

SECTION 081613 - FIBERGLASS REINFORCED POLYESTER DOORS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes: Fiberglass polyester doors (FRP) for the following:
 - 1. Exterior doors.
- B. Related Requirements:
 - 1. Section 081213 "Hollow Metal Frames" for frames receiving FRP doors.
 - 2. Section 087100 "Door Hardware" for hardware installed in FRP doors.
 - 3. Section 088000 "Glazing" for glass view panels in FRP doors.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of door. Include details of core and edge construction and trim for openings.
- B. Shop Drawings: Use same reference numbers as used on Contract Documents. Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; and the following:
 - 1. Dimensions and locations of blocking.
 - 2. Dimensions and locations of mortises and holes for hardware.
 - 3. Dimensions and locations of cutouts.
 - 4. Undercuts.
- C. Samples for Initial Selection: Color charts consisting of actual materials in small sections for door faces.
- D. Samples for Verification:
 - 1. Corner sections of doors, approximately 8 by 10 inches (200 by 250 mm), with door faces and edges representing actual materials to be used.
 - a. Provide Samples for each color, texture, and pattern.
 - 2. Frames for light openings, 6 inches (152.4 mm) long, for each material, type, and finish required.

1.4 INFORMATIONAL SUBMITTALS

- A. Sample Warranty: For warranty.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Comply with requirements of manufacturer's written instructions.
- B. Package doors individually in corrugated cartons.
- C. Mark each door on top with opening number used on Shop Drawings.

1.6 WARRANTY

- A. Warranty: Manufacturer agrees to repair or replace doors that fail in materials or workmanship within specified warranty period.
 - 1. Warranty shall also include installation that may be required due to repair or replacement of defective doors.
 - 2. Warranty Period: Ten years from date of Substantial Completion.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Products: Subject to compliance with requirements, provide one of the following products:

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1. FRP Architectural Doors, Inc.; FD-25
2. Special Lite; SL17

B. Source Limitations: Obtain doors from single manufacturer.

2.2 FIBERGLASS POLYESTER DOORS, GENERAL

- A. FRP Doors: Provide flush type, fiberglass reinforced polyester doors, 1 3/4" thick.
- B. All doors shall be machined with templates from the manufacturer of submitted and approved hardware. Doors shall be internally reinforced for specified surface hardware. All doors to be properly reinforced for hardware before core is foamed in door.
- C. Doors are to be shipped with hardware installed by the FRP Door Manufacturer except for door closers and holders that may be field installed. Reinforcement must be provided by the door manufacturer for the through bolting of door closures and holders and exit devices. Hardware shall be installed in accordance with Section 087100 "Door Hardware" and hardware manufacturer's specifications.
- D. Fire-Rated FRP Doors: Doors complying with NFPA 80 that are listed and labeled by a testing and inspection agency acceptable to authorities having jurisdiction, for ratings of 20 minute doors, based on testing according to NFPA 252.
 1. Test Pressure: Test at atmosphere pressure.
- E. Comply with fire-resistance and flammability regulations as interpreted by governing authorities as follows:
 1. Face sheet tested in accordance with ASTM E84 shall have the following ratings:
 2. Smoke Developed: not greater than 450.
 3. Flame Spread: not greater than (Class C) Exterior (Class A) interior.
- F. Provide door assemblies that have been designed and fabricated to comply with requirements for system performance characteristics listed below as demonstrated by testing and manufacturer's corresponding stock systems according to test methods designated.
 1. Thermal Transmittance: U-Value of not more than 0.09 (0.09)/0.70.
- G. Provide face sheets that meet the following test requirements:
 1. Impact Strength of Face Sheets: ASTM D256 Izod Impact Strength, 14 pounds per inch of notch.
 2. Abrasion Resistance of Face Sheets: NEMA Standard L.D1-2.01 and ASTM D 1242, 2000 cycles of Model 503 Taber Abraser with a 1000 gram load, not to exceed 0.23% weight loss, providing 50% less weight loss after 25 abrader cycles.
 3. Hardness of Face Sheets: ASTM D 2583, Barcol Meter Hardness Test, not more than 55.
 4. Humidity Resistance of Face Sheets: ASTM D570, water absorption not greater than 0.40% after 24-hour immersion.

2.3 MATERIALS

- A. Aluminum Members: Alloy and temper recommended by manufacturer for strength, corrosion resistance and application of required finish: ASTM B221 for extrusions, ASTM B209 for sheet/plate, minimum wall thickness of .125 inch (3.18 mm).
- B. Aluminum perimeter extrusions finish shall be:
 1. At interior doors, provide AAM10C22A41 Series Finish (Class I anodized, clear finish 204 R1), 0.7 mils (0.01778 mm) or greater thickness.
- C. Fasteners: Aluminum, or other materials warranted by manufacturer to be non-corrosive and compatible with aluminum components.
- D. Brackets and Reinforcements: Manufacturer's high-strength aluminum units where feasible; otherwise, provide non-magnetic stainless steel or hot-dip galvanized steel complying with ASTM A386.

1. Provide manufacturer's standard reinforcement for each type of hardware required, not less than .125" thick.
2. Provide manufacturer's recommended fasteners reinforcement.
- E. Core Material: Foamed-in-place urethane foam of minimum 5 pounds per cubic foot density, containing no CFC's.
- F. Face Material: Fiberglass reinforced polyester, .120" minimum thickness, with pebble-like embossed finish. Color to be selected by the Architect from a minimum of 8 colors

2.4 LIGHT FRAMES

- A. Metal Frames for Light Openings: Manufacturer's standard four sided, beveled profile, mitered assembly with hemmed edge. Provide security screw fasteners on secure side of doors.
 1. Material: Anodized aluminum to match door edges.
 2. Frames for rated doors shall be tested and approved for ratings indicated.
 3. Frames shall be manufactured to accept glazing system indicated on Drawings and specified for the locations indicated.

2.5 ELECTRIC POWER TRANSFER RACEWAY

- A. Electric Power Transfer Raceway: Where doors are indicated to be provided with electrified door hardware, provide EPT raceways factory installed in doors to facilitate installation of specified electrified door hardware.

2.6 FABRICATION

- A. Railings and stiles to be extruded 6063 T5 aluminum alloy. All exposed surfaces to be a minimum .125 wall thickness.
- B. Stiles shall be tubular to accept hardware as specified.
- C. Top and bottom rails to be extruded with legs for interlocking rigidity weather bar where applicable. On toilet stall doors, top and bottom rail shall be fully closed with seamless top and bottom edges, using identical rail section as used for vertical jambs.
- D. Face sheets to be locked in by extruded interlocking edges which are to be an integral part of rails and stiles.
- E. Joinery to be 3/8" galvanized steel tie rod, top and bottom and 3/16" riveted reinforcing angles and secured with aircraft type nuts.
- F. Core to be foamed-in-place.
- G. Under Cutting: Where doors are indicated to be undercut, the dimension indicated shall be clear opening from floor finish.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine doors and installed door frames, with Installer present, before hanging doors.
 1. Verify that installed frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with level heads and plumb jambs.
 2. Reject doors with defects.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Hardware: For installation, see Section 087100 "Door Hardware."
- B. Installation Instructions: Install doors to comply with manufacturer's written instructions and as indicated.

3.3 ADJUSTING

- A. Operation: Rehang or replace doors that do not swing or operate freely.

- B. Finished Doors: Replace doors that are damaged or that do not comply with requirements.

END OF SECTION 081613