

SECTION 06610 – ARCHITECTURAL FIBERGLASS

PART 1 – GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Fabrication of fiberglass reinforced polyester domes.
- B. Related Documents and Sections:
 - 1. General Conditions, Supplementary Conditions and Division 1 General Requirements apply to the work of this section.
 - 2. Section 06100, “Rough Carpentry”, for blocking.
 - 3. Section 07901, “Joint Sealants”.

1.02 QUALITY ASSURANCE

- A. The fiberglass manufacturer shall be one who is currently in the business of manufacturing and supplying architectural fiberglass components for the building construction industry and who can demonstrate the capability to provide needed domes.
- B. The fiberglass manufacturer shall have been engaged in the fiberglass industry for at least 10 years doing work with projects comparable in size, scope, detail, and complexity to that shown and specified.
 - 1. Submit a list of comparable projects, locations, and owner contacts with bid documents.
- C. Single Source Responsibility for Architectural Fiberglass: Obtain architectural fiberglass from a single source with resources to provide products complying with requirements indicated without delaying the work.
- D. Fire Test Response Characteristics: Provide architectural fiberglass and related materials with fire test response characteristics as specified elsewhere in this section as determined by testing identical products per test method ASTM E-84 or other testing and inspecting agency acceptable to authorities having jurisdiction. Provide written certification that supplied architectural fiberglass panels meets or exceeds the criteria.

1.03 SUBMITTALS

- A. Qualification Data for firms and persons specified in the “Quality Assurance” Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- B. Product Data:
 - 1. For products of standard or similar manufacturing submit manufacturer’s catalog illustrations, specifications, anchor details and installation instructions.
- C. Color Selection:
 - 1. Submit custom color sample selection chips of actual material showing color, texture and sheen available for initial review.
 - a. Architect may supply custom paint color sample for matching.
- D. Shop Drawings:
 - 1. Submit CAD shop drawings for fabrication and erection. Include plans, elevations, sections, profiles, and details of attachment and assembly. Indicate dimensions of components. Include details for dome, anchorage to substructure and all miscellaneous accessories.
 - 2. Professional Engineering, if required, shall include calculations & sealed drawings by a P.E. registered in the State of the dome installation, to meet all State & Local codes.
- E. Samples:
 - 1. Provide sample representing dome vital components as requested
- F. Submit detailed maintenance instructions for inclusion in final operation and maintenance manuals.
- G. Submit warranty on completed fiberglass components in writing against defects of materials and workmanship and to meet the

specified requirements of this Section for a period of one (1) year from delivery to site.

1.04 HANDLING AND SHIPMENT

- A. Ship fiberglass components in padded, dedicated moving van.
 - 1. Provide additional protection as may be necessary to prevent soiling of surfaces and marring of finish on site as recommended by manufacturer.

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURES

- A. Subject to compliance with requirements, fiberglass manufacturer offering products that may be incorporated in work include:
 - 1. EDON Corporation
1160 Easton Road
Horsham, PA 19044
Phone 215-672-8050
Fax 215-672-9014

2.02 MATERIALS

- A. General: The fiberglass reinforced polyester plastic components shall be designed, fabricated and erected to conform to the States Building Code, Local Codes and to the Architect's design criteria.
- B. Glass cloth, matt and "Chop" shall be equal to the products of PPG-Owens Corning or equal.
- C. Polyester resins shall be equal to Class A, Edon Spec 67. The resin shall be flame retardant, promoted thixotropic polyester resin designed for use in hand laid up and spraying processes. The resin shall be specifically formulated for use in applications that require an ASTM E 84, Class I flame spread rating, without the use of fillers or antimony trioxide, with an ASTM E 84 flame spread rating of 25 unfilled smoke density of 380 or under.

- D. Gel Coat: The gel coat shall be a high-performance product with ultraviolet inhibitors as recommended by the gel coat and fiberglass dome manufacturer. Acceptable products are:
1. "951-Armorcote IMC" by Cook Composites and Polymers Co., P. o. Box 419389, Kansas City, MO 64141-6389, (816) 391-6000.
 2. "Max-Guard" Series by Neste Polyester Inc., 5106 Wheeler Avenue, Fort Smith, AK 72901, (501) 646-7865
 3. "Ultra Shield-NPG" by Ferro Corporation, One Erieview Plaza, Cleveland OH 44114, (216) 641-8580
- E. Fiberglass-reinforced polyester components shall be manufactured using the specified resins, reinforced with chopped glass fibers. All exposed surfaces shall be finished with custom colored gel-coat.
- F. Internal metal reinforcement, anchorage clips, brackets and all other "built-in" accessories shall be captured and additionally reinforced with additional glass fiber and matt of sufficient thickness as required by the manufacturers design.
- G. Foam reinforcing equal to Divinycel H – 60.
- H. All metal hardware, both loose and embedded, shall be stainless steel or aluminum as designed by manufacturer. All fasteners to be stainless steel.
- I. Gel coat thickness shall be 0.015" minimum to 0.025" maximum.
- J. Dome thickness shall be 3/16" minimum or as engineered for non-sandwich core construction, 7/16" minimum for sandwich core construction.

2.03 PANEL FABRICATION

- A. Prior to commencement of work installer shall review the job site for conformity to shop drawings. Identify and resolve detail conflicts in advance and identify such condition and resolutions on the shop drawings.
- B. Production molds shall be constructed from successive layers of glass fiber with tooling gel coat. Molds shall be constructed with

sufficient thickness and rigidity to prevent deflection, warp age and defects during panel production.

- C. Form panels with bolt flanges. Use flanges with sufficient depth to accommodate support, mating and alignment of panel surfaces and panel-to-panel sealant components.
- D. Provide all components necessary for a complete, visually continuous, weather tight installation.
- E. All domes shall be factory fitted and predrilled for later field assembly. All dome sections shall be labeled & numbered for reassembly.

PART 3 – EXECUTION

3.01 INSTALLATION

- A. Coordinate required blocking for attachment of dome to structure.
- B. Dome may be pre-assembled and raised into place or assembled in place.
- C. Re-assemble dome as marked from factory. Fully caulk all flanges with installer provided EDON SD-37 silicon sealant as flanges are bolted together.
- D. Do not cut or abrade finishes, which cannot be completely restored in the field. Installer to make small inconspicuous finish repairs using manufactures color matching gel fill finish. If to large of a repair is needed, return to fiberglass manufacturer for alterations or repairs.
- E. Use only stainless steel connectors approved by the dome manufacturer, which will develop the strength required by fiberglass dome manufacturer's calculations. The installer shall supply these connectors for final attachment to building structure.
- F. Clean installed dome to remove all dirt, smudges, and construction dirt. Use only those cleaning products and procedures recommended by the fiberglass manufacturer.