SECTION 08 80 00

GLAZING

PART 1 - GENERAL

1.01 SCOPE:

A. Provide all of the labor, materials, equipment and services to furnish and install the glass and glazing accessories.

B. It is the intent of the Documents that all units shall be glazed so that there will be no passage of air or moisture. The Contractor shall provide whatever materials are necessary, whether specified or not, to achieve this condition.

1.02 SYSTEM PERFORMANCE REQUIREMENTS:

A. Provide glazing systems that are produced, fabricated, and installed to withstand normal thermal movement, wind loading, and impact loading (where applicable), without failure including loss or glass breakage attributable to the following:
   1. Defective manufacture, fabrication, and installation.
   2. Failure of sealants or gaskets to remain watertight and airtight.
   3. Deterioration of glazing materials.
   4. Other defects resulting in construction.

1.03 QUALITY ASSURANCE:

A. Codes and standards:
   1. In addition to complying with all pertinent codes and regulations, comply with all pertinent recommendations contained in the "Manual of Glazing" of the Flat Glass Marketing Association (FGMA) and
   2. Comply with all the requirements of the Safety Standard for Architectural Glazing Materials (16 CFR 1201) as issued by the Consumer Product Safety Commission.
   3. Insulating glass: SIGMA TM-3000 “Vertical Glazing Guidelines” and SIGMA TM-3000 Glazing Guidelines for Sealed Insulating Glass Units.
   4. Safety glass: Products complying with ANSI Z97.1 and testing requirements of 16 CFR Part 1201 for category II materials.

B. Engage an experienced glazier who has completed glazing similar in material, design, and extent to that indicated for Project with a record of successful in-service performance.

C. Single-source responsibility: Obtain glass from one source for each product indicated below:
   1. Primary glass of each type and class indicated.
   2. Heat-treated glass of each condition indicated.
   3. Insulating glass of each construction indicated.

D. Single source responsibility for glazing accessories: Obtain glazing accessories from one source for each product and installation method indicated.

1.04 SUBMITTALS:

A. Prior to fabrication, submit to the Architect for review the following:
   1. Physical sample: 12" square samples of each type of glass indicated (except for clear monolithic glass products) and 12" long samples of each color required (except black) for each type of sealant or gasket exposed to view. Install sealant or gasket sample between two strips of material representative in color of the adjoining framing system.

2. Manufacturer's literature completely describing each product.
3. Product certificates signed by glazing materials manufacturers certifying that their products comply with specified requirements.
   a. Separate certifications are not required for glazing materials bearing manufacturer's permanent labels designating type and thickness of glass, provided labels represent a quality control program of a recognized certification agency or independent testing agency acceptable to authorities having jurisdiction.
4. Compatibility and adhesion test reports from sealant manufacturer indicating that glazing materials were tested for compatibility and adhesion with glazing sealants. Include sealant manufacturer's interpretation of test results relative to sealant performance and recommendations for primers and substrate preparation needed for adhesion.
5. Compatibility test report from manufacturer of insulating glass edge sealant indicating that glass edge sealants were tested for compatibility with other glazing materials including sealants, glazing tape, gaskets, setting blocks, and edge blocks.
6. Product test reports for each type of glazing sealant and gasket indicated, evidencing compliance with requirements specified.
7. Maintenance data for glass and other glazing materials to include in operating and maintenance manual.

1.05 DELIVERY, STORAGE, AND HANDLING:

A. Protect glazing materials to comply with manufacturer's directions and as needed to prevent damage to glass and glazing materials from condensation, temperature changes, direct exposure to sun, or other causes.

1.06 PROJECT CONDITIONS:

A. Environmental conditions: Do not proceed with glazing when ambient and substrate temperature conditions are outside the limits permitted by glazing materials manufacturer or when glazing channel substrates are wet from rain, frost, condensation, or other causes.

1.07 WARRANTY:

A. Coated glass products: Submit written warranty signed by coated glass manufacturer agreeing to furnish replacements for those coated glass units that deteriorate, f.o.b. point of manufacture, freight allowed Project site, within specified warranty period indicated below. Warranty covers only deterioration due to normal conditions of use and not to handling, installing, and cleaning practices contrary to glass manufacturer's published instructions.
   1. Warranty period: Manufacturer's standard, but not less than 5 years after date of Substantial Completion.

B. Insulating glass: Submit written warranty signed by coated glass manufacturer agreeing to furnish replacements for those insulating glass units that deteriorate, f.o.b. point of manufacture, freight allowed Project site, within specified warranty period indicated below. Warranty covers only deterioration due to normal conditions of use and not to handling, installing, and cleaning practices contrary to glass manufacturer's published instructions.
   1. Warranty period: Manufacturer's standard, but not less than 10 years after date of Substantial Completion.

PART 2 - PRODUCTS

2.01 FLOAT GLASS:

A. Annealed float glass: ASTM C 1036, Type I (transparent flat glass), Quality-Q3.

1. Thickness: 1/4".

B. Color: Clear.

C. Tempered:
1. Glass so indicated and required by federal and local regulations and the authorities having jurisdiction shall be fully tempered conforming to ASTM C 1048, Kind FT (fully tempered), Class 1 (clear).
2. Provide in doors, sidelights and other designated locations.

2.02 INSULATING GLASS:

A. Factory assembled units consisting of sealed lites of glass separated by a dehydrated interspace, and complying with ASTM E 774 for Class CBA units.

B. PPG Solargray + Solarban 60 (3) Clear.
1. Provide multi-layer low-E coated unit.
2. Sputter coated.
3. Shading coefficient: 0.32.
4. Solar heat gain coefficient: 0.28.

C. Metal spacer insert between plies of glass: Color to match storefront framing.

D. Tempered:
1. Glass so indicated and required by federal and local regulations and the authorities having jurisdiction shall be fully tempered conforming to ASTM C 1048, Kind FT (fully tempered).
2. Provide in doors, sidelights and other designated locations.

E. Total unit thickness: 1".

2.03 SPANDREL GLASS:

A. Coated spandrel float glass: Float glass complying with other requirements specified and with the following:
1. Ceramic coated: Comply with ASTM C 1048, Condition B, Type I, Quality q3.
2. Factory apply manufacturer's standard opacifier to coated second surface of lites, with resulting products complying with Specification No. 89-1-6 in GNA Tempering Division's "Engineering Standards Manual."
3. Thickness: 1/4".
4. Apply to No. 2 surface.

B. Appearance: Match vision units.

2.04 BUTT GLAZING:

A. Thickness: ½".

B. Glass shall be tempered glass with edges eased and polished. Tong marks shall not be allowed on vertical edges and shall not be readily visible on horizontal edges.

C. Vertical joints where glass meets glass shall be filled with silicone sealant (clear).

D. Head and sill glazing channel shall be Stylemark 110360 with Bronze 10B finish. Coat surfaces for corrosion resistance.

2.05 FIRE GLASS:

A. Fire Glass:
   1. Product/manufacturer:
      a. FireLite NT as manufactured by Technical Glass Products.
      b. Or an approved equal.
   2. Description:
      a. Thickness: 3/16".
      b. Film: 3M Scotchshield Ultra Film.
      c. Weight: 2.4 lbs/sq ft.
      d. Approximate visible transmission: 88%.
      e. Approximate visible reflection: 9%.
      f. Hardness (Vicker's Scale): 700.
      g. Fire-rating: 20 minutes to 3 hours for doors; 20 minutes to 60 minutes for other applications.
      h. Impact safety resistance: ANSI Z97.1 and CPSC 16CFR1201 (Cat. I and II).
      i. Positive pressure test: UL 10C, UBC 7-2 AND 7-4; PASSES.
      j. Surface finish: Clear, premium polished.

2.06 GLASS FILM FOR CUT LETTERING:

A. Product/manufacturer:
   1. 3M Fasara - Astral Silver Decorative / Privacy Glazing Film:
      a. Ultraviolet Rejected (ASTM E 903): Not less than 99 percent.
      b. Visible Light Transmission (ASTM E 903, ASTM E 308): Not more than 11 percent.
      c. Visible Light Rejected (ASTM E 903): Not less than 63 percent.
      d. Solar Heat Reduction: Not less than 51 percent.
      e. Shading Coefficient at 90 Degrees (Normal Incidence) (ASTM E 903): Not less than 0.19.

B. Lettering, font, size: See Drawings and verify with Architect.

2.07 SEALANT - GLASS:

A. One-part acrylic terpolymer.

B. Tape: Resilient polyisobutylene/butyl extruded tape. Physical Characteristics: Self-adhering, remaining permanently elastic even at low temperatures.

C. Adhesion capabilities shall remain constant. Shall be unaffected by ultra-violet through glass. Serviceability range - 40-degree F to 200-degree F. Shall be non-staining with no coil exudation.

PART 3 - EXECUTION

3.01 LABELING:

A. Each item shall be graded and arrive at the site bearing a label setting forth the quality and type of glass and the manufacturer's name and brand designation. Labels shall remain intact until their removal is authorized by the Architect.

3.02 ENVIRONMENTAL CONDITIONS:

A. Glazing shall not be done when the temperature is 40 degrees F or below.

3.03 PREPARATION FOR GLAZING:

A. Check the openings to determine if they conform to the sizes shown on the Drawings and shop drawings.

B. Make certain that the glazing rabbets are clean and in proper condition to receive the sealant.

C. The glazing channel and all sealing surfaces of wood or carbon steel shall have a coat of prime paint. The sealing rabbets of all metal holding members shall have all grease, foreign matter, lacquers or other organic protective coatings removed.

D. Make certain that the corners and intersections of the framing members are properly joined or sealed so as to prevent water leakage. If they are not, advise the Architect in writing. This condition shall be rectified before commencing the glazing operation.

E. Tempered glass must be ordered from the factory by size and not altered after fabrication.

3.04 SEALANT:

A. Sealing of glass shall be as recommended in the Glazing Sealing Systems Manual as published by the Flat Glass Marketing Association, latest edition.

3.05 BREAKAGE OR SURFACE DAMAGE:

A. Solutions used on the surface of the building to clean and/or seal shall be applied in a manner to avoid contact with the glass. Solutions to clean the glass shall be a selected product that will not cause damage to the glass surface, exterior building surface or the sealant.

B. Remove promptly any "wash off" from pre-oxidized metal.

C. Apply tapes or banners to the framing and suspend over the glass to alert workmen that the opening has been glazed. Directly marking on glass surfaces shall not be permitted.

3.06 CLEANING:

A. Remove all excess putty or compound smears.

B. Remove any excess sealant materials left on the surfaces of the glass or the surrounding members immediately during the work life of the sealant.

C. All glass at the completion of the Work shall be clean and polished to the approval of the Architect.

D. Wash, rinse and dry glass at frequent intervals during the Work. Use soft, clean, grime-free cloths, mild soap, detergent or a slightly acidic cleaning solution; follow immediately with clean

rinse water, and prompt removal of excess rinse water with clean squeegee. Remove grease and glazing materials with commercial solvents such as xylene, toluene, mineral spirits or naphtha, and follow with normal wash and rinse. Be careful not to damage glazing or insulating unit seals by over generous application of strong solvents.

E. Remove immediately any staining or leaching resulting from surrounding materials. The Contractor shall be responsible for protecting the glass against any such damage.

- END OF SECTION -