

EDGEWATER DOOR – RECOMMENDED SPECIFICATIONS

SECTION 08 16 13 – FIBERGLASS (FRP) DOORS AND FRAMES

PART 1 – GENERAL

1.1 – SECTION INCLUDES

- A. Fiberglass reinforced plastic (FRP) Doors
- B. Fiberglass reinforced plastic (FRP) Frames

1.2 – RELATED SECTIONS

- A. Applicable provisions of Division 1 shall govern all work under this section.
- B. Division 4 Section “Unit Masonry Assemblies” for installing anchors and grouting frames in masonry construction.
- C. Division 8 Section “Door Hardware” for door hardware and weather-stripping.
- D. Division 8 Section “Glazing” for glass in doors and frames.
- E. Division 9 Section “Painting” for field painting factory-primed doors and frames.

1.3 – QUALITY ASSURANCE

- A. General: Provide fiberglass reinforced door and frame units made of components of standard construction furnished by one manufacturer as coordinated assemblies.
- B. Manufacturer: Company specializing in the manufacture of fiberglass doors and frames with a minimum of fifteen years documented experience.
- C. Construction: Verify that FRP doors and frames are manufactured utilizing pultruded fiberglass components for durability, superior strength, and chemical resistance. Press-molded doors and frames will not be accepted.
- D. Resins: Resins shall comply with USDA standards for incidental food contact.
- E. Tested by Intertek to the following standards for fire rated doors.
 - 1. NFPA 252
 - 2. UL10C
 - 3. CAN/ULC S104
- F. Tested by Intertek to the following standards for Hurricane Doors
 - 1. ASTM E283/E283M-19 Standard Test Method for Rate of Air Leakage Through Exterior Windows, Curtains, Walls, and Doors Under Specified Pressure Differences Across the Speciman.
 - 2. ASTM E331-16 Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
 - 3. ASTM E330/E330M-21 Standard Test Method for Structural Performance of Exterior Windows, Doors Skylights and CurtainWalls by Uniform Static Air Pressure Difference.
 - 4. ASTM E1886-19 Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors and Storm Shutters Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials.
 - 5. ASTM E1996-20 Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors and Storm Shutters Impacted by Windbourne Debris in Hurricanes.
- G. NAMI Certifications: NI015533 and NI015533.01
- H. Hurricane Doors meet ADA compliance – single point latching on single doors.
- I. Hardware Reinforcements: FRP doors and frames fabricated with a minimum screw holding strength to exceed WDMA extra heavy duty requirements.
- J. Paint Adhesion: Coating for FRP doors, panels and frames to conform to AAMA 624-07 for color uniformity, film adhesion, specular gloss, direct impact, abrasion resistance, chemical resistance and USDA approved.
- K. Warranty: Warranty fiberglass doors and frames for life of the initial installation against failure due to corrosion. Additionally, warranty fiberglass doors and frames for a period of 10 years against failure due to materials and workmanship from date of substantial completion.

1.4 - SUBMITTALS

- A. Product Data: For each type of door and frame indicated, include door designation, type, level and model, material description, core description, construction details and finishes.

1.5 – DELIVERY, STORAGE AND HANDLING

- A. Deliver doors and frames palletized and / or crated to provide protection during transit and job storage. Provide additional protection to prevent damage to finish of factory-finished doors and frames.
- B. Inspect doors and frames on delivery for damage and notify shipper and supplier if damage exists. Minor damages may be repaired provided refinished items match new work and are acceptable to the Architect. Remove and replace damage items that cannot be repaired as directed.
- C. Store doors and frames in accordance with HMMA 840 standards.

PART 2 – PRODUCTS

2.1 – MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by the following:
 1. Edgewater Door – 175 N. Western Ave. Neenah, Wisconsin 54956
Phone: 920-886-1995 Fax: 920-886-1998

2.2 – DOORS

Provide seamless doors complying with requirements indicated below:

- A. ES Series (Heavy Duty)
 1. Stiles: Pultruded FRP tubes with at least ¼” thick walls. Outer edge to be HDU to allow field trimming for width.
 2. Rails: Polymer composite with FRP strand reinforcing. Up to 1” of field trimming for height allowed.
 3. Internal Stiffeners: At least one vertical polymer composite with FRP strand reinforcing.
 4. Lite openings shall be completely sealed, integrated into the sub-frame during construction.
 5. Core types: **Please select one:**
 - i. Expanded polystyrene solid foam core, minimum 3# density (standard)
 - ii. Optional polyurethane core (insulated)
 - iii. Optional balsa core (impact resistance)
 - iv. Optional honeycomb core (crush resistance)
- B. EP Series (Extra Heavy Duty)
 1. Stiles: Pultruded FRP tubes with at least ¼” thick walls. Outer edge to be HDU to allow field trimming for width.
 2. Rails: Polymer composite with FRP strand reinforcing. Up to 1” of field trimming for height allowed.
 3. Internal Stiffeners: Vertical polymer composite with FRP strand reinforcing stiffeners every 6” on center.
 4. Lite openings shall be completely sealed, integrated into the sub-frame during construction.
 5. Core types: **Please select one:**
 - i. Expanded polystyrene solid foam core, minimum 3# density. (standard)
 - ii. Optional polyurethane core (insulated)
 - iii. Optional balsa core (impact resistance)
 - iv. Optional honeycomb core (crush resistance)
- C. EF Series (Fire)
 1. Stiles: Concealed intumescent with an HDU outer edge.
 2. Rails: High Density fire rated material with an HDU outer edge. Top rail to have concealed intumescent.
 3. Lite openings shall be completely sealed, integrated into the sub-frame during construction.
- D. EH Series (Hurricane)
 1. Expanded polystyrene solid foam core, minimum 3# density
 2. Doors to have windstorm, air infiltration and water penetration ratings as indicated per schedule
- E. Transom/Side Panels: To be identical to the doors in construction and materials – if applicable to this project

2.3 FRAMES

- A. General: Provide pultruded fiberglass frames for doors, transoms, sidelites and borrowed lites – where indicated and approved.
- B. Frames: Comply with the requirements of grade specified for corresponding doors.
 1. All Frames to be manufactured from 0.1875 inch (4.8 mm) thick fiberglass pultrusions.
 2. Profile must be of standard hollow type to permit installation into new concrete or block walls, as well as slip-on drywall situations.
 3. Solid (foam filled), boxed or coated hollow metal frames will not be accepted.
- C. Door Silencers: Provide silencers for all frames. Three for each strike jamb and two for the heads for paired openings.
- D. Plaster Guards: Provide and install plaster guards in frames for masonry installation.

- E. Anchors: Fabricated from no less than 0.125 inch (3.18 mm) thick pultruded fiberglass material.
 - 1. New Masonry Construction: Provide wire anchors.
 - 2. Existing Masonry Construction: **Please select one:**
 - i. **Provide stainless steel expansion bolts, 3/8" x 4"**
 - ii. **Optional Concealed EMA: Provide stainless steel expansion bolts, 3/8" x 1-7/8". Include cover painted to match frame.**
 - 3. New Steel or Wood Stud Construction: Provide fiberglass anchor supports similar to flush steel channel in backside of frames for attachment from the stud wall into the frames anchor supports. This installation must take place prior to setting drywall.
 - 4. Existing Steel or Wood Stud: Provide drywall slip-on frame anchoring system – compression type
 - 5. Hurricane Construction: Minimum #14 steel screw. 6 inches from bottom, 6 and 10 inches from top, maximum 20.5 inches on center. Head anchoring 6 inches from corner and maximum 20 inches on center for singles and 8 inches from corner, 4 inches from center, at center, and maximum 21 inches on center for pairs.
 - 6. Fire rated Frames:
 - i. Grouted Door Frame: "T" anchors or wire anchors at each hinge location on the hinge and jamb side of the frame
 - ii. Bolt-in Door Frame: 3/8" * 4" long expansion bolts located no more than 7 1/4" from the very top (face) of the frame, spaced no more than 25 1/2" on center and a minimum of 12 1/4" from the bottom of the frame (finished floor).

2.4 – FABRICATION

- A. General: Fabricate fiberglass door and frame units to be rigid, neat in appearance and free from defects including warp and buckle. Where practical, fit and assemble units in manufacturer's plant. Clearly identify work that cannot be permanently factory assembled before shipment, to assure proper assembly at project site.
- B. Core Construction: Manufacturer's standard core construction that complies with the following:
 - 1. All voids to be fully filled with specified core material.
 - 2. All core components to be chemically bonded together prior to the application of FRP faces.
- C. Framing System: Fabricate doors utilizing pultruded FRP tubes with minimum 1/4" thick walls in combination with solid polymer members.
 - 1. All doors to be fully sealed on all 6 sides against water penetration to the core.
- D. Door Faces: Laminated composite faces shall be urethane fused to the stile and rail assembly, including the vertical stiffeners and core material, utilizing a two-part 100 percent reactive urethane adhesive and then cured under pressure until completely bonded.
- E. Face Sheets: **Please select one:**
 - 1. **Faces to be .090 smooth (standard)**
 - 2. **Faces to be .120 smooth (optional)**
 - 3. **Faces to be .120 pebbled (optional)**
- F. Clearances: Not more than 1/8 inch (3.2 mm) at jambs, heads, and wide side joint between meeting pairs.
- G. Door Edges: Lock stile to be factory beveled 1/8" in 2" for rub free operation. Square lock-edge will not be accepted.
- H. Tolerances: Maximum diagonal distortion – 1/8 inch measured with straight edge, corner-to-corner.
- I. Hardware Reinforcement: Fabricate all hardware reinforcements utilizing premium solid polymer and fiberglass blocking. Any form of wood or metal reinforcements will not be accepted.
- J. Exposed Fasteners: Unless otherwise indicated, provide stainless steel, countersunk flat or oval heads for exposed screws and bolts.
- K. Hardware Preparations: Prepare doors and frames to receive mortised and concealed hardware according to final door hardware schedule and templates provided by hardware supplier. Doors and frames must be factory pre-drilled for all mortised hardware preps. Pilot and through-bolt holes for all surface mounted hardware to be drilled at the project site during installation.
- L. Frame Construction: Fabricate frames to size and shape shown on drawings. **Please select one:**
 - 1. **Knock-Down (KD standard): Fabricate frames for field assembly. Include stainless steel screws and corner brackets. Fire and Hurricane rated frames available in knock-down version. Frames over 4' wide are KD only.**
 - 2. **Set-up and resin welded: Fabricate frames with mitered resin-welded corners and seamless face joints. Assembled frames will include temporary spreader bars.**

M. Hardware Locations:

1. Locate hardware as indicated on shop drawings or, if not indicated, according to manufacturer's standard locations.
2. Hardware Preps: If hardware information is not supplied, doors and frames will be machined for ANSI standard preps.

N. Glazing/Louver Stops: Manufacturer's standard two-piece PVC retainers.

1. Provide non-removable stops on outside of exterior and on secure side of interior doors for glass, louver and other panels in doors.
2. Provide screw-applied, removable, glazing stops on inside of glass, louvers and other panels in doors.
3. Loose, eight-piece trim kits will not be accepted. Additionally, retainers held in place by two-sided tape are not acceptable.
4. Glass to be supplied and installed under section 08800, unless stated otherwise.

O. Door Louvers: Provide sight-proof louvers for doors, where indicated. Stationary louvers to be manufactured utilizing fiberglass inverted "V" blades.

P. Astragals: 3/16" x 2" solid FRP flat plate sent loose, can be applied to either leaf.

2.5 – FINISHES

A. Prime Finish: Pre-clean and shop prime each door and frame ready for finish painting, performed at the jobsite under Section 09900.

B. Factory Finished: Where indicated, furnish fiberglass doors and frames factory pre-finished.

1. Finish: Manufacturers standard chemical resistant acrylic polyurethane topcoat
2. Sheen: Semi-gloss
3. Pencil Hardness, ASTM D3363 – 3H
4. Pigmented gelcoats will not be accepted as a final factory finish.

C. Finish on fiberglass frames must match that of the fiberglass doors to which they are installed.

2.6 - HARDWARE

A. Hardware: All hardware shall be furnished under section 08710 unless stated otherwise.

B. Hurricane Hardware: Hardware approved to use as per Intertek listing

PART 3 – EXECUTION

3.1 – INSTALLATION

A. General: Install fiberglass doors, frames and accessories according to Shop Drawings, manufacturer's data and as specified.

B. Placing Frames: Set frames accurately in position, plumbed, aligned and braced securely until permanent anchors are set. After wall construction is completed, remove temporary braces and spreaders, leaving surfaces smooth and undamaged.

1. Except for frames located in existing walls or partitions, place frames before construction of enclosing walls and ceilings.
2. In masonry construction, provide at least three wall anchors per jamb; install adjacent to hinge locations on hinge jamb and at corresponding heights on strike jamb. Acceptable anchors include masonry wire anchors.
3. In existing concrete or masonry construction, provide at least three completed opening anchors per jamb; install adjacent to hinge location on hinge jamb and at corresponding heights on strike jamb. Set frames and secure to adjacent construction with stainless steel expansion bolts.
4. For openings 90 inches (2286 mm) or more in height, install an additional anchor at hinge and strike jambs.

C. Factory Finished Doors: Restore finish before installation if fitting or machining is required at Project site.

D. Door Installation: Fit fiberglass doors accurately in frames. Shim as necessary.

3.2 – ADJUSTING AND CLEANING

A. Cleaning: Clean fiberglass door and frame assemblies in accordance with manufacturer's recommended procedure.

END OF SECTION 08 16 13