

SECTION 06614

FRC CAST STONE

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Fiberglass reinforced plastic architectural trim, simulating cast stone for components indicated on Drawings.

1.2 DESIGN REQUIREMENTS

- A. Wind Loads: Design and size components to withstand positive and negative wind loads acting normal to plane of wall, including increased loads at building corners.
 - 1. Design Wind Load: As calculated in accordance with IBC code with 120 mph basic wind speed, exposure C.
- B. Seismic Loads: Design and size components to withstand seismic loads and sway displacement as calculated in accordance with IBC code.
- C. Accommodate movement of fabrications without damage or overstressing, connection failure, undue strain on fasteners and anchor or other detrimental effect when subject to expansion and contraction from temperature range of 120 degrees F over 12 hour period.
- D. Design items with sufficient strength for handling stresses.

1.3 PERFORMANCE REQUIREMENTS

- A. Conform to IBC code for flame/smoke rating of 25/450 when tested in accordance with ASTM E84.

1.4 SUBMITTALS

- A. Section 01330 - Submittal Procedures: Submittal procedures.
- B. Shop Drawings: Signed and sealed by professional engineer registered in State of New Jersey.
 - 1. Indicate dimensions, materials, thicknesses, and installation details.
 - 2. Indicate fastening methods and locations.

- C. Product Data: Provide data on specified component products.
- D. Design Data: Signed and sealed by professional engineer registered in State of New Jersey.
 - 1. Submit calculations to support design.
- E. Sample: Submit 6 x 6 inch samples of fiberglass indicating each finish and color.

1.5 QUALITY ASSURANCE

- A. Fabricator: Company specializing in glass fiber and resin components with ten years documented experience.
- B. Design FRC fabrications, including anchors and fastenings, under direct supervision of Professional Engineer experienced in design of this Work and licensed in State of New Jersey.

1.6 MOCKUP

- A. Section 01400 - Quality Requirements: Mockup requirements.
- B. Furnish full sized mockup of each architectural trim component installed at location as directed by Architect.
 - 1. Illustrate finish, color, permanent fastening, perimeter detail, and interface with adjacent materials.
- C. Incorporate accepted mockups as part of Work.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Section 01600 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.
- B. Accept FRC cast stone on site in manufacturer's original packaging. Inspect for damage.
- C. Store FRC cast stone on site covered and elevated above grade. Protect FRC cast stone from damage, soiling, and staining.
- D. Provide ventilation to prevent condensation from forming on FRC cast stone.

PART 2 - PRODUCTS

2.1 FRC CAST STONE

- A. Manufacturers:
 - 1. DEC Architectural Composites; Echo-Stone, as basis of design.
 - 2. Substitutions: Section 01600 - Product Requirements.

- B. FRC Cast Stone: Molded, blend of cementitious minerals, aggregates, polymers and glass fibers to achieve the following physical properties to match color and texture of cast stone specified in Section 04720.

Property	Test method	Result
Barcol Hardness	ASTM D2583	43 points
Compression	ASTM C39	4,000 psi
Coefficient of Thermal Expansion, Average	ASTM D696	11.0 x 10 ⁻⁶ inches/inch/degree F
Density	ASTM D792	105 lbs/cu ft
Flammability	ASTM E84	25/450 Flame/Smoke
Flexural Strength	ASTm D790	3050 psi
Impact Strength	ASTM D256	190 ft-lbs/inch
Tensile Strength	ASTM D638	3500 psi
Unit Weight		3-5 lbs/sf at 1/2 inch thickness

- C. Anchors and Fasteners: Stainless steel.

2.2 SHOP FABRICATION

- A. Mold Material: Fabricator’s option to achieve desired shape and finish.
- B. Mold Surface: Smooth.
- C. Fabricate components to shapes and sizes indicated, watertight.
 - 1. Build FRC to nominal 1/2 inch thickness.
 - 2. Provide additional thickness and reinforcing as required to meet performance requirements.
- D. Fabricate with internal reinforcing where required by size or loads supported in finished construction.
- E. Finish surfaces not in contact with the mold to match the molded surfaces in appearance.

- F. Finish corners and edges.
- G. Surface Texture/ Exposed side: Smooth or as indicated on Drawings.
- H. Finish: Integral color and exposed aggregate with a factory applied sealer coat ready for installation.
- I. Cure components prior to shipment.
- J. Identify each part with permanent part number. Coordinate part number with identification numbers on shop drawings.

2.3 FABRICATION TOLERANCES

- A. Maximum Variations:
 - 1. Part thickness 1/2 inch.
 - 2. Dimensions in All Directions: 3/16 inch.
 - 3. Square Measured by Part Diagonals: 1/8 inch.
 - 4. Hardware Location: 1/4 inch.
 - 5. Warpage or Bowing: 1.4 inch in 8 feet.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that surfaces substrate are ready to receive work and dimensions are as indicated on shop drawings.
- B. Coordinate installation requirements with supporting framing and adjacent millwork and wall construction.

3.2 INSTALLATION

- A. Install fabrications in accordance with shop drawings and fabricator's instructions.
- B. Install trim level and plumb with uniform joints.
- C. Securely fasten fabrications to substrate to meet performance requirements.
- D. Touch up damaged surfaces to match shop finish.
- E. Seal joints between fabrications and perimeter joints to adjacent construction in accordance with Section 07900.

3.3 ERECTION TOLERANCES

- A. Section 01400 - Quality Requirements: Tolerances.
- B. Maximum Variation From Indicated Position: 1/4 inch in 8 feet.
- C. Maximum Offset From Indicated Alignment: 1/4 inch in 8 feet.

END OF SECTION