



Specification for Glass Fiber Reinforced Concrete (GFRC)

1. General

1.1 Summary

A. This section includes furnishing all materials, labor, equipment, and related services necessary to supply and install molded glass fiber reinforced concrete (GFRC) parts as indicated in the contract documents, and in compliance with applicable codes.

1.2 Related Sections

- A. Section 04720 – Cast Stone
- B. Section 05500 – Metal Fabrications
- C. Section 06100 – Rough Carpentry
- D. Section 09900 – Paints and Coatings

1.3 References

- A. ASTM C 150 – Standard Specification for Portland Cement
- B. ASTM E 84 – Standard Test Method for Surface Burning Characteristics
- C. ASTM C144 – Standard Specification for Aggregate for Masonry Mortar
- D. ASTM C979 – Standard Specification for Pigments for Integrally Colored Concrete
- E. ASTM C1666 – Standard Specification for Alkali Resistant (AR) Glass Fiber for GFRC and Fiber-Reinforced Concrete and Cement
- F. ASTM C109 – Standard Test Method for Compressive Strength of Hydraulic Cement Mortars

1.4 Manufacturer

GC Products, Inc.
1601 Aviation Blvd, Suite 150
Lincoln, CA 95648
P. 916.645.3870 F. 916.645.3857
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1.5 Submittals and Samples

- A. Product Data: Manufactures data sheets, including dimensions, finishes, installation recommendations and storage and handling requirements.
- B. Shop Drawings: Provide drawings showing dimensions and joint details.
- C. Samples: Submit two samples, minimum size 6 inches (150 mm) square, representing actual product, color and patterns.

1.6 Substitutions

- A. Not permitted
- B. Requests for substitutions will be considered in accordance with provisions of Section 01600.

1.7 Quality Assurance:

- A. Product Manufacturing: In accordance with industry standards with stringent review of individual products produced.
- B. Installer Qualifications: Regularly engaged and experienced in the installation of glass fiber reinforced cement or pre-cast units.

2. Products

2.1 Materials

- A. Glass Fiber Reinforced Cement Fabrications: GFRC units shall be prefabricated with Polymer Glass Fiber Reinforced Cement.
- B. Reinforced as required.



- C. GFRC is supplied in finished color and texture as determined by the customer or is supplied in natural grey color and requires finish by others.
- D. Portland Cement: ASTM C150
- E. Aggregate: ASTM C144
- F. Colorants: ASTM C979
- G. Water: Potable
- H. AR Fiber Reinforcement: ASTM C1666
- 2.2 Physical Properties
 - A. Shell Thickness: +1/8" – 1/16"
 - B. Thickness Total Unit: +1/4" – 1/8"
 - C. Variation from Dimensions: +1/8" – 1/8"
 - D. Surface Burning Characteristics: Flame Spread 0; Smoke Developed 5; Fuel Contribution 5 (ASTM E84)
 - E. Flexural Strength: 1000 to 1800 psi
 - F. Weight: 6 to 9 lbs./sq. ft.
 - G. Compressive Strength: not less than 5000 psi (ASTM C109)
- 2.3 Mold Fabrication & Tolerance
 - A. Molds are fabricated to meet all project and product specifications.
 - B. Mold fabrication materials to be compatible with form release agents.
- 2.4 Anchors & Connector
 - A. All anchoring materials and connection locations are designed for construction industry compliance and performance.
- 2.5 Mix Designs
 - A. Face mix: Portland cement, sand, water, colorant and admixtures without fiber reinforcement.
 - B. Backing mix: Portland cement, sand, water, colorant, fiber reinforcement and admixtures.
- 2.6 Finished Surfaces
 - A. As-cast Surface Finish: Provide surfaces to matched accepted sample or mock-up units for acceptable surface air voids, sand streaks and honeycombs.
 - B. Acid-Etched Surface Finish: A desired surface textured finish by method of acid-etching.
 - C. Travertine Surface Finish: Surface finished with intentionally distributed surface voids.
- 2.7 Handling, Delivery & Storage
 - A. Handle and deliver GFRC panels without damage. Place non-staining, resilient spacers between panels. Support panels on non-staining material during shipment.
 - B. Store GFRC panels to protect from soil, staining and damage. Store panels with non-staining spacers on level and firm supporting surfaces.

3. Execution

- 3.1 Examination
 - A. Do not begin installation until substrates have been properly construction; 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 written instructions before proceeding.
- 3.2 Preparation
 - A. Clean soiled GFRC surfaces with detergent and water, if necessary, using soft fiber brushes and sponges, and rinse with clean water. Prevent damage to GFRC surfaces and staining of adjacent materials.
 - B. Prepare surfaces using the methods recommended by the manufactures for achieving the best results 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 manufactures recommendations, plumb and true to line; shim where necessary.



- B. Provide control joints at not more than 35 feet on center if not indicated on drawings.
- C. Provide expansion joints where moving joints in substrates occur.
- D. Patch exposed anchor points to texture of unit.

3.4 Protection

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.
- C. Repairs will be permitted provided the structural adequacy of the GFRC panel is not impaired. Repairs shall be consistent with the color, texture and appearance of adjacent surfaces.
- D. The surface should be dry and clean before applying finish. The surface should be dry for 48 to 72 hours prior to applying finish.

END OF SECTION