



EXTERIOR PRODUCT SPECIFICATIONS

SECTION 09290 - GLASS REINFORCED CONCRETE (GRC) UNITS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

Drawing and General provisions of contract, including General Supplementary Conditions and Division 1 specification sections, apply to work of this section.

1.02 SUMMARY

A. This section covers all labor, material, accessories, scaffolding and appliances necessary for the complete installation of glass reinforced concrete units. Items not mentioned specifically here, which are necessary to make a complete installation shall also be included.

1.03 RELATED WORK SPECIFIED ELSEWHERE

A. SECTION

B. Paint: Finish Coating will be an emulsified acrylic, latex, or a water-based epoxy and shall be suitable for exterior concrete. SECTION

1.04 SUBMITTALS

A. Shop Drawings: Submit in accordance with Section Indicate materials, construction, dimensions, locations, tolerances, connections and installation details.

B. Product data: Submit in accordance with Section Indicate materials, construction, dimensions, locations, tolerances, physical properties, connections and installation details.

1.05 QUALITY ASSURANCE

A. Manufacturer's qualifications: Minimum of five years experience in the actual production of Glass Reinforced Concrete.

B. Installer's qualifications: Minimum of five years experience in installation of systems of similar complexity to those specified for this project.

1.06 SUBSTITUTIONS

Manufacturers desiring to furnish material other than specified shall submit to the architect, at least 10 working days prior to bid date, all product data as listed above (including copies of all tests and certifications), a 12 x 12 product sample, proof of least five years of GRC product manufacturing experience, and a list of five completed projects with similar product application and size.

PART 2 PRODUCTS

2.01 MANUFACTURER

WEATHR ROK™ DIVISION OF PLASTRGLAS™, INC.
4200 N. 30th Street
Omaha, NE 68111
Phone: (402) 455-0652 Fax: (402) 451-5375

2.02 MATERIALS: REINFORCED CONCRETE UNITS

A. Shall be Weathr Rok™ pre-fabricated glass reinforced concrete units using multi-directional unlayered spray lay-up procedure. The GRC shall be made from Type III Portland Cement, washed and dried silica sand, potable water, alkali resistant glass fibers complying with PCI-MNL 128, and curing additives.

B. TOLERANCES (FABRICATION)

Shell Thickness: ¼" - 0"/+ ¼"

Dimensional: ± 1/8" per part

Warp and Bow: ± 1/8" per part

C. PHYSICAL PROPERTIES

Unit Weight (Weight Per Volume): 123.9 lb/ft³

Compressive Strength (ASTM C39/C109): 9510 psi

Flexural Strength (ASTM C580): 3790 psi

Flexural Strength (MOR) (ASTM C947): +1900 psi

Flexural Strength (PEL) (ASTM C947): +800 psi

Tensile Strength (ASTM D638): 1350 psi

Impact Resistance (IZOD): 9.86 ft-lbs/in²

Rockwell Hardness (ASTM 785): 57.6

Fuel Contributed (ASTM E84): Zero

Flame Spread (ASTM E84): Zero

Smoke Developed (ASTM E84): Zero

2.03 FABRICATION:

A. Moulds for the reinforced concrete units shall be rigid and constructed of materials that will result in smooth, finished products conforming to profiles and dimensions indicated on the shop drawings.

B. Portland cement, sand, water, chemical admixtures (water reducers, latex bonding agents, accelerators) shall be metered by electronic measuring instruments to insure the highest consistency of the batch mix ingredients. The actual batch mixing process in the creation of the concrete slurry shall be timed to manufacturer's prescribed formulations.

C. Meter glass fiber and concrete slurry rates at spray head to achieve desired mix proportion and glass content. Check in accordance with the standard procedures recommended by PCI-MNL-128.

D. Machine spray in accordance with the manufacturer's standards for multi-directional, chopped fibers.

E. Carefully remove units from moulds and factory repair hollows, voids, scratches, or other surface imperfections. Surface shall be primer ready.

F. Each reinforced concrete unit shall bear a stamp indicating it has been inspected and approved by the manufacturer's Quality Assurance inspector.

2.04 JOINT TREATMENT MATERIALS

A. Monolithic Joints: The monolithic joint shall be finished with Weathr Rok™ Joint Compound. The joint compound shall be a latex modified cement, tested in accordance with ASTM C900. The bond strength shall exceed 140 psi when tested on the manufacturer's GRC units. **WATER SOLUBLE OR OTHER JOINT FILLERS CAN NOT BE USED.** Should small surface voids require filling, use Synkaloid Exterior spackle.

B. Caulk Joints: See caulking manufacturer's instructions for joint preparation and caulking applications.

2.05 PAINT

A. Primer: The GRC shall be primed by the painting contractor with Weathr Rok™ Primer prior to applying the finish coat. The primer will meet the following test requirements established for the coating: Freeze / Thaw Adhesion: ASTM D 3359/2246 - A minimum rating of 4A after 10 cycles shall be required. (The test will demonstrate these adhesion characteristics on both the Glass Reinforced Concrete, and the joint compound.) Sand all surfaces to be primed using a medium grit sandpaper. Blow off all dust with compressed air. Surface should be clean, dry, and free of contaminants. One coat of Weathr Rok™ Primer shall be applied to the entire GRC part using a 3/8" nap roller at a spreading rate of 200 square feet per gallon. The primer shall be allowed to cure 12 hours at 75 degrees F. prior to top coating.

B. Top Coating: Finish coating will be applied by the painting contractor, and will be an emulsified acrylic, latex, or water-based epoxy, and shall be suitable for exterior concrete.

2.06 RELATED MATERIALS

A. Fasteners: TWO-BIT CLIP™ by Plastrglas™, Inc. Self-drilling, self-tapping TAPCON screws DUROCK self-taping screws.

B. Adhesives: Solvent base construction adhesives: PL Premium PL 400

C. Joint Tape: 2" wide 6 ga. 10 x 10 Leno scrim (Alkali-Resistant) tape

PART 3 DELIVERY, STORAGE, AND HANDLING

3.01 DELIVERY

A. Reinforced concrete units shall be crated in wooden crates, suitably designed for the specific product. The units shall be cushioned and blocked as necessary, to reduce the susceptibility to freight damage. All crates shall bear the manufacturer's name and a stamp indicating they have been inspected and checked by the Quality Assurance Department. The material is to be warranted against deviation from the shop drawings, by the manufacturer until removed from the crates.

3.02 STORAGE

A. Reinforced concrete units shall be stored on the job in a level area in the manufacturer's crates unit ready for use.

B. The Weathr Rok™ Joint Compound and Weathr Rok™ Primer, shall be kept from freezing.

PART 4 EXECUTION

4.01 INSPECTION

A. Inspection areas directly adjacent to planned installation for conditions that will prevent proper installation of reinforced concrete units.

B. Inspect parts from crates for variations from dimensions and tolerances shown on the manufacturer's shop drawings. Report any discrepancy to the manufacturer before proceeding.

4.02 INSTALLATION

A. Install reinforced concrete units true, plumb, and level in accordance with the manufacturer's printed installation instructions, and shop drawings.

B. Dead air spaces must be vented.

PART 5 WARRANTY

5.01 WARRANTY

A. Submit at the time of the shop drawings, the manufacturer's warranty that the materials furnished herein will not warp or sag for a period of one (1) year when installed in conformance with the manufacturer's recommendations.