

NORTH CAROLINA DEPARTMENT OF ENVIRONMENT,  
HEALTH AND NATURAL RESOURCES  
DIVISION OF ENVIRONMENTAL HEALTH  
ON-SITE WASTEWATER SECTION

<b>SEPTIC TANK EFFLUENT FILTER APPROVAL</b>
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**SEPTIC TANK EFFLUENT FILTER NO: EF-10-R**

**ISSUED TO:** Eric Ball

Orenco Systems Incorporated  
814 Airway Avenue  
Sutherlin, Oregon 97479  
541-459-4449; Fax: 541-459-2884; <http://www.orenco.com/>

**FOR:** Septic Tank Effluent Filter Models:

FTiP0418-S-NC	FTPS0854-36-NC
FTJP0418-S-NC	FTPS1254-36-NC
<a href="#">FTPS0436-28-NC</a>	<a href="#">FTPS1554-36-NC</a>
<a href="#">FTPS0444-36-NC</a>	

**DATE:** December 9, 1998, Re-issued March 5, 1999

In accordance with North Carolina General Statute 130A-335, 130A-335.1, and 15A NCAC 18A .1954(e), an application by Eric Ball of Orenco Systems, Incorporated for approval of septic tank effluent filters has been reviewed and the above referenced filter models have been found to meet the requirements established by statute and rule for approved effluent filters, when the following conditions for use, installation, operation and maintenance are met:

I. Description:

- a. Filters shall be designed and manufactured in accordance with plans, specifications and supporting documents provided by the manufacturer in their application for approval submitted to the On-Site Wastewater Section. The On-Site Wastewater Section shall be notified in writing of any modification to the approved filter models prior to use in septic tank systems.
- b. Filters shall meet the following specifications (see Table 1):

**Table 1. Approved Filter Model Specifications (Orenco)**

Filter Models	Size	Support Case	Case Dimensions		Depth to Bottom of Case Inlet Intake	Min. Access Opening Size <sup>4</sup>
			Above Liquid Level	Below Liquid Level		
FTiP0418-S-NC, FTJP0418-S-NC,	4" dia. x 18"	4" PVC Tee <sup>1</sup>	6"	16"	16" <sup>2</sup>	15 x 15 in. or 17 in. dia. or equal
FTPS0436-28-NC	4" dia. x 28"	4" Tee and Housing	6"	30"	16" <sup>3</sup>	
FTPS0444-36-NC	4" dia. x 36"		6"	38"	16" <sup>3</sup>	
FTPS0854-36-NC	8" dia. x 36"	8" Housing	16"	38"	16" <sup>3</sup>	
FTPS1254-36-NC	12" dia. x 36"	12" Housing	16"	38"	16" <sup>3</sup>	18 x 18 in. or 18 in. dia. or equal
FTPS1554-36-NC	15" dia. x 36"	15" Housing	16"	38"	16" <sup>3</sup>	21 x 21 in. or 21 in. dia. or equal

Notes:

- 1- Support case provided by Orenco with Model FTJP0418-S-NC. Septic tank manufacturer shall provide support case for Model FTiP0418-S-NC.
- 2- Requires minimum septic tank liquid depth of 40 inches for case inlet depth to not exceed 40 percent of the tank liquid depth, as required.
- 3- Filter support case inlet intake depth can be varied depending on tank liquid depth. All openings in the case must be located to meet 25 to 40 percent requirement.
- 4- Other minimum opening sizes or configurations proposed both the septic tank manufacturer shall be approved by the State on a case-by-case basis if documentation is provided showing both adequate access is provided for filter maintenance and for pumping the tank outlet compartment.

c. This approval shall be amended to incorporate additional filter models when they are found to meet the requirements of GS 130A-335, 130A-335.1, and other applicable rules.

II. Use:

A septic tank manufacturer may use one or more of these approved effluent filters in their septic tanks. The septic tank manufacturer must notify the On-Site Wastewater Section in accordance with Rule .1953 of the tanks in which they propose to utilize any of these approved filters, showing any modifications to the approved tank plans which may be necessary to utilize the proposed filter.

III. Sizing:

Approved filter models may be used in systems that meet the capacities and wastewater characteristic limitations stated in the following table, in accordance with manufacturer's specifications:

<b>Table 2. Filter Sizing Criteria (Orenco)</b>			
Filter Model	Maximum Design Flow (gpd, residential <sup>1</sup> )	For Higher Strength Wastewater, Max. Design Flow <sup>3</sup>	
		BOD 300-600 mg/l	BOD 600-1000 mg/l <sup>4</sup>
FTiP0418-S-NC, FTJP0418-S-NC	500	250	167
FTPS0436-28-NC	700	350	233
FTPS0444-36-NC	900	450	300
FTPS0854-36-NC	3000	1500	1000
FTPS1254-36-NC	3000 <sup>2</sup>	2500	1667
FTPS1554-36-NC	3000 <sup>2</sup>	3000	3000

Notes:

1. For residential flows with or without garbage disposals. Design Flows based upon primary sewage effluent from septic tank (without filter installed) with contaminant concentrations or quantities which do not exceed those normally found in residential sewage, including:  
 BOD<sub>5</sub> 300 mg/l; TSS 150 mg/l; TKN 150 mg/l; Oil & Grease 25 mg/l
2. For use in systems with design flows exceeding 3000 gpd, requires engineer design and project-specific approval.
3. For commercial food handling establishments, such as restaurants, properly sized grease traps, pretreatment devices, or kitchen practices must be present to limit the fats, oil and grease (FOG) level at the discharge end of the septic tank to below 25 mg/l.
4. For use in systems with higher strength wastewater, three-year minimum maintenance interval is unrealistic to expect without advanced pretreatment in addition to grease traps.

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The filter sizing must be compatible with tank sizing requirements established based upon Rules .1949 and .1952(d). Both the maximum filter design flow and the maximum tank design flow must be equal to or greater than the maximum design flow rate for the system. The tank liquid depth must also be great enough for the filter case opening depths to extend down to between 25 and 40 percent of the tank liquid depth.

IV. Installation:

The effluent filters and filter support cases shall be assembled and installed in accordance with filter manufacturer's specifications and applicable rules. The filter case shall be located in such a manner that the filter can be readily accessible by the operator beneath the access manhole opening and removable by hand from above finished grade, while also providing enough room to allow for pumping of the tank outlet compartment.

V. Operation and maintenance:

The effluent filters shall be used and maintained in accordance with filter manufacturer's specifications and applicable laws and rules. Manufacturer-specified procedures shall be followed to minimize the bypass of unfiltered effluent while the filter is being serviced. Debris washed off the filter during servicing must be returned to the septic tank, or otherwise handled in accordance with an alternate approved sanitary disposal method.

VI. Literature:

The filter manufacturer shall furnish with each filter:

- Literature to be provided by the tank manufacturer to the system installer describing installation procedures.
  
- Literature to be provided by the installer to the system owner/user describing filter and recommended maintenance and servicing procedures.

VIII. Maintaining approval status:

The approval status is governed by Rule .1954(e).

This approval supersedes previous approval EF-10.

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

SB/rmg