

## SECTION 06 6100

### FIBERGLASS REINFORCED PLASTIC FABRICATIONS ClassicGlas Fiberglass Columns Class A Fire Rated

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Glass fiber reinforced polyester (FRP) columns as indicated on the drawings.

##### 1.2 RELATED SECTIONS

- A. Section 06 100 – Rough Carpentry: Supplementary supports for large items.
- B. Section 09 900 – Paints and Coatings: Field painting and sealing prior to painting

##### 1.3 REFERENCES

- A. ASTM E 84 – Standard Test Method for Surface Burning Characteristics of Building Materials; 1999 <sup>\*\*\*</sup>(ONLY FOR FIRE RATED MATERIALS)<sup>\*\*\*</sup>
- B. ASTM D 790 – Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials; 1999
- C. ASTM D 638 – Standard Test Method for Tensile Properties of Plastics; 1999
- D. ASTM D 695 – Standard Test Method for Compressive Properties of Rigid Plastics; 1996

##### 1.4 SUBMITTALS

- A. Product Data: Manufacturer's data sheets on each prefabricated product to be used, including dimensions, finishes, storage and handling requirements and recommendations, and installation recommendations.
- B. Shop Drawings: For custom fabrication, provide drawings showing dimensions, layout, joints, details, and interface with adjacent work; include field dimensions of the spaces where items are to be installed, if critical to proper installation. Fabrication to begin only after Architects final review stamp.

##### 1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Transport, lift, and handle units with care, avoiding excessive stress and preventing damage; use appropriate equipment.
- B. Store products in manufacturer's unopened packaging until ready for installation, in a clean dry area off the ground and protected from the weather, moisture and damage; store units upright and not stacked unless permitted by manufacturer. The contractor shall not be required to move until installation.

##### 1.6 QUALITY ASSURANCE

- A. Manufacturer: A firm with not less than 10 years successful experience in producing the type of prefabricated components for project applications equivalent to the requirements for this project.

- B. Installer Qualifications: Shall have a minimum of 5 years' experience with the type of prefabricated components specified and shall be technically instructed by the manufacturer.

## **1.7 WARRANTY**

- A. The manufacturer of the fiberglass reinforced polyester (FRP) products and the Contractor shall jointly warrant FRP products to be free from defects in materials and workmanship for a the lifetime of the original owner, and if defects in materials and / or workmanship should appear within the stated period of warranty, the manufacturer and Contractor shall repair or replace the affected part without additional cost to the Owner. Manufacturer's warranty shall be limited to replacement of defective materials and the General Contractor shall remove defective units and install replacement items without additional cost to the Owner or / Manufacturer.
- B. Warranty shall be based on installation methods in conformance with manufacturer's recommendations and instructions. Manufacturer's warranty shall not cover damage to FRP caused by acts of God or structural, mechanical, electrical defects and defects of adjacent materials furnished and installed by other trades.

## **PART 2 PRODUCTS**

### **2.1 MANUFACTURERS**

- A. Acceptable Manufacturer:
  - 1. Melton Classics Inc. PO Box 465020 Lawrenceville, GA 30045  
Columns and Pilasters - "ClassicGlas Fiberglass Columns"  
Email: [Sales@MeltonClassics.com](mailto:Sales@MeltonClassics.com) Website: [www.meltonclassics.com](http://www.meltonclassics.com)  
Phone: 800-963-3060 Fax: 770-962-6988
  - 2. Substitutions: see Section 01 6000- Product Requirements

### **2.2 GENERAL**

- A. Column designs shall have proportions based on the Classical Orders of Architecture.
- B. Column shafts, capitals and bases shall be manufactured from the same fiberglass reinforced polyester resin composite as the column shafts. No polyurethane capitals or bases allowed.
- C. Capitals and base/plinths shall be the manufacturers standard for the size and design indicated

### **2.3 APPROVAL OF ACCEPTABLE MANUFACTURERS**

- A. It is required that other manufacturers wishing to submit their products shall submit and a 3 part CSI specification and samples of each type of column, capital, and base at least ten (10) days prior to bid date. These products must be certified by the manufacturer to meet or exceed all, materials, technical performance tests and warranty listed on the architectural specifications for those products. The design and aesthetic appearance of the column, capital, and base are of equal importance in determining if the column shaft, capital, and base are "equal". Manufacturers and products meeting these requirements will receive a letter of approval prior to bid date of this project. Manufacturers not receiving said letter will not be considered for this product.

## 2.4 MATERIALS

- A. Fabrication of Fiberglass reinforced polyester products shall be manufactured using specified resins, and reinforced chopped glass fibers, and exposed surfaces will be sanding gel-coat for field applied coatings. Structural reinforcing will be added where necessary. Materials are as follows.
1. Surface Coat: Ultraviolet inhibited NPG-ISO polyester gel-coat, 20 mils (0.5mm) thick nominal.
  2. Polyester Resin: Class A resin will meet or exceed the requirements of ASTM E 84, Class I flame spread rating.
  3. Glass Fiber: Glass cloth, matte and chop: random chopped fibers shall be "E" type.
  4. Reinforcement: Use of structural reinforcement where necessary for product rigidity.
  5. Final ratio of materials shall be 40% fiber, 60% resin for the body components.
  6. Shaft thickness shall be 3/16" to 1/4" depending on column size
- B. Typical Glass Reinforced Laminate Material Specifications
1. Mat Laminate Flexural Strength at 77 degrees F (25C), 20,000 psi (186158 N/m<sup>2</sup>) when tested in accordance with ASTM D 790.
  2. Flexural Modulus at 77 degrees F (25 C) at 10 (6) 1.5 psi (10.34 N/m<sup>2</sup>) when tested in accordance with ASTM D 790.
  3. Tensile Strength at 77 degrees F (25C), 12,000 psi when tested in accordance with ASTM D 638.
  4. Comprehensive Strength at 77 degrees F (25C) Edgewise, 17,000 psi (186158 N/SM) ASTM D 695.
  5. 24 Hr. Water absorption at 77 degrees F (25C) 0.05 percent change in weight when tested in accordance with ASTM D 570.
  6. Barcol Hardness 45 when tested in accordance with ASTM D 2583.
  7. Glass content, 30 percent.

## 2.5 FABRICATION

- A. Prior to fabrication verify, by measurement at the Project Site, all dimensions affecting work of this section.
- B. Fabricate materials to the required size and thickness to produce adequate strength and durability in the finished product and for the intended use. Work to the dimensions shown or accepted on the shop drawings using proven details of fabrication and support.
- C. Thickness of FRP parts: Nominal total thickness is ¼ inch (6mm) to 3/16 inch (5mm) including gel-coat, or as specified in approved shop drawings. Gel-coat thickness 25 mils nominal.
- D. Remove all units that are cracked, bent, chipped, scratched, or otherwise unsuitable for installation and replace with new, approved items.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Prior to installation verify that all conditions are plumb and true, and that any

previously installed work under other sections is acceptable for installation of FRP items.

- B. Any unsatisfactory conditions shall be noted and brought to the Architect's attention immediately before proceeding.
- C. All field dimensions should be checked and if not in allowable range the Architect should be notified and wait for installation instructions before proceeding.

### **3.2 PREPARATION**

- A. All surfaces where FRP products are to be installed should be clean and free of debris.
- B. Prepare substrates for connection devices carefully, using approved shop drawings and preparation methods provided by manufacturer.
- C. Install all supplementary support; wood blocking, metal studs, or any other supports specified by manufacturer.

### **3.3 INSTALLATION**

- A. Install in accordance with manufacturer's instructions, making sure that units are plumb, true to line and shim whenever necessary.
- B. Use tools and hardware approved by manufacturer.
- C. Connect FRP components in accordance with approved shop drawings. Use only Stainless Steel fasteners permitted for use in all connections. Allowing no more than ¼ inch in 10feet variation from approved shop drawings, also align all vertical and horizontal seams.
- D. Secure individual units as indicated, accurately fitted true to line and slopes as indicated and required for proper alignment with adjacent work.
- E. Caulk joints as indicated in the approved shop drawings.

### **3.3 CLEAN-UP AND PROTECTION**

- A. Clean surfaces of FRP; comply with manufacturer's instructions. Repair or replace units damaged during installation.
- B. Protect FRP products from damage or deterioration until acceptance of the work. Touch-up, repair or replace damaged products before Substantial Completion.
- C. Clean and properly dispose of misplaced adhesives, shavings, and trimmings from the area.

### **I. END OF SECTION**