SECTION 06 61 00

GLASS FIBER REINFORCED PLASTIC FABRICATIONS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. ALTERNATE to GFRC - Glass fiber reinforced plastic fabrications as indicated on the drawings.

1.2 RELATED SECTIONS

A. Section 03 49 00 - Glass Fiber Reinforced Concrete.

B. Section 05 50 00 - Metal Fabrications: Supplementary supports for large items.

C. Section 06 10 00 - Rough Carpentry: Supplementary supports for large items.

D. Section 09 90 00 - Paints and Coatings: Field painting and sealing prior to painting.

1.3 REFERENCES

A. ASTM D 638 - Standard Test Method for Tensile Properties of Plastics; 1999.

B. ASTM D 648 - Standard Test Method for Deflection Temperature of Plastics under Flexural Load in the Edgewise Position; 1998c.

C. ASTM D 790 - Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials; 1999.

D. ASTM D 695 - Standard Test Method for Compressive Properties of Rigid Plastics; 1996.

E. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 1999.

1.4 SUBMITTALS

A. Submit under provisions of Section 01 00 00.

B. Product Data: Manufacturer's data sheets on each product to be used, including dimensions, finishes, storage and handling requirements and recommendations, and installation recommendations.

C. Shop Drawings: For custom items, provide drawings showing dimensions, layout, joints, details, and interface with adjacent work; include field measured dimensions of the spaces where items are to be installed, if critical to proper installation.

D. Samples: For each custom finish specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.

1.5 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 weather, moisture and damage; store units upright and not stacked unless permitted by manufacturer.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Stromberg Architectural Products Inc; PO Box 8036, I-30 West, 4400 Oneal, Greenville, TX 75404. ASD. Tel: (903) 454-0904. Fax: (903) 454-3642. Email: sales@strombergarchitectural.com. www.strombergarchitectural.com.

B. Substitutions: Permitted subject to compliance with requirements as judged solely by Architect..

C. Requests for substitutions will be considered in accordance with provisions of Section 01 00 00.

2.2 MATERIALS

A. Glass Fiber Reinforced Plastic Fabrications: Molded surface coat over polyester resin laminate reinforced with glass fiber and structural reinforcing as required.
1. Surface Coat: Ultraviolet inhibited NPG-ISO polyester gel coat, 20 mils (0.5 mm) thick, nominal.
2. Surface Coat: Polyurethane.
3. Color: Match Architect’s sample
4. Texture on Exposed Side: Smooth
5. Resin: Isophthalic polyester resin; with flame spread index less than 25, smoke developed index less than 450, when tested in accordance with ASTM E 84; heat distortion greater than 180 degrees F (82 degrees C), when tested in accordance with ASTM D 648.
6. Glass Fiber: "E" type random chopped fibers.
7. Glass Content: 25 to 30 percent by weight.
8. Glass Content: 15 percent by weight, maximum.
9. Shell Thickness: 3/16 inch (5 mm), minimum.
10. Surface Burning Characteristics: Flame spread index of less than 25, smoke developed index of less than 450,when tested in accordance with ASTM E 84.
11. Flexural Strength: 20000 psi (138 MPa), when tested in accordance with ASTM D 790.
12. Modulus of Elasticity: 0.9 x 10^6 psi (6200 MPa), when tested in accordance with ASTM D 790.
13. Tensile Strength: 12000 psi (83 MPa), when tested in accordance with ASTM D 638.
14. Compressive Strength: 17000 psi (117 MPa), when tested in accordance with ASTM D 695.
15. Bearing Strength: 9000 psi (62 MPa), when tested in accordance with ASTM D 638.
16. Thermal Expansion Coefficient: 10 x 10^-6 per degree F (5.56 x 10^-6 per degree C).
17. Specific Gravity: 1.5.
18. Variation in Thickness From Nominal: Minus 1/16 inch (1.5 mm), plus 1/4 inch (6 mm).
19. Variation in Thickness of Gel Coat: Plus and minus 2.5 mils (0.06 mm), maximum.

20. Variation from Dimensions Indicated on Drawings: Plus and minus 1/8 inch (3 mm), maximum.
21. Variation from Square: Plus and minus 1/8 inch (3 mm), maximum.
22. Variation of Hardware from Intended Location: Plus and minus 1/4 inch (6 mm), maximum.
23. Provide concealed reinforced anchorage points for anchors of type recommended by manufacturer.
24. Mark each unit with permanent serial number coordinated with shop drawing designators.
25. Cure and clean prior to shipment; remove material that may be toxic to plant or animal life or incompatible with adjacent building materials.

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly constructed; verify that substrates are plumb and true.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

C. Check field dimensions before beginning installation. If dimensions vary too much from design dimensions for proper installation, notify Architect and wait for instructions before beginning installation.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Install supplementary temporary and permanent supports as required for proper installation.

3.3 INSTALLATION

A. Install in accordance with applicable code and manufacturer's recommendations, plumb and true to line; shim where necessary.

B. Install with variation from position shown on drawings not more than 1/4 inch in 10 feet (6.25 mm in 3 m); align horizontal and vertical joints.

C. Fasten using methods that allow for thermal expansion and contraction.

D. Provide control joints at not more than 35 feet (10.5 m) on center if not indicated on drawings.

E. Provide expansion joints where moving joints in substrate occur.

3.4 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

…END OF SECTION 06 61 00