

SECTION 08800
GLASS AND GLAZING

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This work includes the furnishing and fabrication of all glass and glazing materials required for the following:
 - 1. Aluminum Curtain Wall
 - 2. Aluminum Storefront
 - 3. Exterior Storefront
 - 4. Vision Lites Indicated.
- B. Definitions:
 - 1. "Glass" includes both primary and fabricated glass products as described in FGMA "Glazing Manual."
 - 2. "Glazing" includes glass installation and materials used to install glass.
- C. All exterior glazing must meet/exceed Florida Building Code wind resistance requirements for Project Location (Normal 117 mph, Ultimate 150), see the Structural Drawings.

1.02 RELATED WORK

- A. JOINT SEALANTS: Section 07900.
- B. ALUMINUM CURTAIN WALL: Section 08441.
- C. ALUMINUM STOREFRONT: Section 08443.
- D. EXTERIOR ALUMINUM STOREFRONT: Section 08442.

1.03 QUALITY ASSURANCE

- A. Approved Products: As applicable, products used herein shall comply with requirements of the Florida Product Approval System as required by Florida Statute 553.842 and Florida Administrative Code 9B-72.
- B. Design Criteria: Provide glass and glazing that has been produced, fabricated, and installed to withstand normal temperature changes, wind loading, impact loading (where applicable), without failure of sealants or gaskets to remain watertight and airtight, deterioration of glass and glazing materials, and other defects in the work.
 - 1. Comply with Florida Building Code requirements for wind loading.
 - 2. Comply with Florida Building Code requirements for impact resistance.
- C. Provide monolithic glazed assemblies that have been produced and fabricated to comply with

requirements for system performance characteristics specified herein as demonstrated by testing manufacturer's corresponding stock systems.

- D. Single Source Responsibility: Provide materials obtained from one source for each type of glass and glazing product indicated.
- E. Source Quality Control: All glass shall bear the manufacturer's identifying label.
- F. Safety Glazing Standard:
 - 1. Where safety glass is indicated or required by authorities having jurisdiction, provide type of products indicated which comply with ANSI Z 97.1, and testing requirements of 16 CFR Part 1201 for category II materials.
 - 2. Comply with Florida Statutes - Chapter 553, Part III, Safety Performance Specifications and Methods of Test for Safety Glazing Used in Buildings.
 - 3. Subject to compliance with requirements, provide safety glass permanently marked with certification label of Safety Glass Certification Council (SGCC) or other certification agency acceptable to authorities having jurisdiction.
- G. Reference Standards: Comply with provisions of the following, unless otherwise indicated or specified:
 - 1. American Architectural Manufacturers Association (AAMA):
 - a. AAMA 800 Voluntary Specifications and Test Methods for Sealants.
 - 2. American National Standards Institute (ANSI):
 - a. ANSI Z 97.1 Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test.
 - 3. American Society for Testing and Materials (ASTM):
 - a. ASTM C 1036 Standard Specification for Flat Glass.
 - b. ASTM C 1048 Standard Specification for Heat-Treated Flat Glass - Kind HS, Kind FT Coated and Uncoated Glass.
 - c. ASTM E 774 Standard Specification for Sealed Insulating Glass Units.
 - 4. Code of Federal Regulations (CFR):
 - a. 16 CFR 1201 Safety Standard for Architectural Glazing Materials.

1.04 SUBMITTALS

- A. Product Data: Submit manufacturer's technical data for each glazing material and fabricated glass product required, including installation and maintenance instructions.
- B. Samples: Submit two (2) 12-inch square samples of each type of glass to be installed, and two (2) 12 inch lengths of each type of gasket to be used in the work.
- C. Guarantee: Submit a sample copy of the specified guarantee.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Product Delivery: Deliver glass to the job site in suitable containers that will provide protection from weather and breakage.
- B. Storage and Handling: Comply with manufacturer's published directions and as required to prevent edge damage to glass, and damage to glass and glazing materials from effects of moisture including condensation, of temperature changes, of direct exposure to sun, and from other causes; and keep glass free from contamination by materials capable of staining material.

1.06 PROJECT CONDITIONS

- A. Measurements: Sizes for glass and polycarbonate sheet shall be measured from the actual installed openings, frames, and doors.
- B. Environmental Requirements: Perform glazing when ambient temperature is above 40 degrees F., and on dry surfaces only.
- C. Sequence, Scheduling: Schedule glass sheet deliveries to coincide with glazing schedules.

1.07 GUARANTEE

- A. Special Project Guarantee: Provide a five (5) year written guarantee against defects in materials and workmanship, commencing on the date of Substantial Completion.

1.08 SAFETY AND TEMPERED GLASS LOCATIONS

- A. Provide safety or tempered glass:
 - 1. Where any exposed individual pane is greater than 9 square feet.
 - 2. Where the exposed bottom edge is less than 18" above a walking surface.
 - 3. In all operable units.
 - 4. Adjacent to doors.
 - 5. Within 24" of a door swing.
 - 6. As otherwise required in Chapter 24 of FBC 2004.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Products: Subject to compliance with requirements, provide products of one of the following manufacturers:
 - 1. PPG Industries, Inc. (PPG).
 - 2. Pilkington Building Products North America (Pilkington).
 - 3. Guardian Industries (Guardian).
 - 4. Old Castle Building Envelope

2.02 GLASS TYPES

- A. Glass Standards: Comply with the following:

1. Primary Glass Standard: Provide primary glass that complies with ASTM C 1036 requirements, including those indicated by reference to type, class, quality, and, if applicable; form, finish, mesh, and pattern.
 2. Heat-Treated Glass Standard: Provide heat-treated glass which complies with ASTM C 1048 requirements, including those indicated by reference to kind, condition, type, quality, and, if applicable; form, finish, and pattern.
- B. Clear Float Glass: Type I (transparent glass, flat), Class 1 (clear), Quality Q3 (glazing select), 1/4 inch thick unless otherwise indicated or specified. All interior glass unless otherwise noted.
- C. Exterior Glazing to have a U-value of 0.29 and a SHGC of 0.25 or better.
- E. Exterior Glass (Except for Curtain Wall from 0' to 10' above first floor): Provide insulated glass composed of the following: Total assembly 1" thick.
1. Outboard Glass Layer: Solarban® 60, 1/4 inch
 2. 1/2" Air Gap
 3. Inboard Glass Layer: Clear float heat-treated glass, 1/4 inch.
- F. Exterior Glass (Curtain Wall from 0' to 10' above first floor): Provide insulated glass composed of the following: Total assembly 1" thick.
1. Outboard Glass Layer: Clear float heat-treated glass, 1/4 inch.
 2. 1/2" Air Gap
 3. Inboard Glass Layer: Clear float heat-treated glass, 1/4 inch.

2.03 GLAZING MATERIALS

- A. General: Comply with the following:
1. Comply with recommendations of sealant and glass manufacturers for selection of glazing materials that have performance characteristics suitable for applications indicated and conditions at time of installation.
 2. Select glazing materials with proven compatibility with surfaces contacted in the installation and under service conditions indicated, as demonstrated by testing and field experience
- B. Glazing Sealants:
1. Silicone Glazing Sealant: Single component elastomeric silicone sealant complying with ASTM C 920, Type S, Grade NS; class and modulus as specified herein to suit installation conditions.
 2. Colors: Provide color of exposed sealants as selected by Architect/Engineer from manufacturer's standard colors.
 3. Class 50 Low-Modulus Products: Provide one of the following glazing sealants:
 - a. "SilPruf SCS2000"; GE Silicones.

- b. "864"; Pecora Corporation.
 - c. "Omniseal"; Sonneborn, Div. of ChemRex, Inc.
 - d. "Spectrem 3"; Tremco.
4. Class 50 Medium-Modulus Products: Provide one of the following glazing sealants:
- a. "799"; Dow Corning Corporation.
 - b. "SilPruf NB SCS9000"; GE Silicones.
 - c. "865"; Pecora Corporation.
- C. Preformed Butyl-Polyisobutylene Glazing Tape: Blend of butyl polyisobutylene rubber with a solid content of 100 percent, in extruded tape form, complying with AAMA 807.1, packaged on rolls with a release paper on side, with or without continuous spacer rod as recommended by manufacturers of tapes and glass for application indicated.
1. Products: Provide one of the following glazing tapes:
 - a. "PTI 606"; H.B. Fuller Company.
 - b. "PTI 303"; H.B. Fuller Company.
 - c. "Tremco 440 Tape"; Tremco, Inc.
 - d. "MBT-35"; Tremco, Inc.
 - e. "Extru-Seal"; Pecora Corp.
- D. Glazing Gaskets:
1. Dense Elastomeric Compression Seal Gaskets: Molded or extruded neoprene or EPDM gaskets of profile and hardness required to maintain watertight seal; complying with ASTM C 864, Option 1.
 2. Cellular Elastomeric Preformed Gaskets: Extruded or molded closed cell, integral-skinned neoprene of profile and hardness required to maintain watertight seal; complying with ASTM C 509, Type II; black.
 3. Products: Provide products by one of the following manufacturers:
 - a. D.S. Brown Co.
 - b. Maloney Precision Products Co.
 - c. Tremco, Inc.
- E. Setting Blocks: Neoprene, EPDM, or silicone blocks are required for compatibility with glazing sealants, 80 to 90 Shore A durometer hardness.
- F. Spacers: Neoprene, EPDM or silicone blocks, or continuous extrusions, as required for compatibility with glazing sealant, of size, shape, and hardness recommended by glass and sealant manufacturers for application indicated.

- G. Edge Blocks: Neoprene, EPDM or silicone blocks as required for compatibility with glazing sealant, of size and hardness required to limit lateral movement (side-walking) of glass.
- H. Cleaners, Primers, and Sealers: Type recommended by sealant or gasket manufacturer.

2.04 SEALED INSULATING GLASS UNITS

- A. Not Used.

2.05 FABRICATION

- A. Sizes: Fabricate glass and glazing material to sizes required for glazing openings indicated, with edge clearances and tolerances complying with recommendations of glass manufacturer. Provide thicknesses indicated or, if not otherwise indicated, as recommended by glass manufacturer for application indicated.
- B. Tong Marks: Provide tempered glass produced by manufacturer's special process, which eliminates tong marks, for locations and installation condition where tong marks would otherwise be exposed. No exposed tong marks shall be permitted.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Refer to Sections noted above for installation of glass and glazing materials, unless otherwise specified.
- B. Comply with combined written instructions of manufacturers, glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.
- C. Glazing channel dimensions, as indicated on Drawings, provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances. Adjust as required by Project conditions during installation.
- D. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass is glass with edge damage or other imperfections that, when installed, could weaken glass and impair performance and appearance.
- E. Protect glass from contact with contaminating substances resulting from construction operations, including weld splatter. If, despite such protection, contaminating substances do come into contact with glass, remove substances immediately as recommended by glass manufacturer.

END OF SECTION 08800