

## HORIZONTAL FIBERGLASS FILTER TANK

- A. The equipment described herein shall be products of a manufacturer regularly engaged in the fabrication of pressure vessels for at least 15 years.
- B. The filter tank shall be no less than " diameter with a " side shell, suitable for 50 psi working pressure, hydrostatically tested to 75 psi (for six (6) hours) and designed with a 4:1 safety factor.
- C. Saddle style bases (2) shall be provided for tank support. Systems which incorporate stacked tanks shall include similar bases and mounting saddles for the upper vessel. Access to the tank shall be provided by a 14" x 18" manhole with a two bolt, 4 point yoke. Manhole seal shall be complete with one piece 1/4" neoprene gasket and positioned so that internal pressure from the filter will augment the seal. No additional hardware or through bolts will be allowed.
- D. Drain out system shall consist of one (1) 3/4" coupling mounted to the tank bottom. Each coupling to be fitted with a slotted PVC sand retainer. Air relief connection shall be One (1) 3/4" coupling provided on top of the tank.
- E. Each filter tank shall be equipped with the necessary flanges and connections for the internal and external piping. Connections shall be comprised of 1" minimum thickness fiberglass flanges with ANSI standard 150 lb. bolt pattern.
- F. The resin used shall be a commercial grade, premium corrosion resistant vinylester that has been evaluated in a laminate by test in accordance with ASTM C-581 in service comparable to the intended service and recommended for this service by the manufacturer.
- G. A thixotropic agent that does not interfere with visual inspection of laminate quality shall only be added for viscosity control in resins that are not to be used in the inner corrosion barrier, interior layers, interior secondary layers, and interior top coats.
- H. Resin pastes used to fill crevices may contain thixo-tropic agents provided that all such areas are subsequently covered with a full corrosion resistant barrier laminate.
- I. Ultraviolet absorbers shall be added to the exterior surface for improved exterior resistance.
- J. Chopped strand mat shall be constructed from commercial grade E- type glass strands bonded together using a binder. The strands shall be treated with a sizing that is chemically compatible with the resin system used.
- K. Continuous roving shall be a commercial grade of E-type glass fiber with a sizing that is chemically compatible with the resin system used. Continuous roving for chipping in spray-up process shall be principally silane furnished with as little chrome compounds as practical to achieve chipper performance while maintaining visual laminate clarity requirements.

- L. Woven roving shall be in accordance with ASTM Specification D- 4357.
- M. The laminate comprising the structural tank (cylindrical shell) shall consist of a corrosion-resistant barrier comprised of an inner surface, interior layer and a structural layer.
- N. The inner surface exposed to the chemical environment shall be a resin rich 0.010 to 0.030 inches thick, reinforced with 1 ply of continuous glass fiber surface mat such as Regina/OCF C3/33 or approved equal.
- O. The inner surface exposed to the corrosive environment shall be followed with a layer composed of resin, reinforced only with non continuous glass fiber strands applied to a minimum thickness of 0.100 inches. The combined thickness of the inner surface and interior layer shall be 0.110 to 0.130 inches and in no case less than 0.100 inches.
- P. The glass content of the inner surface and interior layer combined shall be 27% & 5% by weight.
- Q. Resin used in these layers shall be Hetron 922 incorporating a Cobalt/MEKP cure system as recommended by the manufacturer.
- R. The degree of cure shall be such as to exhibit a Barcol hardness on the inner surface of at least 90% of the resin manufacturer's minimum specified hardness for the cured laminate with a continuous glass surface mat.
- S. Subsequent reinforcement shall be continuous strand roving. Glass content of this filament-wound structural layer shall be 50 to 80% by weight. Only those constructions evaluated for design properties shall be used.
- T. Subsequent reinforcement shall be comprised of 1.5 oz./ft. chopped strand mat or equivalent weight of chopped roving, or shall be comprised of chopped strand mat or chopped roving and such additional number of alternating plies of 24 oz./yd. woven roving to a thickness as required to meet the physical properties that are used for the design. Each successive ply or pass of reinforcement shall be well-rolled prior to the application of additional reinforcement. Where woven rovings are used, chopped strand glass reinforcement shall be used as alternating and final layers. All woven roving and chipped strand shall be overlapped. Laps in subsequent layers shall be staggered at least 2.25 inches from laps in the preceding layer.
- U. Resin used in the structural layer shall be the same as used in the inner surface and interior layers. Other generic types of resin such as isophthalics or general purpose resins shall not be used.
- V. Filter shall carry a fifteen (15) year limited non-prorated warranty.