

Standard Specification for FRP Pantry System

1.1.0 SCOPE

1.1.1 This specification shall govern for all work necessary to furnish a FRP Pantry System, including all anchorage hardware which may be required to provide a complete installation of the FRP Pantry System. Pantry System should be Contact Molded and other methods are not acceptable.

1.2.0 GENERAL

1.2.1 The FRP Pantry System shall be self-supporting. FRP Pantry System to be designed with two double doors. All hardware to be galvanized steel constructions.

1.3.0 GOVERNING SPECIFICATIONS

1.3.1 Applicable sections of the following standards shall apply to the FRP Pantry System as indicated in this specification:

- a. Implement quality control methods for classifying visual defects in glass reinforced laminates.

2.1.0 DESIGN REQUIREMENTS

2.1.1 FRP Pantry System shall be designed to sustain the following load combinations in accordance with or later:

- a. counter top loading: 20psf

2.1.2 The design and installation shall incorporate provisions for thermal expansion and contraction over an ambient air temperature range of -30 to 120 deg. F.

2.2.0 QUALITY ASSURANCE

2.2.1 Qualifications: FRP Pantry System manufacturer must have a minimum of TEN (10) years history of successful installations of similar size. Past job list with customer contact information will be required. Subject to compliance with requirements, manufacturers offering products which may be incorporated are limited to: EDGENG PVT LTD of Sri Lanka.

2.2.2 Manufacturer's Quality Control: All fabrication shall be carefully inspected at the site of fabrication by factory inspectors who shall use whatever means necessary to assure the proper fit of all field connections and compliance with all material and fabrication requirements of the specifications.

2.2.3 Warranty: A general warranty of the fabricated FRP Pantry System for materials and workmanship shall be for a minimum of one (1) year after installation with a maximum of 18 months.

2.2.4 Physical Properties: (minimum)

Property @ 70 °F	Value	Test Method
Tensile Strength molded	26,500 psi	ASTM D 638
Tensile Modulus molded	1,550,500 psi	ASTM D 638
Compressive Strength molded	26,500 psi	ASTM D 695
Compressive Modulus molded	1,500,000 psi	ASTM D 695
Flexural Strength molded	30,000 psi	ASTM D 790
Flexural Modulus molded	1,550,500 psi	ASTM D 790
Shear Strength molded	12,500 psi	ASTM D 732
Barcol Hardness Molded	40	ASTM D 2583
Glass Content	45%	ASTM D 2584
Water Absorption	.09% Max	ASTM D 570
Coefficient of Linear Thermal Expansion (in/in/°F) - Molded	15×10^{-6}	ASTM D 696

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2.3.0 SHOP DRAWINGS / SUBMITTAL DATA

- 2.3.1 Shop drawings shall be completed with all dimensions, anchor locations, details of connecting piping and the size and locations of any required openings.
- 2.3.2 Specifications for all components shall be provided.
- 2.3.3 Details of the major fabricated components showing the arrangement of components and labeled with component sizes and materials of construction shall be submitted.

3.1.0 MATERIALS

- 3.1.1 All materials shall be new and shall be specially designed or selected for the function and service specified. No material may be used in the project that has not been approved by the engineer. Approval for incorporation into the project will be made only after the review of shop drawings and specifications.
- 3.1.2 Resin: The resin shall be a corrosion resistant RTM Polyester, which has been determined to be acceptable for the service conditions.
 - a. Resins shall contain no bulk extenders or filler, except for viscosity control.
 - b. Ultraviolet-light inhibitors shall be added to the laminate.
- 3.1.3 Glass: The reinforcing materials shall be type E glass with a chrome or silane finish, and a binder compatible with the resin. Surfacing veil shall be type C veil with a binder containing silane and compatible with the resin.

4.1.0 MANUFACTURE

- 4.1.1 Laminate Sequence:
 - a. Interior surface shall be the corrosion barrier consisting of 10-20 mils C-veil at 10% glass content (unreinforced resin coat is not acceptable).
 - c. Surfacing veil shall be supported by 80 mil thickness of chopped strand E-glass.
 - d. Structure shall consist of alternating layers of 24 ounce roving and mat to complete the required thickness.
 - e. Total laminate thickness shall be not less than the allowable design for a 4:1 safety factor.
 - f. Exterior surface shall be a resin-rich coat with ultraviolet protection. A paraffinated wax additive will be used in the top coat to eliminate air inhibition (14-18 mils thick).
 - g. Standard color shall be off White.

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- h. Cut edges or drilled holes shall be de-burred and sealed with paraffinated resin solution.

5.1.0 PACKING AND STORAGE

- 5.1.1 Preparation for Shipment: All pieces shall be delivered in the largest practical sizes for field assembly by the contractor. Individual pieces shall be permanently tagged and cross-referenced with information on the manufacturer's erection and assembly drawings.
- 5.1.2 Storage of Material: All material stored on the job shall be protected and maintained in accordance with the manufacturer's recommendations. Materials may be stored outdoors on pallets or other wooden supports providing for the proper support and drainage. Material shall not be allowed to contact the ground directly.

6.1.0 INSTALLATION

- 6.1.1 Assembly shall be in strict accordance with the manufacturer's drawings and instructions.