MADE COMPOSITES INC
228, Toryork Dr. Toronto, ON
M9L 1Y1 - CANADA
T. +1 416 745 5674
F. +1 416 745 6194
www.madecomposites.com
info@madecomposites.com

# SECTION 09 27 13
# GLASS FIBER REINFORCED GYPSUM (GFRG)

## 1.0 GENERAL

### 1.1 SECTION INCLUDES

A. Furnish all materials, labor, equipment and services necessary for the supply of GFRG 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 10 00 Rough Carpentry - for blocking, nails, shims, and carpentry supporting glass fiber reinforced gypsum fabrications.
B. Section 09 22 00 Supports for Plaster and Gypsum Board - for support, blocking, and bracing supporting glass fiber reinforced gypsum fabrications.
C. Section 09 90 00 Painting and Coating

### 1.3 INTENT

A. This specification is intended to generally outline the GFRG 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 Gypsum Board Contractor shall install and tape the work under this section and he will be responsible for coordinating the installation with drywall work and other trades.

### 1.5 SUBMITTALS

A. Submit 3 GFRG flat samples to the Finishing Contractor for paint selection.
B. Submit shop drawings for approval showing plans, sections, details, joint treatment, reinforcing, fastening devices and the relation of the GFRG components to the surrounding construction.

### 1.6 MOCK-UP

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

### 1.7 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 with the system and provide photographs and shop drawings of at least three projects similar in detail and scope with names, addresses and phone contacts of the respective Architects and installation Contractors. Independent test data showing compliance with the specified system and three samples of similar details must also be submitted.

# 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. GFRG components shall be prefabricated with high density gypsum, free of resin and asbestos, reinforced with continuous glass fiber matt.
B. Components shall be reinforced with galvanized steel or wood, embedments that can be used, if required, as suspension/attachment points, in installation.
C. No additives such as retarders, accelerators or polymers are permitted.
D. 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, installation or finishing may be required.
E. GFRG components shall be ready to receive primer and paint as specified under Section 09900.

## 2.3 TOLERANCES (FABRICATION)

| | |
|---|---|
| Dimensional - all directions | ± ⅛" (3mm) |
| Thickness - Shell | ± ⅛" - 3⁄16" (3mm - 5mm) |
| Warpage or Bowing | ± ⅛" per foot (3mm per 0.305m) |

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

## 2.4 PHYSICAL PROPERTIES

A. Precast Glass Fiber Reinforced Gypsum Parts to meet the mechanical properties specified in section 5.2 of ASTM Standard C1355:

1. Flexural Strength in accordance to ASTM C947
2. Impact Resistance in accordance to ASTM D256
3. Hardness in accordance to ASTM D2583
4. Coefficient of Linear Thermal Expansion in accordance to ASTM D696
5. Humidified Deflection in accordance to ASTM C473
6. Surface Burning Characteristics in accordance to ASTM E84
7. Behavior at 750° C in accordance to ASTM E136
8. Nail Pull Resistance in accordance to ASTM C473
9. Shell Thickness ± ⅛" - 3⁄16" (3mm - 5mm)
10. Weight (depending on reinforcing) 2 - 3 lbs/sq.ft (0.91 – 1.36 Kg/0.93sq.m)
11. Density 103 - 112 lbs/cu.ft (46.7 – 50.8 Kg/0.0283)
12. Fiber Content 5 - 6% by weight

## 2.5 INSPECTION

The Architect/Designer 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 Manufacturers 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/Designer.

### 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 lifted with suitable devices.
B. Components shall be installed plum and true. Shim where necessary.
C. Fasten components with self drilling, self tapping bugle head screws through face or back as indicated on shop drawings.
D. Where components are suspended, use as a minimum 12 gauge galvanized steel wire and the suspension points indicated on the shop drawings.
E. Framing, hangers, etc, as specified for Gypsum Board.
F. Butt joints are to be adhered together using “Liquid Nail” or equivalent.

### 3.4 JOINT FINISHING, PATCHING AND CONTROL JOINTS

A. Tape, fill and sand all joints and introduce control joints (± 35' - 0" / 10.67m O.C) as required under Section 09250 of the Specifications and as outlined in U.S.G. or C.G.C. Gypsum Construction Handbook.
B. Patch countersunk fasteners and any damage to match component

### 3.5 FINISHING

A. Refer to Painting Section of the Specifications.
B. The Paint Contractor shall comply with ASTM C 840-79 Specifications.

# NOTES

A. GFRG components shall be used for Interior Applications only.
B. Unfinished GFRG may exhibit slight imperfections, normally hidden by textured or mat finishes. To obtain satisfactory results with Gloss Finishes, additional filling, sanding, priming and painting may be required.
C. Improper sealing, more than crowning, can cause tape joint read-through after painting. This is due to the difference in porosity between joint compounds and GFRG therefore, ensure that the Painting Contractor seals all surfaces properly prior to finishing.