

SPC-FRP-002: SPECIFICATION FOR MOLDED FIBERGLASS REINFORCED PLASTIC (FRP) BASKET STRAINERS IN FOR

LIFE SUPPORT SYSTEMS- ESW SERIES

1. SCOPE

The molded fiberglass reinforced plastic basket strainer shall be designed for the pump suction side of recirculation systems in continuous operation. These strainers are designed for easy operation, assuming maintenance personnel have limited training and minimal tools to clean the basket. Baskets are designed to remove foreign objects typically found in zoos and aquarium systems. Typical installations include the suction side of the recirculation pump that operating at high flow rates and minimal pressure drops.

1. DESIGN REQUIREMENTS
	1. Configuration
		1. Strainer type shall be OVERSIZED flanged basket type
		2. Effluent shall be in-line with the influent
		3. Dimensions as illustrated in ESW Series Cut Sheet
	2. Flanges
		1. Flanges shall allow easy installation into piping system by limiting rotational nozzle stress and flange bolt hole misalignments
			1. Flanges 12” and smaller shall be ANSI 150# Van Stone type-SCH80 PVC.
			2. Flanges 14” and larger shall require dimensional and load verification
		2. Flange material shall be PVC Cell Class 23447-B ASTM D-1784
	3. Basket
		1. Basket material shall be 316 Stainless Steel
		2. Basket perforation shall be 1/4” on 3/8” centers
		3. Basket shall have handle welded to body, capable of holding 50lbs of debris
		4. Basket shall be able to withstand 15 psi pressure drop across the perforated wall
		5. Basket surface area as illustrated in ESW Series Cut Sheet
	4. Basket Maintenance
		1. No tools shall be required to remove the lid
		2. The lid shall be clear acrylic lid with a minimum thickness of 1” and flexural strength greater than 15,000 psi
		3. Lid attachment shall be with 316 Stainless Steel Tee Handles / Swing Bolts
		4. Gasket grooves shall be in the strainer body to prevent accidental misplacement
		5. Basket shall self-center and remove in one simple motion
		6. Basket shall be suspended to ensure positive seal at the basket flange
		7. Vent plugs shall allow for gas removal without lid removal
		8. Drain plugs shall be minimum 1 inch off floor to prevent plugging from debris
	5. Operating Conditions
		1. Normal operating temperature is 75 deg F with no effect on longevity
		2. Maximum fluid temperature shall be 140 deg F with reduced pressure rating
		3. Normal operating pressure is 2 psi suction
		4. Maximum operating pressure is 50 psi with no surge
		5. Maximum suction pressure is 14 psig vacuum
	6. Pressure Rating
		1. The shell thickness shall be at least 2 times greater than the minimum thickness specified using ASME BPVC SEC X design equations for FRP vessels
		2. Hydrostatic testing of strainer at 50 psig shall be conducted every unit.
	7. Materials of Construction
		1. Gaskets shall be EPDM
		2. Shell shall be FRP with high grade, corrosive resistant vinyl ester resin matrix
		3. Strainer shall be constructed from components certified to NSF/ANSI 61
		4. Exterior shall have UV protective inhibitors to maximize service life
		5. Flanges shall be PVC Cell class 23447-B, ASTM D-1784
2. CONSTRUCTION
	1. Manufacturer shall have minimum five year service history in industry
	2. Manufacturer shall maintain as-built dimensions of each strainer
	3. Manufacturer shall be ISO 9001:2008 Certified
	4. Manufacturer shall supply minimum one year warranty on lids, baskets, and gaskets to cover defect in material or workmanship
	5. Manufacturer shall supply minimum five year warranty on FRP shell to cover defect in material or workmanship
	6. Approved manufacturer
		1. Fluidtrol Process Technologies, Inc. [www.fluidtrol.com](http://www.fluidtrol.com) 888-551-0511