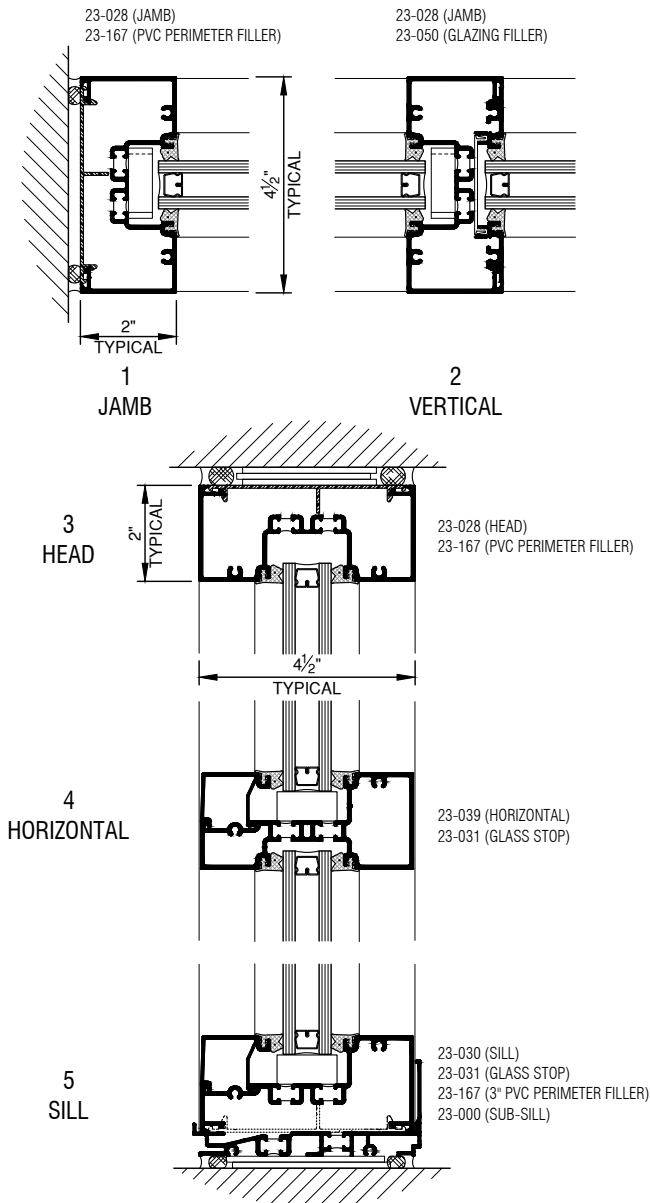


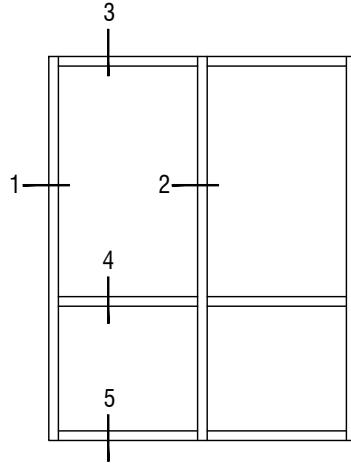
TYPICAL FRAMING DETAILS (Outside Glazed)



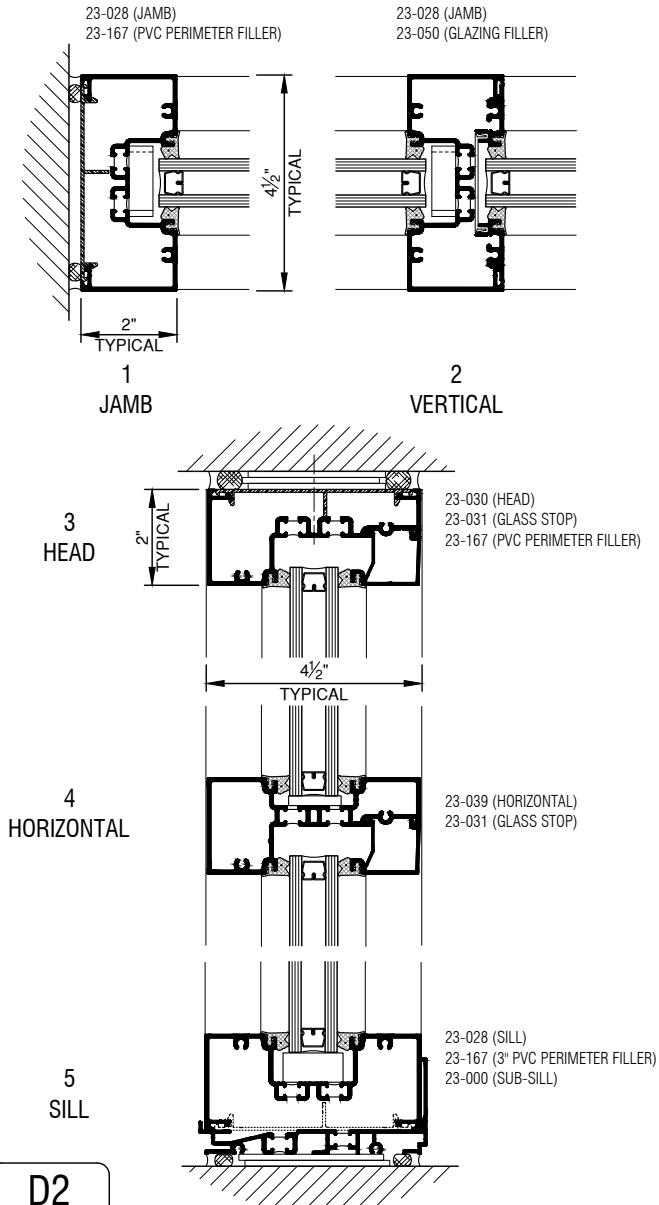
**SCREW SPLINE**

**SHEAR BLOCK**

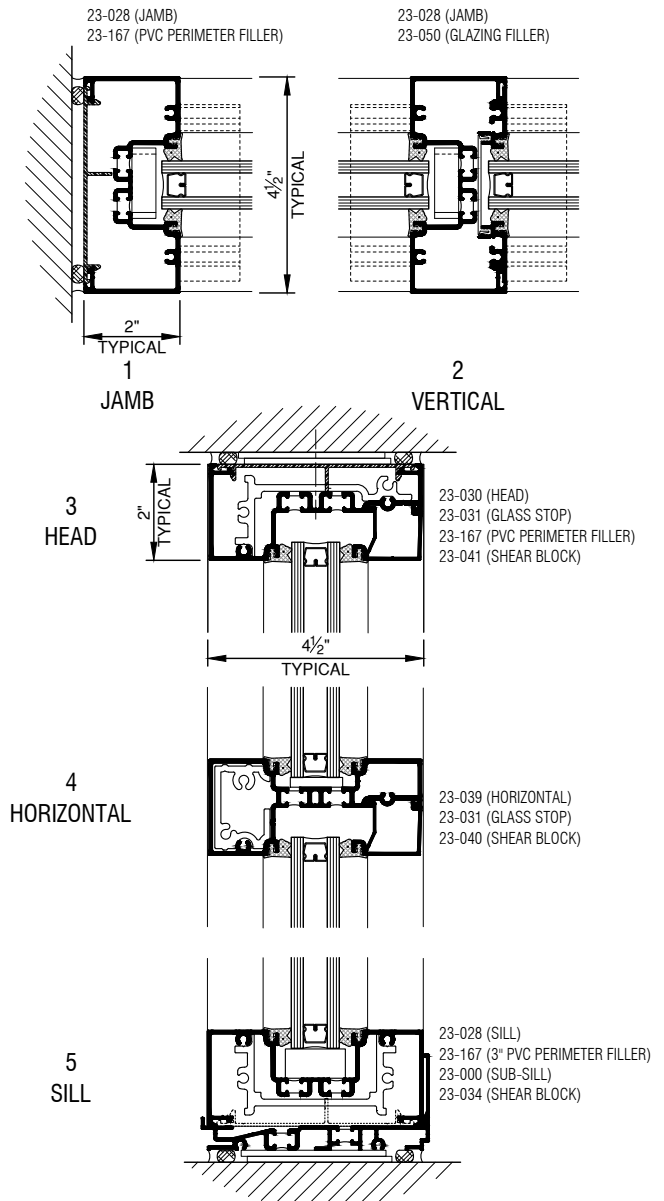


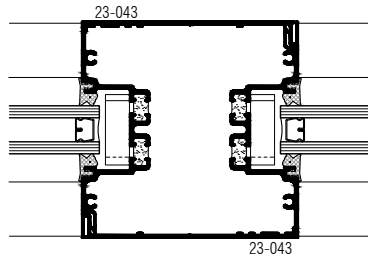


### SCREW SPLINE

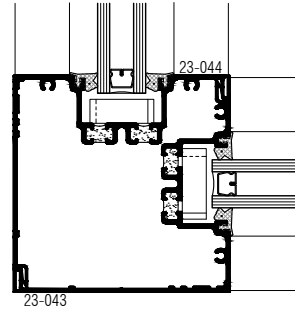


### SHEAR BLOCK

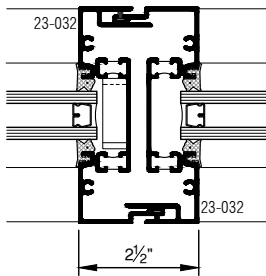




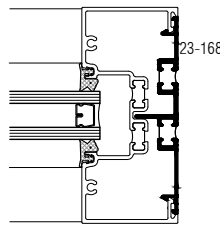
2 POCKET CORNER



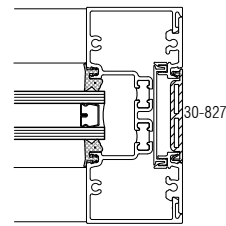
90° CORNER



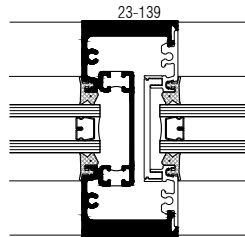
EXPANSION MULLION



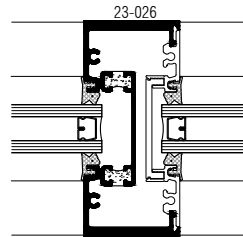
OPTIONAL FULL LENGTH  
ALUMINUM FILLER



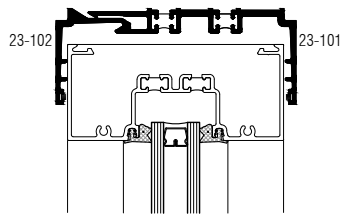
SNAP IN  
POCKET FILLER



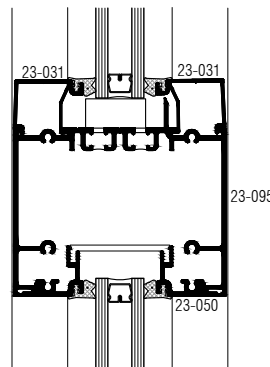
HEAVY WALL MULLION



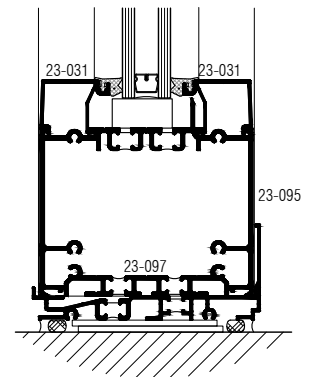
MEDIUM WALL MULLION



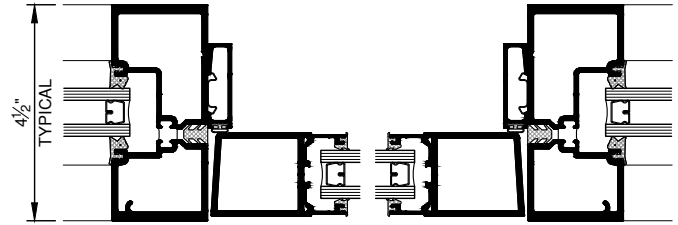
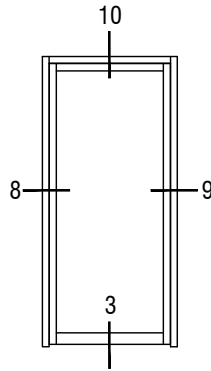
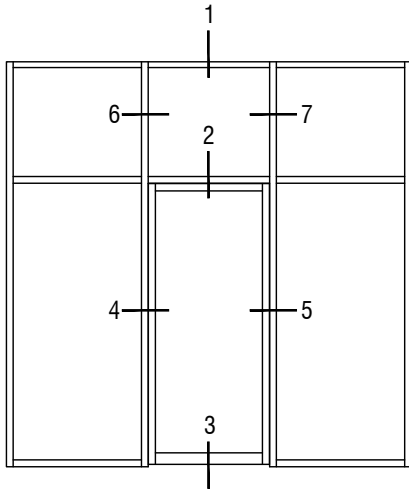
HEAD RECEPTOR



4 1/2" x 4 1/2" HORIZONTAL



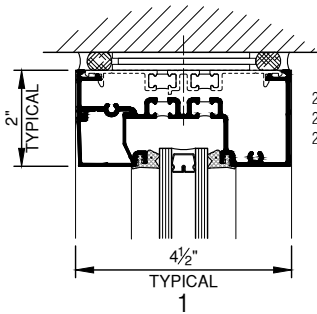
4 1/2" SILL



4  
23-136 (MULLION)  
19-001 (1/2" DOOR STOP)

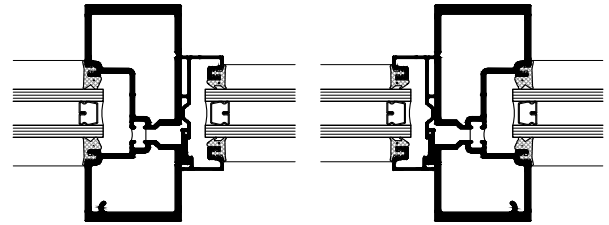
**SINGLE ACTING  
DOOR JAMBS**

5  
23-136 (MULLION)  
19-001 (1/2" DOOR STOP)



23-030 (HEAD)  
23-031 (GLASS STOP)  
23-168 (PERIMETER FILLER)

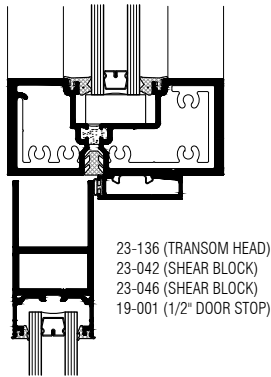
**TRANSOM HEAD**



6  
23-136 (MULLION)  
14-090 (SASH)

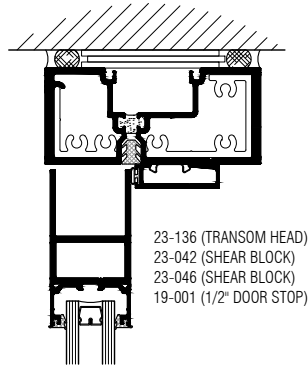
**TRANSOM JAMBS**

7  
23-136 (MULLION)  
14-090 (SASH)



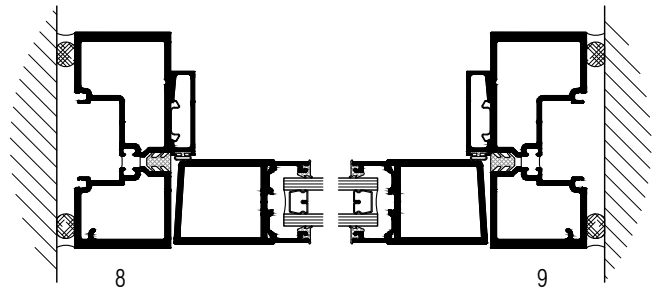
23-136 (TRANSOM HEAD)  
23-042 (SHEAR BLOCK)  
23-046 (SHEAR BLOCK)  
19-001 (1/2" DOOR STOP)

**2  
DOOR HEAD**



23-136 (TRANSOM HEAD)  
23-042 (SHEAR BLOCK)  
23-046 (SHEAR BLOCK)  
19-001 (1/2" DOOR STOP)

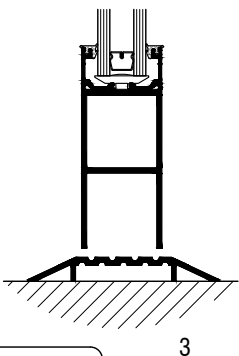
**10  
DOOR HEAD**



8  
23-136 (MULLION)  
19-001 (1/2" DOOR STOP)

**SINGLE ACTING  
DOOR JAMBS**

9  
23-136 (MULLION)  
19-001 (1/2" DOOR STOP)



**3  
BOTTOM RAIL**

STANDARD ENTRANCE SHOWN. MONUMENTAL, AND THERMAL ENTRANCE AVAILABLE  
NARROW STILE SHOWN, MEDIUM, AND WIDE STILE AVAILABLE  
1/2" DOOR STOP SHOWN, 3/4", AND 1" DOOR STOP AVAILABLE  
4" THRESHOLD SHOWN, 5", 6", 7 1/2", 10", AND 5" THERMAL THRESHOLD AVAILABLE



WINDLOAD CHARTS

SYSTEM ANALYSIS CRITERIA:

ALUMINUM: 6063-T6

DEFLECTION LIMITS: L/175 FOR SPANS LESS THAN 13'-6"

L/240 + 1/4" FOR SPANS GREATER THAN 13'-6"

CODES AND SPECIFICATIONS VARY, NO SINGLE LITE OF GLASS SHALL DEFLECT MORE THAN 3/4"

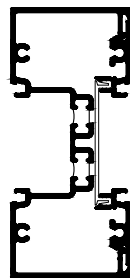
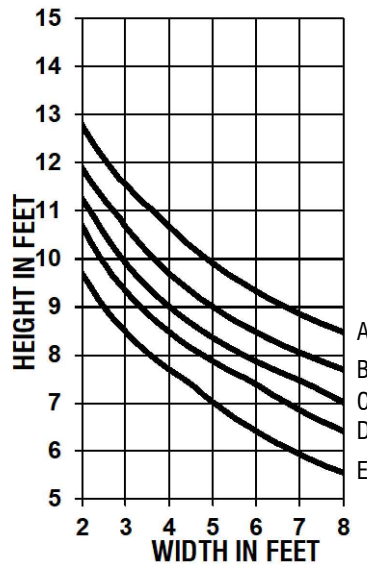
LATERAL BRACING OR HORIZONTAL MEMBER SPACING: 48" O.C. (MAXIMUM)

(FOR HORIZONTAL SPACING GREATER THAN 48" CONTACT PITTCO ENGINEERING)

SECTION EVALUATED PER 2005 ALUMINUM DESIGN MANUAL

SIMPLE SPAN CONDITION

**WITH HORIZONTALS**



23-028  
23-050

- A = 15 PSF
- B = 20 PSF
- C = 25 PSF
- D = 30 PSF
- E = 40 PSF

### SYSTEM ANALYSIS CRITERIA:

ALUMINUM: 6063-T6

DEFLECTION LIMITS: L/175 FOR SPANS LESS THAN 13'-6"

L/240 + 1/4" FOR SPANS GREATER THAN 13'-6"

CODES AND SPECIFICATIONS VARY, NO SINGLE LITE OF GLASS SHALL DEFLECT MORE THAN 3/4"

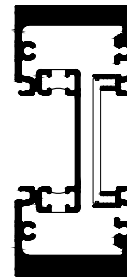
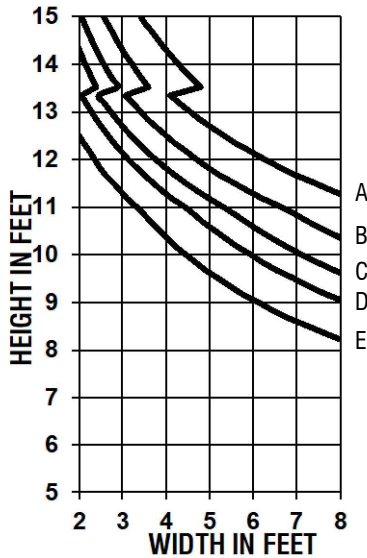
LATERAL BRACING OR HORIZONTAL MEMBER SPACING: 48" O.C. (MAXIMUM)

(FOR HORIZONTAL SPACING GREATER THAN 48" CONTACT PITCO ENGINEERING)

SECTION EVALUATED PER 2005 ALUMINUM DESIGN MANUAL

SIMPLE SPAN CONDITION

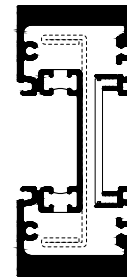
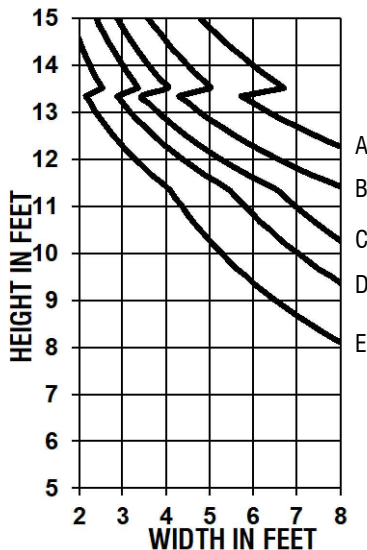
#### WITH HORIZONTALS



23-139  
23-050

- A = 15 PSF
- B = 20 PSF
- C = 25 PSF
- D = 30 PSF
- E = 40 PSF

#### WITH HORIZONTALS



20-139  
20-050  
WITH 16-501 STEEL

VERTICAL REINFORCING IS ANALYZED AS AN ASSEMBLY WITH THE ALUMINUM SECTIONS.

WINDLOAD CHARTS

SYSTEM ANALYSIS CRITERIA:

ALUMINUM: 6063-T6

DEFLECTION LIMITS: L/175 FOR SPANS LESS THAN 13'-6"

L/240 + 1/4" FOR SPANS GREATER THAN 13'-6"

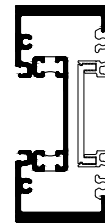
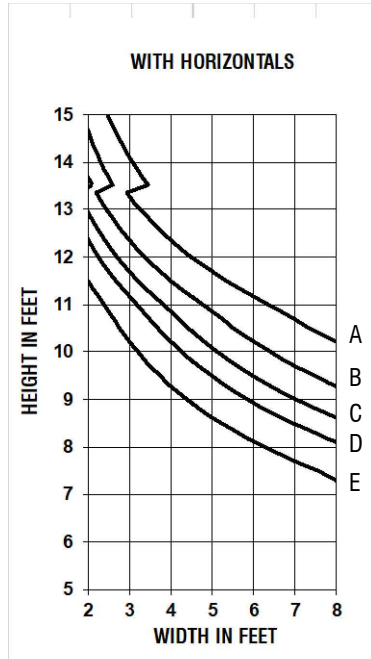
CODES AND SPECIFICATIONS VARY, NO SINGLE LITE OF GLASS SHALL DEFLECT MORE THAN 3/4"

LATERAL BRACING OR HORIZONTAL MEMBER SPACING: 48" O.C. (MAXIMUM)

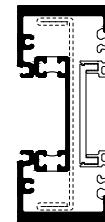
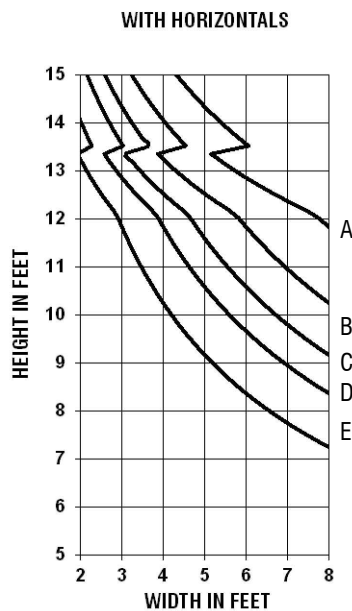
(FOR HORIZONTAL SPACING GREATER THAN 48" CONTACT PITCO ENGINEERING)

SECTION EVALUATED PER 2005 ALUMINUM DESIGN MANUAL

SIMPLE SPAN CONDITION



- A = 15 PSF
- B = 20 PSF
- C = 25 PSF
- D = 30 PSF
- E = 40 PSF



23-026  
23-050  
W 16-500 STEEL

VERTICAL REINFORCING IS ANALYZED AS AN ASSEMBLY WITH THE ALUMINUM SECTIONS.

### SYSTEM ANALYSIS CRITERIA:

ALUMINUM: 6063-T6

DEFLECTION LIMITS: L/175 FOR SPANS LESS THAN 13'-6"

L/240 + 1/4" FOR SPANS GREATER THAN 13'-6"

CODES AND SPECIFICATIONS VARY, NO SINGLE LITE OF GLASS SHALL DEFLECT MORE THAN 3/4"

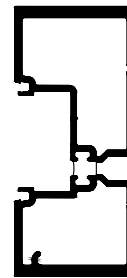
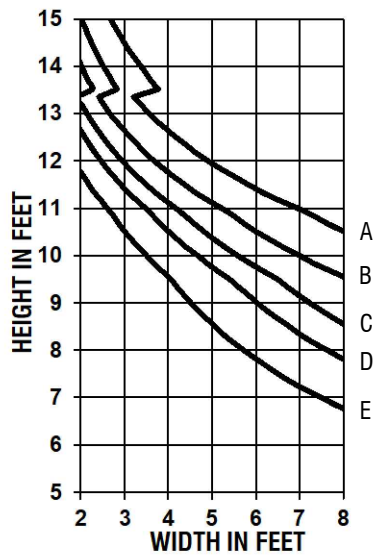
LATERAL BRACING OR HORIZONTAL MEMBER SPACING: 48" O.C. (MAXIMUM)

(FOR HORIZONTAL SPACING GREATER THAN 48" CONTACT PITCO ENGINEERING)

SECTION EVALUATED PER 2005 ALUMINUM DESIGN MANUAL

SIMPLE SPAN CONDITION

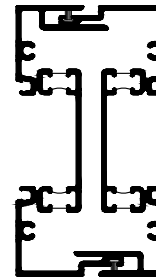
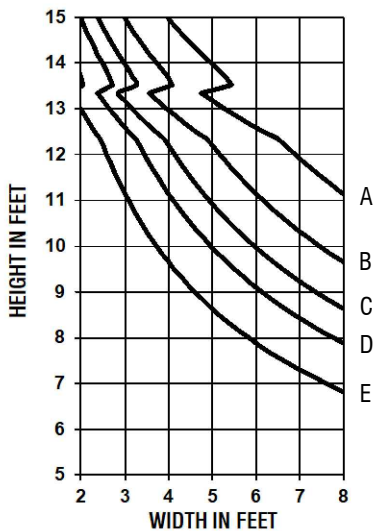
**WITH HORIZONTALS**



23-136

- A = 15 PSF
- B = 20 PSF
- C = 25 PSF
- D = 30 PSF
- E = 40 PSF

**WITH HORIZONTALS**



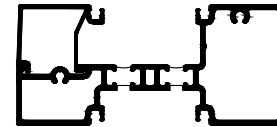
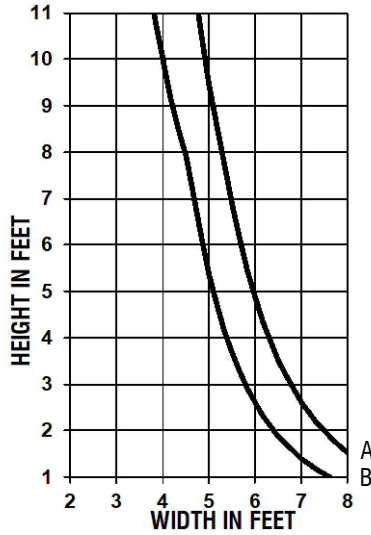
23-032  
23-032

COMBINED SECTIONS ARE ANALYZED AS AN ASSEMBLY

SECTION PROPERTIES

SYSTEM ANALYSIS CRITERIA:

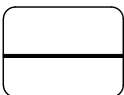
ALUMINUM: 6063-T6  
 HORIZONTAL OR DEADLOAD LIMITATIONS ARE BASED UPON 1/8" MAXIMUM ALLOWABLE DEFLECTION WITH 1" THICK INSULATED GLASS  
 SECTION EVALUATED PER 2005 ALUMINUM DESIGN MANUAL  
 SIMPLE SPAN CONDITION  
 A 15% REDUCTION IN SECTION PROPERTIES TO ACCOUNT FOR THE THERMAL BREAK THERMAL SECTIONS



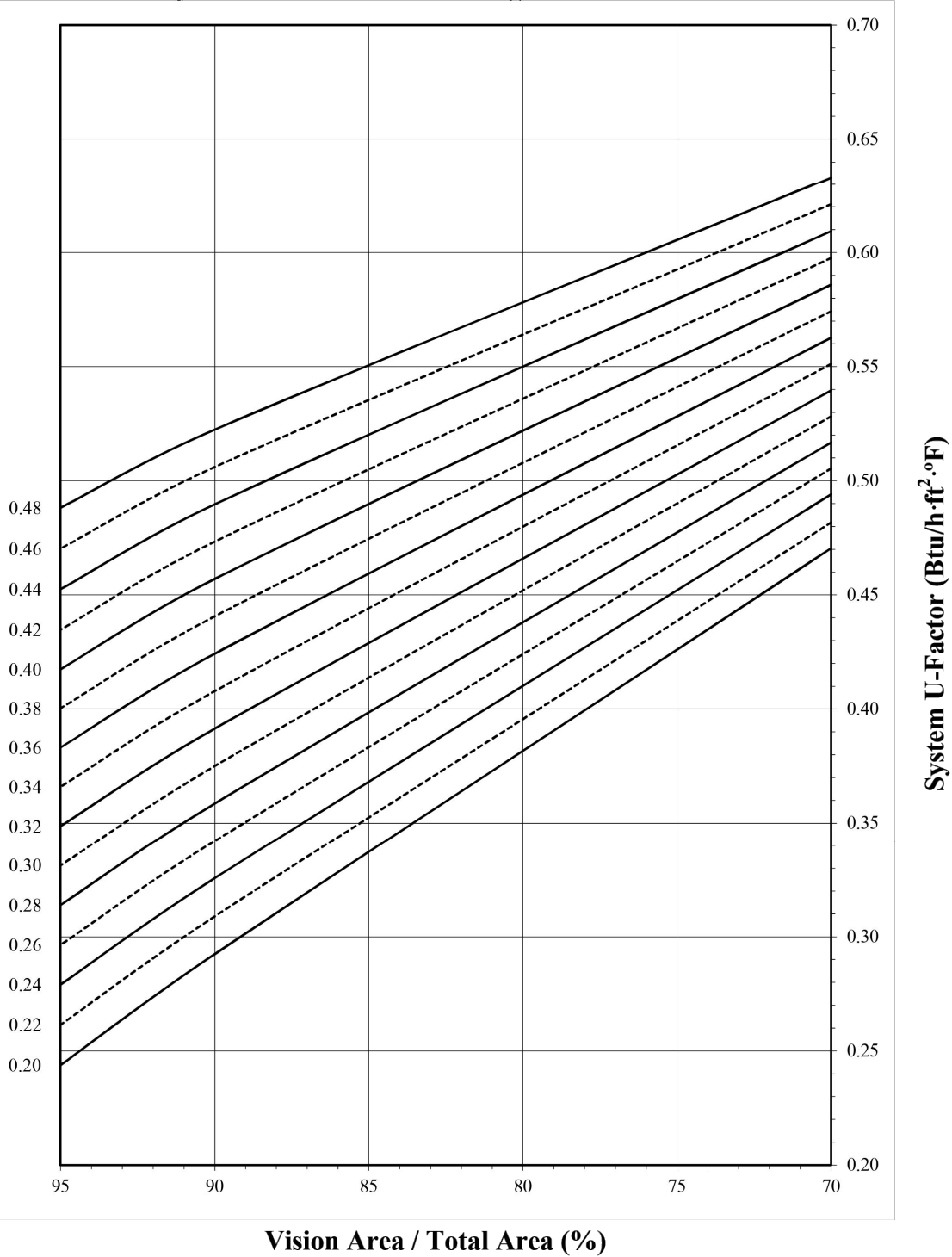
23-039 (HORIZONTAL)  
 23-031 (GLASS STOP)

A = SETTING BLOCKS AT 1/8 POINTS  
 B = SETTING BLOCKS AT 1/4 POINTS

STRUCTURAL PROPERTIES of TMS 114XT THERMAL FRAMING				
Part Number	lx	Sx	ly	Sy
23-026	4.197	1.865	0.537	0.434
23-028	2.392	1.063	0.423	0.349
23-030	1.855	0.748	0.287	0.286
23-032	2.219	0.965	0.214	0.179
23-039	2.138	0.883	0.434	0.367
23-043	2.300	0.772	1.853	0.562
23-044	2.293	0.783	1.838	0.548
23-095	4.118	1.839	2.221	0.964
23-099	0.256	0.179	0.031	0.066
23-136	4.584	1.997	1.009	0.946
23-139	5.835	2.593	0.669	0.560
23-168	0.480	0.233	0.010	0.021
16-501 Steel	0.808	0.458	0.023	0.041

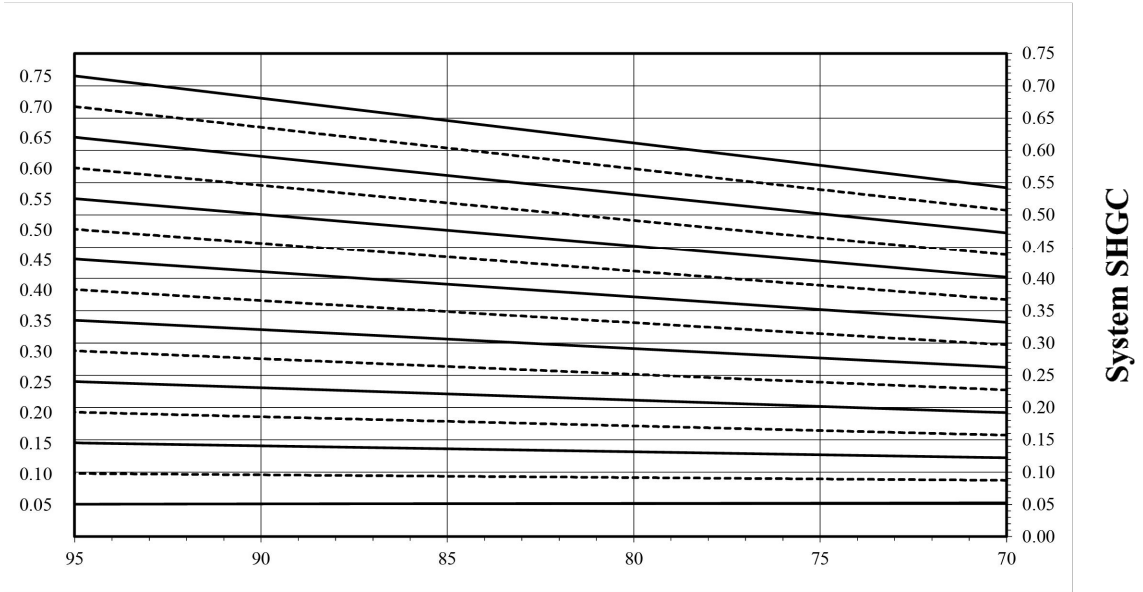


**Pittco Architectural Metals, Inc.**  
**TMS114XT - Storefront - Glazed Wall System**  
**System U-Factor vs. Percentage of Vision Area**



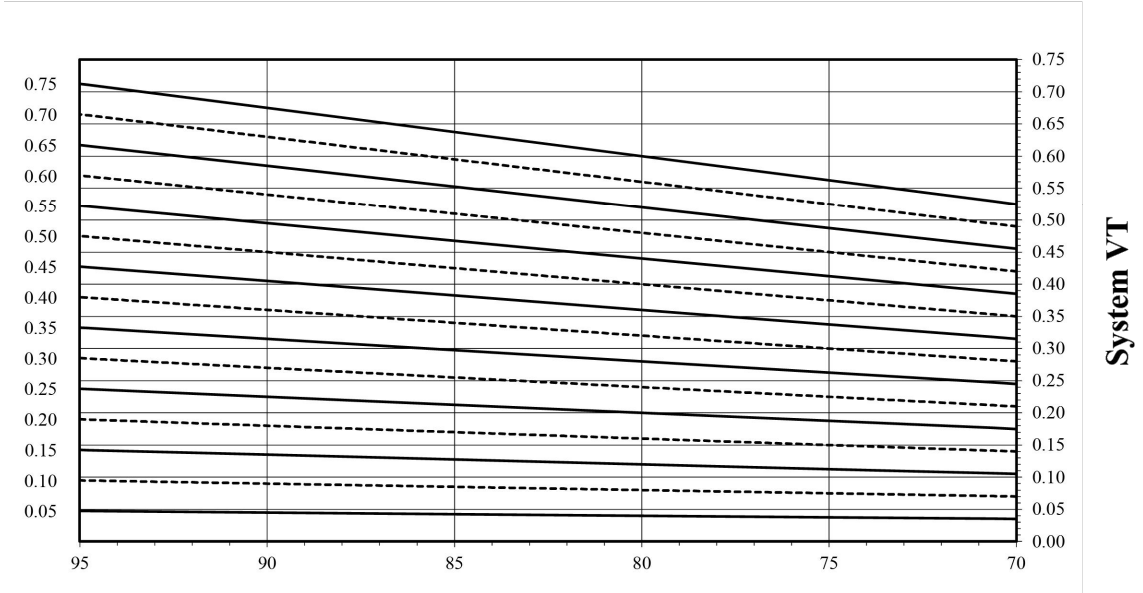
Note: 1 inch Overall - Dual Glazed Glass (0.48-0.20 COG) with Aluminum Spacer

Pittco Architectural Metals, Inc.  
**TMS114XT - Storefront - Glazed Wall System**  
**System SHGC vs. Percentage of Vision Area**



Vision Area / Total Area (%)

**System VT vs. Percentage of Vision Area**



Vision Area / Total Area (%)