

FRP SPECIFICATIONS

ARCHITECTURAL FIBERGLASS REINFORCED POLYMER SECTION 06 82 00 (06610)

(SECTION 2612 OF THE 2009 INTERNATIONAL BUILDING CODE)

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. **20 year Materials Warranty Fiberglass (FRP) Trim** including columns, cornice, wall panels, window surrounds, window heads, window sills, finials, balustrades, signage, restoration trim, etc.

1.02 RELATED SECTIONS

- A. Section 05 12 13 (05400): Light Gauge Metal Framing: support framing (blocking) for fiberglass trim.
- B. Section 06 10 53 (06100): Miscellaneous Rough Carpentry for support framing (blocking) for fiberglass trim.
- C. Section 07 92 13 (07900): Elastomeric Joint Sealants.
- D. Section 09 91 00: (09900): Painting

1.03 DELIVERY, STORAGE AND HANDLING

- A. Handle, store, and transport fiberglass parts according to manufacturer's recommendations and in a manner that prevents damage.
- B. Protect fiberglass parts from damage by retaining 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 fiberglass parts, after delivery to the job site and until installation is completed, inspected and approved by the Owner's representative.

1.04 SUBMITTALS

- A. Samples: manufacturer to submit 3 each 3" x 3" flat samples demonstrating thickness and strength of fiberglass trim.
- B. Shop Drawings: manufacturer to submit shop drawings delineating all details required for fabrication as well as showing installation related details including the location of counter sunk screws through the face of the profiles into metal or wood blocking. Blocking design is the responsibility of the Installer and not the FRP manufacturer.

1.05 QUALITY ASSURANCE

- A. Inspect each molded part to ensure that it complies with specified requirements, including nominal dimensions.
- B. Manufacturer is to pre-fit parts to verify continuity and alignment.

1.06 MANUFACTURER'S QUALIFICATIONS

- A. Manufacturer shall have a minimum of ten (10) years' experience in the fabrication and installation field of architectural fiberglass.

1.07 INSTALLER QUALIFICATIONS

- A. Engage an experienced architectural fiberglass Installer who has completed FRP installations similar in material, design and extent to that indicated for this project.

1.08 WARRANTY (20 Year Materials)

- A. Warrant fiberglass parts to be free from defects due to materials and workmanship for **20 years**.

PART 2 - PRODUCTS

2.01 APPROVED MANUFACTURER

- A. **CBL Architectural Fiberglass, LLC**
447 Lake Shore Dr. N.
Southaven, MS 38671
Office: 901-318-3977 Mobile: 901-485-9516 E-mail: jasondgibbs@comcast.net
Website: www.cblarchitecturalfiberglass.net
- B. **Or Architect Approved Equal** - to be submitted to Architect at least 7 days prior to bid date. Must comply with Specifications including (a)20 year warranty and (b)factory sanding and priming in preparation for field painting. Must also substantiate proven track record by photographs and samples illustrating previous fabrication of FRP parts of a similar nature to that required for this project.

2.02 MATERIAL CHARACTERISTICS

- A. Molded Exterior Surfaces: U-V inhibited, NPG-ISO polyester gelcoat, 16 to 22 mils thick.
- B. Back up Laminate:
 - 1. Resin: Isophthalic Polyester resin.
 - 2. Fiberglass Reinforcement
 - a) "E" type fiberglass.
 - b) Random chopped glass fibers.
 - c) Glass content approximately 25% to 30%.
 - 3. Laminate Thickness
 - a) Nominal thickness 3/16"
 - b) Additional thickness and reinforcement, and sandwich structures as indicated for structural integrity and counter sunk screw head attachment locations.

2.03 FINISH

- A. Manufacturer to factory sand the gel coat finish to remove mold release residue on the parts and then factory prime all parts with Sherwin-Williams Prep Rite Pro Block™ in preparation for installation and field top coat painting. Top coat painting is required for the 20 year FRP materials warranty. Installer is to perform detailing as required to make all urethane joints, Bondo™ floated countersunk screw heads, and damage repair ready for final painting by others.

- B. For the required smooth finish, top coat paint to be high grade acrylic or oil base. All areas exposed during installation such as floated column seams, floated countersunk screw heads as well as all urethane/polyurethane sealant must be spot primed. All sealant, patching, floating and spot priming must be completed prior to this final top coat. Follow sealant manufacturer's requirements for sealant cure prior to painting. (See Section 09 91 00: (09900): Painting)

2.04 MECHANICAL PROPERTIES

- A. Large flat areas (in excess of 12") of the profiles are to be fabricated with synthetic sandwich COREMAT™ or Architect approved equivalent. Sandwich core is required for panel stiffness and flexural strength to prevent warping, bowing and oil-canning and to provide sound anchorage for counter sunk screw head attachment and to withstand wind and seismic forces. The Coremat™ must be used where countersunk screws will be used.
- B. Physical Characteristics of FRP Components (minimum values):
- | | |
|---------------------------|------------|
| Shell thickness (nominal) | 3/16"-1/4" |
| Flexural strength | 29,000 psi |
| Tensile strength | 14,000 psi |
| Compressive strength | 18,000 psi |
| Glass content | 25-30% |
- UL 723-1960 Tunnel & ASTM E-84-68 Tests typical unmodified laminate:
 Class I Flame Spread Classification (≤ 25)
 Reinforced areas of components where noted.

2.06 IDENTIFICATION

- A. Identify each fiberglass part with a permanent designation number.
 B. Designate number to coordinate with shop drawings.

2.07 ANCHORS AND FASTENERS

- A. The Installer to provide anchors, fasteners and other accessories required for proper installation of trim as shown in fiberglass manufacturer's shop drawings. Only stainless steel or treated screws to be used.

2.08 FRP Parts

A. (Cornice, Wall Panels and other Building Trim)

Installation - Attachment to Blocking: To provide solid anchorage to withstand wind and seismic forces, fiberglass panels are to be screw attached to wood or steel blocking at 16" on center on the horizontal run. Vertical spacing of screw attachment to be shown on the shop drawings. Attachment is to be by treated or stainless screw appropriate for metal or wood blocking. Screws, construction adhesive and shims are to be used where required to assure a "true" surface profile of the assembled pieces. Screws are to be countersunk and the exposed countersunk hole patched with resin putty (supplied by manufacturer) and/or Bondo™, sanded smooth and flush with exposed surface of panel, then spot primed for painting.

Thermal Expansion and Contraction: Based on normal climatic extremes in specified region including allowances for installation and expected temperature range at time of installation. Normally, cornice panels are to be 8' long with corners factory molded. 1 1/2" wide recessed overlap joints for cornice are to be installed leaving 1/4" wide flush sealanted joints (for cosmetic appearance, sealant joints should not exceed 1/4" unless a wider and/or recessed "stone" masonry joint is called for by the Architect). Sealanting to be Urethane such as NP1 by Sonneborn or Polyurethane such as Vulkem 921 by Tremco. Installer to thoroughly clean surfaces to which sealant is to be bonded. Due to sealant shrinkage during cure, two applications of sealant may be required. In addition to the sealant in the joint, a bead of construction adhesive or sealant is to be applied between the top of the recessed rear flange and back side of the overlapping front flange. All exterior floated joints are to be spot primed. Interior fiberglass can be installed using standard drywall joint materials. Top coat painting to be high grade acrylic or oil base. (See Section 09 91 00: (09900): Painting)

B. (Column Covers)

Installation - Attachment to Overhead Structure and Deck: Column shells with attached molded caps are to be attached to the overhead structure with long treated screws appropriate for metal or wood blocking. These screws are to be countersunk through the cap into the wood that is embedded within the cap during fabrication. At the bottom of the column shaft, Installer supplied cleats are to be used to attach the column shaft to the deck. Then the column base halves are to be joined and countersunk screwed to the shaft at the top ring of the base. The countersunk holes and column seam are to be floated with fiberglass cloth tape and resin putty (supplied by manufacturer). The resulting surface is to be sanded, coated with "Bondo" type surface finisher, and then sanded smooth and spot primed. Maximum thickness of Bondo™ surface finisher not to exceed 1/16".

Shaft Vertical Seams has a recessed overlap seam that is screw attached to the mating seam. The base, which is separate from the shaft, is to be screwed to the shaft as described above.

The vertical seam in the column tube/cap and base and the horizontal seam at the base/shaft joint is to be "glassed" with fiberglass resin and cloth tape supplied by manufacturer. The resulting surface is to be sanded, coated with "Bondo" type filler, and then sanded smooth for spot priming by Installer. These seams are to be floated smooth so as to disappear. Interior fiberglass can be installed using standard drywall joint materials. Top coat painting to be high grade acrylic or oil base. (See Section 09 91 00: (09900): Painting)

FRP (fiber reinforced plastic columns) must be the 25%-30% glass content polyester resin composite (like boat hulls) and not the rotational cast 3%-5% glass content, brittle cultured marble type composite. Seams in column covers shall be fused and floated with fiberglass tape, resin putty and Bondo™. Sealant vertical and horizontal seams are not allowed.

PART 3 - EXECUTION

3.01 PRE-INSTALLATION EXAMINATION (Installer)

- A. Verify that the substrates are ready for installation of fiberglass trim.
- B. Check field dimensions affecting the installation of fiberglass trim.
- C. Verify that support framing (wood or steel blocking) has been installed to allow accurate placement, alignment and connection of the trim to the structure.
- D. Report discrepancies to the General Contractor between design dimensions and field dimensions which could adversely affect installation.
- E. Do not proceed with installation until discrepancies are corrected or installation requirements are modified and approved by the General Contractor and Architect.
- F. Start of installation constitutes acceptance of existing conditions.

3.02 INSTALLATION

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

3.03 ALLOWABLE TOLERANCES FOR INSTALLED UNITS

- A. Maximum Offset from True Alignment: 1/8 inch in 20 feet.
- B. Maximum Variation from True Position: 1/4 inch in 20 feet.

3.04 CLEANING

- A. Clean installed fiberglass trim using cleaning methods approved by manufacturer.

END OF SECTION