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SPECIFICATION

SECTION 08 8810: FIRE RATED GLASS & FRAMING

GPX® Ballistic System

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes: Fire resistive, ballistic rated glass and framing system.

1. GPX® Ballistic Series fire resistive, temperature rise, ballistic rated glass and framing system for 45-120 minute interior and exterior applications.
2. Applications of fire rated framing includes:
 - a. Full vision fire and ballistic rated doors, sidelites, borrowed lites, windows, transoms and transparent walls with fire rating requirement as specified.

B. Related Sections:

1. Section 01 3323: Shop Drawings, Product Data and Samples.
2. Section 08 1110: Steel Doors & Frames.
3. Section 08 3453: Security Doors & Frames
4. Section 08 5130: Steel Windows.
5. Section 08 4113: Aluminum-Framed Entrances and Storefronts.
6. Section 08 7100: Finish Hardware.
7. Section 08 8000: Glazing.
8. Section 08 8856: Ballistic Resistant Glazing.

1.02 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. ASTM E119 Methods for Fire Tests of Building Construction and Materials.
2. ASTM F 1592: Standard Test Methods for Detention Hollow Metal Vision Systems.

B. National Fire Protection Association (NFPA):

1. NFPA 80: Fire Doors and Windows.
2. NFPA 251: Fire Tests of Building Construction and Materials.
3. NFPA 252: Fire Tests of Door Assemblies.
4. NFPA 257: Fire Tests of Window Assemblies.

C. Underwriters Laboratories, Inc. (UL):

1. UL 9: Standard for Safety of Fire Tests of Window Assemblies.
2. UL 10B: Standard for Safety of Fire Tests of Door Assemblies.
3. UL 10C: Standard for Safety of Positive Pressure Fire Tests of Door Assemblies.
4. UL 263: Fire Tests of Building Construction and Materials.
5. UL 752-2005: Standard for Safety for Bullet-Resisting Equipment.

D. Standard Council of Canada (ULC):

1. ULC Standard CAN4-S101: Fire Tests of Building Construction and Materials.
2. ULC Standard CAN4-S104: Fire Tests of Door Assemblies.
3. ULC Standard CAN4-S106: Fire Tests of Window Assemblies.

E. Consumer Product Safety Commission (CPSC):

1. CPSC 16 CFR 1201: Safety Standard for Architectural Glazing Materials.

F. American National Standards Institute (ANSI):

1. ANSI Z97.1: Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test.

G. Glass Association of North America (GANA)

1. GANA – Glazing Manual.
2. FGMA – Sealant Manual.

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: must meet 45, 60, 90 or 120 minutes as specified.
2. Fire Resistive Wall Assembly Certifications: must meet 60-120 minute fire resistive wall assemblies tested in accordance with ASTM E119, NFPA 251, UL 263 and ULC-S101.
3. Fire Resistive, Temperature Rise Door Assembly Certifications: must meet 60-90 minute fire resistive temperature rise door assemblies tested in accordance with NFPA 252, UL 10B, UL 10C and CAN4 S104. Must meet 250 degrees F/450 degrees F temperature rise door requirements.
4. Fire Protective Door Assembly Certifications: must meet 20-45 minute fire protective door assemblies shall be tested in accordance with NFPA 80, NFPA 252, UL 10B, UL 10C and CAN4-S104.
5. Fire Protective Window Assembly Certifications: must meet 20-45 minute fire protective window assemblies shall be tested in accordance with NFPA 80, NFPA 257, UL 9 and CAN4-S106.
6. Ballistic Resistance: Can be customized to meet up to UL 752 Level 8 for openings, walls, sidelites and transoms. Can be customized to meet up to UL 752 Level 3 for doors.
7. Detention: Meets ASTM F1592 Table 1 Grade 1 requirements for openings, walls, sidelites and transoms.
8. Testing Laboratory: Fire test must be conducted by a nationally recognized independent testing laboratory.
9. Glazing: Fire protective glazing in 20-45 minute fire protective doors and openings up to the maximum size tested. Fire resistive glazing that meets ASTM E-119/UL 263/ULC- S101 up to the

max. size tested. All glazing used in doors, sidelites or any hazardous location must meet CPSC Cat. I or II impact safety.

10. Max. Door Opening Sizes: must meet up to 54" wide x 120" high for single doors and 108" wide by 120" high in pair doors. No intermediate rails required. Continuous hinges required for max. door sizes.

B. Listings and Labels:

1. Fire resistive, temperature rise, ballistic rated glass and framing 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.

C. Appearance:

1. Fire rated opening/wall/door assembly shall have a neat finished appearance with minimum joints at decorative cover intersections.

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.

1.05 DELIVERY, STORAGE AND HANDLING

A. General: Comply with Division 1 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 or distributor'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 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 – FIRE RATED (DOOR) (OPENING) (WALL ASSEMBLY)

- A. Manufacturer of Framing System: GPX® Ballistic Series Framing as manufactured and distributed by SAFTI *FIRST*® Fire Rated Glazing Solutions.
 - 1. Contact: 100 N Hill Drive, Suite 12, Brisbane, CA 94005; Telephone 888.653. 3333; Fax 888.653.4444; email info@safti.com; Web site www.safti.com

B. Manufacturer of Glazing Material: SuperLite® II-XL with ballistic glazing as manufactured and distributed by SAFTI *FIRST*® Fire Rated Glazing Solutions.

1. Contact: 100 N Hill Drive, Suite 12, Brisbane, CA 94005; Telephone 888.653. 3333; Fax 888.653.4444; email info@safti.com; Web site www.safti.com

C. Fire rated glass and framing 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.

D. Substitutions: No substitutions allowed.

2.02 MATERIALS – FRAMING

A. Fire resistive, temperature rise, ballistic framing system rated for 45 to 120 minutes.

Properties:

1. Window/wall frame profile thickness: 3” standard.
2. Door profile thickness: 5” rail and 2” frame standard. 10” ADA compliant bottom rail (can be modified with AHJ approval).
3. Internal framing: Internal tube steel framing shall conform to ASTM A501. Formed steel retainers shall be galvanized conforming to ASTM A527.
4. Insulation: The framing system shall insulate against the effects of fire, smoke and heat transfer from either side. The perimeter of the framing system to the rough opening shall be firmly packed with mineral wool fire stop insulation or appropriately rated intumescent sealant.
5. Fasteners: Type recommended by manufacturer. No exposed fasteners allowed.
6. Glazing accessories: The glazing material perimeter shall be separated from the perimeter framing system with approved flame retardant glazing tape. The SuperLite® glazing panel shall be caulked continuously around the edge to the tube steel frame utilizing neutral cure silicone. Silicone setting blocks recommended.
7. Door constructed in accordance with the individual manufacturer’s listings or in accordance with HMMA 861-06 and HMMA 850.

8. 60-90 minute doors meet 250 degrees F/450 degrees F at 30 minutes.
9. Maximum door opening sizes are 54 in. x 120 in. for single doors and 108 in. x 120 in. for pair doors. No intermediate rails required. For max. door sizes, continuous hinges may be required.
10. SAFTI FIRST listing allows for doors by others.

2.03 MATERIALS – GLASS

A. Assemblies shall be glazed with SuperLite® glazing products combined with ballistic rated glazing.

B. Properties:

1. Individual Lites shall be permanently identified with a listing mark.
2. Glazing material installed in “Hazardous Locations” (subject to human impact) shall be certified to meet the applicable requirements for fire rated assemblies referenced in ANSI Z97.1 Standard for Safety Glazing Materials Used In Buildings and/or CPSC 16 CFR 1201 Safety Standard for Architectural Glazing Materials.
3. Temperature rise on the unexposed side of glazing material shall be limited to 250 degrees Fahrenheit when required.
4. Visible daylight transmission of SuperLite® II-XL only: Varies by glazing type. Must meet:

SuperLite II-XL 45	0.851
SuperLite II-XL 45 Starphire	0.905
SuperLite II-XL 60	0.856
SuperLite II-XL 60 Starphire	0.898
SuperLite II-XL 90	0.853
SuperLite II-XL 90 Starphire	0.895
SuperLite II-XL 120	0.853
SuperLite II-XL 120 Starphire	0.895

5. STC/OITC rating of SuperLite II-XL only: Varies by glazing type. Must meet:

Product	STC	OITC
SuperLite II-XL 45	40	37
SuperLite II-XL 60	42	39
SuperLite II-XL 90	44	40
SuperLite II-XL 120	44	40

6. Pressure glazing is acceptable.

C. Logo: Each piece of fire rated glazing shall be labeled with a permanent logo.

2.03 FABRICATION

A. Assemblies shall be furnished [knocked down for field assembly and will be glazed in the field] [assembled (should configurations and job site conditions allow)] [unitized (should configurations and job site conditions allow)] .

B. Door assemblies shall be factory prepared for field mounting of hardware.

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

2.04 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 Corafion Fluoropolymer Finish by PPG®. Solid color to be selected from SAFTI's Standard Color Chart. Mica, XL, Gloss & Exotics are available at an additional charge.
2. Stainless steel or aluminum clad.
3. Clear, Bronze or Black Anodized.
4. Decoral® (specify color).
5. Ornamental metal (specify finish).
6. Wood veneer (natural finish standard).
7. Acrylic urethane custom color.
8. Other

- C. Protect finishes on exposed surfaces from damage by applying strippable, temporary protective covering before shipping.
- D. Variations in appearance of abutting or adjacent pieces are acceptable. Noticeable variations in the same piece are not acceptable.

2.05 DOOR HARDWARE FOR SINGLE AND PAIRED DOORS

- A. Hardware shall be supplied with the fire door. Hardware selection shall be from door manufacturer's standard and custom recommended hardware groups as specified below. Please call manufacturer a list of hardware options.

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 wall/door installation shall be 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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