G.F.R.C.

SECTION 03 49 00

RoyalGFRC™ Glass Fiber Reinforced Concrete Columns

Architectural Specifications

PART 1 – GENERAL

1.1 SCOPE:

1.2 Furnish all labor, materials, equipment and services necessary or incidental to completion of molded glass fiber reinforced concrete composites (G.F.R.C.) and associated work in accordance with the contract documents and all applicable building codes.

1.3 Specify Diameter, Height, Style (Tapered or Non-Tapered, Plain or Fluted, Round or Square), Capitol Type (Tuscan, Doric, Roman Corinthian, Temple of the Winds, Scamozzi, Roman Ionic) Base Type (Tuscan, Doric, Attic) here.

1.4 WORK INCLUDED:

A. Manufacturer to provide all labor, materials, equipment and related services required for the fabrication of G.F.R.C. shapes shown in the contract documents. (G.F.R.C., as manufactured by Royal Corinthian, is non-structural and is to be considered as decorative only. Royal Corinthian is not responsible for structural load considerations.)

B. Installer to provide all labor, materials, equipment and related services required for complete erection of the G.F.R.C. and joint treatment if required.

1.5 RELATED WORK SPECIFIED ELSEWHERE:

A. Precast concrete

B. Framing and Suspension

C. Finishes

D. Joint Treatment

1.6 MANUFACTURER:

Royal Corinthian
603 Fenton Ln
West Chicago, IL 60185
Phone: (888) 265-8661
royalcor@Royalcorinthian.com
www.royalcorinthian.com

1.7 SUBSTITUTIONS:

Manufacturers desiring consideration other than those specified must submit data, samples and certified testing reports showing compliance to all guidelines set forth in the G.F.R.C. specification ten days prior to bid date. Before being considered, manufacturers must: Have five years' experience in manufacturing G.F.R.C., provide photographs, copies of certified tests, shop drawings, names and contact for architects and installing contractors of at least three projects. Projects must be of similar scope.

1.8 SUBMITTALS:

A. Samples: Submit three (3) 6" x 6'' flat samples for paint and finish section.

B. Submit shop drawings for approval showing plans, sections, details, joint treatment, reinforcing fastening devices and relation to adjacent construction as required.

Specifier's Option: If the G.F.R.C. scope and complexity warrant a mock-up, this section should be included. Manufacturer to provide one full size mock-up (specify piece) to the jobsite for installation and review.

PART 2 – PRODUCTS

2.1 MATERIALS:

A. Glass Fiber Reinforced Concrete (G.F.R.C.) to be fabricated using long strand continuous glass fiber mats laminated with polymer modified Portland Cement.

B. Embeds and reinforcement (if required by manufacturer) to be galvanized steel or wood.

C. G.F.R.C. members to be stored in climate-controlled conditions for sufficient period of time to ensure product stability before being shipped.

D. All G.F.R.C. members to have identification marks, as indicated on shop drawings, clearly displayed on backside of part.

E. Miscellaneous Materials:

1. All other materials, i.e. screws, clips, adhesives, shims, hangerwire, etc., to be per manufacturers shop drawings and/or job specifications and shall be supplied by installer of G.F.R.C. materials.

2.2 PHYSICAL PROPERTIES:

1. Glass Fiber = 5-6% by weight
2. Shell Thickness = +/- 3/8”
3. Weight = 2-1/2 lbs – 4-1/2 lbs./ft.
4. Density = 125-130 lbs./cu. Ft.
5. Finish = Smooth or Texture
6. Tensile Strength = 1110 psi. (ASTM C947)
7. Flexural Strength = 2590 psi. (ASTM C947)
8. Compressive Strength = 9520 psi. (ASTM C472)
9. Impact Strength = 12.51 ft lbs./in. (ASTM D256)

2.3 TOLERANCES

1. Dimension – all directions +- 3/16’’
2. Thickness 3/8” +- 1/8”
3. Warpage or bowing 1/16” per foot

PART 3 – EXECUTION

3.1 DELIVERY, STORAGE AND HANDLING

A. Delivery and Handling:

1. All G.F.R.C. material shipped to be placed in specially built crates and shipped in a manner that will protect pieces from damage, dirt, moisture and warpage.
2. Support pieces during shipment on non-staining shock absorbing materials.
3. Lift and support pieces only at points indicated for attachment on drawings.

Specifier’s Option: Any limitations regarding crate size weight or jobsite unloading facilities should be noted in this section.

B. STORAGE:

1. Once uncrated, material to be stored in an upright position on a flat, smooth and level surface. Avoid stacking and leaning of pieces as much as possible.
2. Cover and protect pieces from excessive dirt, moisture, surface damage or other jobsite hazards.

3.2 INSPECTION:

A. Contractor shall be responsible for inspecting job conditions and providing lines, centers, grades and marks in sufficient detail for correct installation.

B. Installer will verify all marks and check jobsite conditions for clearance, working space and all marks provided before commencement of installation. Installer will also inspect all pieces prior to installation. Installer will be responsible for repairing all installed pieces except manufacturing defects. All discrepancies affecting the installation of the G.F.R.C. members will be brought to the attention of the General Contractor and resolved before installation begins.

C. General Contractor to provide sufficient space for unloading and transport of pieces as required.

3.3 ERECTION:

A. Safety: Installer is responsible for handling and installing the G.F.R.C. material in a safe manner. Report any unsafe conditions immediately to the General Contractor.

B. Installer will use experienced workmen to install the G.F.R.C. pieces. Material will be installed level and plumb and as shown in the approved shop drawings. All pieces will be securely anchored and joints finished as shown in the approved shop drawings.

C. The installer will protect the G.F.R.C. members from damage by other trades during construction and until accepted by the General Contractor.

D. After erection and acceptance of finished pieces, all damage and repair will be the responsibility of the General Contractor.

3.4 TAPING, PATCHING AND CONTROL JOINTS:

A. Exterior tape and bed joints are to be attached with an exterior grade construction adhesive. Then taped and floated using fiberglass mesh tape and a bedding compound of Portland Cement, boding agent, water fine washed silica sand (sand omitted in finish coats) and clean the joint to match piece surface and shape.

B. Countersunk fasteners and damage are to be patched using same bedding compound as used to float joints.

C. Control joints or exposed joints to be filled with appropriate backer rod and a sealant (Dow Corning 795 or Soneborn NP-1 or equally capable of withstanding +- 25% joint movement.

3.5 FINISHING:

A. Pre-finished (finishing not required): Integral Color w/Smooth or Acid Etched Sand Finish.

B. Paint-Grade: See Painting/Coating Section of Specifications. G.F.R.C. as made by Royal Corinthian., is shipped as a Natural Portland/Gray color. Flied finishing is required and should be treated as a masonry/concrete product.

PART 4 – WARRANTY

C. Manufacturer will warrant all materials against defect for one (1) year after acceptance of materials.

D. Installer will warrant installation of installed materials for one (1) year after acceptance of materials.

E. The manufacturer will, at his discretion, repair or replace defective pieces subject to approval of architect.