EDGEWATER FRP DOOR - RECOMMENDED SPECIFICATIONS

SECTION 08220 - FIBERGLASS (FRP) DOORS AND FRAMES

PART 1 - GENERAL

1.1 - SECTION INCLUDES

A. Fiberglass reinforced plastic (FRP) Doors
B. Fiberglass reinforced plastic (FRP) Frames
C. Fire-rated fiberglass reinforced plastic (FRP) Doors
D. Fire-rated 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 five years documented experience.
C. Construction: Verify that FRP doors and frames are manufactured utilizing pultruded fiberglass components for flexibility, durability, superior strength and chemical resistance. Press-molded doors and frames will not be accepted. Resin rich door edges and gelcoat are prone to chipping and cracking (brittle).
D. Resins: Resins shall comply with USDA and FDA standards for incidental food contact.
E. Flame Spread Rating: Flame retardant structural shapes meet the minimum flame spread rating less than or equal to 25 when tested according to ASTM E84.
F. Fire-rated doors and frames to conform to NFPA 252 (2008), CAN4 S104 (1985), UL10C (2001), and UL9 (2005).
G. Physical Endurance: FRP Doors and frames successfully completed 1,000,000 cycles Grade A swing test in compliance with ANSI/SDI A250.4-2011.
H. Impact Strength: FRP doors and panels 10.32 foot-pounds per inch of notch, ASTM D-256.
I. Tensile Strength:
    a. FRP doors and panels 12,000 psi, ASTM D-638.
    b. FRP frames 30,000 psi, ASTM D-638.
J. Flexural Strength: FRP doors, panels, and frames 25,000 psi, ASTM D-790.
K. Compressive Strength:
    a. FRP doors and panels 18,000 psi, ASTM D-695.
    b. FRP frames 30,000 psi, ASTM D-695.
L. Water Absorption: FRP doors, panels, and frames .27 %, ASTM D-570.
M. Hardware Reinforcements: FRP doors and frames fabricated with a minimum screw holding strength of 1,000 lbs. Tested with a #12 x 1-1/4" hinge screw.
N. 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, and chemical resistance.
O. 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 cardboard-wrapped 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 damaged items that cannot be repaired as directed.
C. Store doors and frames at building site under cover. Avoid using non-vented plastic or canvas covers that could create a humidity chamber.

PART 2 - PRODUCTS

2.1 - MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by the following:

1. Edgewater FRP Door – 175 N. Western Ave. Neenah, Wisconsin 54956
Phone: 920-886-1995 Fax: 920-886-1998
2. Substitutions: None

2.2 - DOORS

A. Interior Doors: Provide doors complying with requirements indicated below:

1. E-S series (heavy duty) from the "Cutting Edge" product line (seamless).
2. Doors to have at least two internal full height heavy duty vertical fiberglass stiffeners for warp resistance.
3. Expanded polystyrene solid foam core.

B. Exterior Doors and High Traffic Areas: Provide doors complying with requirements indicated below:

1. E-P series (Extra Heavy Duty) or E-S series from the "Cutting Edge" product line (seamless).
2. Doors to have full height heavy duty vertical fiberglass stiffeners 6 inches on center for superior strength.
3. Expanded polystyrene solid foam core.

C. Fire-rated Doors: Provide doors complying with the requirements indicated below:

1. E-F series (Fire) from the "Cutting Edge" product line (seamless).
2. Doors to have fire-rating as indicated per schedule.
3. Fire-rated mineral core.

D. Vision Lite Systems: Lite opening shall be completely sealed utilizing fiberglass pultrusions, integrated into the units sub-frame during construction.

E. Door Louvers: Provide sight-proof louvers for doors, where indicated. Stationary louvers to be manufactured utilizing fiberglass inverted "V" blades. Louver openings shall be completely sealed in the same manner as lite openings.

F. Transom/side Panels: Transoms 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.

B. Frames: Comply with the requirements of grade specified for corresponding doors. Frames for E-S (standard), E-P (premier), and E-C (custom) series fiberglass doors to be manufactured from 0.1875 inch (4.8 mm) thick fiberglass pultrusions. Profile must be of standard hollow type to permit installation into new concrete or block walls, as well as slip-on drywall situations. Solid (foam filled) or boxed frames will not be accepted.

C. Fire-rated Frames: Frames for E-F (fire) series fiberglass doors to be manufactured from 0.1875 inch (4.8 mm) thick fiberglass pultrusions. Profile must be of standard hollow type to permit installation into new concrete or block walls. *Coated hollow metal frames will not be accepted.*

D. Door Silencers: Except on weather-stripped frames, fabricate stops to receive three silencers on strike jambs of single-door frames and two silencers on heads of double-door frames.

E. Plaster Guards: Provide plaster guards or mortar boxes at back of hardware cutouts where mortar or other materials might obstruct hardware operation.

F. Supports and Anchors: Fabricated from no less than 0.125 inch (3.18 mm) thick pultruded fiberglass material.

1. Wall Anchors in New Masonry Construction: Provide T-strap or wire anchors.
2. Wall Anchors in Existing Masonry Construction: Provide six (three per jamb) Redhead or Lock-bolt type flat head, stainless steel expanding sleeve bolts, 3/8 inch diameter, 4 inches in length.
3. Wall Anchors in New Steel or Wood Stud Construction: Provide multi-purpose type fiberglass anchor supports 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.

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. E-S (standard) series to have expanded polystyrene foam core.
2. E-P (premier) series to have full height vertical fiberglass stiffeners, 6 inches on center. Voids to be filled with expanded polystyrene foam.
3. E-C (custom) series to have expanded polystyrene foam, polyurethane foam or vertical fiberglass stiffeners, where indicated.
4. E-F (fire) series to have fire-rated mineral core.
5. Hollow/honeycomb core will not be accepted.

C. Stiles and Rails: Fabricate doors utilizing heavy duty pultruded fiberglass tubular members.
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. Clearances: Not more than 1/8 inch (3.2 mm) at jambs and heads, except not more than 1/4 inch (6.4 mm) between pairs of doors. Not more than 3/4 inch (19 mm) at bottom, with standard being 5/8 inch (15.9 mm) at bottom.
F. Door Edges: Lock stile to be factory beveled 1/8" in 2" for rub-free operation. Square lock-edge will not be accepted.
G. Tolerances: Maximum diagonal distortion – 1/16 inch (1.6 mm) measured with straight edge, corner-to-corner.
H. Hardware Reinforcement: Fabricate all hardware reinforcements utilizing premium high density polyethylene (HDPE) and fiberglass blocking. Any form of wood or metal reinforcements will not be accepted.
I. Exposed Fasteners: Unless otherwise indicated, provide stainless steel, countersunk flat or oval heads for exposed screws and bolts.
J. Thermal-Rated (insulating) Assemblies: At exterior locations and elsewhere shown or scheduled, provide doors fabricated as thermal-insulating door and frame assemblies, with an "R" value of 11-12.
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.
1. Fabricate frames with mitered resin-welded corners and seamless face joints.
2. Provide set-up and resin welded frames with temporary spreader bars.
3. Provide 4 or 6 inch terminated/hospital stops - where indicated.

M. Hardware Locations: Locate hardware as indicated on shop drawings or if not indicated, according to manufacturers standard locations.
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. Astragals: Fabricate astragals for pairs of doors utilizing fiberglass materials in either flat or "T" configuration – where indicated.

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.
1. Where indicated, furnish fiberglass doors and frames factory pre-finished.
a. Finish: Manufacturers standard chemical resistant waterborne acrylic enamel topcoat.
b. Sheen: Satin or semi-gloss - as indicated.
c. Finish: Manufacturers chemical resistant gel-coat.

B. Door Faces: Face skins shall be smooth. Due to the unit's extra-long life expectancy, minor repairs on facings must be easily blended in the event of damage. Slightly textured gelcoat facings will not be accepted.
C. Finish on fiberglass frames must match that of the fiberglass doors to which they are installed. Gelcoated doors and polyurethane coated frames together as a unit will not be accepted.

2.6 - HARDWARE

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

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 and masonry T-shaped 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 and masonry anchorage devices.
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. Protection Removal: Immediately before final inspection, remove protective wrappings from doors and frames.

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

END OF SECTION 08220