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
425.396.8200
Fax: 800.451.9857
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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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
60 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
60 mm System Reference Details

1. **Head Section**
   - Flexible silicone membrane used in exterior applications.
   - Wall construction by other trades.
   - Head anchor per project requirements (typ.).
   - Perimeter spacer.
   - Interior and exterior glazing gaskets.
   - Dovetail opening 25/16" (60mm).
   - Insulated glass unit.
   - Horizontal shear clip.
   - Silicone setting blocks (not by TGP).
   - Diverter gasket used in exterior applications.
   - Pressure plate & clamping screws.
   - Varies 1 3/16" - 1 5/16" (46.5mm - 181.5mm).

2. **Horizontal Mullion Section**
60 mm System Reference Details

4. Horizontal Mullion Section

- Silicone Setting Blocks (not by TGP)
- Pressure Plate & Clamping Screws
- Daylight Opening

5. Horizontal Mullion Section

- Interior and Exterior Glazing Gaskets
- Diverter Gasket used in exterior applications
- Pressure Plate & Clamping Screws
- Insulated Glass Unit
- Variance: 1 3/8" - 7/8" [46.5mm - 181.5mm]
60 mm System Reference Details

7 JAMB SECTION SHOWN AT SILL
STUD WALL/ SHEATHING W/WATERPROOFING MEMBRANE

EXTRUDED SILICONE MEMBRANE, SET IN SEALANT AT BOTH EDGES

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

INSULATED GLASS UNIT

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

HORIZONTAL SHEAR CLIP

1¾" - 2¾"
[46.5mm - 18.15mm]

½" [19mm]

2¾" [60mm]

DAYLIGHT OPENING

9 JAMB SECTION
60 mm System Reference Details

HORIZONTAL SHEAR CLIP

INTERIOR AND EXTERIOR GLAZING GASKETS

INSULATED GLASS UNIT

DAYLIGHT OPENING

2 3/8" [60mm] DAYLIGHT OPENING

19/32" - 7/32"
[46.5mm - 18.15mm]

VERTICAL MULLION SECTION
VERTICAL MULLION SECTION AT SLAB
60 mm System Reference Details

Refer to SteelBuilt Door System Product Documentation for additional information about framing and glazing.

Wall construction by other trades

Flexible silicone membrane, used in exterior applications.

Door jamb at pivot with curtainwall sidelite.

Frame dimension

Daylight opening

Door opening

Rough opening

Weld on door pivots

Exit device
Refer to Steelbuilt door system product documentation for additional information about framing and glazing.

Door Jamb at Lever with Curtainwall Sidelite

60 mm System Reference Details
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.

HORIZONTAL SHEAR CLIP

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

1/4" - 1/2"
4.5 mm - 18.15 mm

VANES

INSULATED GLASS UNIT

DAYLIGHT OPENING

WELD ON DOOR PIVOTS

3/8" [80 mm]

DAYLIGHT OPENING

3/8" [80 mm]

FRAME DIMENSION

21/8" [60 mm]

21/8" [53 mm]

21/8" [60 mm]

Door Jamb at Pivot

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

HORIZONTAL SHEAR CLIP

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

VARIES

1 1/4" - 7/8"

[46.5mm - 181.5mm]

DAYLIGHT OPENING

3 1/8" [80.1mm]

DOOR OPENING

2 1/2" [52.9mm]

2 1/2" [56mm]

DAYLIGHT OPENING

FRAME DIMENSION

LEVER

18 DOOR JAMB AT LEVER

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one source. many solutions.

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60 mm System
Reference Details

03|14 Reference Details - 60 mm System
Refer to SteelBuilt Door System product documentation for additional information about framing and glazing.
60 mm System
Reference Details

Refer to SteelBuilt Door System Product Documentation for additional information about framing and glazing.

ACTIVE / ACTIVE MEETING RAIL

PUSH SIDE
EGRESS SIDE

EXIT DEVICE

DAYLIGHT OPENING

DOOR OPENING

FRAME DIMENSION

ROUGH OPENING

1 3/4" [50mm]

1 3/4" [50mm]
REPLACE TEXT WITH REFERENCE DETAILS - 60 MM SYSTEM

**Active / Fixed Meeting Rail**

- Push Side
- Egress Side
- Pull Side
- Secure Side

*Refer to SteelBuilt Door System Product Documentation for additional information about framing and glazing.*
22 90 Degree Outside Corner
23 90 DEGREE OUTSIDE CORNER OPTION
24 ANGLED OUTSIDE CORNER
125 DEGREE SHOWN
25 90 DEGREE INSIDE CORNER
90 DEGREE INSIDE CORNER OPTION
27° ANGLED INSIDE CORNER
125 DEGREE SHOWN
Snap-on cover caps are interchangeable with 403-560 and 430-060 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

Twin Span

Single Span Reinforced

Twin Span Reinforced

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

RP-1800

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

0.500" [12.70]

2.362" [60.00]
Single Span

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

**RP-1802**

Single Span Reinforced

**RP-1802**

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

Twin Span

**RP-1802**

Twin Span Reinforced
Wind Load Charts

Single Span

Single Span Reinforced

Twin Span

Twin Span Reinforced

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

RP-1804

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

Wind Load Charts

Single Span

Twin Span

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

RP-1806

W/ (2) 6-1/4" x 1/2" Steel Bars
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

1" Glass

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

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## Silicone Glazing Charts

### Chart Legend:
1. Select the row based on dimension column “B.” This is the exterior weather joint between the lites of glass, the width is either 12 mm or 19 mm.
2. To determine the sealant contact width, move to the right across the selected row to column “E” (sealant contact width).
3. To determine the maximum wind load in psf follow this row further to the right until you reach the appropriate narrowest glass dimension column (top row).

**Note:** To determine the narrowest glass dimension, use narrowest dimension of either glass width or height, rounded up to the nearest foot.

### Example:
1. For 60 mm mullion width system, select the 19 mm weather joint width (column B, row 2).
2. Follow row to sealant contact bond width column “E” (14.5 mm / 9/16”)
3. The largest lite on the project is 68” x 120”. The narrowest dimension is 68”, round up to 72” (6’)
4. Continue across the row to the right and look up to the narrowest glass dimension in feet until you get to the 6’ column. 46 psf is the maximum wind load.

**Note:** Chart and detail show possible configurations, exact conditions can vary by project. Contact TGP or sealant manufacturer for specific questions about a given set of conditions or project.

### Table: Narrowest Glass Dimension in Ft (Top Line of Chart)

<table>
<thead>
<tr>
<th>Narrowest Glass Dimension in Ft</th>
<th>1’</th>
<th>2’</th>
<th>3’</th>
<th>4’</th>
<th>5’</th>
<th>6’</th>
<th>7’</th>
<th>8’</th>
<th>9’</th>
<th>10’</th>
</tr>
</thead>
<tbody>
<tr>
<td>60 mm 12 mm 6 mm 24</td>
<td>340</td>
<td>170</td>
<td>113</td>
<td>85</td>
<td>68</td>
<td>57</td>
<td>49</td>
<td>43</td>
<td>38</td>
<td>34</td>
</tr>
<tr>
<td>60 mm 19 mm 6 mm 31</td>
<td>274</td>
<td>137</td>
<td>91</td>
<td>69</td>
<td>55</td>
<td>46</td>
<td>39</td>
<td>34</td>
<td>30</td>
<td>27</td>
</tr>
</tbody>
</table>

### Diagram: Silicone Glazing Detail at 60 mm System

[Diagram showing silicone glazing detail at 60 mm system]
Thermal Charts

Thermal Transmittance\(^1\) (btu/hr + ft\(^2\) + °F)

<table>
<thead>
<tr>
<th>Glass U-Factor(^1)</th>
<th>Overall U-Factor(^2)</th>
<th>Stainless Steel Cover Cap</th>
<th>Aluminum Cover Cap</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.48</td>
<td>.51</td>
<td>.51</td>
<td></td>
</tr>
<tr>
<td>0.44</td>
<td>.49</td>
<td>.49</td>
<td></td>
</tr>
<tr>
<td>0.30</td>
<td>.35</td>
<td>.36</td>
<td></td>
</tr>
<tr>
<td>0.247</td>
<td>.31</td>
<td>.32</td>
<td></td>
</tr>
<tr>
<td>0.123</td>
<td>.19</td>
<td>.20</td>
<td></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").