

SECTION 068200 - GLASS FIBER REINFORCED PLASTIC – EXTERIOR CORNICE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Glass fiber reinforced, resin fabrications.
 - 1. Exterior cornice at existing building - match existing profile.
 - 2. Exterior cornice to match drawings provided by architect

1.02 RELATED SECTIONS

- A. Section 013000 - Administrative Requirements: Submittal procedures.
- B. Section 054000 - Cold-formed Metal Framing: Supplementary supports for large items.
- C. Section 061000 - Rough Carpentry: Framing, blocking and support.
- D. Section 079005 - Joint Sealants: Field applied sealants.

1.03 REFERENCE STANDARDS

- A. ASTM E 84 - Standard test Method for Surface Burning Characteristics of Building Materials.
- B. FM P7825 - Approval Guide; Factory Mutual Research Corporation; current edition.
- C. ITS (DIR) - Directory of Listed Products; Intertek Testing Services NA, Inc.; current edition.
- D. UL (BMD) - Building Materials Directory; Underwriters Laboratories Inc.; current edition.
- E. Guidelines and Recommended Practices for Fiberglass Reinforced Plastic Architectural Products.

1.04 DESIGN REQUIREMENTS

- A. Design items with sufficient strength for handling stresses.
- B. Installed architectural fiberglass components and systems shall be designed, engineered, fabricated, and installed to conform to the state codes, local codes and design.

1.05 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on specified component products.
- C. Shop Drawings: Indicate plan views, elevations, sections, profiles and details of all components. Provide dimensions, adjacent construction, materials, thicknesses, fabrication details, required clearances, field jointing, tolerances, colors, finishes, methods of support, integration of adjacent components, and anchorages.
- D. Samples: Submit one piece, of each profile indicated, minimum 12 inch in size, illustrating color, texture, and finish.
- E. Manufacturer to submit a list of comparable projects, locations, Owner and Architect contacts.
- F. Submit manufacturers current valid certification with The Certified Composites Technician (CCT) program created by the American Composites Manufacturers Association (ACMA).
- G. Manufacturer certificate, located at the end of this Section to be submitted with the bid, for the proposed FRP system.

1.06 QUALITY ASSURANCE

- A. Designer Qualifications: Design under direct supervision of a Professional Engineer experienced in design of this Work and licensed in the State in which the Project is located.
- B. Manufacturer Qualifications: Company specializing in architectural glass fiber and resin components with ten years documented experience.

- C. Obtain FRP components from a single source manufacturer that has the ability and resources to comply with requirements and project schedule.
- D. Manufacturer shall demonstrate current valid certification and participation in the CCT program and fabricate material based upon provisions published in the "Guidelines and Recommended Practices for Fiberglass Reinforced Plastic Architectural Products".

1.07 WARRANTY

- A. Warrant architectural fiberglass components to be free from defect due to materials and workmanship for five (5) years.

1.08 REGULATORY REQUIREMENTS

- A. Conform to ASTM E 84 code for a flame/smoke rating in accordance with UL requirements.

1.09 DELIVERY, STORAGE, AND HANDLING

- A. Protect components from damage by retaining shipping protection in place until installation.
- B. Inspect all crates and components at time of delivery to ensure no concealed damage. Note freight carrier's BOL of any damage at time of delivery.
- C. Handle, store and transport architectural fiberglass components according to manufacturer's recommendations and in a manner that prevents damage.
- D. Damage Responsibility: Except for damage caused by others, the installer is responsible for chipping, cracking, or other damage to fiberglass components, after delivery to the jobsite and until installation is completed and approved by the Architect.

1.10 FIELD CONDITIONS

- A. Do not install site fabricated components when site conditions may be detrimental to successful installation.
- B. Maintain temperature and humidity conditions favorable to proper curing of resin during and after installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Subject to compliance with requirements, manufacturers offering the following products that may be incorporated into the work include, but are not limited to the following:
 - 1. Worthington Millwork, LLC
17842 Ashley Drive
Panama City Beach, FL 32413
(800)872-1608
www.WorthingtonMillwork.com

2.02 MATERIALS

- A. Molded Exterior Surface: U-V inhibited polyester gel coat, 18 to 22 mils thick. Architect to select gel coat color.
- B. Barrier Coat: Specially formulated backup polyester surface ceil 18-20 mils thick to prevent glass print through and provide Class A finish.
- C. Back Up Laminate to consist of the following:
 - 1. Resin: Polyester resin shall be fire retardant, and meet Class Flame spread rating of 25 or less and smoke density under 450 without the use of antimony trioxide as characterized by the ASTM E-84 tunnel test at typical 1/8" glass mat laminate. General purpose resin will not be permitted.
 - 2. Filler: Functional filler to be added to resin matrix to minimize shrinkage, add stiffness, control opacity, add fire retardant, improve surface finish, minimize crazing, and control dimensional stability from weather extremes.

3. Fiberglass Reinforcement: Type "E" fiberglass, glass cloth, matt and/or random chopped glass fibers. Glass content approximately 20% to 30%.
 4. Laminate Thickness: Nominal laminate shall be minimum 3/16" thickness. Additional core reinforcements and/or sandwich structure added as required for rigidity and structural integrity.
- D. Installer to provide anchors and fasteners and other accessories for proper installation of fiberglass components as recommended and approved by FRP manufacturer.

2.03 COMPONENT PROPERTIES

- A. To meet the following properties:
1. Tensile strength: 12,000 PSI per ASTM D638.
 2. Flexural strength: 20,000 PSI per ASTM D790.
 3. Flexural modulus: 0.9 x 10 to the 6th PSI per ASTM D790.
 4. Compressive strength: 17,000 PSI per ASTM D695.
 5. Bearing strength: 9,000 PSI per ASTM D638.
 6. Thermal Expansion : 10 x 10 to the -6th
 7. Specific gravity: 1.5

2.04 SHOP FABRICATION

- A. Mold Material: rubber, metal or wood with resin coating type.
1. Production molds shall be constructed from successive layers of glass fiber with tooling gel coat or alternately from rubber molds. Molds shall be constructed with sufficient thickness and rigidity to prevent deflection, warpage and defects during panel production.
- B. Mold Surface: Smooth.
- C. Component Ends: Form panel ends with ship lap or tongue and groove joint. Use joints with sufficient depth to accommodate mating and alignment of panel surfaces and panel to panel sealant components.
- D. Provide all special transition, corner pieces (inside and outside) and special closures necessary for a complete, visually continuous, weather tight fabrication.
- E. All inside and outside corners shall be shop fabricated. Fabrication of corners in the field will not be permitted.
- F. Coordinate cutouts required for drain inlets, rainwater conductors and other penetrations. Reinforce panel as required and provide special formed closures to make joints and intersections weather-tight.
- G. Fabricate components with the open mold spray-up or hand lay-up method.
- H. Finish other surfaces not in contact with the mold to match the molded surfaces in appearance.
- I. Finish trim corners and edges.
- J. Coat exposed surfaces and surfaces in contact with moisture or earth with gel coat of colored resin.
- K.** Cure components prior to shipment and remove material that may be toxic to plant or animal life.

2.05 FINISH

- A. Color: As selected by Architect.
- B. Exposed to view surface texture: Smooth

PART 3 EXECUTION 3.01 EXAMINATION

- A. Verify that surfaces are ready to receive work and dimensions are as indicated on shop drawings.

3.02 INSTALLATION

- A. Install fabrications in accordance with shop drawings and fabricator's instructions

3.03 TOLERANCES

- A. Part thickness: +/- 1/8 inch.
- B. Gel coat thickness: +/- 2.5 mils.
- C. Length: +/- 1/8 inch.
- D. Maximum variation from true position: 1/2 inch in 20 feet.
- E. Maximum offset from true alignment: 1/4 inch in 20 feet. 3.04

CLEANING

- A. Clean components of foreign material without damaging finished surface.
- B. Hand rub smooth surfaces with polishing cream.
- C. Clean fabrications in accordance with fabricator's instructions. 3.05

PROTECTION

- A. Place protective structural covering over installed units.

END OF SECTION