STEELBUILT CURTAINWALL INFINITY™ SYSTEM

The SteelBuilt Curtainwall Infinity™ System can use as a back mullion almost any type of custom steel member, such as stainless steel, box, I-beams and T-shapes. This allows architects and designers to use larger areas of glass, smaller frame profiles and wider free-spans than are possible with traditional aluminum curtain wall. This flexibility in design and material allows curtain walls to be incorporated into a nearly limitless range of building types, designs, and performance requirements. SteelBuilt Curtainwall Infinity System helps inspire a whole new world of creativity.

For specifications, photographs and additional information contact:

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CSI-SPECIFICATION

Full copies of our CSI specifications can be downloaded from our Web site at tgpamerica.com/specs/ 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 Infinity™ System. 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

- Almost any type of custom steel member can be used for a back mullion—such as stainless steel, box, I-beams and T-shapes
- Offers all the advantage of steel: larger free spans, narrower sight lines and improved thermal performance
- Narrow sight line of 1-3/4" (45 mm) or 2-3/8" (60 mm)
- No water penetration at 15 PSF pressure differential when tested to ASTM E283
- Air infiltration below 0.03 CFM /Ft² when tested to ASTM E33
- 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 & Door® Systems
- Silicone compatible glazing materials for long-lasting seals

OPTIONAL FEATURES

- Stainless steel cover caps
- Custom aluminum cover caps available

PRODUCT APPLICATIONS

- Ideal choice for tall span applications with no intermediate support
- Ideal for low to mid-rise applications where large glass and narrow sight lines are desired
- Coastal environments that benefit from the durability of stainless steel
Connection Options

- For combination with all SteelBuilt mullion-transom façade systems

- Lateral grooves for perpendicular screw guidance high extraction resistance
- Complete aeration prevents contact corrosion
- One base profile for 45 and 50 mm view and 60 mm view
- Stabilised seal

Welding fixation  Bolt fixation  Screw fixation

- Welding and corrosion protection through double opening
- Bolt head sunk in identical mark; seal insertion without problems
- Screw fixation through pre-punched holes
Reference Details – I-Beam

Materials:
- Carbon Steel
  - Blasted
  - Painted
- Stainless Steel
  - Blasted
  - Polished
  - Ground
  - Pickled

Member dimensions (depth, material thickness, etc.) dependent on span, load, and module dimensions.

Webs can be custom machined with
- Patterns
- Logos
- Other

Glazing:
- 1" thick (25 mm) shown
- ½" to 2" thick (12-50 mm) available
- Single, double, or triple glazing options available
- Structural silicone glazing

Face Dimension:
- 2 3/8" (60 mm) shown
- 1 ¾" (45 mm) and 2" (50 mm) available

Caps:
- Extruded aluminum, standard or custom caps, anodized or painted
- Stainless steel
- Depths vary by material, system width

Horizontals:
- Any Infinity shape can be used
- SteelBuilt / rectangular tube system compatible
- Custom shapes available upon request

Infinity Mullions:
- Other shapes (custom) available upon request
Reference Details – Tube

Materials:
- Carbon Steel
  - Bead Blasted
  - Painted
- Stainless Steel
  - Bead Blasted
  - Polished
  - Ground
  - Pickled

Member dimensions (depth, material thickness, etc.) dependent on span, load, and module dimensions.

Sharp Corners:
- Radius less than 1/32” (0.5 mm)

Glazing:
- 1” thick (25 mm) shown
- ½” to 2” thick (12-50 mm) available
- Single, double, or triple glazing options available

Face Dimension:
- 2” (50 mm) shown
- 1 ¾” (45 mm) and 2 3/8” (60 mm) available

Caps:
- Extruded aluminum, standard or custom caps, anodized or painted
- Stainless steel
- Depths vary by material, system width

Horizontals:
- Any Infinity shape can be used
- SteelBuilt / rectangular tube system compatible
- Custom shapes available upon request

Infinity Mullions:
- Other shapes (custom) available upon request
Reference Details – T

Materials:
- Carbon Steel
  - Blasted
  - Painted
- Stainless Steel
  - Blasted
  - Polished
  - Ground
  - Pickled

Member dimensions (depth, material thickness, etc.) dependent on span, load, and module dimensions.

Webs can be custom machined with
- Patterns
- Logos
- Other

Glazing:
- 1" thick (25 mm) shown
- ½" to 2" thick (12-50 mm) available
- Single, double, or triple glazing options available

Face Dimension
- 1 ¾" (45 mm) shown
- 2" (50 mm) and 2 3/8" (60 mm) available

Caps:
- Extruded aluminum, standard or custom caps, anodized or painted
- Stainless steel
- Depths vary by material, system width

Horizontals:
- Any Infinity shape can be used
- SteelBuilt / rectangular tube system compatible
- Custom shapes available upon request

INFINITY T-PROFILE OPTIONS
Materials:
- Carbon Steel
  - Blasted
  - Painted
- Stainless Steel
  - Blasted
  - Polished
  - Ground
  - Pickled

Member dimensions (depth, material thickness, etc.) dependent on span, load, and module dimensions.

Webs can be custom machined with
- Patterns
- Logos
- Other

Glazing
- 1” thick (25 mm) shown
- ½” to 2” thick (12-50 mm) available
- Single, double, or triple glazing options available

Face Dimension
- 1 ¼” (45 mm) shown
- 2” (50 mm) and 2 3/8” (60 mm) available

Caps:
- Extruded aluminum, standard or custom caps, anodized or painted
- Stainless steel
- Depths vary by material, system width

Horizontals:
- Any Infinity shape can be used
- SteelBuilt / rectangular tube system compatible
- Custom shapes available upon request
**Reference Details – Framing Options**

**INFINITY PROFILE OPTIONS**

**Framing Options:**

Descriptions below are suggested options for framing as may be developed by design professionals. TGP is available to assist the design professional with any questions regarding attachment or support of SteelBuilt Curtainwall Infinity™ System glazing materials not furnished by TGP.

Method of attachment of Infinity glazing materials to other framing options is permitted. This work is typically completed by the installer in the field.

TGP does not typically design, furnish, or finish these materials. Design of these members is not by TGP, and should be verified by registered, licensed professional engineers or architects.

Glue-laminated wood: any shape, size, and profile

Steel or aluminum:
- Hot rolled steel or extruded tubes, rounds, or structural shapes
- Truss assemblies
- Structural steel framing

Sloped or vertical framing (with safety glazing) is permitted.
DESIGN NOTE:
1. IF MEMBER LOADING AND DESIGN AESTHETICS ALLOW: TO INSTALL HORIZONTALS BETWEEN I-BEAMS, THIS DIMENSION MUST BE GREATER THAN DEPTH OF HORIZONTAL

2. IF DIMENSION BETWEEN BACK OF HORIZONTAL TO J/S FACE OF FLANGE IS LESS THAN HORIZONTAL DEPTH, 1MM JOINT AT MULLION DLO REQUIRED.

DEPT OF VERTICAL / INSTALLATION OF STEELBUILT HORIZONTALS AT I-BEAM, TR PROFILES
Corner Options

Corner Mullion Configurations shown herein are generic. Contact TGP for questions regarding proposed configuration(s).

Corner Mullion can match depth of typical mullion as shown, or depth of horizontals (shown dashed, depending on load, modules, etc).

Alternate Exterior Cover

8

2\(\frac{3}{4}\)\text{"} [62.7mm]

\(\frac{1}{4}\)\text{"} [22.3mm]

DLO

\(\frac{1}{4}\)\text{"} [44.9mm]

Ref / Location Dim.

Infinity Corner Options
Corner Options

Dimensions symmetrical about mullion axis / not shown for clarity.

Inside Corner Options
Mullion Profiles

STRUCTURAL SILICONE GLAZING / MULLION

- Width shown is typical for all infinity profiles.
- Depth of profile determined by wind load, span, and mullion spacing.
- Infinity shapes interchangeable, see architectural manual for shape options, size limits.

- Extruded silicone gasket on forwed glazing adaptor, welded to front of profile.
- Extruded aluminum cassettes shop applied to glass, shipped to field, set into framing.

Structural bond line dependent on wind load, glass dimensions. Formula:

\[ \text{Bond Line} = \frac{\text{WL} \times \text{GD} \times 0.5}{12 \times 20} \]

- WL = Design wind load (PSF)
- GD = Glass dimension (in mm, smallest of width, height dim.)
- 12 = Converts GD dim. to inches
- 20 = Allowable silicone tension (PSI)

- Min: \( \frac{1}{4} \) [6.4]
- Max: 17.1mm [1 1/16]

- Silcone compatible foam tape
- Structural silicone
- Aluminum or stainless steel toggles at 9-12" OC, dependent on wind load conditions

- Min. to hold cassettes flush with side walls of steel profiles

- 23.1mm [15/16]
- 70.0mm [2 3/4]
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

ALTERNATE PERIMETER
SILL RAIL HEIGHT DIMENSIONS CAN VARY - CONTACT TGP FOR OPTIONS.

THRESHOLD AT EXTERIOR DOORS RECOMMENDED - NOT SHOWN.

DOOR HEADER & SILL

DOORS

TGP DESIGNER SERIES DOOR, DOOR FRAME WITH 1/4" MONOLITHIC LITE. GLAZING CAN VARY 1/4" (6mm) TO 1" (25mm)

DOOR HARDWARE SELECTION CRITICAL / LIMITED - PLEASE CONTACT TGP TO COORDINATE HARDWARE REQUIREMENTS.

INFINITY PROFILES / SHAPES INTERCHANGEABLE - PROFILE SHOULD MATCH WIDTH OF GLAZING ADAPTOR AT FRONT OF SYSTEM (MIN)

TGPAMERICA.COM
800.426.0279
INFINITY PROFILES / SHAPES INTERCHANGEABLE - PROFILE SHOULD MATCH WIDTH OF GLAZING ADAPTOR AT FRONT OF SYSTEM (MIN)

TGP DESIGNER SERIES DOOR, DOOR FRAME WITH 1/4" MONOLITHIC LITE. GLAZING CAN VARY 1/4" [8mm] TO 1" [25mm]

DOOR HARDWARE SELECTION CRITICAL / LIMITED - PLEASE CONTACT TGP TO COORDINATE HARDWARE REQUIREMENTS.

HORIZONTAL, HEAD / SILL FRAMING NOT SHOWN FOR CLARITY

2 3/8" [60 mm] SHOWN
1 3/4" [45mm], 1 15/16" [50mm] AVAILABLE

WELD ON DOOR PIVOTS

3/8" [80mm] DAYLIGHT OPENING

2 1/8" [53mm] DOOR OPENING

DOOR JAMB AT PIVOT
Doors Jamb at Lever

- Dimension varies - determined by Infinity vertical profile requirements for structural loading / Job specific.
- At "T"'s or "I" beams wider than glazing adaptor: formed metal extension, screwed applied and sealed to existing door profile per TGP Manufacturing requirements.
- Exit device
- Daylight opening
- Lever
INFINITY PROFILE OPTIONS

- VARIABLES:
  INFINITY RECTANGULAR SECTION SHOWN - ANY PROFILE CAN BE USED, DIMENSIONAL VARIATIONS SHOWN ON PAGES 2 THRU 4, PAINTED STEEL OR STAINLESS STEEL.
  METHOD OF ATTACHMENT OF SPIDER FITTINGS TO PROFILES VARIES BY INFINITY PROFILE, DESIGN BY ARCHITECT / PROJECT STRUCTURAL ENGINEER.
  SPIDER FITTINGS BY MANUFACTURE AS SELECTED BY ARCHITECT.

- GLASS CONSTRUCTION, PENETRATIONS FOR SPIDER FITTINGS PER GLASS MANUFACTURER'S RECOMMENDATIONS, LOCATIONS, BASED ON GLASS SIZE, WIND LOADING REQUIREMENTS.
Cover Caps
60 mm Profiles

HORIZONTAL GLAZING

SILICONE SETTING BLOCKS (2) PER LITE

BACK MEMBER NOT SHOWN / SEE PREVIOUS PAGES FOR OPTIONS

VERTICAL GLAZING

ALUM. PRESSURE BARS

1/4" [6.3]

3/16" [4.8]

7/16" [11.1]

23/64 [9.6]

(Exposed fasteners reqd. both profiles)

STAINLESS STEEL PRESSURE PLATES AND COVER CAPS

1 15/64" [2.3]

3 13/64" [3.3]

1 1/8" [2.3]

1 15/64" [2.4]

ALUM. PRESSURE PLATES, ALUM. COVER CAPS

15/64" [2.4]

1 1/8" [2.1]

15/64" [2.4]

1 1/8" [2.1]

60 mm COVERS, GLAZING

TGPAMERICA.COM
COVER CAP, PRESSURE PLATE & GASKET

ALUM. PRESSURE BARS

\[ \frac{7}{16} \text{ in} \quad \frac{15}{16} \text{ in} \quad \frac{1}{2} \text{ in} \]

(EXPOSED FASTENERS REQ'D)

ALUM. PRESSURE PLATES, ALUM. COVER CAPS

\[ \frac{13}{16} \text{ in} \quad \frac{9}{16} \text{ in} \quad \frac{15}{16} \text{ in} \]

50 mm COVERS, GLAZING

HORIZONTAL GLAZING

VERTICAL GLAZING
Cover Caps
45 mm Profiles

COVER CAP, PRESSURE PLATE & GASKET

ALUM. PRESSURE PLATES,
STAINLESS STEEL COVER CAPS

ALUM. PRESSURE PLATES,
ALUM. COVER CAPS

45 mm COVERS, GLAZING