



Architectural Fiberglass Fabrication Specifications

SECTION 06610

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, conditions of the contract and Division 1 Specifications sections, apply to work of this section.

1.2 SUMMARY

- A. Section Includes: Architectural Fiberglass Reinforced Polymer (FRP) fabrications.

1.3 RELATED SECTIONS

- A. Section 05120 – Structural Steel: Support framing for architectural fiberglass fabrications.
- B. Section 06100 – Rough Carpentry: Framing of Opening and Blocking.
- C. Section 07900 - Joint sealants and field applied sealants.

1.4 DESIGN REQUIREMENTS

- A. Installed architectural fiberglass fabrications and fastening systems shall be designed, engineered, fabricated, and installed to conform to the state codes, local codes, and the Architect's design.

1.5 SUBMITTALS

- A. Shop Drawings: Shall illustrate dimensions, adjacent construction, materials, thickness, fabrications details, required clearances, field jointing, tolerances, colors, finishes, methods of support, attachments, anchorage to substrates, integration of components, and list of part numbers that coordinate with labeled architectural fiberglass parts.
- B. Submit current valid third party product Listing and Labeling from International Code Council (ICC)-sanctioned authority to be affixed to all products manufactured and delivered to the jobsite as required per the 2009 International Building Code (IBC). ICC-sanctioned Listing and Labeling Program shall be in place at bid time and state compliance with Flame Spread Index requirements stipulated in the 2009 IBC, section 2612. Manufactured products without Listing and Labeling Program at bid time will not be considered.
- C. Submit manufacturer's current valid certification with The Certified Composites Technician (CCT) program created by the American Composites Manufacturers Association (ACMA).
- D. Submit manufacturer's internal Quality Control & Assurance Procedures based upon provisions published in the "Guidelines and Recommended Practices for Fiberglass Reinforced Plastic Architectural Products" upon request.
- E. Product Data: Submit manufacturer's product data and installation instructions.
- F. Product Samples: Submit minimum 3-inch x 5-inch samples in specified color, texture and finish when applicable.

1.6 QUALITY ASSURANCE

- A. Obtain architectural fiberglass from a single source manufacturer that has the ability and resources to comply with the requirements and schedule of the project.
- B. Manufacturer's ICC-sanctioned Listing and Labeling Program shall include site visits to manufacturing facility by third party testing authority witnessing compliance with manufacturing procedures and Listing and Labeling Program.
- C. Manufacturer to comply with Quality Control & Assurance Procedures, and fabricate architectural fiberglass based upon provisions published in the "Guidelines and Recommended Practices for Fiberglass Reinforced Plastic Architectural Products".
- D. Inspect each molded piece to ensure that it complies with specified requirements, including nominal dimensions.

1.7 MANUFACTURER'S QUALIFICATIONS



- A. Manufacturer: Provide products manufactured by a firm specializing in the manufacture of fiberglass architectural ornamentation, in the United States with a minimum of ten (10) years experience.
- B. All products manufactured shall carry ICC-sanctioned Listing and Labeling per 2009 IBC.
- C. 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".
- D. Provide a list of projects comparable in size, scope, and complexity as indicated, upon request.
- E. Provide verification that architectural fiberglass meets or exceeds products specified.

1.8 DELIVERY, STORAGE AND HANDLING

- A. Handle, store and transport architectural fiberglass fabrications according to manufacturer's recommendations and in a manner that prevents damage.
- B. Protect architectural fiberglass from damage by retaining shipping protection in place until installation.
- C. Damage Responsibility: Except for damage caused by others, the installer is responsible for chipping, cracking, or other damage to fiberglass fabrications, after delivery to the jobsite and until installation is completed and inspected and approved by the Architect or owner's representative.

1.9 WARRANTY

- A. Warrant architectural fiberglass fabrications to be free from defect due to materials and workmanship for one year.

PART 2 – PRODUCTS

2.1 ACCEPTABLE SUPPLIER:

Zoho Stone Cladding Products LLC
34318 US Highway 19 N, Palm Harbor FL 34684
727.230.6956 - 727.230.9716 Fax

2.2 FABRICATION PATTERNS/MOLDS

- A. Custom Pattern/Mockups: Patterns and mockups shall be hand carved and/or CNC machined by skilled pattern makers with minimum of ten (10) years experience with architectural elements. Patterns & mockups shall be available at manufacturing facility for architect's inspection and approval before molds are produced.
- B. Custom Molds: Molds shall be produced with ample layers of tooling resin, tooling gel-coat, glass fibers and/or flexible rubber by skilled mold makers with minimum of ten (10) years experience with architectural elements. Produced molds shall have rigidity and thickness to prevent distortion and deflection of molded architectural fiberglass.

2.3 MATERIALS CHARACTERISTICS

- A. MOLDED EXTERIOR SURFACE: U-V inhibited, NPG-ISO polyester gel coat, 18 to 22 mils thick. Color to match in texture and finish of sample supplied by Architect.
- B. BARRIER COAT: Specifically formulated backup polyester surface veil 18-20 mils thick to prevent glass print through and ultimate Class A finish.
- C. BACK UP LAMINATE:
 - 1. Resin: Polyester resin shall be fire retardant, and meet Class 1 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 retardance, 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.

2.4 AVERAGE MECHANICAL PROPERTIES:

| PROPERTY | VALUE | TEST METHOD |
|----------------------|----------------------------|-------------|
| Tensile strength | 12,000 PSI | ASTM D638 |
| Flexural strength | 20,000 PSI | ASTM D790 |
| Flexural modulus | 0.9 x 10 ⁶ PSI | ASTM D790 |
| Compressive strength | 17,000 PSI | ASTM D695 |
| Bearing strength | 9,000 PSI | ASTM D638 |
| Thermal expansion | 10 x 10 ⁻⁶ (°F) | |
| Specific gravity | 1.5 | |

2.5 FINISH

- A. Color as selected by Architect or Owner’s representative.
- B. Surface Texture/Exposed side shall be smooth or textured based upon approved sample.

2.6 TOLERANCES

- A. Part Thickness: + or – 1/8 inch.
- B. Gel Coat Thickness: + or – 2.5 mils.
- C. Length: + or – 1/8 inch
- D. Variation from Square: 1/8 inch.
- E. Hardware Location Variation: + or – ¼ inch.

2.7 IDENTIFICATION

- A. Identify each architectural fiberglass unit with a permanent serial number.
- B. Number parts to coordinate with shop drawings.

2.8 CURING AND CLEANING

- A. Cure and clean components prior to shipment and remove material which may be:
 - 1. Toxic to plant or animal life.
 - 2. Incompatible with adjacent building material.

2.9 ANCHORS AND FASTENERS

- A. Contractor to provide anchors and fasteners and other accessories for proper installation of architectural fiberglass fabrications as recommended and approved by fiberglass fabrication manufacturer.

PART 3 – EXECUTION

3.1 PRE-INSTALLATION EXAMINATION

- A. Carefully observe and verify field conditions that substrates are ready for installation of architectural fiberglass fabrications. Contractor shall verify on site dimensions with shop drawings and assume full responsibility for fitting the components to the structure.
- B. Verify that bearing surfaces are true and level.
- C. Verify that support framing has been constructed to allow accurate placement, alignment and connection of architectural fiberglass fabrications to structure.
- D. Report discrepancies between design dimensions and field dimensions, which could adversely affect installation, to the Architect and / or Owner’s Representative.
- E. Do not proceed with installation until discrepancies are corrected, or until installation requirements are modified and approved by the Architect and / or Owner’s Representative.
- F. Beginning of installation means acceptance of existing conditions and fiberglass materials.



3.2 INSTALLATION

- A. Install architectural fiberglass fabrications in accordance with manufacturer's instructions and approved shop drawings.

3.3 ALLOWABLE TOLERANCES FOR INSTALLED UNITS

- A. Maximum offset from True Alignment: 1/4 inch in 20 feet.
- B. Maximum Variation from True Position: 1/2 inch in 20 feet.

3.4 CLEANING

- A. Clean installed architectural fiberglass fabrications using cleaning methods and material approved by manufacturer.

3.5 PROTECTION OF INSTALLED FABRICATIONS

- A. Comply with manufacturer's recommendations and instructions for protecting installed fabrications during construction activities.

END OF SECTION