STEELBUILT CURTAINWALL® SYSTEMS

Envision expansive window openings, with more glass and less frame. Imagine a curtainwall system that only requires frame profiles one-third the size of traditional aluminum systems.

Now that dream is a reality with the new SteelBuilt Curtainwall® Systems from Technical Glass Products (TGP). SteelBuilt Curtainwall Systems give you all the advantage of steel: greater strength, superior performance and improved aesthetics. Utilized throughout Europe for many years, SteelBuilt Curtainwall Systems have been tested to North American standards and are now available to open tremendous new design opportunities.

For specifications, photographs and additional information contact:

Technical Glass Products
8107 Bracken Place SE
Snoqualmie, WA 98065

Office:     800.426.0279
Fax:        425.396.8300
E-mail: sales@tgpamerica.com
Web:        tgpamerica.com

CSI-SPECIFICATION

Full copies of our detail drawings and CSI format Specifications can be downloaded from our Web site or obtained from our office.

This Architectural Specification Manual provides a summary of the specification, design and applications that can be achieved with SteelBuilt Curtainwall® Systems. Many special finishes and components are available, please consult Technical Glass Products.
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LAWS AND BUILDING AND SAFETY CODES GOVERNING THE DESIGN AND USE OF GLAZED ENTRANCE, WINDOW, AND CURTAIN WALL PRODUCTS VARY WIDELY. TGP 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

TGP reserves the right to change configurations without prior notice when deemed necessary for product improvement.
FEATURES

• Offers all the advantage of steel: greater strength, superior performance and improved aesthetics
• Narrow sight line of 1-3/4” (45 mm) or 2-3/8” (60 mm)
• Variety of system depths
• Infill options up to 2”
• Stainless steel or anodized cover caps available
• Painted finishes in standard and custom choices
• Concealed fastener joinery creates smooth, monolithic appearance
• Shear block fabrication method
• Compatible with SteelBuilt Window & Doors® Systems
• Silicone compatible glazing materials for long-lasting seals

Optional Features

• Stainless steel cover caps
• Custom aluminum cover caps available
• Steel reinforcing available

Product Applications

• Ideal for low to mid-rise applications where large glass and narrow sight lines are desired
• Ideal choice for high span applications
• Coastal environments that benefit from the durability of stainless steel
45 mm SYSTEM
1. Vertical Mullion
2. Horizontal Mullion
3. Full-width Mullion Gasket
4. Front Gasket
5. Shear Block
6. Glass Setting Pad
7. Pressure Plate
8. Cover Cap
9. Intersection Cover
10. Connecting Plate
11. Spacer
12. Sealing Washer
13. Guide Bushing
14. Fastening Screw
15. Self Drilling Screw
Profile Overview - 45 mm System

Building Slab or Support

In-Fill Panel or Spandrel Unit

1 2 3 4 5 6 7 8 9 10 11 12

22-27
45 mm System
Overview SteelBuilt Door System in Curtainwall

Overview SteelBuilt Door System - 45 mm System
45 mm System Reference Details

- Interior and exterior glazing gaskets
- In-fill panel or spandrel unit
- Silicone setting blocks
- Pressure plate & clamping screws

Horizontal Mullion Section at Slab Edge

Mullion anchors per project requirements (typ)

- Line of interior finish
- Horizontal shear clip
- Sheet metal trim
- Floor slab

[Dimensions and specifications for 45 mm system components]
45 mm System
Reference Details
45 mm System Reference Details

PERIMETER SPACER

HORIZONTAL SHEAR CLIP

LINE OF VERTICAL MULLION SILL ANCHOR PER PROJECT REQUIREMENTS (TYP.)

INSULATED GLASS UNIT

$\frac{3}{8}''$ (9.5 mm)

$\frac{1}{4}''$ (6.35 mm)

DAYLIGHT CLIENTING

7 JAMB SECTION SHOWN AT SILL
45 mm System
Reference Details

STUD WALL / SHEATHING W/ WATERPROOFING MEMBRANE

EXTRUDED SILICONE MEMBRANE (BY TGP), SET IN SEALANT AT BOTH EDGES

EXTRUDED ALUMINUM / ALODINE FINISH (MIN), SUPPLIED LOOSE BY TGP FOR FIELD INSTALLATION

HORIZONTAL SHEAR CLIP

WebView

¼" [19mm]

1/8" [3.5mm]

DAYLIGHT OPENING

JAMB SECTION
(PERIMETER ALTERNATE)
45 mm System
Reference Details

LINE OF BUILDING OR SLAB

MULLION ANCHORS PER PROJECT REQUIREMENTS (TYP.)

IN-FILL PANEL OR SPANDREL UNIT

VERTICAL MULLION SECTION AT SLAB
Refer to Steelbuilt Door System Product Documentation for additional information about framing and glazing.
15 DOOR JAMB AT LEVER

REFER TO STEELBUILT DOOR SYSTEM PRODUCT DOCUMENTATION FOR ADDITIONAL INFORMATION ABOUT FRAMING AND GLAZING.
45 mm System
Reference Details

DOOR HEADER & SILL

NEOPRENE SETTING BLOCKS

ROUGH OPENING

FRAME DIMENSION

DOOR OPENING

DAYLIGHT OPENING

REFER TO STEELBUILT DOOR SYSTEM PRODUCT DOCUMENTATION FOR ADDITIONAL INFORMATION ABOUT FRAMING AND GLAZING
REFER TO STEELBUILT DOOR SYSTEM PRODUCT DOCUMENTATION FOR ADDITIONAL INFORMATION ABOUT FRAMING AND GLAZING.

DOOR JAMB AT LEVER

45 mm System Reference Details
DOOR MULLION

REFER TO STEELBUILT DOOR SYSTEM PRODUCT DOCUMENTATION FOR ADDITIONAL INFORMATION ABOUT FRAMING AND GLAZING.
45 mm System Reference Details

REFER TO STEELBUILT DOOR SYSTEM PRODUCT DOCUMENTATION FOR ADDITIONAL INFORMATION ABOUT FRAMING AND GLAZING

ACTIVE / ACTIVE MEETING RAIL

TGPAMERICA.COM
800.426.0279
22° 90 DEGREE OUTSIDE CORNER

45 mm System
Corner Details
90 Degree Outside Corner Option

45 mm System Corner Details

TGPAMERICA.COM
800.426.0279
24° 90 DEGREE OUTSIDE CORNER OPTION
45 mm System
Corner Details

90 DEGREE INSIDE CORNER
45 mm System
Corner Details

29 04|20 Corner Details - 45 mm System
TGPAMERICA.COM 800.426.0279

90 DEGREE INSIDE CORNER OPTION
Available Frame Profiles - 45 mm System

**MULLION PROFILE OPTIONS**

Profiles are steel, pre-galvanized. Available in 304 stainless steel with #4 brush finish.

**PRESKURE PLATE / GASKET**

Stainless steel options:
- 1/2" (13.5)
- 5/8" (16)
- 3/4" (19.5)

**COVER CAP**

Stainless steel options:
- 1/2" (13.5)
- 5/8" (16)
- 3/4" (19.5)

**ALUMINUM PRESSURE PLATE & GASKET**

Aluminum and stainless cover caps are interchangeable with aluminum and stainless pressure plates.
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 precise engineering calculations for stress and deflection. Allowable wind load stress for STEEL 30,000 p.s.i. (207MPa.). Charted curves, in all cases are for the limiting value. 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 TGP representative for additional information.

DEAD LOAD CHARTS
Horizontal or deadload limitations are based upon 1/8" (3.2), maximum allowable deflection at the center of an intermediate horizontal member. The accompanying charts are calculated for 1" (25.4) thick insulating glass or 1/4" (6.35) thick glass supported on two setting blocks placed at the loading points shown.

SILICONE GLAZING CHART
Structural silicone glazing is used primarily to eliminate the need or appearance of exterior pressure plates and caps. The size of the silicone bond line, used to structurally retain the glass to the building and the curtain wall frame, is based on the size of the individual lites of glass, the wind load requirements of a given project, and the design pressure of 20 psi capacity allowed by most silicone sealant manufacturers. The accompanying chart is meant to give the maximum wind load pressure based on either a ½" or ¾" weather joint between lites of glass, and the shortest dimension of the individual lite of glass. This chart is not meant to dictate final silicone bond line or loading requirements. While TGP can assist in determining the bond line dimension, the silicone sealant manufacturers must review and approve the final details, typically done during the shop drawing phase of most projects.

THERMAL CHART
Thermal transmittance (U-Value) is a measure of the rate of heat loss of a building component. The test method measures the thermal characteristics of the system under steady-state conditions.
Wind Load Charts

Single Span

Single Span Reinforced

Twin Span

Twin Span Reinforced

Curve 'A' - 10 PSF
Curve 'B' - 20 PSF
Curve 'C' - 30 PSF
Curve 'D' - 40 PSF
Curve 'E' - 50 PSF

RP-1786

1.772" [45.00]

RP-1786

0.500" [12.70]

W/ (2) 1" x 1/2"
Steel Bars

0.61 1.22 1.83 2.44 3.05
MODULE (M)

0.61 1.22 1.83 2.44 3.05
MODULE (M)

0.61 1.22 1.83 2.44 3.05
MODULE (M)

0.61 1.22 1.83 2.44 3.05
MODULE (M)
**Wind Load Charts**

**Single Span**

*RP-1787 W/ (2) 1-3/4” x 1/2” Steel Bars*

- **Curve A** - 10 PSF
- **Curve B** - 20 PSF
- **Curve C** - 30 PSF
- **Curve D** - 40 PSF
- **Curve E** - 50 PSF

**Twin Span**

- 2.277’ [69.00]

**RP-1787**

0.500” [12.70]

1.772” [45.00]
Wind Load Charts

Single Span

RP-1788

W/ (2) 2-3/4" x 1/2" Steel Bars

Twin Span

RP-1788

CURVE 'A' - 20 PSF
CURVE 'B' - 30 PSF
CURVE 'C' - 40 PSF
CURVE 'D' - 50 PSF
CURVE 'E' - 60 PSF

Single Span Reinforced

Twin Span Reinforced

CURVE 'A' - 20 PSF
CURVE 'B' - 30 PSF
CURVE 'C' - 40 PSF
CURVE 'D' - 50 PSF
CURVE 'E' - 60 PSF

3.602" [91.50] 1.772" [45.00] 0.500" [12.70] 3.602" [91.50] 2.570" [69.85] 1.772" [45.00]
### Single Span Reinforced

- **RP-1789**: 3-1/2" x 1/2" Steel Bars
- **Curves**:
  - **Curve A**: 20 PSF
  - **Curve B**: 30 PSF
  - **Curve C**: 40 PSF
  - **Curve D**: 50 PSF
  - **Curve E**: 60 PSF

### Twin Span Reinforced

- **RP-1789**: 3-1/2" x 1/2" Steel Bars
- **Curves**:
  - **Curve A**: 20 PSF
  - **Curve B**: 30 PSF
  - **Curve C**: 40 PSF
  - **Curve D**: 50 PSF
  - **Curve E**: 60 PSF
Wind Load Charts

Single Span

Single Span Reinforced

Twin Span

Twin Span Reinforced

RP-1790

W/ (2) 4-1/2" x 1/2" 
Steel Bars

CURVE 'A' - 20 PSF
CURVE 'B' - 30 PSF
CURVE 'C' - 40 PSF
CURVE 'D' - 50 PSF
CURVE 'E' - 60 PSF
Wind Load Charts

Single Span

**RP-1815**

CURVE 'A' - 20 PSF
CURVE 'B' - 30 PSF
CURVE 'C' - 40 PSF
CURVE 'D' - 50 PSF
CURVE 'E' - 60 PSF

Single Span Reinforced

**RP-1815**

W/ (2) 5" x 1/2" Steel Bars

Twin Span

**RP-1815**

0.500" [12.70]
Dead Load Charts (Tubular)

1/4" Glass

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

1" Glass

A = 1/4 POINT LOADING
B = 1/8 POINT LOADING
Dead Load Charts (Tubular)

1/4" Glass

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

1" Glass
Dead Load Charts (Tubular)

1/4" Glass

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

1" Glass

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

<table>
<thead>
<tr>
<th>Glass U-Factor</th>
<th>Stainless Steel Cover Cap</th>
<th>Aluminum Cover Cap</th>
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<tbody>
<tr>
<td>0.48</td>
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<td>.20</td>
</tr>
</tbody>
</table>

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

1. U-Factors are determined in accordance with NFRC 100.
2. Glass properties are based on center of glass values and are obtained from your glass supplier.
3. Overall U-Factor is based on the standard NFRC specimen size of matrix 2000 mm wide by 2000 mm high (78-3/4" by 78-3/4").