

SECTION 06 82 00 GLASS FIBER REINFORCED PLASTIC (GFRP)

1.0 GENERAL

1.1 SECTION INCLUDES

- A. Furnish all materials, labor, equipment and services necessary for the supply of GFRP components as indicated on the drawings and contract documents, all in compliance with local codes and/or ordinances.

1.2 RELATED SECTIONS

- A. Section 06 60 00 Plastic Fabrications
- B. Section 06 80 00 Composite Fabrications
- C. Section 06 10 00 Rough Carpentry - for connection attachment to structural wood framing.
- D. Section 05 12 00 Structural Steel - for connection attachment to structural steel framing.
- E. Section 07 90 00 Joint Protection - for joint sealants and expansion control.
- F. Section 07 60 00 Flashing and Sheet Metal – for flashing of GFRP fabrications.

1.3 INTENT

- A. This specification is intended to generally outline the GFRP requirements, as they pertain to the overall project design. In all cases, the Manufacturer's printed specifications shall govern the work of this section.

1.4 RESPONSIBILITY

- A. The Installation Contractor shall install and work under this section and he will be responsible for coordinating the installation with other trades.

1.5 SUBMITTALS

- A. Submit of 3 Made Composites Inc. GFRP samples illustrating color, texture and finish.
- B. Submit shop drawings for approval showing plans, sections, details, joint treatment, reinforcing, fastening devices and the relation of the GFRP components to the surrounding construction. Framing details and structural support are not our responsibility.

1.6 SUBSTITUTIONS

- A. Manufacturers desiring to submit proposals other than ours shall, at least 10 days prior to the bid date, submit to the Architect all descriptive information of the system. These Manufacturers must have a minimum of five years experience in architectural fiberglass reinforced fabrications.

1.7 MOCK-UP

- A. Prior to production erect one proto-type on-site or at our plant, for review by the Architect.

2.0 PRODUCTS

2.1 MANUFACTURER

MADE COMPOSITES INC.
228, Toryork Dr. Toronto ON - M9L 1Y1 - CANADA
Phone: 416-745-5674 - Fax: 416-745-6194

2.2 MATERIALS

- A. All material to be Class 1 (or A) Fire Rated. (Flame Spread: ≤ 25 ; Smoke Development: ≤ 450 ; in accordance with ASTM E84 standard)
- B. Gelcoat: ± 18 mils thick, UV resistant
- C. Glass: E Glass Fiber. Glass Content 20 - 32%.
- D. Laminate: Nominal thickness $\frac{3}{16}$ " (5mm). Additional thickness and sandwich structure as indicated or required for structural integrity.
- E. Finish:
 - Option 1. Unfinished sanding gelcoat. Field priming and painting required.
 - Option 2. Pre-finished gelcoat with primer.
 - Option 3. Factory applied paint.
 - Option 4. Simulated stone.
- F. Fabrication will be as per approved shop drawings and will not include assembly. If multiple components are required to complete design criteria as per contract drawings, additional site work under related section and installation may be required.

2.3 TOLERANCES (FABRICATION)

Dimensional - all directions	$\pm \frac{1}{8}$ " (3mm)
Thickness - Shell	$\frac{1}{8}$ " - $\frac{3}{16}$ " (3-5mm)
Warpage or Bowing	$\pm \frac{1}{16}$ " over 2ft.* (1.5mm over 0,610m*)
Warpage or Bowing	$\pm \frac{1}{16}$ " over 8ft.** (1.5mm over 0,244m**)
Gelcoat Thickness	± 18 mils

Site conditions and normal manufacturing variations may require additional site work to maintain these tolerances.

*Based on hand layup application

**Based on infusion application (MADE Composites application)

2.4 PHYSICAL PROPERTIES

- A. Reference - ASTM International (ASTM)
 - 1. D790 - Standard Test Methods of Flexural Properties of Unreinforced and Reinforced Plastics
 - 2. D638 - Standard Test Method For Tensile Properties of Plastics
 - 3. D256 - Standard Test Methods For Determining the Izod Pendulum Impact Resistance of Plastics.
 - 4. D2583 - Standard Test Method for Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor
 - 5. E84 - Standard Test Method for Surface Burning Characteristics of Building Materials
 - 6. Water Absorption (ASTM D570)

2.5 INSPECTION

The Architect or his representative shall have access to the manufacturing facilities, either prior to contract award or thereafter, to inspect or verify compliance with the above specifications.

3.0 EXECUTION

3.1 PRE-INSTALLATION RESPONSIBILITY

- A. Field Measurements: Prior to manufacturing, the Installer will be responsible for obtaining all field dimensions for inclusion on the Manufacturer's shop drawings.
- B. Co-Ordination: The Installer will be responsible for the co-ordination of the installation with related sections, within the tolerances specified in the respective articles.
- C. Discrepancies: Prior to installation, the Installer shall check job site dimensions and conditions. Any discrepancies between design and field dimensions shall be brought to the attention of the General Contractor and the Architect.

3.2 DELIVERY, STORAGE, HANDLING AND PROTECTION

- A. Transport and handle units in a manner that avoids excessive stresses or damage.
- B. Components displaying obvious damage must be rejected at site at time of delivery.
- C. Store the components in a controlled environment weather protected, on level surfaces, with temporary supports as required. Do not stack or lean.

3.3 INSTALLATION

- A. Components shall be installed in accordance with architectural drawings, approved shop drawings and Manufacturer's instructions.

3.4 CLEANING

- A. Clean components in accordance with Manufacturer's instructions.
- B. Clean soiled GFRP units with a mild, nonabrasive detergent and clean water, using a soft cloth. Rinse thoroughly with clean water.