



DEC Architectural Composites

A Division of DEC Associates, Inc.
18 Technology Drive, Suite 134
Irvine, CA 92618
PH: 949.502.3321
FX: 949.502.3319

Email: info@decassociates.com
www.decassociates.com

**SECTION 034900
GFRCNEXT
GLASS FIBER REINFORCED CEMENT (GFRC)**

PART 1. GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings, Conditions of the Contract and Division 1 Specifications sections, apply to work of this section.

1.02 SUMMARY

- A. Section Includes: Glass Fiber Reinforced Concrete (GFRC) part fabrication and installation as scheduled at the end of this section and as shown on the architectural drawings.

1.03 RELATED WORK IN OTHER SECTIONS

- A. Section 03490- Glass Fiber Reinforced Precast Concrete
- B. Section 06600- Plastic Fabrications
- C. Section 06610- Glass Fiber Reinforced Plastic
- D. Section 06650- Solid Polymer Fabrications

1.04 REFERENCE STANDARDS

- A. ASTM C947: Test Method for Flexural Strength
- B. ASTM E-84: Test Method for Surface Burning Characteristics of Building Materials.
- C. MNL-128: Range of Premix Properties Recommended to PCI.
- D. ASTM E136: Test method for Surface Burning Characteristic of Building Materials.

1.05 SUBMITTALS

- A. Samples: Submit four (4) each, 12" x 12" samples demonstrating finish to be supplied (finish per contract).
- B. Shop Drawings: Submit shop drawings delineating all details required for fabrication and installation. Shop drawings to indicate the necessary blocking and attachment to the building or framing as required to support and secure the GFRC material only. Framing details and structural support of framing is not the responsibility of the GFRC manufacturer, and it is to be engineered by others unless previously agreed to by contractor/subcontractor and DEC, and noted accordingly in the material supply contract.

1.06 QUALITY ASSURANCE

- A. Manufacturer: Firm with manufacturing and delivery capacity required for the project, shall have successfully completed at least ten projects within the past five years, utilizing systems, materials and techniques as herein specified.
- B. Fabricator must own and operate its own manufacturing facilities for all material components. "Stick Built" or "kit of Parts Systems" consisting of components from a variety of manufacturers will not be considered or accepted.
- C. All GFRC forms shall match approved samples.
- D. All GFRC forms will be installable according to details submitted in shop drawings.

1.07 MANUFACTURER'S QUALIFICATIONS

- A. Firms specified in Approved Manufacturers (section 2.01) must demonstrate their capabilities and experience by including lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

1.08 DELIVERY, STORAGE AND HANDLING

- A. Handle, store and transport GFRC parts according to manufacturer's recommendations. All materials shall be protected during fabrication, shipment, site storage and erection to prevent damage to the finished work from other trades. Store materials inside a well-ventilated area, away from uncured concrete and masonry, and protected from weather moisture, soiling, abrasion, and extreme temperatures.
- B. Protect fabrications from damage by retaining or duplicating shipping protection in place until installation.
- C. Damage Responsibility: Except for damage caused by others, the installer is responsible for chipping, cracking, or other damage to GFRC parts, after delivery to the job site and until installation is complete and inspected and approved by the contractor and architect.

1.09 WARRANTY

- A. Warrant fabrications to be free from defects due to materials and workmanship for one year.

PART 2. PRODUCTS

2.01 APPROVED MANUFACTURER

- A. **DEC ARCHITECTURAL COMPOSITES - GFRCNEXT**
A Division of DEC Associates, Inc.
18 Technology Drive, Suite 134
Irvine, CA 92618
PH: 949.502.3321
FX: 949.502.3319
Email: info@decassociates.com

- B. The listed manufacturer shall not be construed as closing the specifications to other prospective manufacturers, but rather as establishing a level of quality in a composite fabrication system. Other manufacturers may be submitted for approval, as provided for in the specifications at least 14 working days prior to submission of bids. Companies desiring to submit a proposal shall submit all descriptive information of the system proposed including photographs and shop drawings of at least three projects similar in detail and scope.

2.02 FABRICATED PRODUCTS

- A. GFRC will be fabricated with a proprietary blend of cementitious minerals, aggregates, polymers and glass fibers to achieve a typical range of physical properties shown in Section 2.03.

2.03 PHYSICAL PROPERTIES

<u>Property Value</u>	<u>Test Method/Result</u>
Barcol Hardness	ASTM-D-2583 56 Points
Compression	ASTM-C-39 10,810 psi
CTE Average	ASTM-D-696 8.0 x 10 ⁻⁶ in./in./F°
Density	ASTM-D-792 132.5 lbs/cu.ft.
Flammability – Class I Materials	ASTM-E-84 0 Flame/50 Smoke
Flexural Strength	ASTM-D-790 2,630 psi
Tensile	ASTM-D-638 1,500 psi
Unit Weight (lbs./sq.ft. at ½")	4-6 lbs.
Impact Strength	ASTM-D-256 99.0 ft. lbs./in

2.04 FINISH

- A. Surface Texture/ Exposed side: Smooth or as indicated on drawing.
- B. Finish: Smooth surface or to match approved texture. Parts to be primer ready for field painting. Please note that parts must be paint finished.

2.05 TOLERANCES

- A. Part Thickness: ±½
 Dimensions all directions: ±3/16
 Variation from Square: ⅛ inch
- B. Hardware Location Variation: ±¼ inch.
- C. Warpage or bowing 1/4 in 8 ft.

2.06 IDENTIFICATION

- A. Identify each part with a permanent part number.
- B. Number parts to coordinate with shop drawings.

2.07 CURING AND CLEANING

- A. Cure and clean components prior to shipment.

2.08 ANCHORS AND FASTENERS

- A. The installer is to provide anchors and fasteners and other accessories required for proper installation of fabrications as recommended and approved by the composite fabricator and the project architect; however, the necessary blocking and attachment to the building or framing as required to support and secure the GFRC material, as well as any framing details and structural support of framing, is not the responsibility of the GFRC manufacturer, and it is to be engineered by others unless previously agreed to by contractor/subcontractor and DEC, and noted accordingly in the material supply contract.

PART 3. EXECUTION

3.01 PRE-INSTALLATION EXAMINATION

- A. Installer to observe field conditions and verify that substrates are ready for installation of fabrications.
- B. Installer to check field dimensions affecting the installation of **GFRC™** fabrications.
- C. Installer to verify that bearing surfaces are true and level.
- D. Installer to verify that support framing has been constructed to allow accurate placement, alignment and connection of fabrication to structure.
- E. Installer to report discrepancies between design dimensions and field dimensions, which could adversely affect installation, to the contractor and architect.
- F. Do not proceed with installation until discrepancies are corrected, or until installation requirements are modified and approved by the contractor and architect.
- G. Start of installation constitutes acceptance of existing conditions.

3.02 INSTALLATION

- A. Install fabrications in accordance with manufacturer's instructions and approved shop drawings.

3.03 ALLOWABLE TOLERANCES FOR INSTALLED UNITS

- A. Maximum Offset from True Alignment: ¼ inch in 8 feet.
- B. Maximum Variation from True Position: ¼ inch in 8 feet.

3.04 CLEANING

- A. Clean installed Glass Fiber Reinforced Concrete fabrications using cleaning methods and materials approved by manufacturer.

3.05 PROTECTION OF INSTALLED FABRICATIONS

- A. Comply with General Contractor's recommendations and instructions for protecting installed Fabrications during constructions activities.

END OF SECTION