

SECTION 081113

FIRE RATED GLASS AND FRAMING SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Fire rated door and framing systems for installation as vision lights in fire rated doors, sidelights, and windows.
- B. Related Sections include the following:
- C. Related Sections:
 - 1. Division 7 Section "Penetration Firestopping:" Firestopping between work of this section and other fire resistive assemblies.
 - 2. Division 8 Section "Door Hardware:" Door hardware other than that provided by the work of this section

1.2 DEFINITIONS

- A. Manufacturer: A firm that produces primary glass, fabricated glass or framing as defined in referenced glazing publications.

1.3 PERFORMANCE REQUIREMENTS

- A. Duration -- Doors: Capable of providing a fire rating for 60 minutes.
- B. Fire Rating -- Window Assembly: Capable of providing a fire rating for 60 minutes.
- C. Opening Applications in fire rated partitions or area separation walls and corridors where opening protection is specified to provide 60 minute rating.
- D. Design Requirements:
 - 1. Dimensions – Door and Framing:
 - a. Door framing face dimension: 1 15/16-inch.
 - b. Depth of door framing: 1 15/16-inch.
 - c. Door style face dimension: 3 1/8-inch.
 - d. Door cross rail (if applicable) Face: 3 9/16-inch.
 - e. Depth of stile, header, sill and cross rail: 1 15/16-inch
 - 2. Dimensions -- Window Assembly:
 - a. Perimeter framing face dimension: 2 3/4-inch at head, sill and jamb.
 - b. Horizontal and/or vertical mullions: 3 9/16-inch on the face.
 - c. Depth of perimeter and mullion: 1 15/16-inch.
 - 3. Construction: Roll formed and profiled steel tubes, factory-welded or complete with mechanical joints for simplified installation or shipped spliced for assembly at the building site or for fitting through available building openings.
 - a. Knock down frames are not permitted.

1.4 SUBMITTALS

- A. Product Data: Submit latest edition of manufacturer's product data providing product descriptions and technical data.
- B. Shop Drawings: Show doors, frames, hardware and steel frame components as shown on drawings and schedules. Detail any need for on-site fabrication on shop drawings.
- C. Hardware schedule: list of manufacture supplied hardware and verification of cylinder size complying with Section 087100.
- D. Glazing Schedule: Use same designations indicated on drawings for glazed openings in preparing a schedule listing glass types and thicknesses for each size opening and location.
- E. Certificates of compliance from glass and glazing materials manufacturers attesting that glass and glazing materials furnished for project comply with requirements.
 - 1. Separate certification will not be required for glazing materials bearing manufacturer's permanent label designating type and thickness of glass, provided labels represent a quality control program involving a recognized certification agency or independent testing laboratory acceptable to authority having jurisdiction.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has completed glazing similar in material, design, and extent to that indicated for Project and whose work has resulted in construction with a record of successful in-service performance.
- B. Source Limitations for Glazing Accessories: Obtain framing system, glazing and glazing accessories from one source for each product and installation method indicated.
- C. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by UL, for fire ratings indicated, based on testing according to NFPA 252. Assemblies must be factory-welded or come complete with factory-installed mechanical joints and must not require job site fabrication.
- D. Fire-Rated Window Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by UL, for fire ratings indicated, based on testing according to NFPA 257. Assemblies must be factory-welded or come complete with factory-installed mechanical joints and must not require job site fabrication.
- E. Listings and Labels - Fire Rated Assemblies: Under current follow-up service by Underwriter Laboratory maintaining a current listing or certification. Label assemblies accordance with limits of manufacturer's listing.

1.6 PRE-INSTALLATION MEETING

- A. Conduct a pre-installation conference at least one week prior to the work of this section.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store and handle under provisions specified by manufacturer. For details on storage and product handling, please contact Technical Glass Products and request information on storage and product handling.
- B. Deliver materials to specified destination in manufacturer or distributor's packaging undamaged.

- C. Store off ground, under cover, protected from weather and construction activities.

1.8 PROJECT CONDITIONS

- A. Obtain field measurements prior to fabrication of frame units. If field measurements will not be available in a timely manner coordinate planned measurements with the work of other sections.
 - 1. Note whether field or planned dimensions were used in the creation of the shop drawings.
- B. Coordinate the work of this section with others affected including but not limited to: other interior components and door hardware beyond that provided by this section.

1.9 WARRANTY

- A. Provide the Fireframes® Designer Series by TGP limited five year warranty dated from substantial completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS - FIRE RATED DOOR ASSEMBLY AND WINDOW

- A. Glass Material: FireLite Plus® fire-rated glazing as fabricated and distributed by Technical Glass Products, 2425 Carillon Point, Kirkland, WA 98033 (800-426-0279) fax (800-451-9857) e-mail sales@fireglass.com, web site <http://www.fireglass.com>.
- B. Frame System: “Fireframes® Designer Series by TGP” fire-rated steel frame system as manufactured and supplied by Technical Glass Products, 600 6th Street South, Kirkland, WA 98033 (800-426-0279) fax (800-451-9857) e-mail sales@fireglass.com web site <http://www.fireglass.com>.
- C. Substitutions: Substitutions for Glazing Material and Frame System not permitted.

2.2 MATERIALS - GLASS

- A. Fire Rated Glazing: ASTM C 1036 and ASTM C 1048; composed of polished laminated ceramic and insulated ceramic glazing material.
- B. Thickness of Glazing Material: 5/16” FireLite Plus®.
 - 1. Provide 1 inch thick FireLite® Insulated Glass Unit (IGU) at exterior units.
- C. Approximate Visible Transmission: Varies with thickness (approximate range 88 percent).
- D. Logo: Each piece of fire-rated glazing shall be labeled with a permanent logo including name of product, manufacture, testing laboratory (UL® only), fire rating period, safety glazing standards, and date of manufacture.
- E. Performance: Glass must be rated to stop fire from either direction and must meet all testing requirements including the required hose-stream test (where fire-rating exceeds 20 minutes).

2.3 MATERIALS – STEEL FRAMES AND DOORS

- A. Steel Framing System including [60] [90]-minute rated doors, [60] [90]-minute rated windows.
 - 1. Steel: Profiled steel tubing formed using cold drawn and profiled steel tubing.
 - 2. Fasteners: As recommended by manufacturer
 - 3. Glazing Accessories: calcium silicate setting blocks.
 - 4. Glazing Compounds:
 - a. FireLite Plus® and FireLite® IGU. Glaze glass panels that exceed 1,393 sq. inches for 90-minute ratings with “Kerafix 2000” glazing tape supplied by manufacturer.

2.4 FABRICATION

- A. Furnish frame assemblies pre-welded.
 - 1. When necessary, splice frames too large for shop fabrication or shipping or to fit in available building openings.
 - 2. Fit with suitable fasteners.
 - 3. Knock-down frames are not permitted
- B. Field glaze door and frame assemblies.
- C. Factory prepares steel door assemblies for field mounting of hardware when necessary.
- D. Fabrication Dimensions: Fabricate to field dimensions.
- E. Obtain approved shop drawings prior to fabrication.

2.5 FINISHES, GENERAL

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Finish frames after assembly.
- C. Protect finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- D. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable. Noticeable variations in the same piece are not acceptable.

2.6 DOOR HARDWARE

- A. Furnish hardware with [60] [90] minute fire door by the manufacturer.
- B. Select hardware from door manufacturer's standard recommended and approved hardware groups as specified in Division 8 Section – Door Hardware.
- C. Provide high traffic areas or areas requiring a door motion force of greater than 20 pounds with power assisted hardware for use with manufacturer’s frame system.
- D. Operating hardware for Fireframes® Designer Series Single Outswing Doors with Exit Device. Each to have the following. Additional hardware provided by Division 8 Section “Door Hardware.”

Item	Description	Manufacturer	Finish*
2	Hanging Devices	Weld on Pivots	Technical Glass Products 630

1	Hanging Devices	Power transfer intermediate pivot hinge	ABH	630
1	Auto door Bottom	420APKL Smoke Seal	Pemko	MA
1	Weather Seal	Perimeter Gasket	Technical Glass Products	
	Remaining hardware	Supplied as part of door hardware section		

E. Finish Legend:

1. PTM Painted to match frame
2. MA Mill Finish Aluminum
3. 689 Aluminum Paint
4. 630 Satin Stainless Steel
5. 626 Satin Chrome Plated

2.7 ACCESSORY MATERIALS

- A. Bituminous Paint: Cold-applied, asphalt-mastic paint complying with SSPC-Paint 12 requirements except containing no asbestos; formulated for 0.762-mm thickness per coat.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and members to which the work of this section attaches or adjoins prior to frame installation.
- B. Provide openings plumb, square and within allowable tolerances.
 1. Provide 3/8 inch shim space at all walls
- C. Notify Architect of any conditions which jeopardize the integrity of the proposed fire wall / door system.
- D. Do not proceed until such conditions are corrected.

3.2 INSTALLATION

- A. Install fire window and door by a specialty contractor with appropriate experience qualifications; and in strict accordance with the reviewed shop drawings.
- B. Install fire safing / fire stopping at edges of system
- C. Install glazing in strict accordance with fire resistant glazing material manufacturer's specifications.
 1. Field cutting or tampering is not permissible.
- D. Do not install damaged frames or chipped glassing units.

- E. Install plumb and true. Limit out of plumb or true to 1/8 inch in 10'-0" in any dimension.

3.3 REPAIR AND TOUCH UP

- A. Limited to minor repair of small scratches. Use only manufacturer's recommended products.
 - 1. Such repairs shall match original finish for quality or material and view.
- B. Remove and replace glass that is broken, chipped, cracked, abraded, or damaged.

3.4 ADJUSTING

- A. Adjust door function and hardware for smooth operation. Coordinate with other hardware suppliers for function and use of any other attached hardware.

3.5 PROTECTION AND CLEANING

- A. Protect glass from damage immediately after installation by attaching crossed streamers to framing held away from glass. Do not apply markers to glass surface. Remove nonpermanent labels, and clean surfaces.
 - 1. Do not clean with astringent cleaners. Use a clean "grit free" cloth and a small amount of mild soap and water or mild detergent.
 - 2. Do not use any of the following:
 - a. Steam jets
 - b. Abrasives
 - c. Strong acidic or alkaline detergents, or surface-reactive agents
 - d. Detergents not recommended in writing by the manufacturer
 - e. Do not use any detergent above 77 degrees F
 - f. Organic solvents including but not limited to those containing ester, ketones, alcohols, aromatic compounds, glycol ether, or halogenated hydrocarbons.
 - g. Metal or hard parts of cleaning equipment must not touch the glass surface
- B. Protect glass from contact with contaminating substances resulting from construction operations, including weld splatter. If, despite such protection, contaminating substances do come into contact with glass, remove them immediately as recommended by glass manufacturer.

END OF SECTION