

SECTION 08 81 00

GLASS AND GLAZING

PART 1 GENERAL

1.1 SUMMARY

- A. Furnish all labor, materials, tools, equipment, services, operations and incidentals necessary to install, complete in every respect, all glass, glazing, and related work as indicated on Drawings and specified.

1.2 RELATED WORK DESCRIBED ELSEWHERE

- A. Glass and glazing, as required under various Sections of these Specifications including, but not limited to:
 - 1. Hollow Metal Work: Section 08 11 13.
 - 2. Wood Doors: Section 08 14 16.
 - 3. Aluminum Storefront: Section 08 43 13
- B. Installation materials specified in Sealants and Caulking: Section 07 92 00.

1.3 REFERENCES

- A. ASTM C1048 "Standard Specification for Heat Treated Flat Glass – Kind HS, Kind FT Coated and Uncoated Glass."
- B. ASTM C1279 "Standard Test Method for Non-Destructive Photoelastic Measurement of Edge and Surface Stresses in Annealed, Heat-Strengthened, and Fully Tempered Glass" Requirements.

1.4 SUBMITTALS

- A. General: Comply with the provision of Section 01 33 00.
- B. Product Data: Within 30 calendar days after award of the Contract, submit:
 - 1. Complete materials list showing all items proposed to be furnished and installed under this Section.
 - 2. Sufficient data to demonstrate that all such materials meet or exceed the specified requirements.
- C. Shop Drawings:
 - 1. Submit detailed shop and installation drawings of all work under this Section to Architect for approval prior to ordering materials.
 - 2. Indicate glass sizes, thickness, glazing details and where mirrors are to be installed in the building.

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3. Shop Drawings shall include engineering data on the Aluminum Entry/Storefront and other glazing systems, including the size and spacing of setting blocks under the glass and wind load.

1.5 FIELD MEASUREMENTS

- A. Accurately field measure all openings to receive glass and cut glass to correspond to each measured opening. The General Contractor and Glazing Contractor shall be responsible for overall coordination and accuracy of the Field Measurements.

1.6 PRODUCT HANDLING

- A. Protection: Use all means necessary to protect the materials of this Section before, during, and after installation and to protect the work and materials of all other trades.
- B. Replacement: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

1.7 GUARANTEE

- A. Contractor shall furnish a written guarantee covering all mirror silvering from defects in material and workmanship for a period of five years from date of final acceptance of the building.
- B. All glazing work performed under this Section shall be guaranteed against defects in materials and workmanship for a period of one year from date of final acceptance of the building. This guarantee, however, shall not cover accidental breakage of glass subsequent to acceptance except where breakage is due directly to defective materials and/or inferior workmanship.
- C. All sealed insulating glass shall be warranted against failure of the air seal for a period of ten (10) years from the date of substantial completion.

PART 2 PRODUCTS

2.1 GLASS

- A. General: Glass is called for by "type" (i.e. Insulated, wire, etc.) on Details and Schedules in the Drawings. The "types" are defined herein.
- B. Tempered Glass: Provide Tempered Glass where called for on the Drawings or in these Specifications, and where such tempering would be required under provisions of the International Building Code, latest edition, or other applicable laws and regulations.
- C. Heat Strengthened Glass: Unless Tempered glass is required by code, glass at exterior walls shall be heat treated to have a surface compression between 3,500 and 7,500 psi to increase its strength to resist impact, mechanical loads and thermal stress breakage.

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- C. All glass shall conform to the requirements of Federal Specification DD-G-451c, or as indicated with individual glass types.
- D. Unless noted otherwise, Glass will be manufactured by Vitro (formerly PPG), Guardian Glass or approved alternate. Each light shall bear the manufacturer's label designating the type and thickness of glass. "AFPC V2 2701.1 "Each unit of tempered glass shall be permanently identified by the manufacturer. The identification shall be etched or ceramic fired on the glass and be visible when the unit is glazed. Tempered spandrel glass is exempted from permanent labeling. This type of glass shall be identified with a removable paper label by the manufacturer.
- E. Individual glazed areas in hazardous locations shall meet requirements CPSC 16, CFR Part 1201.
- F. Size: Sizes of glass indicated on Drawings are approximate, actual sizes of glass shall be taken from actual frames. Labels shall remain on glass until after inspection by the Architect.
 - 1. Actual design sizing shall be the responsibility of the glass manufacturer. Sizes indicated herein and on the Drawings are approximate only. Where required, the manufacturer's recommended changes shall be made. Note all such changes or revisions on the Shop Drawings submitted for approval.

2.2 GLASS TYPES

- A. Single Thickness Plate Glass: Shall be 1/4" thick clear glazing quality float glass.
- B. Tempered/Safety Glazing: Shall be 1/4" thick clear Tuf-flex Tempered Safety Glass to meet the requirements of Federal Specifications DD-G-1403B, ANSI Z97, 1-1984 and the Federal Standard 15 CFR 1201.
- C. STC 45 Door Lite Glass: Shall be 5/8" glass laminated with 0.06" clear PVB. Coordinate make up assembly with STC door manufacturer.
- D. STC 50 Door Lite Glass: shall be 1-1/8" non-rated IGU (insulated glass unit). Coordinate make up of assembly with STC door manufacturer.
- E. Insulated Glazing: Shall be 1" thick Thermopane Insulating Glass as follows, refer to drawings for locations:
 - 1. Clear Solarban Low-E Glass:
 - a. Solarban 60 (2) clear 1/4"(6mm), 1/2" Air Space, Clear 1/4"(6mm). Manuf. By Vitro
 - b. Sunguard SN 68 (2) clear 1/4"(6mm), 1/2" Air Space, Clear 1/4"(6mm). Manuf. By Guardian.
 - c. SHGC= 0.30 - 0.32
 - d. U value= 0.29
 - e. Verify existing glass is clear, provide tint to match existing if tinted.

2.4 GLAZING COMPOUNDS AND SEALANTS

- A. General: Use glazing compounds and preformed glazing sealant approved for the particular application as described herein and shown on the Drawings or specified in the Related Work referenced in Paragraph 1 b) of the Section, unless otherwise noted.
- B. Glazing Compound shall be GE SILGLAZE, clear or neutral color, unless approved otherwise by the Architect.
- C. Setting Blocks and Gaskets shall be extruded hard neoprene, clear or neutral color unless noted otherwise.
- D. Tape shall be polyisobutylene base elastic compound with gauze reinforcement, equal to Presstite 162 Elastic Compound Tape, clear or neutral color unless noted otherwise.
- E. Sealants used for glazing shall be G.E. Silicone, Dow-Corning Silicone Structural Sealant, or as approved by the Architect. Silicone shall be clear or neutral color as approved by Architect.

2.5 GLAZING ACCESSORIES

- A. Provide all glazing accessories required to supplement those accessories which accompany the items to be glazed, and as needed to provide a complete installation, including glazing points, clips, shims, angles, beads, settling blocks, and spacer strips. Use ferrous metal, which will be exposed in the finished work, which has a finish that will not corrode or stain while in service.

2.6 INSPECTION

- A. Examine the areas and conditions under which work of this Section will be installed. Correct conditions detrimental to the proper and timely completion of the Work. Do not proceed until unsatisfactory conditions have been corrected.
- B. Verify all field dimension openings prior to glass fabrication and cutting. Cut pieces to fit actual opening sizes.

PART 3 EXECUTION

3.1 INSTALLATION

- A. General:
 - 1. All glass shall be accurately cut or sized to fit openings and locations and shall be set by skilled glazers. Extreme care shall be exercised in sizing the insulating glass to allow recommended clearances around glass.
 - 2. Cut and install glass with any visible lines or waves running in horizontal direction.
 - 3. Fix movable and operating items securely, or in a closed, locked position until glazing compound has thoroughly set.

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4. Use insulating units which do not have corners or edges ground, nipped, cut, or fitted after leaving the factory. Do not subject units to springing, forcing, or twisting during setting. Handle so as not to strike the setting frames or other objects.
5. Use beads or stops furnished with the items to be glazed to secure the glass in place.
6. Items to be glazed shall be shop-glazed or field-glazed with glass of the quality and thickness specified.

3.2 GLASS SETTING

- A. Wood Doors and Wood Frames: Field glaze all wood doors and wood frames with glazing sealant and flush solid wood stops as indicated on Drawings. (Metal stops where required for fire rating)
 1. Use sufficient glazing sealant to insure a complete seal between glass and stop.
 2. After stops have been installed and pulled up tight, trim bead of sealant resulting from setting operations away from face of glass. Retouch damaged compound after glazing.
- B. Aluminum Doors, Frames, Storefront and Windows:
 1. All openings shall be field-glazed in strict conformance with aluminum door frame and window manufacturer's written instructions.
 2. Install glass types as indicated on Drawings and described in this Section.
 3. Extruded EPDM elastomeric glazing gaskets shall be supplied with each aluminum door, frame or window by the manufacturer.
 4. All installations shall be completely watertight when finished.

3.3 REPLACEMENT AND CLEANING

- A. Replacement: Glass broken or glass damaged before completion of the building operations shall be replaced with glass of the like kind and quality at no cost to the Owner.
- B. Cleaning: Upon completion of all construction work and approval of all glazing installations, remove from the glass surfaces, surrounding framing materials and mirrors all labels, sealant and caulking compound smears, spots, etc. Do not use cleaning materials or agents which will damage glass or surrounding surfaces. After cleaning, wash all glass and mirrors completely.

END OF SECTION

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