SECTION 06610 – ARCHITECTURAL FIBERGLASS

PART 1 – GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Fabrication of fiberglass – reinforced polyester cornice profiles.

B. Related Documents and Sections:
   1. General Conditions, Supplementary Conditions and Division 1 General Requirements apply to the work of this section.
   2. Section 06100, “Rough Carpentry”, for blocking.
   3. Section 07901, “Joint Sealants”.

1.02 QUALITY ASSURANCE

A. The fiberglass manufacturer shall be one who is currently in the business of manufacturing and supplying architectural fiberglass components for the building construction industry and who can demonstrate the capability.

B. The fiberglass manufacturer shall have been engaged in the fiberglass industry for at least 10 years doing work with projects comparable in size, scope, detail, and complexity to that shown and specified.

C. Single Source Responsibility for Architectural Fiberglass: Obtain architectural fiberglass from a single source with resources to provide products complying with requirements indicated without delaying the work.

D. Fire Test Response Characteristics: Provide architectural fiberglass and related materials with fire test response characteristics as specified elsewhere in this section as determined by testing identical products per test method ASTM E-84 or other testing and inspecting agency acceptable to authorities having jurisdiction. Provide written certification that supplied architectural fiberglass panels meets or exceeds the criteria.

1.03 SUBMITTALS

A. Qualification Data for firms and persons specified in the “Quality Assurance” Article to demonstrate their capabilities and experience.

Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

B. Product Data:

1. For products of standard manufacture, not custom fabricated for this work, submit manufacturer's catalog illustrations, specifications, anchor details and installation instructions.

C. Color Selection:

1. Architectural Mall FRP is manufactured in standard white, however Architects can submit custom color sample selection chips of actual material showing color, texture and sheen available for initial review.
   a. FRP Finish to be White unless (see B)

   b. Architect will supply custom paint color sample for matching.

D. Shop Drawings:

1. Submit shop drawings for fabrication and erection. Include plans, elevations, sections, profiles, and details of cornice panels. Indicate dimensions of each profile and component. Include for comparison a dimensioned drawing showing plan elevation section and details of existing cornice section used for model purposes if applicable. Indicate those features, which differ from fiberglass replication. Include details for panel connections, anchorage to substructure and all miscellaneous accessories. Show all special corner pieces, splices for panels and inside corner transitions and terminations for panels. Provide layout drawings including seam locations for each elevation.

E. Samples:

1. For each cornice type submit sample cornice panel section, large enough to include all panel features including joints. Construct sample panel to show all connection points, embedded connection and reinforcing clips, include typical fasteners to complete the submission.

F. Submit detailed maintenance instructions for inclusion in final operation and maintenance manuals.

G. Submit warranty on completed fiberglass components in writing against defects of materials and workmanship and to meet the specified requirements of this Section for a period of one (1) year from delivery to site.

1.04 HANDLING AND SHIPMENT

A. Provide shipping crates of sufficient size and strength to protect components during shipping or ship fiberglass components in padded dedicated moving van.

1. Provide additional protection as may be necessary to prevent soiling of surfaces and marring of finish.

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURES

A. Subject to compliance with requirements, fiberglass manufacturer offering products that may be incorporated in work include:

Architectural Mall, Inc
323 St Paul Blvd
Carol Stream, IL 60188
T. 877-279-9993
F. 844-817-0480
www.columnsandbalustrades.com
sales@architecturalmall.com

2.02 MATERIALS

A. General: The fiberglass reinforced polyester plastic components shall be designed, fabricated and erected to conform to the state of Building Code, Local Codes and to the Architect's design criteria.

B. Glass cloth, matt and "Chop" shall be equal to the products of PPG-Owens Corning. Type "E" random chopper fibers.

C. Polyester resins when requested shall be equal to Class A, AMI Spec 67. The resin shall be flame retardant, promoted thixotropic polyester resin designed for use in hand laid up and spraying processes. The resin shall be specifically formulated for use in applications that require an ASTM E 84, Class I flame spread rating, without the use of fillers or antimony trioxide, with an ASTM E 84 flame spread rating of *25* unfilled smoke density of *380* or under.

D. Gel Coat: The gel coat shall be a high-performance product with ultraviolet inhibitors as recommended by the gel coat and fiberglass panel manufacturer.

E. Fiberglass-reinforced polyester components shall be manufactured using the specified resins, reinforced with chopped glass fibers. All exposed surfaces shall be finished with custom colored gel-coat.

F. Internal metal reinforcement, anchorage clips, brackets and all other “built-in” accessories shall be captured and additionally reinforced with additional glass fiber and matt of sufficient thickness as required by the panel manufacturers design.

G. All metal hardware, both loose and embedded, shall be stainless steel.

H. Gel coat thickness shall be 0.015” minimum to 0.025” maximum.

I. Panel thickness shall be 3/16” minimum.

J. FRP Properties, Min. Values:

1. Gel Coat Thickness: 22 mils. Wet
2. Bearing Strength: 9,000 psi per ASTM D638
3. Shear Strength: 7,500 psi
4. Flexural Strength: 20,000 psi per ASTM D790
5. Flexural Modulus: 0.9×10^6 psi per ASTM D790
6. Tensile Strength: 12,000 psi per ASTM D638
7. Compressive Strength: 17,000 psi per ASTM D695
8. Relative Density (Specific Gravity): 1.5

2.03 PANEL FABRICATION

A. Prior to commencement of work review the job site before selective demolition begins to determine the layout, spacing and termination of the existing cornice. Duplicate these layouts intersections and relationships in so far as practical. Identify and resolve panel detail conflicts in advance and identify such condition and resolutions on the shop drawings.

B. Carefully measure each existing cornice assembly component and replicate size, profile, position, and detail in the finished panel so far as practical. Indicate on shop drawings those indentations and/or detail which cannot be duplicated in the replication due to physical limitations of the manufacturing process.

C. Full-size models and mock-ups shall be hand carved and machined as required to produce the replication patterns.

D. 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, warp age and defects during panel production.

E. Form panel ends with sealable lap joints. Use lap joints with sufficient depth to accommodate mating and alignment of panel surfaces and panel-to-panel sealant components.

F. Provide all special transition, corner pieces (inside and outside) and special closures necessary for a complete, visually continuous, weather tight installation.

1. All inside and outside corners shall be shop fabricated. Fabrication of corners in field will not be permitted.

G. Coordinate cutouts required for drain inlets, rainwater conductors and other penetrations. Reinforce panel as required and provide special formed closures to make joints and intersection weather tight.

PART 3 – EXECUTION

3.01 INSTALLATION

A. Coordinate required blocking for attachment of cornice panels to substructure. Provide additional, wood preservative treated or metal stud framing as may be required to attached and reinforce cornice panels for a solid installation.

1. Coordinate installation with any metal gutter lining work or flashing above and wood/metal substrates.

B. Erect cornice panels plumb, square and true to line and level. Follow fiberglass panel manufacturer's recommendations with regard to installation clearances, notches, and formation of panel-to-panel joints.

C. Install sealant and accessories as work progresses, so as to make the work weather tight.

D. Provide each panel with joints such that adjacent panels mate to produce flush joints. Recess blocking or notch continuously behind each panel joint. Set panels to ensure a maximum joint thickness of 3/8".

E. Prepare each cornice panel section for installation by carefully sanding joints and shrinkages where blocking occurs to assure a tight flush fit.

F. Fill joints with a continuous bead of sealant. Tooling finished joints to a slightly concave profile ensuring complete filing and flush installation.

G. Carefully monitor ambient temperatures at time of panel installation and observe all panels to panel clearances recommended by the fiberglass manufacturer.

H. Do not cut or abrade finishes, which cannot be completely restored in the field. Installer to make small inconspicuous finish repairs using manufactures color matching gel fill finish. If to large of a repair is needed return to fiberglass manufacturer for alterations or new units.

I. Use only stainless steel connectors approved by the panel manufacturer and which will develop the strength required by fiberglass panel manufacturer's calculations. The installer shall supply these connectors.

J. Countersink all exposed fasteners. Patch all attachment holes with gel fill finish supplied by the fiberglass panel manufacturer for field application. Finish attachment points so that there is no detectable difference in the completed panel surface.

K. Clean installed panel to remove all dirt, smudges, and construction dirt. Use only those cleaning products and procedures recommended by the fiberglass manufacturer.