



**GLASS-FIBER REINFORCED CEMENT (GRC)**

**PART 1- GENERAL**

1.01 SUMMARY

A. Related sections:

1. Division 5, Metal Stud Framing
2. Division 7, Sealants
3. Division 9, Painting

1.02 REFERENCES

A. Standards of the following as referenced:

1. American Society for Testing and Materials (ASTM)

1.03 DEFINITIONS

A. Terms:

1. GRC -Glass-Fiber Reinforced Cement
2. GRC+ -Glass-Fiber Reinforced Cement w/ Sand
3. GRC- -Glass-Fiber Reinforced Cement w/o Sand

1.04 SUBMITTALS

A. Product Data:

1. Manufacturer's literature
2. Material Safety Data Sheets for raw materials used to produce GRC

B. Shop drawings:

1. Detailing GRC members; include locations, sizes and shapes of members, proposed jointing arrangements, details of attachments, suspension systems, and items pertinent to the GRC members.
  2. Where applicable, show reflected ceiling plan.
  3. Include plans at not less than  $\frac{1}{2}'' = 1'-0''$ , details at not less than  $3'' = 1'-0''$  scale
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4. Include manufacturer's recommendations for storage, handling, installation, and patching/finishing of GRC members.

C. Samples:

1. 6" x 6" flat samples depicting material thickness and surface finish to be supplied.

D. Quality control submittals:

1. Test reports:

- a. Test data from an approved independent testing laboratory establishing compliance with specification requirements.
- b. Tests to be performed by an independent testing agency employed by the manufacturer of the finished product under his own trade name. Include the following:

- 1) Flexural strength
- 2) Impact resistance
- 3) Hardness
- 4) Coefficient of linear thermal expansion
- 5) Humidified deflection
- 6) Flammability
- 7) Compressive strength
- 8) Dry and wet density

2. Certificates:

- a. Manufacturer's certification that all GRC pieces contain at least 3% by weight of glass fiber reinforcement.

## 1.05 QUALITY ASSURANCE

A. Manufacturer's Qualifications:

1. Obtain GRC from a manufacturer who will, upon request, send a qualified technical representative to the project site for the purpose of advising the installer of procedures and precautions for materials used.
2. Obtain GRC from a manufacturer who will certify the materials have been tested and proven satisfactory for the intended use.

3. Obtain GRC from a manufacturer with five years verifiable and successful experience producing material for projects of similar size and scope.
4. GRC must be manufactured in the United States.

B. Installer's Qualifications:

1. Firm must provide evidence of three years verifiable evidence installing the specified work.
2. Installer must be acceptable to the manufacturer.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Deliver GRC members in packaging/crating required to minimize damage in transit.
- B. Upon receipt of each GRC shipment, unpack a random sampling of each profile to verify GRC's compliance with FABRICATION Article. Repackage the material and do not unpack until immediately prior to installation.
- C. Store per the manufacturer's written instruction.

1.07 SEQUENCING AND SCHEDULING

- A. Coordinate the delivery and installation of GRC members with work specified in other sections.
- B. Do not proceed with the installation of GRC members until conditions are acceptable.

1.08 WARRANTY

- A. The GRC manufacturer and installing contractor shall jointly warrant the GRC members to be free from defects in materials and workmanship for one year from the date of installation.
- B. The warranty shall be based on installation methods in accordance with the manufacturer's recommendations and instructions.

**PART 2- PRODUCTS**

2.01 MANUFACTURERS

A. Acceptable manufacturer:

First Class Building Products, Inc.

3600 Dallas Highway Suite 230-387

Marietta, GA 30064 (770-514-8141)

B. Any other manufacturer seeking approval must submit acceptable test data, product literature, samples, and certificates (per section 1.04) at least 14 days prior to the originally scheduled bid date.

C. Characteristics

1. GRC to consist of DENS-CRETE EC cement as manufactured by Georgia-Pacific Corporation, water, polymer, and type 'E' glass fiber mat.
2. GRC+ will also contain silica sand.
3. GRC- will not contain silica sand.
4. GRC+ will have a design thickness of 7/16" and a design weight of approx. 3.5 psf.
5. GRC- will have a design thickness of 1/4" and a design weight of approx. 2 psf

6. Flexural Strength

ASTM test method C947

Flexural yield -1871 psi

Flexural ultimate -3075 psi

7. Impact Resistance

ASTM test method D256, Method E (Izod reverse notch method)

10.2

8. Hardness

ASTM test method D2583

Barcol Hardness of 74 Shore D-2

9. Coefficient of Linear Thermal Expansion

ASTM test method D696

0.00000853 in/in degrees Centigrade

10. Humidified Deflection

ASTM test method C473

0.049 in.

11. Compressive Strength

ASTM test method C109

3070 psi

12. Density

Dry Bulk Density -86.93 lbs. / cu. ft.

Wet Bulk Density -113.78 lbs. / cu. ft.

13. Flammability

ASTM test method E84-94

Flame Spread Index -5

Smoke Developed Value -0

2.02 ACCESSORIES

- A. Fasteners, embeds, and framing as detailed in the approved shop drawings.
- B. Fasteners to be non-corrosive, non-bleeding.
- C. Adhesive to be silicone based.

2.03 FABRICATION

- A. Fabricate GRC members to profiles, shapes, and configurations detailed on approved shop drawings using manufacturer's standard processes.
- B. Tolerances as stated on manufacturer's approved shop drawings.
- C. Finished surfaces to have a smooth finish suitable for priming

**PART 3- EXECUTION**

3.01 INSTALLATION, JOINT FINISHING AND PRIMING

- A. Comply with the manufacturer's written storage, handling, installation, and patching/finishing instructions as well as the approved shop drawings.
- B. Finish the indicated joints at piece intersections such that joints are neither visible nor perceptible.
- C. Priming

1. All GRC material should be primed with one or more coats of:

Sheboygan Paint Company

Cedartown, GA

(770) 748-8426

Product No. 43-1685

Off White Concrete Sealer

2. Sanding after each coat of primer may be required.