

## PART 1 GENERAL

### 1.1 SECTION INCLUDES

- A. Glass and glazing for Sections referencing this Section for products and installation.

### 1.2 RELATED SECTIONS

- A. Section 08 11 13 - Steel Doors and Frames: Glazed doors and frames.
- B. Section 08 41 13 - Aluminum Framed Storefronts.
- C. Section 08 51 13 – Aluminum Windows.

### 1.3 REFERENCES

- A. ANSI/ASTM E330 - Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
- B. ANSI A97.1 - Safety Performance Specifications and Methods of Test for Safety Glazing Used in Buildings.
- C. ASTM C1036 - Flat Glass.
- D. ASTM C1048 - Heat-Treated Flat Glass - Kind HS, Kind FT Coated and Uncoated Glass.
- E. ASTM E546 - Test Method For Frost Point of Sealed Insulating Glass Units.
- F. ASTM E576 - Test Method For Dew/Frost Point of Sealed Insulating Glass Units in Vertical Position.
- G. ASTM E773 - Test Method for Seal Durability of Sealed Insulating Glass Units.
- H. ASTM E774 - Sealed Insulating Glass Units.
- I. FGMA - Glazing Manual.
- J. FGMA - Sealant Manual.
- K. FS TT-C-00598 - Caulking Compound, Oil and Resin Base Type.
- L. FS TT-S-001657 - Sealing Compound, Single Component, Butyl Rubber Based, Solvent Release Type.
- M. FS TT-S-00227 - Sealing Compound, Rubber Base, Two Component.
- N. FS TT-S-00230 - Sealing Compounds, Synthetic-Rubber Base, Single Component, Chemically Curing.
- O. FS TT-S-01543 - Sealing Compound, Silicone Rubber Base.
- P. FS TT-G-410 - Glazing Compound, Sash (Metal) for Back Bedding and Face Glazing (Not for Channel or Stop Glazing).

- Q. Laminators Safety Glass Association - Standards Manual.
- R. SIGMA - Sealed Insulated Glass Manufacturers Association.

#### 1.4 PERFORMANCE REQUIREMENTS

- A. Glass and glazing materials of this Section shall provide continuity of building enclosure vapor and air barrier:
  - 1. In conjunction with materials described in Section 07 92 00.
  - 2. To utilize the inner pane of multiple pane sealed units for the continuity of the air and vapor seal.
  - 3. Maintain continuous air and vapor barrier throughout glazed assembly from glass pane to heel bead of glazing sealant.
- B. Size glass to withstand dead loads and positive and negative live loads acting normal to plane of glass as calculated in accordance with code and as measured in accordance with ANSI/ASTM E330.
- C. Limit glass deflection to flexure limit of glass with full recovery of glazing materials, whichever is less.

#### 1.5 SUBMITTALS

- A. Submit under provisions of Section 01 33 00.
- B. Product Data on Glass Types Specified: Provide structural, physical and environmental characteristics, size limitations, and special handling or installation requirements.
- C. Product Data on Glazing Compounds: Provide chemical, functional, and environmental characteristics, limitations, special application requirements. Identify available colors.
- D. Samples: Submit two samples, 12 x 12 inch in size, illustrating glass units, coloration and design.
- E. Manufacturer's Installation Instructions: Indicate special precautions required.
- F. Manufacturer's Certificate: Certify that sealed insulated glass, meet or exceed specified requirements.

#### 1.6 QUALITY ASSURANCE

- A. Perform Work in accordance with FGMA Glazing Manual, FGMA Sealant Manual, SIGMA and Laminators Safety Glass Association - Standards Manual for glazing installation methods.
- B. Maintain one copy of each document on site.

#### 1.7 ENVIRONMENTAL REQUIREMENTS

- A. Do not install glazing when ambient temperature is less than 50 degrees F.
- B. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

1.8 FIELD MEASUREMENTS

- A. Verify that field measurements are as indicated on shop Drawings instructed by the manufacturer.

1.9 COORDINATION

- A. Coordinate Work prior to start of work.
- B. Coordinate the Work with glazing frames, wall openings, and perimeter air and vapor seal to adjacent Work.

1.10 WARRANTY

- A. Provide five year manufacturer's warranty under provisions of Section 01 70 00.
- B. Warranty: Include coverage for sealed glass units from seal failure, interpane dusting or misting, and replacement of same.

PART 2 PRODUCTS

2.1 MANUFACTURERS/FABRICATORS - FLAT GLASS MATERIALS

- A. AFG Glass
- B. Pilkington
- C. Viro-Con
- D. PPG.
- E. Substitutions: Under provisions of Section 01 60 00.

2.2 FLAT GLASS MATERIALS

- A. Float Glass (Type G-1): ASTM C1036, Type 1 transparent flat, Class 1 clear, Quality q3 glazing select; 1/4 inch thick minimum.
- B. Laminated Safety Glass (Type G-2): Two lites of clear annealed glass, 1/8 inch thick with clear Saflex interlayer by Solutia. Laminate shall comply with CPSC 16 CFR 1201 Category I and Safety Glazing Test Standard and ANSI A-97.1-1984. Minimum standards specified in ASTM C1036-85 or C1048-85.
- C. Wire Glass (Type G-3): Clear, polished both sides, square mesh of woven stainless steel wire of 2 inch grid size; 1/4 inch thick. Conform to ANSI Z97.1.
- D. Safety Glass (Type G-4): Clear; fully tempered; conforming to ANSI A97.1 and CPSC 96 CFR (1201); 1/4 inch thick minimum.
- E. Tinted Glass (Type G-5): Float type, tempered, light reducing tinted color; light transmittance of 70 percent, 1/4 inch thick minimum. Color as selected by Owner/Architect.

- F. One-way vision Glass (Type G-10): Float type, annealed; 1/4 inch thick; visible reflectance of 60%; visible transmittance of 12%. Equal to Libby Owens mirror pane E.P. transparent mirror.

### 2.3 MANUFACTURERS/FABRICATORS - SEALED INSULATING GLASS MATERIALS

- A. AFG Glass
- B. Pilkington
- C. Viro-Con
- D. PPG.
- E. Substitutions: Under provisions of Section 01 60 00.

### 2.4 SEALED INSULATING GLASS MATERIALS

- A. Insulated Glass Units (Type G-6): All insulated glass units designated on the drawings shall be tinted gray and have a 1" overall thickness and be Sunergy glazing quality float glass as manufactured by Glaverbel Glass. Quality of the float glass shall meet the requirements of ASTM CI036. All insulating glass units specified herein shall be AFG Insulating Units as manufactured by AFG Glass or approved equal. Insulating glass units shall consist of a 1/2" thick airspace, with an interior lite of 1/4" thick, clear. All units will be tested in accordance with ASTM E-774, and E-773 test methods and be certified by IGCC CBA, ALI CBA rating and IGMAC. All insulated units shall carry a ten (10) year warranty to include replacement of sealed units exhibiting seal failure, interpane dusting or fogging.

The center-of-glass area will provide the following performance characteristics:

- Visible Light Transmittance of 50%
- Visible Light Reflectance (outdoors) of 10%
- Total Solar Energy Transmittance of 28%
- Total Solar Energy Reflectance of 7%
- Winter U-Value not to exceed .37
- Shading Coefficient not to exceed 0.41

Double glazing units to be Sunergy, Sun and Energy Control Sunergy.

- B. 1" Tempered Insulated Glass Units (Type G-7): All insulated glass units designated on the drawings shall be tinted gray and have a 1" overall thickness and be Sunergy glazing quality float glass as manufactured by Glaverbel Glass. Quality of the float glass shall meet the requirements of ASTM CI036. All insulating glass units specified herein shall be AFG Insulating Units as manufactured by AFG Glass or approved equal. Insulating glass units shall consist of a 1/2" thick airspace, with an interior lite of 1/4" thick, clear. All units will be tested in accordance with ASTM E-774, and E-773 test methods and be certified by IGCC CBA, ALI CBA rating and IGMAC. All insulated units shall carry a ten (10) year warranty to include replacement of sealed units exhibiting seal failure, interpane dusting or fogging.
- 1. Heat – Strengthened Glass (Outboard Lite)  
All Heat Strengthened Float glass designated on the drawings shall be 1/4" thick and be Sunergy Azur glazing quality float glass as manufactured by AFG Glass. Quality of the float glass shall meet the requirements of ASTM C1036 or Heat Strengthened glass will be in accordance with ASTM C1048, Kind HS.

## 2.5 GLAZING COMPOUNDS

- A. Silicone Sealant (Type GC-F): Single component, solvent curing; capable of water immersion without loss of properties; non-bleeding non-staining; cured Shore A hardness of 15-25.

## 2.6 GLAZING ACCESSORIES

- A. Setting Blocks: Silicone, 80 - 90 Shore A durometer hardness, length of 0.1 inch for each square foot (25 mm for each square meter) of glazing or minimum 4 inch x width of glazing rabbet space minus 1/16 inch x height to suit glazing method and pane weight and area.
- B. Spacer Shims: Silicone, 50 - 60 Shore A durometer hardness, minimum 4 inch long x one half the height of the glazing stop x thickness to suit application, self adhesive on one face.
- C. Glazing Tape: Preformed butyl compound with integral resilient tube spacing device; 10 - 15 Shore A durometer hardness; coiled on release paper; black color.
- D. Glazing Clips: Manufacturer's standard type.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Verify prepared openings under provisions of Section 01 30 00.
- B. Verify that openings for glazing are correctly sized and within tolerance.
- C. Verify that surfaces of glazing channels or recesses are clean, free of obstructions, and ready to receive glazing.

### 3.2 PREPARATION

- A. Clean contact surfaces with solvent and wipe dry.
- B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.
- C. Prime surfaces scheduled to receive sealant.

### 3.3 EXTERIOR - DRY METHOD (PREFORMED GLAZING)

- A. Cut glazing tape to length; install on glazing pane. Seal corners by butting tape and sealing junctions with butyl sealant.
- B. Place setting blocks at 1/4 points with edge block no more than 6 inches from corners.
- C. Rest glazing on setting blocks and push against fixed stop with sufficient pressure to attain full contact.
- D. Install removable stops without displacing glazing tape. Exert pressure for full continuous contact.
- E. Trim protruding tape edge.

3.4 INTERIOR - DRY METHOD (TAPE AND TAPE)

- A. Cut glazing tape to length and set against permanent stops, projecting 1/16 inch above sight line.
- B. Place setting blocks at 1/4 points with edge block no more than 6 inches from corners.
- C. Rest glazing on setting blocks and push against tape for full contact at perimeter of pane or unit.
- D. Place glazing tape on free perimeter of glazing in same manner described above.
- E. Install removable stop without displacement of tape. Exert pressure on tape for full continuous contact.
- F. Knife trim protruding tape.

3.5 INSTALLATION - MIRRORS

- A. Set mirrors with adhesive, applied in accordance with adhesive manufacturer's instructions.
- B. Place plumb and level.

3.6 CLEANING

- A. Clean work under provisions of 01 70 00.
- B. Remove glazing materials from finish surfaces.
- C. Remove labels after work is complete.
- D. Clean glass and mirrors.

3.7 PROTECTION OF FINISHED WORK

- A. Protect finished Work under provisions of Section 01 50 00.
- B. After installation, mark pane with an 'X' by using removable plastic tape or paste. Do not mark heat absorbing or reflective glass units.

END OF SECTION