Technical Glass Products
The Fireframes® Curtainwall Series frame system allows for large, multi-story expanses of fire-rated glass and frames in both interior and exterior applications. Envision expansive window openings, with more glass and less frame. Along with exterior applications, lobbies and atriums are well suited to the use of fire rated curtain wall to provide uninterrupted views. Floor to ceiling fire-rated curtain walls can be used to divide interior spaces while offering security and aesthetic appeal as well as fire protection. Fireframes Curtainwall is just one of the many expressions of creativity that are changing traditional thinking about fire-rated glass and framing. The future of fire safety has never looked so good.

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@fireglass.com  
Web: fireglass.com
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>System Exploded Assembly</td>
<td>4</td>
</tr>
<tr>
<td>Material Key Chart</td>
<td>5</td>
</tr>
<tr>
<td>General Information</td>
<td>7</td>
</tr>
<tr>
<td>Features</td>
<td>7</td>
</tr>
<tr>
<td>Testing Data</td>
<td>7</td>
</tr>
<tr>
<td>Listings</td>
<td>8</td>
</tr>
<tr>
<td>Sizing Guidelines</td>
<td>8</td>
</tr>
<tr>
<td>Americans with Disability Act Standards on Fire Protection Doors</td>
<td>8</td>
</tr>
<tr>
<td>Doors in Fireframes Curtainwall Series Frames</td>
<td>9</td>
</tr>
<tr>
<td>Conventional Wood or Hollow Metal Doors in Fireframes Curtainwall Series Frames</td>
<td>9</td>
</tr>
<tr>
<td>Fire-Rated Glazing Options</td>
<td>9</td>
</tr>
<tr>
<td>Glazing Specifications</td>
<td>10</td>
</tr>
<tr>
<td>Angle Segmented Frames</td>
<td>12</td>
</tr>
<tr>
<td>Recommended Guidelines</td>
<td>13</td>
</tr>
<tr>
<td>45 mm System Profile Options</td>
<td>16</td>
</tr>
<tr>
<td>45 mm System Elevations</td>
<td>17</td>
</tr>
<tr>
<td>45 mm System Interior Section Details</td>
<td>18</td>
</tr>
<tr>
<td>45 mm System Interior Section Details - Doors</td>
<td>23</td>
</tr>
<tr>
<td>45 mm System Exterior Section Details</td>
<td>27</td>
</tr>
<tr>
<td>45 mm System Exterior Section Details - Doors</td>
<td>32</td>
</tr>
<tr>
<td>60 mm System Profile Options</td>
<td>36</td>
</tr>
<tr>
<td>60 mm System Elevations</td>
<td>37</td>
</tr>
<tr>
<td>60 mm System Interior Section Details</td>
<td>38</td>
</tr>
<tr>
<td>60 mm System Interior Section Details - Doors</td>
<td>43</td>
</tr>
<tr>
<td>60 mm System Exterior Section Details</td>
<td>47</td>
</tr>
<tr>
<td>60 mm System Exterior Section Details - Doors</td>
<td>52</td>
</tr>
<tr>
<td>Section Details - Doors</td>
<td>56</td>
</tr>
<tr>
<td>Corner Details</td>
<td>57</td>
</tr>
</tbody>
</table>
Figure 1 - System Exploded Assembly View
<table>
<thead>
<tr>
<th>Item(s)</th>
<th>Material</th>
<th>Fasteners Provided With Fireframes Curtainwall Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>CONNECTING PLATE SCREW</td>
<td>Connecting plate screws (Torx T25) for connecting “T” and “X” type connecting plates over Mullion gasket intersections.</td>
</tr>
<tr>
<td>13</td>
<td>GLAZING PLATFORM SCREW</td>
<td>M6-1.0 x 16mm stainless steel flat head socket cap screws are provided for connecting bolt-on glazing platforms to horizontal mullions.</td>
</tr>
<tr>
<td>29</td>
<td>PRESSURE PLATE SCREW</td>
<td>Self-drilling screw (Torx T27) provided at appropriate length for connecting pressure plates and temporary pressure plates to mullions.</td>
</tr>
<tr>
<td>18</td>
<td>PERIMETER SPACER SCREW</td>
<td>#12-11 stainless steel Phillips flat head sheet metal screws are provided for connecting perimeter spacers to mullions.</td>
</tr>
<tr>
<td>10</td>
<td>SILL ANCHOR SCREW</td>
<td>Non-welded sill anchors will have an M6-1.0 x 25mm screw securing the anchor to the mullion.</td>
</tr>
<tr>
<td>4</td>
<td>SLIDING SHEAR CLIP SCREW</td>
<td>Frames using sliding shear clips have an M6-1.0 x 30mm screw used to lock the shear clip into position once installed.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item(s)</th>
<th>Material</th>
<th>Components Provided With Fireframes Curtainwall Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, 2, and 3</td>
<td>ANCHORS</td>
<td>Head and Sill anchors at vertical mullions are provided for jamb and intermediate mullion conditions.</td>
</tr>
<tr>
<td>14 and 15</td>
<td>CONNECTING PLATE</td>
<td>Connecting plates, “T” and “X” styles, fit over freshly sealed mullion gasket joints at horizontal and vertical mullion intersections.</td>
</tr>
<tr>
<td>30 and 31</td>
<td>COVER CAP</td>
<td>Snap on cover caps are provided for horizontal and vertical members.</td>
</tr>
<tr>
<td>23 and 24</td>
<td>COVER PLATE</td>
<td>Cover plates, similar to the connection plates, are used at the horizontal and vertical pressure plate intersections and are applied to the exterior face of the glass under the pressure plates.</td>
</tr>
<tr>
<td>22</td>
<td>DIVERTER GASKET</td>
<td>The diverter gasket may be integral to the horizontal mullion gasket, or it may be supplied as a separate gasket. See Fireframes project drawings for details.</td>
</tr>
<tr>
<td>20</td>
<td>FIRE-RATED GLAZING MATERIAL</td>
<td>Refer to the Fire-Rated Glazing Options and Specifications, and Glazing Installation Instructions.</td>
</tr>
<tr>
<td>-</td>
<td>FLEXIBLE FLASHING</td>
<td>On exterior applications, silicone linear flexible flashing and molded corner flashings may be provided.</td>
</tr>
<tr>
<td>-</td>
<td>FOAM BAFFLE</td>
<td>A foam baffle (M2-045) is required at intermediate weeps (Section 15) on exterior elevations over 20 feet (6m) tall.</td>
</tr>
<tr>
<td>12</td>
<td>GLAZING PLATFORM</td>
<td>Bolt on glazing platforms are installed on sill and intermediate horizontal mullions.</td>
</tr>
<tr>
<td>25 and 28</td>
<td>GUIDE BUSHING</td>
<td>Guide Bushings and Bushing Separators are provided to help guide the pressure plate screws and protect the glass during installation.</td>
</tr>
<tr>
<td>21</td>
<td>INTUMESCENT TAPE</td>
<td>REQUIRED on all applications, fire-rated intumescent tape as supplied must be installed on the glass at each opening.</td>
</tr>
<tr>
<td>5, 6, and 8</td>
<td>MULLIONS</td>
<td>Vertical and horizontal mullions are cut to size and pre-machined.</td>
</tr>
<tr>
<td>11</td>
<td>MULLION GASKET</td>
<td>Black silicone gaskets for horizontal and vertical mullions may be shipped loose for field installation.</td>
</tr>
<tr>
<td>17</td>
<td>PERIMETER SPACER</td>
<td>Spacers are made of hardwood, and are typically supplied in stock lengths not exceeding 96” for field trimming.</td>
</tr>
<tr>
<td>27</td>
<td>PRESSURE PLATE</td>
<td>Pressure plate, gaskets, and guide bushings are provided.</td>
</tr>
<tr>
<td>26</td>
<td>PRESSURE PLATE GASKET</td>
<td>EPDM seal required for pressure plate.</td>
</tr>
<tr>
<td>19</td>
<td>SETTING BLOCKS</td>
<td>6 mm calcium silicate setting blocks shipped loose for field installation. Hardwood or silicone setting blocks are also allowable.</td>
</tr>
<tr>
<td>9</td>
<td>SHEAR CLIPS</td>
<td>Sliding shear clips (or welded shear clips) are provided for each horizontal mullion.</td>
</tr>
<tr>
<td>-</td>
<td>TEMPORARY PRESSURE PLATE</td>
<td>A quantity of temporary pressure plates are provided to aid in the installation of the glass.</td>
</tr>
</tbody>
</table>

Figure 2 - Provided by TGP Material Key Chart
<table>
<thead>
<tr>
<th>Material</th>
<th>Required Material NOT PROVIDED With Fireframes Curtainwall Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANCHORS (Special)</td>
<td>If required per the approved Fireframes drawings, intermediate wind-load (dynamic) and/or dead load (fixed) anchors provided by other trades.</td>
</tr>
<tr>
<td>ANCHOR FASTENER</td>
<td>As constructions vary widely in design, perimeter fasteners (anchors) are supplied by others.</td>
</tr>
<tr>
<td>FINISH SEALANT</td>
<td>Sealant installed into the interior and exterior perimeter cavity. Select color for sealant to match frame or as directed by project architect.</td>
</tr>
<tr>
<td>FIRESAFING</td>
<td>REQUIRED on all applications, mineral wool and/or fire rated caulking must be installed between the perimeter frame and surrounding conditions. Intumescent sealant or firmly packed mineral wool must be installed in a continuous fashion between frame assembly and wall construction, being interrupted only by the perimeter anchor and/or anchor shims. Sealant manufacturers such as Tremco, Pemko and many others supply intumescent sealants.</td>
</tr>
<tr>
<td>SHIMS</td>
<td>Perimeter shims at anchor locations are to be of hardwood (oak) or non-combustible (steel) materials. Plastic shims may not be used.</td>
</tr>
<tr>
<td>WEEPS AND BAFFLES</td>
<td>When weeps or baffles are required at the sill condition of exterior applications, a 5/16” minimum inside diameter weep is recommended. A 30 ppi reticulated foam baffle, compressed to 50% original size is recommended.</td>
</tr>
<tr>
<td>WALL CONDITION</td>
<td>Rated wall construction by other trades.</td>
</tr>
</tbody>
</table>

*Figure 3 - Not Provided by TGP Material Key Chart*
General Information

This document is meant as a general description of typical installations. As such, it is the responsibility of the installer to ensure the frame materials are installed per the conditions that exist on any given project in accordance with these instructions and project drawings. TGP project drawings may detail modifications to the surrounding conditions required for a given project, (if architectural details or sketches were provided to TGP) and should be used in conjunction with these instructions. In the event of any conflict between these instructions and TGP project drawings, the TGP project drawings shall govern. TGP does not accept any warranty and/or liability for installations not in compliance with this document or other non-conforming use of the TGP products and/or system. Contact TGP with questions concerning these details as they apply to the particulars of a given project.

FEATURES

- Fire ratings of 45, 60, 90, and 120 minutes.
- Unrestricted glazing area for use in locations where total glazing exceeds 25% of wall area (except for 45 minute rating).
- Full-lite doors available in single leaf or double leaf design (see Fireframes Designer Series or Fireframes Heat Barrier Series).
- Narrow steel profiles.
- Air and water pressure tested and approved for exterior use.
- Easy installation; similar to typical pressure plate curtain wall.
- Frames supplied as “K.D.” (knock-down) for field installation.
- Pressure-glazed with EPDM or silicone gaskets.
- Can incorporate large individual panes of Pilkington Pyrostop® glass.
- Durable steel frames ensure low maintenance system.
- Custom cover caps (aluminum, stainless steel, etc.) to meet project needs.
- Factory finished to match desired color scheme.
- Fabricated in the U.S.A.

TESTING DATA

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Per</th>
<th>Standards</th>
<th>Measured</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Infiltration</td>
<td>ASTM E283-91</td>
<td>CFM per square foot @ 1.57 PSF</td>
<td>0.1</td>
<td>Passed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reported to the second decimal</td>
<td>0.07</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TOTAL CFM</td>
<td>3.93</td>
<td></td>
</tr>
<tr>
<td>Water Resistance</td>
<td>ASTM E547-00</td>
<td>@ 30.00 PSF leakage after:</td>
<td>None</td>
<td>Passed</td>
</tr>
<tr>
<td></td>
<td>ASTM E331-00</td>
<td>4 cycles of 5 minutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 cycle of 15 minutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uniform Structural Load</td>
<td>ASTM E330-97</td>
<td>Damage from a load of:</td>
<td>None</td>
<td>Passed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>+125.00 PSF</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>-125.00 PSF</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Permanent Set Deflection</td>
<td>0.005&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.317&quot;</td>
<td></td>
</tr>
</tbody>
</table>
LISTINGS

- Listed and labeled by Underwriters Laboratories, Inc.® as Design Number U537 and Underwriters Laboratories of Canada as W473.
- Frame tests performed in accordance with ASTM E-119 (60-120 minutes), NFPA 251, NFPA 257, UL 263, UL 9, UL 10C, ASTM E283, ASTM E330, ASTM E331, ASTM E547, AAMA 501.1, CAN/ULC-S101, and CAN4 S-106.
- Approved for use in Los Angeles – LARR 25798.

SIZING GUIDELINES

<table>
<thead>
<tr>
<th>Frame Rating</th>
<th>Maximum Exposed Glass Area Per Piece</th>
<th>Maximum Exposed Glass Single Dimension</th>
<th>Maximum Frame Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>45 Minutes *</td>
<td>31.25 sq. ft.</td>
<td>95-1/4” 2419 mm</td>
<td>Maximum area: 152 sq. ft. (22,888 sq.in.) 14.12 sq. m. Maximum single dimension: 13’-6” 4,115 mm</td>
</tr>
<tr>
<td>60 Minutes (Pyrostop 23 mm)</td>
<td>39 sq. ft.</td>
<td>96” 2,438 mm</td>
<td>n/a **</td>
</tr>
<tr>
<td>60 Minutes (Pyrostop ≥ 26 mm)</td>
<td>51.7 sq. ft.</td>
<td>Maximum width: 96” 2,438 mm</td>
<td>n/a **</td>
</tr>
<tr>
<td>120 Minutes</td>
<td>25.9 sq. ft.</td>
<td>111” 2,819 mm</td>
<td>n/a **</td>
</tr>
</tbody>
</table>

Sizing and Glazing Notes: Refer to the rows above.

* Opening Protective – Limited size IBC Fire Window Assembly Fire Protection Rating Table 715.4
** 60 and 120 minute tests conducted per UL 263 / ASTM E119. Therefore assembly is classified as a wall assembly, and not subject to “opening” area limitations.

AMERICANS WITH DISABILITY ACT STANDARDS ON FIRE PROTECTION DOORS

If fire doors were required to meet A.D.A. (Americans with Disability Act) Standards, many would not open or close with adequate force to prevent passage of flame and smoke. Recognizing this special fire safety need, NFPA 101 (National Fire Protection Association) allows operational features for fire doors (opening forces, closing speeds, etc.) that are different than for non-fire-rated doors. These fire “protective” steel doors carry ratings from 20-90 minutes for fire protection. Heat transfer through the door is not an issue, so they are constructed without interior insulation.
General Information

DOORS IN FIREFRAMES CURTAINWALL SERIES FRAMES
Fireframes Designer Series and Fireframes Heat Barrier Series door frames and doors may be installed into the Fireframes Curtainwall Series frames. For more details on installation, refer to those specific product’s Architectural Specification Manuals.

CONVENTIONAL WOOD OR HOLLOW METAL DOORS IN FIREFRAMES CURTAINWALL SERIES FRAMES
Fireframes® Designer Series or Fireframes® Heat Barrier Series doors are compatible with Fireframes Curtainwall Series framing. Additionally, conventional fire-rated wood or hollow metal doors can also be installed into Fireframes Curtainwall Series frames, but will require coordination with respect to preparation of door hardware. Prior to producing your shop drawings, TGP will need to evaluate relevant hardware schedule information. When ordering wood or hollow metal doors, you must supply our engineering staff with the manufacturer, model number, fabrication templates, door handing and, if required, physical samples. If TGP must prepare special fabrication drawings to accommodate your hardware needs, your project lead time may be extended.

FIRE-RATED GLAZING OPTIONS
Technical Glass Products provides a complete line of fire-rated glazing options to complement the Fireframes Curtainwall Series frame system. Refer to your Technical Glass Products SpeciFIRE® Selection Guide, available from your sales representative or online at www.fireglass.com.

Please consult your Technical Glass Products sales representative to determine the best option for your application.

<table>
<thead>
<tr>
<th>Glazing Product</th>
<th>Available Fire Rating (minutes)</th>
<th>Offers High Impact Safety</th>
<th>Passes Hose Stream Test</th>
<th>Reduces Heat Transfer</th>
<th>Complies with Energy Codes</th>
<th>Compatible with TGP Framing</th>
<th>Provides Acoustic Barrier</th>
<th>Advantages / Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pilkington Pyrostop®</td>
<td>45/60/120</td>
<td>●*</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>+ High clarity + Larger sizes - Can be heavy</td>
</tr>
<tr>
<td>Pilkington Pyrostop® IGU</td>
<td>45/60/120</td>
<td>●*</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>+ High clarity + Larger sizes - Can be heavy</td>
</tr>
</tbody>
</table>

Note: * Meets CPSC 16CFR1201: Category I and II.
GLAZING SPECIFICATIONS

Pilkington Pyrostop® fire resistant glass provides up to a two (2) hour fire rating. It can also be combined with other glazing products to achieve nearly any level of security protection and performance.

The Fireframes Curtainwall Series when combined with Pilkington Pyrostop at 60 minutes or greater, is classified and listed with UL as a transparent wall; a fire resistive assembly that blocks the transfer of radiant heat during a fire. Lower ratings (45 minute) are considered a window assembly.

<table>
<thead>
<tr>
<th>Manufacturer’s Designation</th>
<th>45-200</th>
<th>45-260 or 45-360</th>
<th>60-101</th>
<th>60-201</th>
<th>60-261 or 60-361</th>
<th>120-202</th>
<th>120-104</th>
<th>120-262 or 120-362</th>
<th>120-203 or 120-203 TI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Rating (minutes)</td>
<td>45</td>
<td>45</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td>120</td>
<td>120</td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>Glazing Type</td>
<td>Single</td>
<td>IGU</td>
<td>Single</td>
<td>Single</td>
<td>IGU</td>
<td>Single</td>
<td>IGU</td>
<td>IGU</td>
<td>IGU</td>
</tr>
<tr>
<td>Nominal Thickness</td>
<td>3/4” (19 mm)</td>
<td>1-1/4” (33 mm)</td>
<td>7/8” (23 mm)</td>
<td>1-1/16” (27 mm)</td>
<td>1-5/8” (41 mm)</td>
<td>1-9/16” (40 mm)</td>
<td>2-1/8” (54 mm)</td>
<td>2-1/8” (54 mm)</td>
<td>2-3/8” (61 mm)</td>
</tr>
<tr>
<td>Daylight Transmission (approx.)</td>
<td>84%</td>
<td>75%</td>
<td>88%</td>
<td>88%</td>
<td>78%</td>
<td>85%</td>
<td>78%</td>
<td>75%</td>
<td>74%</td>
</tr>
<tr>
<td>STC Rating (dB) (approx.)</td>
<td>40</td>
<td>40</td>
<td>41</td>
<td>44</td>
<td>44</td>
<td>46</td>
<td>46</td>
<td>46</td>
<td>44</td>
</tr>
</tbody>
</table>

NOTES:
* Exterior IGU is available with Low E or Solar Control coating.
△ Opening Protective – Limited size IBC Fire Window Assembly Fire Protection Rating Table 715.4
□ UL Listed as Wall Assembly as per UL 263 / ASTM E-119.
### GLAZING SPECIFICATIONS

<table>
<thead>
<tr>
<th>GLAZING SPECIFICATIONS</th>
<th>60-101 – 60 Minute Interior Window</th>
<th>60-201 – 60 Minute Exterior Window</th>
</tr>
</thead>
<tbody>
<tr>
<td>60-261 / 60-361 – 60 Minute Exterior Window</td>
<td></td>
<td></td>
</tr>
<tr>
<td>120-202 – 120 Minute Exterior Window</td>
<td></td>
<td></td>
</tr>
<tr>
<td>120-262 / 120-362 – 120 Minute Exterior Window</td>
<td></td>
<td></td>
</tr>
<tr>
<td>45-200 – 45 Minute Interior Window</td>
<td></td>
<td></td>
</tr>
<tr>
<td>45-260 / 45-360 – 45 Minute Exterior Window</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** One size of glass is detailed in subsequent illustrations per installation location. Glass thickness and associated components may vary depending on specific glazing selection.
**ANGLE SEGMENTED FRAMES**

For interior and exterior applications utilizing the 60 mm wide profiles, the horizontals and glass can be angled up to a maximum of six degrees (6°) on either side of the shared vertical mullion (Figures 4 and 5). This configuration requires welded shear clips which have exposed fasteners on each side of the horizontal mullion.

Figure 4 - Segmented Frame Plan View

Figure 5 - Segmented Frame Detail
Recommended Guidelines

1. REVIEW CONTRACT DOCUMENTS
Review architectural drawings, specifications, approved TGP project drawings, installation instructions, and shipping lists to become thoroughly familiar with the project. The TGP project drawings take precedence and include specific details for your installation. These installation instructions are of a general nature and cover most conditions.

2. BUILDING CODES
Due to the diversity in local, state / provincial, or federal laws and the codes that govern design and application of architectural products, it is the responsibility of the individual architect / owner and installer to ensure that products selected for use on projects comply with all the applicable building codes and laws. Technical Glass Products exercises no control over the use or application of its products, glazing materials, and operating hardware and assumes no responsibility thereof. Compliance of TGP project drawings with applicable codes for a given project shall be the responsibility of the Buyer.

3. COORDINATION WITH OTHER TRADES
Coordinate with the general contractor any sequence with other trades which impact installation (i.e. fire proofing, back-up walls, partitions, ceilings, mechanical ducts, converters etc.) or in which installation may impact the work of adjacent trades.

4. INSTALLATION
All materials are to be installed plumb and level.

5. BENCH MARKS
All work should start from bench marks and/or column lines as established by the architectural drawings and the general contractor with guaranteed accuracy. Using these datum points and lines, determine:
   a. The plane of the wall in reference to offset lines provided on each floor;
   b. The finish floor lines in reference to bench marks on the outer building columns; and
   c. Mullion spacing from both ends of openings to prevent dimensional build-up of daylight opening.

6. SURROUNDING CONDITIONS
Unless specifically contracted to do so, TGP does not draw or detail the project specific surrounding conditions (the area of the building that surrounds the TGP framing). Coordination of adjacent material and construction tolerances to TGP’s systems must be facilitated by the installer. TGP recommends that a professional engineer review the project drawings to verify the structural integrity of the installation. Please contact TGP if you would like a quote for fully detailed project drawings including surrounding details and or Professional Engineering (PE) services.
   a. Coordination of adjacent material and construction tolerances to TGP’s systems may be facilitated by TGP as part of preparing project drawings, and these drawings may indicate acceptable tolerances for critical dimensions. The installer should verify that surrounding construction is in accordance with the approved project drawings. Do not accept rough opening dimensions less than shown on project drawings. It is assumed that the minimal joint dimensions shown on the TGP project drawings match the field conditions. A frame may fit within a given opening but sealants may not perform as detailed if a smaller sealant joint is installed. Expansion / contraction issues may also be compromised. IF THE JOINTS ARE SMALLER THAN THAT SHOWN ON THE TGP PROJECT DRAWINGS, DO NOT PROCEED. Notify the General Contractor that the conditions are not as detailed and wait for corrective work to be completed before starting this work.
b. The installer MUST notify and receive approval from TGP and the general contractor when conditions are not in accordance with approved project drawings and/or change any aspect of the structural performance of the Fireframes Series before making any modifications to the TGP-furnished material or making changes which are different from those shown on the TGP project drawings. These conditions include, but are not limited to, anchor placement/location, changes in adjacent materials the anchor is being connected to or changes to dimensional relationships between framing, anchors and connection to adjacent materials.

c. TGP must review and approve in writing any changes required prior to the subcontractor installing any “corrective” work. These reviews may incur additional charges, which must be approved by the TGP customer prior to TGP’s review.

7. FRAME CONSTRUCTION VARIES
All frames are shipped “K-D” (knock-down) and are to be assembled on site. TGP does not pre-assemble frames prior to shipment as the method for doing so is not intended for long shipping distances. Component parts such as anchors, spacers, and gaskets are shipped loose. Depending on the installer’s preference, some of these components may be pre-assembled at your shop prior to transporting to job site.

8. FASTENING
Within the body of these instructions, “fastening” means any method of securing one part to another or to adjacent materials by means other than welding, adhering or using a mechanical fastener as shown on the approved details. Only those fasteners used within the system are specified in these instructions. Due to the varying perimeter conditions and performance requirements, perimeter and anchor fasteners are not specified in these instructions and are the responsibility of the installer.

9. SEALANTS
a. Sealants must be compatible with all materials they are in contact with, including other sealant surfaces. Consult with sealant manufacturer for recommendations relative to joint size, shelf life, compatibility, cleaning/priming, tooling,adhesion, etc.

b. The chemical compatibility and/or adhesion of all glazing materials and framing sealants with each other and with like materials used in glass and frame fabrication must be established by the installer. This is required on every project.

c. If required by the project specifications, it is the responsibility of the glazing contractor to submit any documentation or samples from the sealant manufacturer indicating that glass and glazing material has been tested for chemical compatibility and/or adhesion with glazing sealants. This applies to all TGP materials in contact with any sealant. TGP will furnish samples of these materials upon request.

d. The implementation of the test results is the responsibility of the installing contractor, and includes material performance and recommendations for primers and substrate preparation required to obtain adhesion.

10. PERIMETER JOINTS
Perimeter seals and/or expansion joints shown in these instructions and in the TGP project drawings are shown at nominal size. Actual dimensions may vary due to perimeter conditions and/or difference in metal temperature between the time of fabrication and the time of installation. Design and detailing have been based on a fabrication / installation temperature of 70° F (21° C). If extreme temperatures exist at time of installation, gaps between expansion members may require slight adjustment.
11. CLAMPING SCREW TORQUE
Edge pressure must not exceed 11.5 pounds per linear inch. This pressure is required on the Fireframes Curtainwall Series mullion gaskets. It must be uniformly applied by the exterior mounted pressure plate, through the glass, to the mullion gaskets. **Excessive or irregular edge pressure WILL CAUSE deformation and breakage.**

12. WATER HOSE TEST
Exterior installations may require a water test in accordance with AAMA 501.2. As soon as a representative amount of the wall has been glazed (500 square feet or 46.5 square meters) a water hose test should be conducted. This test should be repeated for every 500 square feet (46.5 square meters), or as stipulated by specification, after all components have been installed.

13. FIELD ANCHORS
Steel or stainless steel anchors that are welded to steel structure or are bolted to embed must be line set before mullions are placed. Outstanding leg of anchors must be at 90° to offset lines. Mullion spacing should be held to ±1/32" (0.8 mm). Anchors may vary per job conditions. On stainless steel mullion projects, stainless steel anchors may be used, therefore, proper welding procedures must be followed. Always refer to approved project drawings for specific job site conditions.

   a. AWS-certified welders are recommended to be used to install all field weld conditions called out in the TGP project drawings. The responsibility of using experienced, certified welders is the installing contractor’s, not TGP’s.
   
   b. All field welding must be adequately shielded to avoid any splatter on glass or frame components. Results of inadequately shielded field welding will be unsightly and /or structurally unsound. Advise general contractor and other trades accordingly.
   
   c. TGP typically finishes all steel material to protect from corrosion during shipping and storage on site prior to installation. For powder coated finishes, it is required to grind off the finish at the expected weld location prior to welding operations. The field weld must be re-finished with a zinc rich primer (in unexposed areas) or with touch-up paint (in exposed areas) after the welding is completed. Welds should never be left unpainted or unfinished. TGP can furnish small quantities of touch-up paint as required to match the original finish.

14. STAINLESS STEEL
On projects with stainless steel mullions specified, certain precautions must be taken for proper installation.

   a. When fastening any screw into the mullion, a constant torque tool such as a regular drill or screw gun must be used. Impact style “bit-drivers” must NOT be used as the increased torque will likely break the screws.
   
   b. If field drilling the mullions is required, sharp drill bits must be used with constant pressure maintained on the drill bit at all times to avoid work-hardening the hole. Lubrication, such as a cutting fluid, is recommended.

**ATTENTION:** Stainless steel fasteners used on this system need special care during installation. Loctite® brand anti-seize must be used for all stainless steel fastener installation. If no lubrication is used, the fasteners have a higher chance of galling and seizing during installation; this will either strip or break fasteners. If the fastener seize or strips, the fastener must be removed and replaced. Final fastener tightening should be done in accordance with other sections as described herein.
45 mm System Profile Options

45 mm MULLION PROFILE OPTIONS

- MULLION/TRANSOM PROFILE
- 1/4" [6.5] STEEL, PRE-GALVANIZED
- AVAILABLE IN 304 STAINLESS STEEL WITH #4 BRUSH FINISH
- SELF DRILLING FACADE SCREWS
- CREATES SECURE FASTENING WITH EXTREMELY HIGH PULLOUT VALUES
- WATER RESISTANT PENETRATION
- PREERVATS WATER INFILTRATION
- GLASS POCKET BUSHING
- GUIDED DRILLING
- SEAL
- ALIGNS EASILY IN PROFILE GROOVES
- OVERLAPPING JOINERY CREATES SECURE FACADE SEAL

FACE OF HORIZONTAL COVER CAP

VARES

1/2 [12.8]

(DLO)

1/8 [3.5]

REF: GLASS DIMENSION

PRESSURE PLATE AND GASKET

STAINLESS STEEL

COVER CAP, PRESSURE PLATE AND GASKET

STAINLESS STEEL COVER CAPS

ALUMINUM COVER CAPS
45 mm System Elevations

A WINDOW AND SINGLE DESIGNER SERIES DOOR
45 MM SYSTEM

B WINDOW
45 MM SYSTEM

C ACTIVE / ACTIVE DESIGNER SERIES DOOR
45 MM SYSTEM

D ACTIVE / FIXED DESIGNER SERIES DOOR
45 MM SYSTEM

IN-FILL PANEL OR SPANDEL UNIT
BUILDING SLAB OR SUPPORT

MAXIMUM DOOR OPENING
84" [2134]

MAXIMUM DOOR OPENING
96" [2438]
45 mm System Interior Section Details

1. HEAD SECTION
   - ROUGH OPENING (RO)
   - FRAME DIMENSION (FD)
   - PERIMETER SPACER
   - PERIMETER SPACER SCREW
   - COVER CAP
   - PRESSURE PLATE
   - CONNECTING PLATE
   - COVER PLATE BETWEEN GASKET AND GLASS
   - FIRE-RATED GLASS
   - ANCHOR BOLT (BY OTHERS)
   - SEALANT AND BACKER ROD (BY OTHERS)
   - SLIDING SHEAR CLIP
   - 3/4" THICK HEAD ANCHOR

2. HORIZONTAL MULLION SECTION
   - ROUGH OPENING (RO)
   - FRAME DIMENSION (FD)
   - COVER PLATE BETWEEN GASKET AND GLASS
   - SETTING BLOCK
   - PRESSURE PLATE
   - PRESSURE PLATE SCREW
   - COVER CAP
   - PRESSURE PLATE GASKET
   - INTUMESCENT TAPE
   - CONNECTING PLATE
   - MULLION GASKET

3. SILL SECTION
   - ROUGH OPENING (RO)
   - FRAME DIMENSION (FD)
   - SILL ANCHOR SCREW
   - COVER PLATE BETWEEN GASKET AND GLASS
   - PRESSURE PLATE
   - CONNECTING PLATE
   - 1/4" THICK SILL ANCHOR ATTACHED TO END OF VERTICAL MULLION
   - SLIDING SHEAR CLIP
   - MINERAL WOOL (BY OTHERS)
   - FULL BEARING SHIM (BY OTHERS)
   - SEALANT AND BACKER ROD (BY OTHERS)
   - ANCHOR BOLT (BY OTHERS)
   - CAULK JOINT

VARIES: 2 1/4" - 5 1/4" (69.0 - 148.9 mm)
45 mm System Interior Section Details

- FIRE-RATED GLASS
- COVER PLATE BETWEEN GASKET AND GLASS
- SETTING BLOCK
- PRESSURE PLATE
- PRESSURE PLATE SCREW
- COVER CAP
- PRESSURE PLATE GASKET
- INTUMESCENT TAPE
- CONNECTING PLATE
- MULLION GASKET

- SLIDING SHEAR CLIP
- LINE OF INTERIOR FINISH
- LINE OF INTERIOR FINISH
- BUILDING SLAB OR SUPPORT
- MULLION ANCHORS (SPECIAL) PER PROJECT REQUIREMENTS (TYP.)

- SLIDING SHEAR CLIP
- LINE OF INTERIOR FINISH
- VARIIES

**HORIZONTAL MULLION SECTION WITH MULLION ANCHOR AT SLAB EDGE**
45 mm System Interior Section Details

- SLIDING PAD (NOT PER PROJECT REQUIREMENTS (BY OTHERS))
- BUILDING SLAB OR SUPPORT
- ANCHOR BOLTS (PER PROJECT REQUIREMENTS (BY OTHERS))
- MULLION ANCHORS (SPECIAL) PER PROJECT REQUIREMENTS (BY OTHERS)
- MULLION GASKET
- FIRE-RATED GLASS
- FACE OF HORIZONTAL COVER CAP
- PRESSURE PLATE SCREW
- COVER CAP
- PRESSURE PLATE GASKET
- 5 VERTICAL MULLION SECTION AT SLAB INTERIOR APPLICATION

Dimensions:
- 13 4/5 (DLO)
45 mm System Interior Section Details

6 JAMB SECTION WITH WELDED SHEAR CLIP AT SILL
INTERIOR APPLICATION

SILL ANCHOR SCREW
CONNECTING PLATE
COVER PLATE BETWEEN GASKET AND GLASS
SETTING BLOCK
PRESSURE PLATE
PRESSURE PLATE SCREW
COVER CAP
PRESSURE PLATE GASKET
PERIMETER SPACER
MINERAL WOOL (BY OTHERS)

VARIES
2 1/4" - 5 7/8" [69.0 - 148.5]

1/4" THICK SILL ANCHOR ATTACHED TO END OF VERTICAL MULLION
10GA WELDED SHEAR CLIP
#10-24X1/2 UFHMS
ANCHOR BOLT (BY OTHERS)
FULL BEARING SHIM (BY OTHERS)
SEALANT AND BACKER ROD (BY OTHERS)
ANCHOR BOLT (BY OTHERS)

VARIES
2 1/4" - 5 7/8" [69.0 - 148.5]

1/4" THICK SILL ANCHOR
10GA WELDED SHEAR CLIP
#10-24X1/2 UFHMS
ANCHOR BOLT (BY OTHERS)
SEALANT AND BACKER ROD (BY OTHERS)
PERIMETER SPACER SCREW
MINERAL WOOL (BY OTHERS)
CAULK JOINT
SEALANT AND BACKER ROD (BY OTHERS)
INTERIOR APPLICATION

SILL SECTION WITH WELDED SHEAR CLIP
INTERIOR APPLICATION

VARIES
2 1/4" - 5 7/8" [69.0 - 148.5]

1/4" THICK SILL ANCHOR
10GA WELDED SHEAR CLIP
#10-24X1/2 UFHMS
ANCHOR BOLT (BY OTHERS)
FULL BEARING SHIM (BY OTHERS)
SEALANT AND BACKER ROD (BY OTHERS)
ANCHOR BOLT (BY OTHERS)
45 mm System Interior Section Details

1/4" THICK SILL ANCHOR
SEALANT AND BACKER ROD (BY OTHERS)
SILL ANCHOR SCREW
PERIMETER SPACER SCREW
MINERAL WOOL (BY OTHERS)
SEALANT AND BACKER ROD (BY OTHERS)
PERIMETER SPACER
PRESSURE PLATE GASKET
COVER CAP
SLIDING SHEAR CLIP
ANCHOR BOLT (BY OTHERS)
INUMESCENT TAPE
PRESSURE PLATE
PRESSURE PLATE SCREW
CAULK JOINT
FRAME DIMENSION (FD)
ROUGH OPENING (RO)

8 JAMB SECTION WITH SLIDING SHEAR CLIP AT SILL
INTERIOR APPLICATION

1/4" THICK SILL ANCHOR
ANCHOR BOLT (BY OTHERS)
SLIDING SHEAR CLIP
FIRE-RATED GLASS
MULLION GASKET
PRESSURE PLATE GASKET
COVER CAP
INTUMESCENT TAPE
PRESSURE PLATE
PRESSURE PLATE SCREW
FRAME DIMENSION (FD)
ROUGH OPENING (RO)

9 VERTICAL MULLION
INTERIOR APPLICATION
45 mm System Interior Section Details - Doors

- SEALANT AND BACKER ROD (BY OTHERS)
- PERIMETER SPACER
- PERIMETER SPACER SCREW
- COVER CAP
- PRESSURE PLATE SCREW
- PRESSURE PLATE
- 14GA DOOR ADAPTOR
- ANCHOR BOLT (BY OTHERS)
- MINERAL WOOL (BY OTHERS)
- SLIDING SHEAR CLIP
- 1/4" THICK HEAD ANCHOR
- CLOSER
- SECURE
- DOOR OPENING (DO)
- SIDE
- PUSH
- SIDE
- PRESSURE PLATE
- PRESSURE PLATE
- SCREW
- COVER CAP
- ROUGH OPENING (RO)
- FRAME DIMENSION (FD)
- 15 1/2" [50]
- VAVIES
- GLAZING TAPE PROVIDED ON 90 MIN. RATED GLASS ONLY
- SETTING BLOCK
- SMOKE SEAL
- FINISHED FLOOR

HORIZONTAL MULLION, DOOR HEADER, AND BOTTOM RAIL
INTERIOR APPLICATION
45 mm System Interior Section Details - Doors

- **Cover Plate Between Gasket and Glass**
- **Setting Block**
- **Pressure Plate**
- **Pressure Plate Screw**
- **14 GA Door Adaptor**
- **Closer**
- **Rough Opening (RO)**
- **Door Opening (DO)**
- **Frame Dimension (FD)**
- **Connecting Plate**
- **Sliding Shear Clip**
- **Fire-Rated Glass**
- **Cover Plate Between Gasket and Glass**
- **Glazing Tape**
- **Provided on 90 Min. Rated Glass Only**
- **Smoke Seal**
- **Setting Block**
- **Finished Floor**

**Door Header with Transom, Door Mid Rail, and Bottom Rail**

**Interior Application**

---

800.426.0279 | fireglass.com

45 mm System Interior Section Details - Doors

14 VERTICAL MULLION WITH SIDELITE DOOR JAMB AT PIVOT
INTERIOR APPLICATION

15 VERTICAL MULLION WITH SIDELITE DOOR JAMB AT LEVER
INTERIOR APPLICATION
45 mm System Exterior Section Details

- FIRE-RATED GLASS
- COVER PLATE BETWEEN GASKET AND GLASS
- SETTING BLOCK
- PRESSURE PLATE
- PRESSURE PLATE SCREW
- COVER CAP
- PRESSURE PLATE GASKET
- DIVERTER GASKET
- INTUMESCENT TAPE
- CONNECTING PLATE
- MULLION GASKET

- SLIDING SHEAR CLIP
- LINE OF INTERIOR FINISH

- IN-FILL PANEL OR SPANDREL UNIT
- FACE OF VERTICAL COVER CAP

- BUILDING SLAB OR SUPPORT
- MULLION ANCHORS (SPECIAL) PER PROJECT REQUIREMENTS (TYP.)

- SLIDING SHEAR CLIP
- LINE OF INTERIOR FINISH

- HORIZONTAL MULLION SECTION WITH MULLION ANCHOR AT SLAB EDGE
  EXTERIOR APPLICATION
45 mm System Exterior Section Details

- Sliding pad not per project requirements (by others)
- Building slab or support
- Anchor bolts per project requirements (by others)
- Mullion anchors (special) per project requirements (by others)
- Face of horizontal cover cap
- Pressure plate screw
- Cover cap
- In-fill panel or spandrel unit
- Vertical mullion section at slab exterior application

20 vertical mullion section at slab exterior application

Fire-Rated Glass. See exterior glazing options.

DLO

13\(\frac{1}{2}\)" [35]

Face of horizontal cover cap

Building slab or support

ANCHOR BOLTS
PER PROJECT
REQUIREMENTS
(BY OTHERS)

MULLION ANCHORS
(SPECIAL) PER PROJECT
REQUIREMENTS (BY OTHERS)

PRESSURE PLATE
SCREW

COVER CAP

IN-FILL PANEL OR
SPANDREL UNIT

BUILDING SLAB OR SUPPORT
45 mm System Exterior Section Details

**JAMB SECTION WITH WELDED SHEAR CLIP AT SILL**

1/4" THICK SILL ANCHOR
SEALANT AND BACKER ROD (BY OTHERS)
SILL ANCHOR SCREW
PERIMETER SPACER SCREW
MINERAL WOOL (BY OTHERS)
INTUMESCENT CAULK (BY OTHERS)
FLEXIBLE SILICONE FLASHING SET IN SEALANT BED
PERIMETER SPACER
PRESSURE PLATE GASKET
COVER CAP
CAULK JOINT

**FRAME DIMENSION (FD)**

2 1/2" - 5 3/8"
[69.0 - 148.5]

**ROUGH OPENING (RO)**

VARIES

**SILL SECTION WITH WELDED SHEAR CLIP**

1/4" THICK SILL ANCHOR ATTACHED TO END OF VERTICAL MULLION
10GA WELDED SHEAR CLIP
#10-24X1/2 UFHMS
FULL BEARING SHIM (BY OTHERS)
MINERAL WOOL (BY OTHERS)
SEALANT AND BACKER ROD (BY OTHERS)
ANCHOR BOLT (BY OTHERS)

ROUGH OPENING (RO)

VARIES

FRAME DIMENSION (FD)

3 3/8" [85.0]
45 mm System Exterior Section Details
45 mm System Exterior Section Details - Doors

- **FACE OF VERTICAL COVER CAP**
  - **CLOSER**
  - **SIDE**
  - **SECURE**
  - **PULL**

- **DOOR OPENING (DO)**
- **ROUGH OPENING (RO)**
- **FRAME DIMENSION (FD)**

- **1 2/3” [45]**
- **1 1/4” [36]**
- **1 1/16” [50]**

- **1/4” THICK HEAD ANCHOR**
- **SLIDING SHEAR CLIP**
- **MINERAL WOOL (BY OTHERS)**
- **ANCHOR BOLT (BY OTHERS)**
- **SEALANT AND BACKER ROD (BY OTHERS)**
- **INTUMESCENT CAULK (BY OTHERS)**

- **PERIMETER SPACER SCREW**
- **PRESSURE PLATE**
- **14GA DOOR ADAPTOR**

- **PERIMETER SPACER**
- **CAULK JOINT**

- **COVER CAP**
- **PRESSURE PLATE SCREW**

- **FRANK OPENING (RO)**
- **FRAME DIMENSION (FD)**

- **1 1/2” [13]**

- **HORIZONTAL MULLION, DOOR HEADER, AND BOTTOM RAIL**
- **EXTERIOR APPLICATION**

- **FINISHED FLOOR**

- **GLAZING TAPE PROVIDED ON 90 MIN. RATED GLASS ONLY**
- **SETTING BLOCK**
- **SMOKE SEAL**

- **MINERAL WOOL (BY OTHERS)**
- **ANCHOR BOLT (BY OTHERS)**
- **SEALANT AND BACKER ROD (BY OTHERS)**
- **INTUMESCENT CAULK (BY OTHERS)**

- **FRAME DIMENSION (FD)**
- **ROUGH OPENING (RO)**

- **PRESSURE PLATE SCREW**
- **PERIMETER SPACER SCREW**

- **PRESSURE PLATE**
- **14GA DOOR ADAPTOR**

- **PERIMETER SPACER**
- **CAULK JOINT**

- **COVER CAP**
- **PRESSURE PLATE SCREW**

- **FRANK OPENING (RO)**
- **FRAME DIMENSION (FD)**

- **1 1/2” [13]**

- **HORIZONTAL MULLION, DOOR HEADER, AND BOTTOM RAIL**
- **EXTERIOR APPLICATION**

- **FINISHED FLOOR**

- **GLAZING TAPE PROVIDED ON 90 MIN. RATED GLASS ONLY**
- **SETTING BLOCK**
- **SMOKE SEAL**
45 mm System Exterior Section Details - Doors

FRAME DIMENSION (FD)
16' [90]

ROUGH OPENING (RO)

DOOR OPENING (DO)

FACE OF VERTICAL DOOR OPENING (DO)

COVER CAP

COVER PLATE BETWEEN GASKET AND GLASS

PRESSURE PLATE

PRESSURE PLATE SCREW

SLIDING SHEAR CLIP

SLIDING SHEAR CLIP

PRESSURE PLATE

SETTING BLOCK

COVER CAP

CONNECTING PLATE

FIRE-RATED GLASS

GLAZING TAPE PROVIDED ON 90 MIN. RATED GLASS ONLY

SETTING BLOCK

SMOKE SEAL

PRESSURE PLATE

COVER PLATE BETWEEN GASKET AND GLASS

COVER CAP

FACE OF VERTICAL COVER CAP

FACE OF VERTICAL COVER CAP

FINISHED FLOOR

DOOR HEADER WITH TRANSOM, DOOR MID RAIL, AND BOTTOM RAIL

EXTERIOR APPLICATION

2½" [65]

3½" [85]

2½" [65]
45 mm System Exterior Section Details - Doors

**27 VERTICAL MULLION WITH DOOR JAMB AT PIVOT**

- 1/4" THICK ANCHOR
- SEALANT AND BACKER ROD (BY OTHERS)
- MINERAL WOOL (BY OTHERS)
- PERIMETER SPACER SCREW
- INTUMESCENT CAULK (BY OTHERS)
- FLEXIBLE SILICONE FLASHING SET IN SEALANT BED
- SEALANT AND BACKER ROD (BY OTHERS)
- PERIMETER SPACER
- PRESSURE PLATE GASKET
- COVER CAP
- CAULK JOINT
- EXIT DEVICE

- 14GA DOOR ADAPTOR
- ANCHOR BOLT (BY OTHERS)

**28 VERTICAL MULLION WITH DOOR JAMB AT PIVOT**

- 1/4" THICK ANCHOR
- SEALANT AND BACKER ROD (BY OTHERS)
- MINERAL WOOL (BY OTHERS)
- PERIMETER SPACER SCREW
- INTUMESCENT CAULK (BY OTHERS)
- FLEXIBLE SILICONE FLASHING SET IN SEALANT BED
- SEALANT AND BACKER ROD (BY OTHERS)
- PERIMETER SPACER
- PRESSURE PLATE GASKET
- COVER CAP
- CAULK JOINT
- EXIT DEVICE

- 14GA DOOR ADAPTOR
- ANCHOR BOLT (BY OTHERS)
45 mm System Exterior Section Details - Doors

FRAME DIMENSION (FD)

ROUGH OPENING (RO)

EXIT DEVICE

1/4" THICK ANCHOR

PERIMETER SPACER SCREW

ANCHOR BOLT (BY OTHERS)

SLIDING SHEAR CLIP

FIRE-RATED GLASS

INTUMESCENT TAPE

PRESSURE PLATE

PRESSURE PLATE SCREW

COVER CAP

PRESSURE PLATE GASKET

WELD ON DOOR PIVOTS

GLAZING TAPE PROVIDED FOR 90 MIN. GLASS ONLY

DOOR OPENING (DO)

VERTICAL MULLION WITH SIDELITE DOOR JAMB AT PIVOT

VARIABLE

VERTICAL MULLION WITH SIDELITE DOOR JAMB AT LEVER

EXTERIOR APPLICATION

EXIT DEVICE

1/4" THICK ANCHOR

PERIMETER SPACER SCREW

ANCHOR BOLT (BY OTHERS)

SLIDING SHEAR CLIP

FIRE-RATED GLASS

INTUMESCENT TAPE

PRESSURE PLATE

PRESSURE PLATE SCREW

COVER CAP

PRESSURE PLATE GASKET

PRESSURE PLATE SCREW

(45)

VERTICAL MULLION WITH SIDELITE DOOR JAMB AT LEVER

EXTERIOR APPLICATION

VARIABLE
60 mm System Profile Options

60 mm MULLION PROFILE OPTIONS

- MULLION/TRANSOM PROFILE
  - \( \frac{3}{8} \) [9.5] STEEL
  - PRE-GALVANIZED
  - AVAILABLE IN 304 STAINLESS STEEL WITH #4 BRUSH FINISH

- SELF DRILLING FACADE SCREWS
  - CREATES SECURE FASTENING WITH EXTREMELY HIGH PULLOUT VALUES

- WATER RESISTANT PENETRATION
  - PREVENTS WATER INFILTRATION

- GLASS POCKET BUSHING
  - GUIDED DRILLING

- SEAL
  - ALIGNS EASILY IN PROFILE GROOVES
  - OVERLAPPING JOINERY CREATES SECURE FACADE SEAL

FACE OF HORIZONTAL COVER CAP

REF: GLASS DIMENSION

PRESSURE PLATE AND GASKET

STAINLESS STEEL

COVER CAP: PRESSURE PLATE AND GASKET

STAINLESS STEEL COVER CAPS

ALUMINUM COVER CAPS
60 mm System Elevations

E WINDOW AND SINGLE DESIGNER SERIES DOOR

60 MM SYSTEM

F WINDOW

60 MM SYSTEM

Active / Active Designer Series Door

Active / Fixed Designer Series Door

Building slab or support

In-fill panel or spandrel unit

Corner detail

Maximum Door Opening

96" [2438]

84" [2134]

800.426.0279 | fireglass.com

Architectural Specification Manual 37
60 mm System Interior Section Details

**Head Section**
- Rough Opening (RO)
- Frame Dimension (FD)
- Perimeter Spacer
- Anchor Bolt (by others)
- Cover Plate Between Gasket and Glass
- Pressure Plate
- Connecting Plate
- Intumescent Tape
- Sliding Shear Clip

**Horizontal Mullion Section**
- Rough Opening (RO)
- Frame Dimension (FD)
- Setting Block
- Pressure Plate Screw
- Pressure Plate Gasket
- Cover Cap
- Connecting Plate
- Mullion Gasket

**Sill Section**
- Rough Opening (RO)
- Frame Dimension (FD)
- Sill Anchor Screw
- Cover Plate Between Gasket and Glass
- Pressure Plate
- Connecting Plate
- 1/4" Thick Sill Anchor Attached to End of Vertical Mullion
- Sliding Shear Clip
- Mineral Wool (by others)
- Full Bearing Shim (by others)
- Sealant and Backer Rod (by others)
- Anchor Bolt (by others)
60 mm System Interior Section Details

- FIRE-RATED GLASS
- COVER PLATE BETWEEN GASKET AND GLASS
- SETTING BLOCK
- PRESSURE PLATE
- PRESSURE PLATE SCREW
- COVER CAP
- PRESSURE PLATE GASKET
- INTUMESCENT TAPE
- CONNECTING PLATE
- MULLION GASKET
- SLIDING SHEAR CLIP
- LINE OF INTERIOR FINISH

- BUILDING SLAB OR SUPPORT
- MULLION ANCHORS (SPECIAL) PER PROJECT REQUIREMENTS (TYP.)
- SLIDING SHEAR CLIP
- LINE OF INTERIOR FINISH

**HORIZONTAL MULLION SECTION WITH MULLION ANCHOR AT SLAB EDGE**

**INTERIOR APPLICATION**
60 mm System Interior Section Details

- **Mullion Gasket**
- **Pressure Plate Gasket**
- **Fire-Rated Glass**
- **Pressure Plate**
- **Screw**
- **Cover Cap**
- **Face of Horizontal Cover Cap**
- **Sliding Pad**
- **Anchor Bolts**
- **Mullion Anchors (Special)**

*Note: Sliding pad not per project requirements (by others)*

*Note: Face of horizontal cover cap (DLO)*

*Note: Building slab or support*
36. JAMB SECTION WITH WELDED SHEAR CLIP AT SILL

Interior Application

- 10GA WELDED SHEAR CLIP
- #10-24X1/2 UFHMS
- ANCHOR BOLT (BY OTHERS)
- SEALANT AND BACKER ROD (BY OTHERS)
- 1/4" THICK ANCHOR
- SILL ANCHOR SCREW
- PERIMETER SPACER SCREW
- FIRE-RATED GLASS
- MINERAL WOOL (BY OTHERS)
- PERIMETER SPACER
- PRESSURE PLATE GASKET
- COVER CAP
- INTUMESCENT TAPE
- PRESSURE PLATE
- PRESSURE PLATE SCREW
- FRAME DIMENSIONS (FD)
- ROUGH OPENING (RO)
- CAULK JOINT
- 23 3/8" (60)

37. SILL SECTION WITH WELDED SHEAR CLIP

Interior Application

- 1/4" THICK SILL ANCHOR ATTACHED TO END OF VERTICAL MULLION
- #10-24X1/2 UFHMS
- 10GA WELDED SHEAR CLIP
- ANCHOR BOLT (BY OTHERS)
- FULL BEARING SHIM (BY OTHERS)
- SEALANT AND BACKER ROD (BY OTHERS)
- SILL ANCHOR SCREW
- FIRE-RATED GLASS
- CONNECTING PLATE
- COVER PLATE BETWEEN GASKET AND GLASS
- SETTING BLOCK
- PRESSURE PLATE
- PRESSURE PLATE SCREW
- COVER CAP
- PRESSURE PLATE GASKET
- PERIMETER SPACER
- MINERAL WOOL (BY OTHERS)
60 mm System Interior Section Details

**JAMB SECTION WITH SLIDING SHEAR CLIP AT SILL**

- **1/4" THICK SILL ANCHOR**
- **ANCHOR BOLT (BY OTHERS)**
- **SEALANT AND BACKER ROD (BY OTHERS)**
- **SILL ANCHOR SCREW**
- **PERIMETER SPACER SCREW**
- **MINERAL WOOL (BY OTHERS)**
- **PERIMETER SPACER SEALANT AND BACKER ROD (BY OTHERS)**
- **PRESSURE PLATE GASKET**
- **COVER CAP**
- **SLIDING SHEAR CLIP**
- **ANCHOR BOLT (BY OTHERS)**
- **FIRE-RATED GLASS**
- **INTUMESCENT TAPE**
- **PRESSURE PLATE**
- **PRESSURE PLATE SCREW (DLO)**
- **FRAME DIMENSION (FD)**
- **ROUGH OPENING (RO)**
- **CAULK JOINT**
- **SEALANT AND BACKER ROD (BY OTHERS)**
- **INTUMESCENT TAPE**
- **PRESSURE PLATE**
- **PRESSURE PLATE SCREW (DLO)**
- **FRAME DIMENSION (FD)**
- **ROUGH OPENING (RO)**
- **PERIMETER SPACER SCREW**
- **MULLION GASKET**
- **PRESSURE PLATE GASKET**
- **COVER CAP**
- **SLIDING SHEAR CLIP**
- **FIRE-RATED GLASS**
- **INTUMESCENT TAPE**
- **PRESSURE PLATE**
- **PRESSURE PLATE SCREW (DLO)**
- **FRAME DIMENSION (FD)**
- **ROUGH OPENING (RO)**

**VERTICAL MULLION INTERIOR APPLICATION**
60 mm System Interior Section Details - Doors

- **DOOR OPENING (DO)**
- **ROUGH OPENING (RO)**
- **FRAME DIMENSION (FD)**

**Components**

- **CORK/WOOD**
- **PRESSURE PLATE**
- **PERIMETER SPACER**
- **FACE OF VERTICAL COVER CAP**
- **COVER CAP**
- **HEAD ANCHOR**
- **ANCHOR BOLT (BY OTHERS)**
- **SLIDING SHEAR CLIP**
- **PERIMETER SPACER SCREW**
- **MINERAL WOOL (BY OTHERS)**
- **SMOKE SEAL**
- **GLAZING TAPE**

**Measurements**

- **1/4" THICK HEAD ANCHOR**
- **14GA DOOR ADAPTOR**
- **300381 COVER CAP**
- **3/8" [90]**
- **15 3/4" [50]**
- **VARIES**
- **HORIZONTAL MULLION, DOOR HEADER, AND BOTTOM RAIL**

**Egress**

- **PUSH**
- **PULL**

**Applications**

- **INTERIOR APPLICATION**
60 mm System Interior Section Details - Doors
60 mm System Interior Section Details - Doors

1/4" THICK ANCHOR
SEALANT AND BACKER ROD (BY OTHERS)
MINERAL WOOL (BY OTHERS)
PERIMETER SPACER SCREW
PERIMETER SPACER
PRESSURE PLATE GASKET
COVER CAP

ANCHOR BOLT (BY OTHERS)
14GA DOOR ADAPTOR
EXIT DEVICE

WELD ON DOOR PIVOTS
PRESSURE PLATE
PRESSURE PLATE SCREW

CAULK JOINT
FRAME DIMENSION (FD)
ROUGH OPENING (RO)

VERTICAL MULLION WITH DOOR JAMB AT PIVOT

SEALANT AND BACKER ROD (BY OTHERS)
1/4" THICK ANCHOR
MINERAL WOOL (BY OTHERS)
ANCHOR BOLT (BY OTHERS)
PERIMETER SPACER SCREW
PERIMETER SPACER
SEALANT AND BACKER ROD (BY OTHERS)
PRESSURE PLATE GASKET
PRESSURE PLATE
PRESSURE PLATE SCREW
COVER CAP

GLAZING TAPE PROVIDED FOR 90 MIN. GLASS ONLY

FRAME DIMENSION (FD)
ROUGH OPENING (RO)

VERTICAL MULLION WITH DOOR JAMB AT PIVOT

INTERIOR APPLICATION
60 mm System Interior Section Details - Doors

INTERIOR APPLICATION

VERTICAL MULLION WITH SIDELITE DOOR JAMB AT PIVOT

VERTICAL MULLION WITH SIDELITE DOOR JAMB AT LEVER

800.426.0279 | fireglass.com

60 mm System Exterior Section Details

**Rough Opening (RO)**
- Frame Dimension (FD)

**Head Section**
- Exterior Application
- Cover Plate Between Gasket and Glass
- Setting Block
- Pressure Plate
- Cover Cap
- Pressure Plate Screw
- Diverter Gasket
- Intumescent Tape
- Connecting Plate
- Mullion Gasket

**Horizontal Mullion Section**
- Exterior Application
- Sliding Shear Clip
- Cover Plate Between Gasket and Glass
- Pressure Plate Screw
- Cover Cap
- Pressure Plate Gasket

**Sill Section**
- Exterior Application
- Sill Anchor Screw
- Cover Plate Between Gasket and Glass
- Pressure Plate
- Flexible Silicone Flashing Set In Sealant Bed
- 1/4" Thick Sill Anchor Attached To End Of Vertical Mullion
- Sliding Shear Clip
- Mineral Wool (By Others)
- Full Bearing Shim (By Others)
- Sealant and Backer Rod (By Others)
- Anchor Bolt (By Others)

---

**Rough Opening (RO)**
- Frame Dimension (FD)

**Head Section**
- Exterior Application
- Cover Plate Between Gasket and Glass
- Setting Block
- Pressure Plate
- Cover Cap
- Pressure Plate Screw
- Diverter Gasket
- Intumescent Tape
- Connecting Plate
- Mullion Gasket

**Horizontal Mullion Section**
- Exterior Application
- Sliding Shear Clip
- Cover Plate Between Gasket and Glass
- Pressure Plate Screw
- Cover Cap
- Pressure Plate Gasket

**Sill Section**
- Exterior Application
- Sill Anchor Screw
- Cover Plate Between Gasket and Glass
- Pressure Plate
- Flexible Silicone Flashing Set In Sealant Bed
- 1/4" Thick Sill Anchor Attached To End Of Vertical Mullion
- Sliding Shear Clip
- Mineral Wool (By Others)
- Full Bearing Shim (By Others)
- Sealant and Backer Rod (By Others)
- Anchor Bolt (By Others)
60 mm System Exterior Section Details

- FIRE-RATED GLASS
- COVER PLATE BETWEEN GASKET AND GLASS
- SETTING BLOCK
- PRESSURE PLATE
- PRESSURE PLATE SCREW
- COVER CAP
- PRESSURE PLATE GASKET
- DIVERTER GASKET
- INTUMESCENT TAPE
- CONNECTING PLATE
- MULLION GASKET
- SLIDING SHEAR CLIP
- LINE OF INTERIOR FINISH

IN-FILL PANEL OR SPANDREL UNIT

FACE OF VERTICAL COVER CAP

BUILDING SLAB OR SUPPORT

MULLION ANCHORS (SPECIAL) PER PROJECT REQUIREMENTS (TYP.)

HORIZONTAL MULLION SECTION WITH MULLION ANCHOR AT SLAB EDGE

VARIES
60 mm System Exterior Section Details

- Sliding Pad not per project requirements (by others)
- Anchor bolts per project requirements (by others)
- Mullion anchors (special) per project requirements (by others)
- Building slab or support
- Fire-rated glass. See exterior glazing options.
- Face of horizontal cover cap
- Pressure plate screw
- In-fill panel or spandrel unit
- DLO
- Vertical mullion section at slab exterior application
60 mm System Exterior Section Details

1/4" THICK ANCHOR
SEALANT AND BACKER ROD (BY OTHERS)
SILL ANCHOR SCREW
PERIMETER SPACER SCREW
MINERAL WOOL (BY OTHERS)
INTUMESCENT CAULK (BY OTHERS)
PERIMETER SPACER
FLEXIBLE SILICONE FLASHING SET IN SEALANT BED
PRESSURE PLATE GASKET
COVER CAP
INTUMESCENT TAPE
PRESSURE PLATE
PRESSURE PLATE SCREW
FRAME DIMENSION (FD)
ROUGH OPENING (RO)

VARIES

3 3/8" - 7 3/8"

[91.5 - 181.5]

SILL SECTION WITH WELDED SHEAR CLIP

1/4" THICK SILL ANCHOR ATTACHED TO END OF VERTICAL MULLION
10GA WELDED SHEAR CLIP
#10-24X1/2 UFHMS
ANCHOR BOLT (BY OTHERS)
FULL BEARING SHIM (BY OTHERS)
MINERAL WOOL (BY OTHERS)
SEALANT AND BACKER ROD (BY OTHERS)
60 mm System Exterior Section Details

- Sealant and Backer Rod (by others)
- Sill Anchor Screw
- Mineral Wool (by others)
- Perimeter Spacer Screw
- Intumescent Caulk (by others)
- Flexible Silicone Flashing Set in Sealant Bed
- Sealant and Backer Rod (by others)
- Perimeter Spacer
- Pressure Plate Gasket
- Cover Cap
- Caulk Joint

1/4" Thick Sill Anchor
Sill Anchor Bolt (by others)
Sliding Shear Clip
Fire-Rated Glass

3/8" - 7/8" [91.5 - 181.5]

Frame Dimension (FD)
Rough Opening (RO)

Intumescent Tape
Pressure Plate
Pressure Plate Screw

JAMB SECTION WITH SLIDING SHEAR CLIP AT SILL
Exterior Application

Mullion Gasket
Pressure Plate Gasket
Cover Cap

2 3/4" [60]

Vertical Mullion
Exterior Application

Rough Opening (RO)
Frame Dimension (FD)
60 mm System Exterior Section Details - Doors
60 mm System Exterior Section Details - Doors

- **1/4" THICK ANCHOR**
- **SEALANT AND BACKER ROD (BY OTHERS)**
- **ANCHOR BOLT (BY OTHERS)**
- **MINERAL WOOL (BY OTHERS)**
- **PERIMETER SPACER SCREW**
- **INTUMESCENT CAULK (BY OTHERS)**
- **PERIMETER SPACER**
- **FLEXIBLE SILICONE FLASHING SET IN SEALANT BED**
- **PRESSURE PLATE GASKET**
- **COVER CAP**
- **CAULK JOINT**
- **EXTERNAL APPLICATION**
- **FRAME DIMENSION (FD)**
- **ROUGH OPENING (RO)**
- **VERTICAL MULLION WITH DOOR JAMB AT PIVOT**

**EXIT DEVICE**

**WELD ON**

**DOOR PIVOTS**

**PRESSURE PLATE SCREW**

**PRESSURE PLATE**

**GLAZING TAPE PROVIDED FOR 90 MIN. GLASS ONLY**

**ADAPTOR**

**14GA DOOR**

**ANCHOR BOLT (BY OTHERS)**

**MINERAL WOOL (BY OTHERS)**

**INTUMESCENT CAULK (BY OTHERS)**

**FLEXIBLE SILICONE FLASHING SET IN SEALANT BED**

**PRESSURE PLATE GASKET**

**COVER CAP**

**CAULK JOINT**

**EXTERNAL APPLICATION**

**FRAME DIMENSION (FD)**

**ROUGH OPENING (RO)**

**VERTICAL MULLION WITH DOOR JAMB AT PIVOT**

**EXIT DEVICE**

**WELD ON**

**DOOR PIVOTS**

**PRESSURE PLATE SCREW**

**PRESSURE PLATE**

**GLAZING TAPE PROVIDED FOR 90 MIN. GLASS ONLY**

**ADAPTOR**

**14GA DOOR**

**ANCHOR BOLT (BY OTHERS)**

**MINERAL WOOL (BY OTHERS)**

**INTUMESCENT CAULK (BY OTHERS)**

**FLEXIBLE SILICONE FLASHING SET IN SEALANT BED**

**PRESSURE PLATE GASKET**

**COVER CAP**

**CAULK JOINT**

**EXTERNAL APPLICATION**

**FRAME DIMENSION (FD)**

**ROUGH OPENING (RO)**

**VERTICAL MULLION WITH DOOR JAMB AT PIVOT**
60 mm System Exterior Section Details – Doors

**EXIT DEVICE**

**WELD ON DOOR PIVOTS**

**21 16” [53]**

**59 VERTICAL MULLION WITH SIDELITE DOOR JAMB AT PIVOT**

**3 5/8” - 7 1/8” [91.5 - 181.5]**

**14GA DOOR ADAPTOR**

**VARIES**

**FRAME DIMENSION (FD)**

**ROUGH OPENING (RO)**

**PRESSURE PLATE SCREW**

**PRESSURE PLATE GASKET**

**PRESSURE PLATE**

**300381**

**GLAZING TAPE PROVIDED FOR 90 MIN. GLASS ONLY**

**EXIT DEVICE**

**1/4” THICK ANCHOR**

**PERIMETER SPACER SCREW**

**14GA DOOR ADAPTOR**

**VARIES**

**FRAME DIMENSION (FD)**

**ROUGH OPENING (RO)**

**PRESSURE PLATE SCREW**

**PRESSURE PLATE GASKET**

**PRESSURE PLATE**

**300381**

**GLAZING TAPE PROVIDED FOR 90 MIN. GLASS ONLY**

**EXIT DEVICE**

**1/4” THICK ANCHOR**

**PERIMETER SPACER SCREW**

**14GA DOOR ADAPTOR**

**VARIES**

**FRAME DIMENSION (FD)**

**ROUGH OPENING (RO)**

**PRESSURE PLATE SCREW**

**PRESSURE PLATE GASKET**

**PRESSURE PLATE**

**300381**

**GLAZING TAPE PROVIDED FOR 90 MIN. GLASS ONLY**

**EXIT DEVICE**

**1/4” THICK ANCHOR**

**PERIMETER SPACER SCREW**

**14GA DOOR ADAPTOR**

**VARIES**

**FRAME DIMENSION (FD)**

**ROUGH OPENING (RO)**

**PRESSURE PLATE SCREW**

**PRESSURE PLATE GASKET**

**PRESSURE PLATE**

**300381**

**GLAZING TAPE PROVIDED FOR 90 MIN. GLASS ONLY**
Fireframes Designer Series or Fireframes Heat Barrier Series doors, or appropriately rated door by others in a Fireframes Designer Series door frame may be used within the Fireframes Curtainwall Series frames. Doors must be installed before glazing.

NOTE: Refer to product specific Installation Manual for the door(s) supplied with your order.
CORNER MULLION (INTERIOR APPLICATIONS ONLY)

- Corner mullions MUST be installed before the glazing material.
- Corners may be inside or outside corners ranging from 10° to 135°.
- Corner mullion should be set and installed next to first vertical mullion before setting second vertical mullion.
Corner Detail

- **HORIZONTAL MULLION GASKET**
  - (DART REMOVED AT SILL FLASHING)

- **FLEXIBLE FLASHING**

- **VERTICAL MULLION GASKET**
  - (DART REMOVED AT VERTICAL FLASHING)

- **REMOVE GASKET BULB WHERE SHOWN**

- **REMOVE DART ON FLEXIBLE FLASHING WHERE SHOWN**

- **CONNECTING PLATE AND SCREWS**

- **MOLDED CORNER FLASHING**
  - (DART REMOVED AT JAMB)

- **VERTICAL MULLION GASKET**
  - (DART REMOVED AT SILL FLASHING)