Welcome to the SAFTI *FIRST*® Guide Specification System prepared as an aid to specifiers in preparing written construction documents. For specification assistance with specific product applications, please contact SAFTI *FIRST*®. To download an electronic copy, please visit www.safti.com.

SAFTIFIRST®
FIRE RATED GLAZING SOLUTIONS

SPECIFICATION
SECTION 09 62 83: STRUCTURAL GLASS FLOORING
GPX® FireFloor System (*Patented*)

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes: Fire resistive glass floor assembly.
   1. GPX® FireFloor fire resistive glass floor assembly for interior and exterior fully-supported or butt-glazed floor applications up to 2 hours.

B. Related Sections:
   1. Section 08 66 00: Glass Unit Skylight System
   2. Section 08 88 00: Glazing
   3. Section 08 88 00: Special Function Glazing
   4. Section 08 88 13: Fire-Rated Glazing

1.02 REFERENCES

A. American Society for Testing and Materials (ASTM):
   1. ASTM C1172: Standard Specification for Laminated Architectural Flat Glass.
   2. ASTM E119: Standard Test Methods for Fire Tests of Building Construction and Materials.
   3. ASTM E1300: Standard Practice for Determining Load Resistance of Glass in Buildings.

B. American Architectural Manufacturer's Association (AAMA):
   1. AAMA 800: Voluntary Specifications and Test Methods for Sealants.

C. Underwriters Laboratories, Inc. (UL):
   1. UL 263: Fire Tests of Building Construction and Materials.
   2. UL 410: Slip Resistance of Floor Surface Materials.

D. Standard Council of Canada (ULC):
   1. ULC Standard CAN4-S101: Fire Tests of Building Construction and Materials.

H. [American Recovery and Reinvestment Act
   1. Section 1605, Title XVI Buy American Provision]

I. [Insert building code used by Authority Having Jurisdiction]

1.03 SYSTEM DESCRIPTION

A. Performance Requirements:
   1. Fire Rating: 60-120 minutes as specified. Meets ASTM E119, UL 263 and ULC-S101.
   2. Loading: Up to 100 psf.
   3. Testing Laboratory: Fire test shall be conducted by a nationally recognized independent testing laboratory.
   4. Fire resistive glass floor system comprised of custom SuperLite II-XL fire resistive glazing combined with a tempered laminated non-slip walking surface and a fire resistive structural steel framing grid.
   5. Fire resistive glazing must be sealed with the tempered laminated walking surface as one glazing unit to eliminate condensation issues. Separate fire resistive glazing and walking surface not allowed. Desiccant bags placed in the steel tube joists not allowed.
   6. Fire resistive structural frame to be delivered to the job site [knocked down for field assembly] [pre-fabricated in sections (should configurations and job site conditions allow)].
   7. Once the fire resistive structural steel framing is set, fire resistive glazing unit must be loaded from the top. Separate installations of the non-slip walkable surface from the top and the fire resistive glazing from the bottom are not allowed.
   8. Both the fire resistive glazing unit and fire resistive structural steel framing grid must be provided by the same manufacturer. Distributors of fire resistive glazing not allowed.
   9. Span Width: [10 feet] [20 feet] [30 feet] [40 feet] [50 feet] [for spans over 50 feet, consult with manufacturer]

B. Listings and Labels:
   1. Fire resistive glass floor system shall be under current follow-up service by a nationally recognized independent laboratory approved by OSHA and maintain a current listing or certification. Assemblies shall be labeled in accordance with limits of listings.

1.04 SUBMITTALS

A. Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedure Section.
   1. Shop Drawings: Submit shop drawings showing layout, profiles and product components.
   2. Samples: Submit samples for finishes, colors and textures.
   3. Technical Information: Submit latest edition of manufacturer’s product data providing product descriptions, technical data and installation instructions.

4. Structural Calculations: Provide structural calculations sealed by a licensed professional engineer within the United States.

1.05 DELIVERY, STORAGE AND HANDLING

A. General: Comply with Division1 Product Requirements Sections.

B. Ordering: Comply with manufacturer's ordering instructions and lead-time requirements to avoid construction delays.

C. Delivery: Deliver materials to specified destinations in manufacturer's packaging undamaged, complete with installation instructions.

D. Storage and Protection: Store off ground, under cover, protected from weather and construction activities and at temperature conditions recommended by manufacturer.

1.06 FABRICATION DIMENSIONS

A. Field Measurements: Verify actual measurements for openings by field measurements before fabrication. Show recorded measurements on shop drawings. Coordinate field measurements and fabrication schedule with construction progress to avoid construction delays.

1.07 PROJECT CONDITIONS

A. Coordinate the work of this section with others effected including but not limited to: other interior and/or exterior floor or components.

1.08 WARRANTY

A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.

B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document. Manufacturer's warranty is not intended to limit other rights that the Owner may have under the Contract Documents.
   1. Warranty Period: 5 years from date of shipping.

PART 2 PRODUCTS

2.01 MANUFACTURERS – [60] [120] MINUTE FIRE RESISTIVE GLASS FLOOR ASSEMBLY

A. Manufacturer: GPX® FireFloor System by SAFTI *FIRST*® Fire Rated Glazing Solutions.

1. Contact: 100 N Hill Drive, Suite 12, Brisbane, CA 94005; Telephone 888.653. 3333; email info@safti.com; Web site www.safti.com.

B. Fire resistive glass floor assembly must be provided by a single-source, US manufacturer. Distributors of fire rated glass and framing are not to be considered as manufacturers. Materials for the project should be shipped together in the same shipment on the same truck.

C. Substitutions: No substitutions allowed.

2.02 MATERIALS – FIRE RESISTIVE STEEL FRAMING SYSTEM

A. Frame Face Profile: 5”

B. Construction: Structural steel members combined with a proprietary fire resistive insulating mixture to protect the structural steel member. Minimum 16 gauge galvanized or stainless steel covers factory installed over the framing members.

C. Structural members: Use appropriately sized structural members per the manufacturer’s span table and loading criteria. Engineering verification is required for connections and anchorage of all spans.

D. Fasteners, angles, bolts, sealants, caulk and other accessories: As indicated by the manufacturer in the shop drawings.

E. Span Table and Loading Criteria
   1. 60 minute fire resistive floor system:

Span Table and Loading Criteria for GPX FireFloor – 60 Minute						
Span	**3 ft. 0 in.**	**6 ft. 0 in.**	**10 ft. 0 in.**	**15 ft. 0 in.**	**20 ft. 0 in.**	**40 ft. 0 in.**
I-Beam Shape	M3 x 2.9	M4 x 6	M10 x 7.5	M12 x 10.8	M12 x 19	W21 x 48
Flange Width	2.25 in.	3.8 in.	2.69 in.	3.07 in.	4.01 in.	8.14 in.
Flange Thickness	0.13 in.	0.16 in.	0.173 in.	0.21 in.	0.35 in.	0.43 in.
Overall Depth	3 in.	3.8 in.	10 in.	12 in.	12.2 in.	20.6 in.
Web Thickness	0.09 in.	0.13 in.	0.13 in.	0.16 in.	0.235 in.	0.35 in.

Loading Criteria: 35 lbs./sq. ft. dead load
100 lbs./sq. ft. live load

For spans greater than 40 ft. please contact SAFTI *FIRST*®.

   2. 120 minute fire resistive floor system:

Span Table and Loading Criteria for GPX FireFloor – 120 Minute						
Span	**3 ft. 0 in.**	**6 ft. 0 in.**	**10 ft. 0 in.**	**15 ft. 0 in.**	**20 ft. 0 in.**	**40 ft. 0 in.**
I-Beam Shape	M3 x 2.9	M4 x 6	M10 x 7.5	M12 x 10.8	M12 x 19	W21 x 48
Flange Width	2.25 in.	3.8 in.	2.69 in.	3.07 in.	4.01 in.	8.14 in.
Flange Thickness	0.13 in.	0.16 in.	0.173 in.	0.21 in.	0.35 in.	0.43 in.
Overall Depth	3 in.	3.8 in.	10 in.	12 in.	12.2 in.	20.6 in.
Web Thickness	0.09 in.	0.13 in.	0.13 in.	0.16 in.	0.235 in.	0.35 in.

Loading Criteria: 100 lbs./sq. ft. live load
For spans greater than 40 ft. please contact SAFTI *FIRST*®.

2.03 MATERIALS – FIRE RESISTIVE GLASS

A. Fire resistive glass floor system comprised of custom SuperLite II-XLF fire resistive glazing combined with a tempered laminated non-slip walking surface.

B. Properties:
   1. Non-slip walking surface glazing assembly:
      a. Tempered laminated structural glass
      b. Low iron tempered glass
      c. Tinted tempered glass
      d. Other
   2. Individual glass panel maximum size:
      a. 82-3/8” x 85-3/16” (7,017.3 sq. in.) fully supported and 67-7/8” x 70-3/16” (4,763.9 sq. in.) butt-glazed for one-hour floor assemblies.
      b. 96-3/8” x 74-1/2” (7,179.9 sq. in.) fully supported and butt-glazed for two-hour floor assemblies.
   3. Individual panel size thickness and weight:
      a. 4-3/16” overall / 40 lbs. per square foot for 60 minutes.
      b. 5-3/16” overall / 51.6 lbs. per square foot for 120 minutes.

      c. Sealants, intumescent tape (for butt-glazed assemblies) and other accessories: As indicated by the manufacturer in the shop drawings.
      d. Logo: Each piece of fire rated glazing shall be labeled with a permanent logo.

2.04 FABRICATION

A. Fabrication Dimensions: Fabricate to approved dimensions. The general contractor shall guarantee dimensions within required tolerance. Obtain approved shop drawings prior to fabrication.

2.05 FINISHES

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designing finishes.

B. Covers shall be chemically cleaned and pretreated; then, finished with (choose one):
   1. High Performance Fluoropolymer Finish by PPG®. Solid color to be selected from
   2. SAFTI's standard color chart. Mica, XL & Exotics are available at an additional charge.
   3. Clear or bronze anodized.
   4. Stainless steel
   5. Decoral® (specify color).
   6. Ornamental metal (specify finish).
   7. Wood veneer (natural finish standard).
   8. Acrylic urethane custom color.
   9. Other

C. Protect finishes on exposed surfaces from damage by applying strippable, temporary protective covering before shipping.

PART 3 EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS

A. Compliance: Comply with manufacturer's product data including product technical bulletins and installation instructions.

3.02 EXAMINATION

A. Site Verification of Conditions: Verify substrate conditions, have been previously installed under other sections, and are acceptable for product installation in accordance with manufacturer's instructions. Openings shall be plumb, square and within allowable tolerances. The Architect/Engineer shall be notified of any conditions that jeopardize the integrity of the proposed fire wall/door framing system. Do not proceed until such conditions are corrected.

3.03 INSTALLATION

A. Fire resistive glass floor assembly shall be installed by a licensed contractor and in strict accordance with the approved shop drawings.

3.04 CLEANING AND PROTECTION

A. Protect glass from contact with contaminating substances resulting from construction operations. Remove such substances by method approved by manufacturer.

B. Wash glass on both faces not more than four days prior to date schedule for inspections intended to establish date of Substantial Completion. Wash glass by method recommended by glass manufacturer.

C. Remove temporary coverings and protection of adjacent work areas.

D. Remove construction debris from project site and legally dispose of debris.

END OF SECTION

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