SECTION 08342

FIBERGLASS REINFORCED PLASTIC DOORS AND FIBERGLASS DOOR FRAMES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Fiberglass Reinforced Plastic (FRP) Doors.

B. Fiberglass Door Frames.

C. Fiberglass Louvers.

D. Fiberglass Reinforced Plastic (FRP) Transoms.

1.2 RELATED SECTIONS

A. Section 08710 - Door Hardware.

B. Section 08800 - Glazing.

1.3 REFERENCES

A. ASTM D 635 - Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Self-Supporting Plastics in a Horizontal Position.

B. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

1.4 SYSTEM DESCRIPTION

A. Design Requirements:
   1. Design door opening assemblies to resist failure from corrosion in an environment of _____.
   2. Design door opening assemblies to have minimum fiberglass content 25 percent by weight.

B. Performance Requirements:
   1. Door opening assemblies: Maximum flame spread 25 in accordance with ASTM E 84, self-extinguishing in accordance with ASTM D 635.
   2. Door opening assemblies: FDA accepted.
   3. Door opening assemblies: USDA accepted.

1.5 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Product Data: Manufacturer's printed product data indicating characteristics of products specified in this section.

C. Shop Drawings:
   1. Plans: Indicate location of each door opening assembly in project.
   2. Elevations: Dimensioned elevation of each type door opening assembly in project; indicate sizes and locations of door hardware, and lites and louvers, if specified.
   3. Details: Installation details of each type installation condition in project; indicate installation details of glazing, if specified.
   4. Schedule: Indicate each door opening assembly in project; cross-reference to plans, elevations, and details.

D. Verification Samples: Two (2) samples to verify custom color match to color chip furnished by Architect.

E. Manufacturer's Instructions: Printed installation instructions for door opening assemblies.

F. Warranty Documents: Manufacturer's standard warranty documents, executed by manufacturer's representative, countersigned by Contractor.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Manufacturer: Minimum twenty (20) years documented experience producing products specified in this section.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Packing, Shipping, Handling and Unloading:
   1. Deliver doors and frames factory-assembled and pre-hung, with hardware.
   2. Package door opening assemblies in wood crates having wood perimeters; label crates with the following information:
      a. Manufacturer's name.
      b. Architect/Engineer-designated Project Number.
      c. Tag Location in accordance with door schedule.
      d. Door type, color, and weight.

B. Acceptance at Site: Accept only sealed, crated, and labeled door opening assemblies at site.

C. Storage and Protection: Store door assemblies in factory packaging in dry area; store on edge and protect from damage.

1.8 WARRANTY

A. Manufacturer's Warranty: Manufacturer's 10-year warranty against failure due to corrosion from specified environment.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturers: CHEM-PRUF Door Company; P.O. Box 4560, Brownsville TX 78523. ASD. Telephone 1-800-531-7407 or 1-800-444-6924, FAX 956-544-7943; e-mail info@chem-pruf.com web site: www.chem-pruf.com

B. Substitutions: Not permitted.

2.2 MATERIALS

A. Fiberglass Mat: Random glass fiber mat; minimum 4.5 ounces per square foot weight of glass material.

B. Polyurethane Foam: Minimum density 4 pounds per cubic foot; maximum flame spread 25 in accordance with ASTM E 84.

C. Kraft Honeycomb Material: Phenolic resin impregnated; maximum flame spread 25 in accordance with ASTM E 84.

D. Roving: Unidirectional glass fiber mat; minimum 16 ounces per square yard weight.

E. Resins: Formulated for specified environment; maximum flame spread 25 in accordance with ASTM E 84, self-extinguishing in accordance with ASTM D 635

F. Anchors: Manufacturer's standard stainless steel screws and plastic anchors.

G. Bonding Materials: Manufacturer's standard frame-to-opening polymeric bonding system.

H. Glazing Pins: Manufacturer's standard fiberglass glazing retainers.

I. Glazing: Type specified in Section 08800; factory installed.

J. Joint Sealer: Silicone sealant, specified in Section 07900.

2.3 MANUFACTURED UNITS

A. Fiberglass Reinforced Plastic (FRP) Doors:
   1. Thickness: 1-3/4 inches.
   2. Thermal Insulating Value: 'R' factor 12.
   3. Construction:
      a. Stile and Rail Structure: One-piece molded U-shaped cross-section; minimum 15 mil gel coat, minimum three (3) layers random-fiber glass mat, saturated with resins.
      b. Core: Polyurethane foam.
      c. Core: Kraft honeycomb material.
      d. Face sheets: Minimum 15 mil gel coat, with minimum two (2) layers random-fiber glass mat and one (1) layer roving, saturated with resins.
   4. Sizes: Indicated on drawings.
   5. Finish: Smooth gloss surface.
   6. Color: White.
   7. Color: Gray.
   8. Color: Camel tan.
   9. Color: Custom color to match color chip furnished by Architect.

B. Fiberglass Frames:
   1. Construction: One-piece molded solid cross-section with molded stop, flat across surface adjacent to wall opening; minimum 15 mil gel coat, minimum three (3) layers random-fiber glass mat, saturated with resins.
   2. Sizes: For door sizes and frame depths indicated on drawings.
   3. Finish: Smooth gloss surface.
   4. Color: White.
   5. Color: Gray.
   6. Color: Camel tan.

7. Color: Custom color to match color chip furnished by Architect.

C. Fiberglass Louvers:
1. Construction: Molded solid vanes; minimum 15 mil gel coat, minimum three (3) layers random-fiber glass mat, saturated with resins.
2. Sizes: Indicated on drawings.
3. Finish: Match Fiberglass Door finish.

D. Fiberglass Reinforced Plastic (FRP) Transoms:
1. Thickness: 1-3/4 inches.
2. Thermal Insulating Value: 'R' factor 12.
3. Construction:
a. Stile and Rail Structure: One-piece molded channel cross-section; minimum 15 mil gel coat, minimum three (3) layers random-fiber glass mat, saturated with resins.
b. Core: Polyurethane foam.
c. Core: Kraft honeycomb material.
d. Face sheets: Minimum 15 mil gel coat, with minimum two (2) layers random-fiber glass mat and one (1) layer roving, saturated with resins.
4. Sizes: Indicated on drawings.
5. Finish: Match door finish.

E. Door Hardware: Specified Section 08710.

2.4 FABRICATION

A. Fiberglass Reinforced Plastic (FRP) Doors:
1. Stile and Rail Structure:
a. Form in mold of exact door size, with gel coat layer to form, glass mat layers to a U-shaped channel interior.
b. Formulate gel coat for environment and integral color specified.
c. Form structure as single component; jointed construction at intersections of stiles and rails is prohibited.
d. Form mortise for lockset, and recess for strike plate in lock stile, at time of molding.
e. Embed steel reinforcement for hinges in fiberglass matrix; provide for hinge leaf recesses in hinge stile at time of molding.
f. Embed treated wood compression members at the time of molding in locations where thru-bolting of hardware is required.
2. Core:

a. Foam polyurethane in place within stile/rail structure; allow no voids within structure.
b. Form openings for lites or louvers, if specified; form to sizes and at locations indicated.

3. Core:
a. Fit honeycomb core material within stile/rail structure; fit around wood compression members and projections of mortises.
b. Mold openings for lites or louvers, if specified; form to sizes and at locations indicated.

4. Face sheets:
a. Formulate gel coat with integral color specified; embed glass materials.
b. Chemically bond face sheets to stile/rail structure and core material.

B. Fiberglass Frames:
1. Form in mold of exact wall opening size, with gel coat. Glass mat layers to form solid glass core.
2. Formulate gel coat for environment and integral color specified.
3. Form structure of solid fiberglass components; jointed construction at intersections of jambs, head, or intermediate members, is prohibited.
4. Form mortise for lock strike, and recess for strike plate in lock jamb, at time of molding.
5. Embed steel reinforcement for hinges and other indicated hardware in fiberglass matrix; provide for hinge leaf recesses in hinge jamb at time of molding.

C. Fiberglass Louvers:
1. Form in mold of exact frame size, with gel coat layer to form, glass mat layers to interior.
2. Formulate gel coat for environment and integral color specified.
3. Form structure as replaceable component, mounted in molded window type opening.

D. Fiberglass Reinforced Plastic (FRP) Transoms:
1. Stile and Rail Structure:
a. Form in mold of exact transom size, with gel coat layer to form, glass mat layers to channel interior.
b. Formulate gel coat for environment and integral color specified.
c. Form structure as single component, same construction as doors.

2. Core:

a. Foam polyurethane in place within stile/rail structure; allow no voids within structure.
b. Form openings for lites or louvers, if specified; form to sizes and at locations indicated.

3. Core:
a. Fit honeycomb core material within stile/rail structure; fit around wood compression members and projections of mortises.
b. Form openings for lites or louvers, if specified; form to sizes and at locations indicated.

4. Face sheets:
a. Formulate gel coat with integral color specified; embed glass materials.
b. Chemically bond face sheets to stile/rail structure and core material.

E. Assemble doors and frames, with louvers and transoms, if specified; install specified hardware, using through bolts or sex screws with compression members to resist screw torque and to prevent compressing door construction.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verification of conditions:
1. Openings are correctly prepared to receive doors and frames.
2. Openings are correct size and depth in accordance with shop drawings.

B. Installer's Examination:
1. Have installer examine conditions under which construction activities of this section are to be performed and submit written report if conditions are unacceptable.
2. Transmit two copies of installer's report to Architect within 24 hours of receipt.
3. Beginning construction activities of this section before unacceptable conditions have been corrected is prohibited.
4. Beginning construction activities of this section indicates installer's acceptance of conditions.

C. Verify that glazing has been factory-installed.

3.2 INSTALLATION

A. Install door opening assemblies in accordance with shop drawings and manufacturer's printed installation instructions, using installation methods and materials specified in installation instructions.

B. Field alteration of doors or frames to accommodate field conditions is strictly prohibited.

C. Site tolerances: Maintain plumb and level tolerances specified in manufacturer's printed installation instructions.

3.3 ADJUSTING

A. Adjust doors in accordance with door manufacturer's maintenance instructions to swing open and shut without binding, and to remain in place at any angle without being moved by gravitational influence.

B. Adjust door hardware to operate correctly in accordance with hardware manufacturer's maintenance instructions.

3.4 CLEANING

A. Clean surfaces of door opening assemblies and sight-exposed door hardware in accordance with respective manufacturer's maintenance instructions.

3.5 PROTECTION OF INSTALLED PRODUCTS

A. Protect door opening assemblies and door hardware from damage by subsequent construction activities until final inspection.

END OF SECTION