

SECTION 03490

Glass Fiber Reinforced Concrete Decorative Roof Overlay

STROMBERG

Architectural Products Inc.

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Glass fiber reinforced concrete (GFRC) decorative roofing overlays and accessories as indicated on the drawings.

1.2 SUMMARY

- A. Glass Fiber Reinforced Concrete Decorative Roofing Overlay: Simulated tile roof overlay manufactured from GFRC installed over a complete, watertight roofing system per Division 07 roofing specification.
- B. Related Sections:
 - 1. Division 05 Section "Metal Fabrications" for supplementary supports for large items.
 - 2. Division 06 Section "Rough Carpentry" for supplementary supports for large items.
 - 3. Division 07 Section "Roof Deck and Insulation" for field painting and sealing prior to painting.

(Select applicable roofing section below)

- 4. Division 07 Section "Built Up Asphalt Roofing".
- 5. Division 07 Section "Built Up Coal Tar roofing".
- 6. Division 07 Section "Modified Bitumen Roofing".
- 7. Division 07 Section "EPDM Roofing".
- 8. Division 07 Section "PVC Roofing".
- 9. Division 07 Section "TPO Roofing".
- 10. Division 07 Section "Asphalt Shingle Roofing".
- 11. Division 07 Section "Modified Bitumen Roofing".
- 12. Division 07 Section "Flashing and Sheet Metal".
- 13. Division 07 Section "Roof Specialties, Gutters and Downspouts".
- 14. Division 07 Section "Roof Accessories".
- 15. Division 07 Section "Joint Sealers".
- 16. Division 15 – Mechanical, for mechanical items projecting through the roof.
- 17. Division 16 – Electrical, for electrical items projecting through the roof.

1.3 REFERENCES

- A. ASTM C 150 - Standard Specification for Portland Cement; 1999a.
- B. ASTM C 33-99 Concrete Aggregates
- C. ASTM C 666 – Standard test Method for Resistance of Concrete to Rapid Freezing and Thawing

- D. ASTM C 979-82(1993): Pigments for Integrally colored Concrete.
- E. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 1999.
- F. ASTM G 23 - Standard Practice for Operating Light-Exposure Apparatus (Carbon-Arc Type) With and Without Water for Exposure of Nonmetallic Materials; 1996.
- G. SMACNA: Architectural Sheet Metal Manual.
- H. Applicable Building Code: (Select One) [International Building Code 200_ Edition] [Uniform Building Code 199_ Edition].

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's data sheets on each product to be used, including dimensions, finishes, storage and handling requirements and recommendations, and installation recommendations.
- C. Shop Drawings: For custom items, provide drawings showing dimensions, layout, joints, details, and interface with adjacent work; include field measured dimensions of the spaces where items are to be installed, if critical to proper installation.
- D. Samples: For each custom finish specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.

1.5 QUALITY ASSURANCE

- A. Manufacturer: Obtain GFRC decorative roof overlay(s) as manufactured by a firm specializing in the manufacture of GFRC decorative roof overlay(s), with a minimum of ten years experience.
- B. Provide a list of projects comparable in size, scope, and complexity as indicated.
- C. Provide verification that glass fiber reinforced concrete decorative roof overlay(s) meets or exceeds products specified.
- D. Installer Qualifications: Regularly engaged and experienced in the installation of glass fiber reinforced concrete products.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Transport, lift, and handle units with care, avoiding excessive stress and preventing damage; use appropriate equipment.
- B. Store products in manufacturer's unopened packaging until ready for installation, in a clean dry area protected from weather, moisture and damage; store units upright and not stacked unless permitted by manufacturer. Product shall be stored clear of the ground on non-staining pallets or other temporary planking.
- C. Protect product from staining, chipping, and other damage.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Stromberg Architectural Products Inc; PO Box 8036, I-30 West, 4400 Oneal, Greenville, TX 75404. ASD. Tel: (903) 454-0904. Fax: (903) 454-3642. Email: sales@strombergarchitectural.com. www.strombergarchitectural.com.
- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 MATERIALS

- A. Glass Fiber Reinforced Concrete Decorative Roof Overlay: High density concrete made of ASTM C 150 Portland cement, crushed stone, silica sand, and polymers reinforced with glass fiber and structural reinforcing as required; asbestos free.
 - 1. Color: As selected from manufacturer's selection.
 - 2. Color: To match Architect's sample.
 - 3. Surface Texture: Exposed surface as selected from manufacturer's selection
 - 4. Density: 140 pcf (2240 kg/cu m).
 - 5. Shell Thickness: 3/8" to 3/4 inch (9.5 mm), nominal.
 - 6. Surface Burning Characteristics: Flame spread index of 0, smoke developed index of 5; when tested in accordance with ASTM E 84. Fuel contribution of 3.
 - 7. Weather Resistance: No significant loss in strength or change in appearance after 200 hours accelerated weathering conducted in accordance with ASTM G 23.
 - 8. Flexural Strength: 1000 to 1800 psi (6.9 to 12.4 MPa).
 - 9. Modulus of Elasticity: 2×10^5 psi (1370 MPa).
 - 10. Compressive Strength: Over 5000 psi (34 MPa).
 - 11. Variation from Dimensions Indicated on Drawings: Plus and minus 1/8 inch (3 mm), maximum.
 - 12. Units shall be designed to withstand project wind velocities of up to ___ mph.
 - 13. Variation from Plane Along Edge or Surface: Plus and minus 1/16 inch per linear foot (1.5 mm in 300 mm), maximum.
 - 14. Outside Corner Radius: 1/16 inch to 1/8 inch (1.5 to 3 mm).
 - 15. Draft Angle: 3 degrees, minimum, on returns, setbacks, reveals, and grooves.
 - 16. Provide non-corrosive anchors and reinforced anchoring points as indicated on drawings.
 - a. Concealed anchors: Hot dipped galvanized steel unless otherwise indicated.
- B. Accessories:
 - 1. Coordinate with Division 07 Roofing Section for roofing accessories installed as part of roofing system below GFRC decorative roof overlay.
- C. Flashing:
 - 1. Provide flashing per Division 07 Section "Flashing and sheet metal".
 - 2. Sheet metal components to conform to the associated drawings of the contract and the requirements of SMACNA.

3. Install GFRC overlay in compliance with the installation details of NRCA Roofing and Waterproofing Manual.
- D. Sealant:
1. Provide sealant per Division 07 Section "Sealants".

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly constructed; verify that substrates are plumb and true.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
 1. Proceed with installation only after unsatisfactory conditions have been corrected.
- D. Check field dimensions before beginning installation. If dimensions vary too much from design dimensions for proper installation, notify Architect and wait for instructions before beginning installation.
- E. Verify that bearing surface is plumb and true.
- F. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Install supplementary temporary and permanent supports as required for proper installation.
- D. Coordinate roof installation with flashing and other adjoining work to ensure proper sequencing.

3.3 INSTALLATION

- A. Install in accordance with applicable code and manufacturer's recommendations, plumb and true to line; shim where necessary.
- B. Flashing: Install metal flashing and trim as indicated and according to details and Division 07 Section "Flashing and Sheet Metal".
- C. Provide expansion joints where moving joints in substrate occur.
- D. Provide control joints at not more than 35 feet (10.5 m) on center if not indicated on drawings.

- E. Provide sealant joints at locations indicated on drawings and per division 07 sections "Joint Sealants".
- F. Patch exposed anchor points to match color and texture of unit.
- G. Clean GFRC units according to manufacturer's written instructions.
 - 1. Remove dirt, stains, excess sealant or other undesired materials.
 - 2. Protect surrounding materials and surfaces during cleaning.

3.4 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION