

Universal Pultrusions, LLC
SECTION 08200
FIBERGLASS REINFORCED PLASTIC (FRP) DOORS & FRAMES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. FRP Doors
- B. FRP Frames
- C. Accessories

1.02 RELATED SECTIONS

- A. Section 08800- Glass & Glazing
- B. Section 08710- Finish Hardware
- C. Section 09900- Painting (Field Application)

1.03 REFERENCES

- A. ANSI Door and Frame Preparations for Hardware
- B. DHI Recommended Locations for Builders Hardware
- C. ASTM E 84- Surface Burning Characteristics

1.04 PERFORMANCE PROPERTIES OF FRP

A. Tensile Strength	55,000 psi	ASTM D638
B. Compressive Strength	50,000 psi	ASTM D695
C. Flexural Strength	50,000 psi	ASTM D790
D. Modulus of Elasticity	3.5 x 10 (6)	ASTM D790
E. Coefficient of Thermal Expansion	5.5 x 10 (-5)	ASTM D696
F. Surface Burning Characteristics, Class 1 Flame Spread=	25	ASTM E84
G. Thermal Conductivity	0.1 - 0.24 btu-ft/hr-ft(2)-F	

1.05 SUBMITTALS

- A. General: See Section 01300- Submittals and Substitutions for submittal procedures.
- B. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods.
- C. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles and identifying location of different finishes, if any.
- D. Color: Submit manufactures samples of standard colors of doors and frames.
- E. Warranty: Submit manufactures standard warranty.

1.06 PRODUCT HANDLING

- A. Shipping and Delivery
 1. Doors and frames shall be shipped pre-hung in containers such as to prevent damage to finish.
 2. Doors and frames shall be delivered by common carrier with shipping containers intact and door manufacturers name clearly identifiable. Manufactures must be notified if shipping containers arrive damaged. Acceptance of damaged shipment may void warranty
 3. Containers shall be labeled clearly identifying opening door mark.
- B. Handling and Storage
 1. Doors and frames shall be stacked in such a way as to prevent falling and damage. Do not stack higher than indicated on shipping container. Do not stack on top of other material.

1.07 WARRANTY

- A. Manufacturer shall provide a lifetime warranty for the door and frame against failure due to corrosion, and a 15 year warranty against defect in material or workmanship, delaminating, core expansion and warp.

PART 2 PRODUCTS

2.01 MANUFACTURES

- A. Universal Pultrusions, LLC, P.O. Box 1289, 100 Tillco Drive, Marshall, AR., 72650. Contact number: 870-448-4406. Website: www.unipullc.com.
- B. Substitutions: Reference Section 01300 for substitutions.

2.02 DOORS AND FRAMES

- A. Requirements for all doors and frames.
 - 1. General: All door and frame sections shall be chemically welded at factory or knockdown (KD) type for site assembly.
 - 2. Reinforcing: FRP chemically welded at factory. All structural members shall utilize a chemically resistant UV stabilized resin system.
 - 3. Hardware Preparation: In accordance with DHI A115 Series, or as indicated on drawings. All door stiles shall have integral FRP reinforcement, chemically welded in place, and shall not contain corrosive material embedded as reinforcing for hinge locations. Doors & frames shall be factory drilled and mortised for all hardware indicated on drawings. Hardware provided by others. See Specification Section 08710- Finish Hardware.
 - 4. Finish: Factory primed, for field finishing or factory finished with manufactures standard color. Custom color available as an option.

2.03 DOORS

- A. Exterior & interior (non-rated).
 - 1. General: Panels shall be manufactured of fiberglass reinforced plastic (FRP). Use polymers tailored to the specific (corrosive) environment and have a reinforced content of 65% by weight.
 - 2. Door Thickness: 1-3/4 inch of flush construction. Door shall be FRP, pultruded as a one piece monolithic panel, with integral stiles.
 - 3. Profile: Square. Panel shall fit flush with frame on all sides.
 - 4. Texture: Smooth.
 - 5. Panel Thickness: 1/8 thick solid FRP faces free of seams and cracks. Stile edges shall be 9/16 inch thick solid FRP.
 - 6. Insulation factor: R-9 total.
 - 7. Top Rail: Pultruded tube profile designed to flush fit inside the panel and be chemically welded with a two part adhesive.
 - 8. Bottom Rail: Pultruded channel profile designed to fit flush inside the panel allowing for field trimming if needed. A pultruded tube profile may be flush fit into door, in lieu of channel, upon request.
- B. Core
 - 1. Material: High density, closed cell, Poly-isocyanurate sheets.
 - 2. Thickness: 1-1/2 inch.
 - 3. Compressive Strength: 16 psi minimum.

2.04 FRAMES

- A. Exterior & interior (non-rated).
 - 1. Material: 1/4 inch thick solid pultruded FRP profiles having no corrosive components or reinforcement.
 - 2. Width: 2 inch faces.
 - 3. Depth: 5-3/4 inch standard, 7-3/4 inch standard or factory adjustable frame system, depth as indicated on drawings. (4-1/2 inch to 12 inch available) Frames shall be chemically welded at factory for one piece installation or delivered knock down (KD) style for field assembly.
 - 4. Door Stop: 1/2 inch x 2-1/4 inch.
 - 5. Corner Construction: Mitered with 4 inch x 4 inch x 3/8 inch pultruded FRP angle reinforcement with interlocking "L" shaped pultruded FRP brackets.
 - 6. Reinforcing: 5/16 inch pultruded FPR chemically welded at all hinge, strike & closer locations.
 - 7. Mullions: Fixed- Pultruded FRP 2 inch x frame depth x 1/4 inch thick, or Rim (removable)- Pultruded FRP, 2 inch x 3 inch x 1/4 inch thick, face screwed to a concealed FRP block for a flush appearance.

8. Transom & Sidelites: Shall be same material as frame with removable stop to accommodate 1/4 inch, 5/8 inch or 1 inch glazing by others.
9. Astragal: 1/8 inch thick FRP "T" shaped as indicated on drawings.
10. Anchors: Furnished with 6 total wall anchors, type as specified on drawings.
11. Fasteners: Type 304 CRSS (18-8 series corrosion resistant stainless steel.)

2.05 ACCESSORIES

- A. Door Lite Kit: Pultruded FRP with 1 inch face x door width plus a 3/8 inch high integral fixed stop on one side and a 3/8 inch removable stop to accommodate 1/4 inch, 5/8 inch, or 1 inch glazing by others. Finish to match door.
- B. Door Louver: Pultruded FRP 1/8 inch thick materials. Channel frame with 1 inch face frame x door depth. Fixed inverted "Y" shaped blades. Louver size as indicated on drawings. Finish to match door. Brass or Stainless Steel screen option available.
- C. Wall Louver: Pultruded FRP 3/16 inch thick materials. Box frame 2 inch x 4 inch. Fixed or operable "Z" shaped blades, 1/8 inch thick, with internal mechanism. Louver size as indicated on drawings. Factory primed for field finishing or factory finish with manufactures standard color. Custom color available as an option. Brass or Stainless Steel screen option available.
- D. Thresholds: Pultruded FRP 5-3/4 inch depth x 3/16 inch thick. Saddle style 1/2 inch overall height or Bumper style 3/8 inch overall height.
- E. Decorative Trim: Pultruded FRP 1/8 inch thick x 2-1/4 inch wide with mitered corners. Trim shall be chemically welded to door. Panel size & quantity as indicated on Drawings. Finish to match door.
- F. General: Non-corrosive fasteners shall be used with all accessories.
- G. Weatherstripping: By others. See Section 08710

2.06 FINISHES

- A. Doors & frames shall be supplied with grey primer or coated with one of ten manufacture's standard colors. Custom colors are available as an option.
 1. Finish: Two-part aliphatic polyurethane, low VOC, industrial coating.
 2. Thickness: 5 mils.
 3. Sheen: Gloss.
 4. Impact Resistance: 140 in-lbs.
 5. Electrical Resistance: less than 10 megohms.

PART 3 EXECUTION

3.01 EXAMINATION

- A. All doors and frames shall be verified to comply with approved production drawings and meet the requirements for type, size, location and swing.

3.02 INSTALLATION

- A. Installation shall be in strict compliance with manufacturer's instructions using non-corrosive materials. Installation shall be in strict accordance with local codes.
- B. Install doors/frames plumb, level, square, true to line and without warp or rack. Anchor doors securely in place. Install doors to swing freely. After installation make final adjustments to hardware to allow for proper operation and latching.
- C. Coordinate frame anchor placement with wall construction.

3.02 CLEANING

- A. Clean exposed surfaces of FRP doors and frames with a mild, non-abrasive cleaner and water.
- B. Do not use harsh cleaning materials or methods that would damage finish.

END