FEATURES

- TMW 450 is 6 3/4" deep with a 2" wide sightline
- Glaze from the inside or outside
- Screw spline fabrication
- Glazing options up to 1 1/16" thick
- Interior and Exterior can be different colors
- Horizontal stacking of frames and vertical splices

APPLICATIONS

- Strip windows
- Storefronts
- Mid-rise or High-rise curtainwall
- Conventional glazing or 2 sided structural silicone glazing

SYSTEM PERFORMANCE

<table>
<thead>
<tr>
<th>Description</th>
<th>Test Method</th>
<th>Allowed</th>
<th>Achieved</th>
<th>Test Report</th>
</tr>
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<tbody>
<tr>
<td>Structural</td>
<td>ASTM E 330</td>
<td>N/A</td>
<td>50 psf</td>
<td>52-19</td>
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<tr>
<td>Air</td>
<td>ASTM E 283</td>
<td>0.06 cfm/ft² @ 6.24 psf</td>
<td>0.04 cfm/ft² @ 6.24 psf</td>
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<tr>
<td>Water (Static)</td>
<td>ASTM E 331</td>
<td>None @ 5 psf</td>
<td>None @ 15 psf</td>
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<tr>
<td>Water (Dynamic)</td>
<td>AAMA 501.1</td>
<td>None @ 5 psf</td>
<td>None @ 15 psf</td>
<td>52-19</td>
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<tr>
<td>Seismic Racking</td>
<td>UBC 2334</td>
<td>No System Failure</td>
<td>1 1/2&quot; - No Failure</td>
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<tr>
<td>CRF</td>
<td>AAMA 1503</td>
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SYSTEM PERFORMANCE (Butt Glazed)

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<th>Achieved</th>
<th>Test Report</th>
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<td>50 psf</td>
<td>52-14</td>
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<tr>
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<td>ASTM E 283</td>
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<td>0.01 cfm/ft² @ 6.24 psf</td>
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<tr>
<td>Water (Static)</td>
<td>ASTM E 331</td>
<td>None @ 5 psf</td>
<td>None @ 15 psf</td>
<td>52-14</td>
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<tr>
<td>Water (Dynamic)</td>
<td>AAMA 501.1</td>
<td>None @ 5 psf</td>
<td>None @ 15 psf</td>
<td>52-14</td>
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<tr>
<td>CRF</td>
<td>AAMA 1503</td>
<td>N/A</td>
<td>54</td>
<td>52-18</td>
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<td>U Value</td>
<td>AAMA 1503</td>
<td>N/A</td>
<td>0.58</td>
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</table>

* 1" IGU (1/4-1/2-1/4) Clear Annealed Glass, Air Filled, Aluminum Spacer.
PRODUCT DESCRIPTION ......................... PAGES 4 TO 8
EXPLODED VIEWS ............................... PAGE 9
1/4 SIZE DETAILS ............................... PAGES D1 TO D8
WINDLOAD CHARTS ............................. PAGE S1 TO S4
DEADLOAD CHARTS ............................. PAGE S5
SECTION PROPERTIES ......................... PAGE S6
THERMAL CHARTS ............................... PAGE T1 TO T12
BASIC USES / RELATED USES
Framing is designed for storefront and curtain wall glazing assembly.
Vertical mullions are open back aluminum members, with solid face and flush closure side plates forming tubular members for use on single spans.
Horizontal mullions are of hollow aluminum with solid face members and removable glazing stops.
Corners are configured for inside 90 degree, outside 90 degree, and outside 135 degree.
Glazing is insulating glass unit or single pane with adapters.
Glass may be transparent, opaque, or decorative types.
Assembly may be vertically or horizontally butt-glazed.
Framing is intended for tall one story strip window or multi-story curtain wall applications.
Framed assembly may be fitted to most rigid and stable framed opening assemblies.

PRODUCT ATTRIBUTES AND CHARACTERISTICS
Aluminum frame members are thermally improved.
Glass can be glazed from interior or exterior, butt-glazed glass must be glazed from exterior.
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.
Door sub-frame adaptor is available.

SELECTION CRITERIA
Quality, economy, and high 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-1-87 - Aluminum Storefront and Entrance Manual
AAMA MCWM-1-89 - Metal Curtain Wall Manual
AAMA 611-98 - Voluntary Specification for Anodized Architectural Aluminum
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 B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate [Metric]
QUALITY, TESTS, CERTIFICATIONS, AND APPROVALS

Air Infiltration: Maximum leakage of 0.04 cfm/sq ft. when measured in accordance with ASTM E283 at a test pressure of 6.24 psf, 0.00 cfm/sq ft. for butt-glazed applications

Static Water Leakage: No uncontrolled leakage, when measured in accordance with ASTM E331 at a test pressure difference of 15 psf

Dynamic Water Leakage: No uncontrolled leakage, when measured in accordance with AAMA 501.1 at a test pressure difference of 15 psf for butt-glazed applications

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 50 psf

Seismic Racking (UBC 2334) of 1 1/2 inch

Insulations U-Factor: Vertical butt-glazed 0.58 BTU/hr/sq ft/degrees F when measured in accordance with AAMA 1503 with 1” clear glass unit (1/4, 1/2, 1/4)

Condensation Resistance Factor (CRF): 58 when measured in accordance with AAMA 1503 with 1” glass unit (1/4, 1/2, 1/4), 54 for vertical butt-glazed

PACKAGING, HANDLING, AND PROTECTION INSTRUCTIONS

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

SPECIAL WARRANTY

One (1) year

SAFETY PRECAUTIONS

Normal precautions required

AVAILABILITY

Framing is available in all regions of USA - refer to Internet web site for locations and addresses of distributors

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: EPDM thermal separator at exterior gasket line

SHAPE AND DIMENSIONS
Frame Size: 2 x 6-13/16 inch
Glass Edge Bite: 1/2 inch, 3/4 inch for butt-glazed
Glazing Thickness Accepted: 1/8 inch to 1-1/8 inch in increments of 1/16 inch except 7/16 inch, 9/16 inch, 11/16 inch, and 13/16 inch

SHOP FABRICATION AND ASSEMBLY
Provide for flush glazing on all sides with no projecting stops
Configurations:
- Two-piece snap together mullions

Accessories:
- Expansion Mullions
- Corner Mullions
- Open Back Perimeter Members
- Heavy Duty Mullions
- Door Subframes

COLORS AND TEXTURES
- Architectural anodic coating, in accordance with AAMA 611;
  - 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)
Architectural organic coating, in accordance with AAMA 2604 (50% Kynar 500®):
- Finish of Exposed Aluminum shall be compliant with the performance standards set forth in AAMA Specification 2604, High Performance Organic Coatings on Aluminum
- 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
- 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
- Specify color code, e.g. UC 40577 (Duranar Black)

Architectural organic coating, in accordance with AAMA 2605 (70% Kynar 500®):
- Finish of Exposed Aluminum shall be compliant with the performance standards set forth in AAMA Specification 2605, Superior Performing Organic Coatings on Aluminum
- 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
- 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
- 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
Product Name:
TMW 450 Framing System - Section 08424

Manufacturer's Name:
Pittco Architectural Metals, Inc.

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

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)
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 SNAP TOGETHER TO FORM A COMPLETE FRAME.
HORIZONTAL FRAMING DETAILS (INSIDE GLAZED)

1. HEAD
   - 52-467 (HORIZONTAL)
   - 52-000 (EXT. GLASS STOP)
   - 52-035 (INT. GLASS STOP)
   - 52-488 (INT. GLASS STOP)
   - 52-016 (EXTERIOR COVER)

2. HORIZONTAL
   - 52-465 (HORIZONTAL)
   - 52-000 (EXT. GLASS STOP)
   - 52-035 (INT. GLASS STOP)
   - 52-488 (INT. GLASS STOP)
   - 52-016 (EXTERIOR COVER)
   - 19-045 (1/4" ADAPTER)

3. HORIZONTAL
   - 52-465 (HORIZONTAL)
   - 52-000 (EXT. GLASS STOP)
   - 52-035 (INT. GLASS STOP)
   - 52-488 (INT. GLASS STOP)
   - 52-016 (EXTERIOR COVER)
   - 19-045 (1/4" ADAPTER)

4. HORIZONTAL
   - 52-465 (HORIZONTAL)
   - 52-000 (EXT. GLASS STOP)
   - 52-035 (INT. GLASS STOP)
   - 52-488 (INT. GLASS STOP)
   - 52-016 (EXTERIOR COVER)
   - 19-045 (1/4" ADAPTER)

5. SILL
   - 52-453 (HORIZONTAL)
   - 52-481 (PERIMETER FILLER)
   - 52-000 (EXT. GLASS STOP)
   - 52-010 (EXTERIOR COVER)
   - 52-006 (SETTING BLOCK SHELF)

5A. SILL
   - 52-454 (HORIZONTAL)
   - 52-481 (PERIMETER FILLER)
   - 52-000 (EXT. GLASS STOP)
   - 52-010 (EXTERIOR COVER)
   - 52-006 (SETTING BLOCK SHELF)
1. Transom Bar
   Center Hung
   Concealed Overhead or Floor Closer

2. Bottom Rail

3. Door Jamb
   Center Hung
SYSTEM ANALYSIS CRITERIA:

ALUMINUM: 6063-T6
DEFLECTION LIMITS:  
L/175 FOR SPANS LESS THAN 13'-6" OR 3/4"
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 MULLION SPACING: 80" O.C. (MAXIMUM)
SECTION EVALUATED PER 2005 ALUMINUM DESIGN MANUAL
SIMPLE SPAN CONDITION
REINFORCEMENT IS ADDITIVE TO ALUMINUM MULLIONS (NOT COMPOSITE SECTIONS)
SYSTEM ANALYSIS CRITERIA:

ALUMINUM: 6063-T6
DEFLECTION LIMITS:  
\[ \frac{L}{175} \] FOR SPANS LESS THAN 13'-6" OR 3/4"
\[ \frac{L}{240} + \frac{1}{4}" \] FOR SPANS GREATER THAN 13'-6"

CODES AND SPECIFICATIONS VARY, NO SINGLE LITE OF GLASS SHALL DEFLECT MORE THAN 3/4"
LATEROAL BRACING OR HORIZONTAL MULLION SPACING: 80" O.C. (MAXIMUM)
SECTION EVALUATED PER 2005 ALUMINUM DESIGN MANUAL
SIMPLE SPAN CONDITION
REINFORCEMENT IS ADDITIVE TO ALUMINUM MULLIONS (NOT COMPOSITE SECTIONS)
SYSTEM ANALYSIS CRITERIA:

ALUMINUM: 6063-T6
DEFLECTION LIMITS:
L/240 + 1/4" FOR SPANS GREATER THAN 13'-6" OR 3/4"
L/175 FOR SPANS LESS THAN 13'-6" OR 3/4"

CODES AND SPECIFICATIONS VARY, NO SINGLE LITE OF GLASS SHALL DEFLECT MORE THAN 3/4"
LATERAL BRACING OR HORIZONTAL MULLION SPACING: 80" O.C. (MAXIMUM)
SECTION EVALUATED PER 2005 ALUMINUM DESIGN MANUAL
SIMPLE SPAN CONDITION
REINFORCEMENT IS ADDITIVE TO ALUMINUM MULLIONS (NOT COMPOSITE SECTIONS)

A = 15 PSF
B = 20 PSF
C = 25 PSF
D = 30 PSF
E = 40 PSF
SYSTEM ANALYSIS CRITERIA:

ALUMINUM: 6063-T6

DEFLECTION LIMITS:
- L/240 + 1/4" FOR SPANS GREATER THAN 13'-6" OR 3/4".
- L/175 FOR SPANS LESS THAN 13'-6" OR 3/4".

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

LATERAL BRACING OR HORIZONTAL MULLION SPACING: 80" O.C. (MAXIMUM)

SECTION EVALUATED PER 2005 ALUMINUM DESIGN MANUAL

SIMPLE SPAN CONDITION

REINFORCEMENT IS ADDITIVE TO ALUMINUM MULLIONS (NOT COMPOSITE SECTIONS).

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

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ARCHITECTURAL METALS, INC.

TMW 450

SEPTEMBER 2014
SYSTEM ANALYSIS CRITERIA:

ALUMINUM: 6063-T6
DEADLOAD LIMITATIONS ARE BASED UPON 1/8" MAXIMUM ALLOWABLE DEFLECTION
SECTION EVALUATED PER 2005 ALUMINUM DESIGN MANUAL
SIMPLE SPAN CONDITION
HEIGHT IN FEET ON CHART IS GLASS HEIGHT ABOVE HORIZONTAL

A = SETTING BLOCKS AT 1/4 POINTS
B = SETTING BLOCKS AT 1/8 POINTS
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Pittco Architectural Metals, Inc.
TMW 250/450/453 - Captured Glaze - Glazed Wall System
(TMW 453 System as Representative)
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.
TMW 250/450/453 - Captured Glaze - Glazed Wall System
(TMW 453 System as Representative)

System U-Factor vs. Percentage of Spandrel Area

- Spandrel Area / Total Area (%)
- System U-Factor (Btu/hr·ft²·°F)

Note: 1/4" Single Pane with Spandrel (R2-R30)
Pittco Architectural Metals, Inc.
TMW 250/450/453 - Captured Glaze - Glazed Wall System
(TMW 453 System as Representative)
System SHGC vs. Percentage of Vision Area

Vision Area / Total Area (%)

System VT vs. Percentage of Vision Area

Vision Area / Total Area (%)

System VT
Pittco Architectural Metals, Inc.
TMW 250/450/453 - Vertical Butt Glaze - Glazed Wall System
(TMW 450 System as Representative)
System U-Factor vs. Percentage of Vision Area

Note: 1 inch Overall - Dual Glazed Glass (0.48-0.20 COG) with Aluminum Spacer
Pitteo Architectural Metals, Inc.
TMW 250/450/453 - Vertical Butt Glaze - Glazed Wall System
(TMW 450 System as Representative)

System U-Factor vs. Percentage of Spandrel Area

Spandrel Area / Total Area (%)

Note: 1/4" Single Pane with Spandrel (R2-R30)
Pitco Architectural Metals, Inc.
TMW 250/450/453 - Vertical Butt Glaze - Glazed Wall System
(TMW 450 System as Representative)
System SHGC vs. Percentage of Vision Area

Vision Area / Total Area (%)

System VT vs. Percentage of Vision Area

Vision Area / Total Area (%)

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Pittco Architectural Metals, Inc.
TMW 250/450/453 - Horizontal Butt Glaze - Glazed Wall System
(TMW 453 System as Representative)
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.
TMW 250/450/453 - Horizontal Butt Glaze - Glazed Wall System
(TMW 453 System as Representative)
System U-Factor vs. Percentage of Spandrel Area

Spandrel Area / Total Area (%)

Note: 1/4” Single Pane with Spandrel (R2-R30)
Pittco Architectural Metals, Inc.
TMW 250/450/453 - Butt Glaze - Glazed Wall System
(TMW 450 System as Representative)
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.
TMW 250/450/453 - Butt Glaze - Glazed Wall System
(TMW 450 System as Representative)
System U-Factor vs. Percentage of Spandrel Area

Note: 1/4" Single Pane with Spandrel (R2-R30)
Pitteco Architectural Metals, Inc.
TMW 250/450/453 - Butt Glaze - Glazed Wall System
(TMW 450 System as Representative)
System SHGC vs. Percentage of Vision Area

Vision Area / Total Area (%)

System VT vs. Percentage of Vision Area

Vision Area / Total Area (%)