

## SECTION 08817

### FIRE-RATED GLASS – KeraShield FRF

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Section Includes:
  - 1. Fire-rated glazing materials installed as vision lites in fire-rated doors.
  - 2. Fire-rated glazing materials installed as (transoms) (borrowed lites) (windows) in fire-rated frames
- B. Related Sections:
  - 1. Section 08110 – Steel Doors and Frames: Vision panels in interior doors and interior vision panels (borrowed lites) frames
  - 2. Section 08161 – Sliding Metal Doors
  - 3. Section 08210 – Wood Doors: vision panels in interior doors
  - 4. Section 08510 – Steel Windows

##### 1.2 REFERENCES

- A. ASTM E-152 – Methods for Fire Tests of Door Assemblies
- B. ASTM E-163 – Methods for Fire Test of Window Assemblies
- C. FGMA – Glazing Manual
- D. FGMA – Sealant Manual
- E. CSFM – Fire Tests for Doors and Window Assemblies
- F. NFPA 80 – Fire Doors and Windows
- G. NFPA 252 – Fire Tests of Door Assemblies
- H. NFPA 257 – Fire Tests of Window Assemblies
- I. UL 9 – Fire Tests of Window Assemblies
- J. UL10B – Fire Tests of Door Assemblies
- K. UL10C – Positive Pressure Fire Tests of Door Assemblies
- L. 1997 Uniform Building Code (UBC)
- M. 1999 BOCA

##### 1.3 PERFORMANCE REQUIREMENTS

- A. Fire-rated glass ceramic. Clear and wireless glazing material with surface applied film for use in impact safety rated locations such as doors, transoms and borrowed lites with fire rating requirements from 20 minutes to 3 hours, with hose stream test: for use in interior or exterior applications.
- B. Passes positive pressure test standards UL10C, UBC 7-2, and NFPA 252.

*Note: This product is not a barrier to radiant or conductive heat transfer. It does not meet test standards ASTM E-119, UL 263, or UBC 7-1. Should your jurisdiction require a barrier to heat product, please contact Air Louvers regarding SwissShield products.*

## **1.4 SUBMITTALS**

*Note: Specify submittal requirements for fire-rated doors and fire rated frames, including glass stops in the appropriate Sections.*

- A. Comply with requirements of Section 01300
- B. Product Data: Submit manufacturer's technical data for each glazing material required, including installation and maintenance instructions.
- C. Certificates of compliance and glazing materials from glass and glazing materials manufacturers attesting that glass and glazing materials furnished for project comply with requirements. 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.
- D. Product test Listings: from a qualified testing agency indicating fire-rated glass complies with requirements, based on comprehensive testing of current product.
- E. Samples: Submit, for verification and approval purposes, approx. 8" x 10" sample for each type of glass indicated.

## **1.5 QUALITY ASSURANCE**

- A. Glazing Standards: FGMA Glazing Manual and Sealant Manual
- B. Fire-Rated Glass: Each lite shall bear a permanent, non-removable label of UL and/or WHI certifying it for use in tested and rated fire protective assemblies.

## **1.6 DELIVERY, STORAGE, and HANDLING**

- A. Deliver, store and handle materials under provisions of Section 01600
- B. Deliver materials to specified destination in manufacturer's or distributor's packaging, undamaged, complete with installation instructions.
- C. Store off ground, under cover, protected from weather and construction activities.

## **1.7 WARRANTY**

- A. Provide manufacturer's limited 3 year warranty under provision of Section 01790

## **PART 2 PRODUCTS**

### **2.1 FIRE RATED GLAZING MATERIALS**

- A. Manufacturer: SGG Keralite FR-F as manufactured by Vetrotech Saint-Gobain NA, Auburn, WA and **distributed by Air Louvers, Inc. 6285 Randolph St, Commerce CA 90040**
- B. Properties:
  - a. Thickness: 3/16" (5mm)
  - b. Weight: 2.7 lbs / sq. ft.
  - c. Approx. visible light transmission: 86%
  - d. Fire Rating: 20 minutes to 3 hours for doors: 20 minutes to 90 minutes for other applications
  - e. Impact Safety Rating: ANSI Z97.1 and CPSC 16CFR1201 (CAT I & II)
  - f. Film: 3M Scotchguard Ultra Safety Film
- C. Labeling: Permanently label each lite of KeraShield FRF with laboratory logo (WHI and/or UL), product and manufacturer's name and fire rating.
- D. Fire Rating: Fire-rating listed and tested by Underwriters Laboratories and/or Intertek Testing (WHI) for fire scheduled at opening locations on drawings, when tested in accordance with (ASTM E-152) (ASTM E-163) (UBC Standards 7-2 and 7-4) (NFPA 252 & 252) (UL 9 & UL10C)

### **2.2 GLAZING COMPOUND**

- A. Glazing Tape: Closed cell polyvinyl Chloride (PVC) foam tape, with adhesive on two sides.
- B. Silicone Sealant: one-part neutral curing silicone.
  - a. Dow Corning 795 – Dow Corning Corp.
  - b. Siliglaze-II 2800 – General Electric Co.
  - c. Spectrum 2 – Tremco Inc.
- C. Setting Blocks: Neoprene, EPDM, calcium silicate, or hardwood; as tested for compatibility with glazing compound.
- D. Cleaner, Primer, and Sealant: Type recommended by manufacturer of glass and gaskets.

### **2.3 FABRICATION**

- A. Fabricate glass and other glazing products in sizes required to glaze openings indicated for project, with edge and face clearances, edge and surface conditions, and bite complying with recommendations of product manufacturer and referenced glazing standard as required to comply with system performance requirements.

## **PART 3 EXECUTION**

### **3.1 EXAMINATION**

- A. Examine glass and framing, with glazier present, for compliance with the following:
  - 1. Manufacturing and installation tolerances, including those for size, squareness, offsets at corners.
  - 2. Minimum required face or edge clearances
  - 3. Observable edge damage or face imperfections.
- B. Do not proceed with glazing until unsatisfactory conditions have been corrected.
- C. Clean glazing channels and other framing members receiving glass immediately before glazing. Remove coatings that are not firmly bonded to substrates.

### 3.2 INSTALLATION (GLAZING)

- A. Comply with referenced FGMA glazing manual and instructions of manufacturers of glass, glazing sealants, and glazing compounds.
- B. Protect glass from edge damage during installation and handling. Inspect glass during installation and set aside pieces with edge damage that could affect performance.
- C. Set units of glass in each series with uniformity of pattern, draw, bow and similar characteristics.
- D. Cut glazing tape to length and set against permanent stops, flush with sight lines to fit openings exactly, with stretch allowance during installation.
- E. Place setting blocks located at quarter points of glass with edge block no more than 8 inches from corner.
- F. Glaze vertically into labeled frames with the same fire rating as glass and push against tape for full contact at perimeter of pane or unit.
- G. Place glazing tape on free perimeter of glazing in same manner as described above.
- H. Edge clearance and bite
- I. Install removable stop and secure without displacing tape or glazing compound.
- J. Install so that appropriate markings remain visible.

### 3.3 PROTECTION AND CLEANING

- A. Protect glass from contact with contaminating substances resulting from construction operations. Remove any such substances by methods approved by manufacturer.
- B. Wash glass on both faces not more than four days prior to date scheduled for inspections intended to establish date of substantial completion. Wash glass by method recommended by glass manufacturer.

### GLAZING SCHEDULE

Assembly	Time Rating (minute)	Maximum Exposed Area	Maximum Width Exposed Area*	Maximum Height Exposed Area*
Door - Non Temp Rise	20-60	3627 in <sup>2</sup>	46"	78"
Window, Transom Lite, Sidelite	20-60	3627 in <sup>2</sup>	46"	78"
Door - Temp Rise	60-90	100 in <sup>2</sup>	10"	33"
Door - Non Temp Rise	90	3434 in <sup>2</sup>	46"	78"
Window, Transom Lite, Sidelite	90	2736 in <sup>2</sup>	46"	78"
Door - Non Temp Rise & Temp Rise	3 hours	100 in <sup>2</sup>	10"	33"

3.4

*NOTE: Individual lite sizes cannot exceed maximum exposed area shown above.*

*NOTE: Glass-ceramics do not act as a barrier to radiant or conducted heat transfer (ASTM E-119 / UL263) and as such, use in openings with fire ratings of 60-minutes or greater may require approval from the local authority having jurisdiction (AHJ).*

*NOTE: Special approval is required from the local authority having jurisdiction (AHJ) when using this glazing in applications requiring non-standard rating or sizes larger than those scheduled above and in paragraph 2.1, C. In such cases KeraShield FRF will be furnished with the manufacturers name and product name only.*

END OF SECTION