

**NORTH CAROLINA DEPARTMENT OF HEALTH AND HUMAN SERVICES
DIVISION OF PUBLIC HEALTH
ENVIRONMENTAL HEALTH SECTION
ON-SITE WATER PROTECTION BRANCH**

SEPTIC TANK EFFLUENT FILTER APPROVAL

Septic Tank Effluent Filter No: EF-13-R4

Issued To: Zoeller Pump Company
3649 Cane Run Rd
Louisville, KY 40211
Zoellerpumps.com

Contact: Wes Combs
502-778-2731

For: Septic Tank Effluent Filter Models: 170-0023, 170-0058, 170-0078, 170-0016, 170-0017, 5000-0007, 5000-0007 with 5000-0010 Filter Sock

Date: December 30, 1998
February 8, 1999 Addition of Models 170-0016 and 170-0017
June 14, 2000 Addition of Model 170-0078
October 20, 2003 Addition of 5000 Models
December 31, 2024 Updated for 18E, removal of filters no longer manufactured, and renewed for 2025

In accordance with G.S. 130A-335 and 130A-335.1 and 15A NCAC 18E .1404 and .1405, an application by Zoeller Pump Company for renewal of the approval for septic tank effluent filters has been reviewed and approved when the following conditions are met.

I. Description

- a. Effluent filters shall be designed and manufactured in accordance with the plans, specifications and documents submitted by the manufacturer with the application.
- b. Effluent filters shall meet the specifications in Table I.

Table I. Approved Filter Model Specifications						
Filter Models	Size	Support Case ¹	Case Dimensions		Min. Tank Liquid Depth Required	Min. Access Opening Size ³
			Above Liquid Level	Below Liquid Level ²		
170-0078	"ww" shape x 15" (23" total)	4" PVC Tee	6"	Extend down 25%-40% of liquid depth	36"	15 x 15 in. or 17 in. dia. or equal
5000-0007	4- "ww" shape x 15" (23" total)	9-3/4x11-3/4" housing ²	6"	Extend down 25%-40% of liquid depth	36"	18 x 18 in. or 18 in. dia. or equal
5000-0007 w/sock	4- "ww" shape x 15" (23" total)	9-3/4x11-3/4" housing ²	6"	Extend down 25%-40% of liquid depth	36"	18 x 18 in. or 18 in. dia. or equal

Notes:

1. Support case provided by Zoeller with Model 5000-0007. Septic tank manufacturer shall provide support case for Model 170-0058.
2. Model 5000-0007 to be provided with supplemental support by septic tank manufacturer using two pieces of 1-1/4 or 1-1/2 inch Sch 40 PVC extending from filter bottom to tank bottom.

3. Minimum septic tank liquid depth required to meet 25% to 40% inlet intake requirement for filter support case. Note that when supplemental support is provided, all openings in the support pipe must be located so that this requirement shall be met.
4. Other minimum opening sizes or configurations proposed by 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.

II. Sizing

The approved effluent filters may be used in approved septic tanks. The approved flow capacities are shown in Table II. The effluent filter sizing must be compatible with the design daily flow and the minimum septic tank size in accordance with 15A NCAC 18E .0801.

Table II. Filter Sizing Criteria			
Filter Model	Maximum Design Flow (gpd, residential ¹)	For Higher Strength Wastewater, Max. Design Flow ³	
		BOD 300-600 mg/l	BOD 600-1000 mg/l ⁴
170-0078	1,000		
5000-0007	3,000 ²	2,000	1,300
5000-0007 w/sock	3,000 ²	2,000	1,300

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: BOD₅ ≤ 350 mg/l; TSS ≤ 100 mg/l; TKN ≤ 100 mg/l; and Fats, Oil, and Grease ≤ 30 mg/l
2. For use in systems with design flows exceeding 3,000 gpd, requires engineer design and a project-specific approval.
3. For commercial food handling establishments, such as restaurants, grease tanks, pretreatment devices, or kitchen practices must be present to limit the fats, oil and grease level at the discharge end of the septic tank to below 30 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.

III. Installation

The effluent filters and effluent filter support case shall be assembled and installed in accordance with the 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 from the access opening and removable by hand from finished grade. The access opening shall also provide enough room to allow for pumping of the tank compartment. An access device manufactured by Zoeller Pump Company shall be provided whenever the tank is installed with the filter handle deeper than 18-inches below the access opening or more than 18-inches below finished grade.

IV. Operation and maintenance

Effluent filters shall be used and maintained in accordance with the effluent 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 removed when servicing is needed. Zoeller Pump Company has available for purchase a slotted sleeve removal tool that prevents material from leaving the outlet tee while the filter is being replaced. Upon removal, effluent filters shall either be replaced with a new effluent filter and the used effluent filter disposed of in an approved disposal method, or debris shall be washed off the effluent filter into the septic tank and the effluent filter placed back into service.

Approved by: _____

Date: _____