

The Eljen Geotextile Sand Filter System



TRAINING COURSE: INTRODUCTION TO THE ELJEN GEOTEXTILE SAND FILTER SYSTEM

LESSON 1-1: The Eljen Geotextile Sand Filter System

Through Title 25, Chapter 73, Section 73.72, DEP has classified the Eljen GSF as an advanced treatment system. The Eljen GSF is an available [alternate on-lot sewage treatment system](#) in the Commonwealth of Pennsylvania

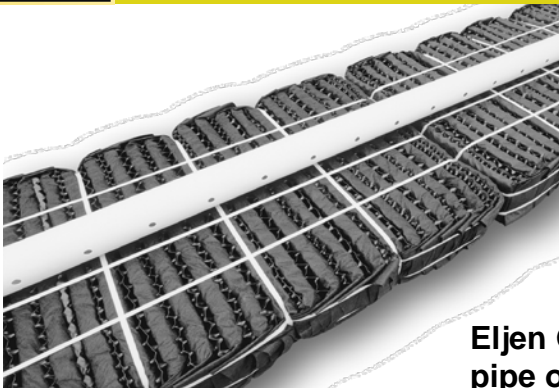
The Eljen GSF Listing provides

- Design Requirements
- Minimum Maintenance Standards
- Permitting Requirements for the alternate technology.

An [alternate on-lot sewage system](#) is a method of demonstrated on-lot sewage treatment and disposal that is not defined in the regulations. (Title 25, Section 73.1)



Go to the On-lot Alternate Technology Listings on the PA DEP website to obtain the Eljen GSF Alternate Technology Classification Listing.



Eljen GSF modules with a lateral pipe on top of the modules.

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Documents that Support the Eljen GSF Alternate Classification Listing

PA Title 25, Chapter 73, Regulations

- The Eljen GSF Listing refers to Title 25, Chapter 73, regulations. Specifications not described in the classification or in the design manual must adhere to the regulations.

Eljen GSF Pennsylvania Design and Installation Manual (Eljen Design Manual)

- The Eljen Design Manual provides additional information about the Eljen GSF System.



Go to www.pacode.com to obtain the **PA Title 25, Chapter 73**. The **Eljen GSF Pennsylvania Design and Installation Manual** can be obtained from www.eljen.com.

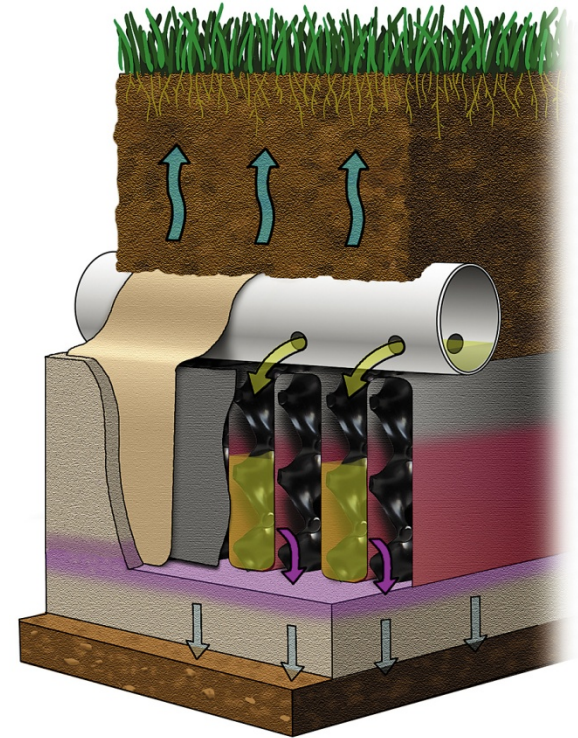
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How Does the Eljen GSF System Work

The Eljen GSF is comprised primarily of a perforated pipe, a collection of GSF B43 modules, and a layer of sand underneath the modules. In viewing a cross-section of the Eljen GSF, the:

- 1) Perforated pipe is centered above the GSF B43 Module
- 2) Septic effluent is distributed over and into corrugations in the cusped core
- 3) Bio-Matt fabric filters the effluent
- 4) Open air channels support aerobic bacterial growth
- 5) The specified sand reduces oxygen demand in the soil, minimizing soil clogging from anaerobic bacteria.



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How Does the Eljen GSF System Work

Specified Sand improves effluent quality



Eljen GSF® Listing II.D

Specified Sand along the side and under the modules provides the following treatment benefits.

- Provides secondary treatment of the effluent
- Enhances the unsaturated flow conditions in the absorption area
- Supports nitrification of the effluent
- Reduces oxygen demand in the soil
- Minimizes soil clogging from anaerobic bacteria

ASTM C33 SAND SPECIFICATION		
Sieve Size	Sieve Square Opening Size	Specification Percent Passing (Wet Sieve)
3/8 inch	9.52 mm	100
No. 4	4.76 mm	95 - 100
No. 8	2.38 mm	80 - 100
No. 16	1.19 mm	50 - 85
No. 30	590 µm	25 - 60
No. 50	297 µm	5 - 30
No. 100	149 µm	0 - 10
No. 200	75 µm	0 - 5

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Where Can the Eljen GSF System be Used?



Eljen GSF® Listing II.A

The Eljen GSF System may be used with on-lot sewage systems for proposals . . .

- for the treatment of domestic strength wastewater
- for either new construction on established lots or repairs



Eljen GSF® Listing II.E, G & I

An Eljen GSF System may be used in the following types of absorption areas:

- In-ground absorption areas described in Title 25, Chapter 73
- alternate elevated absorption area
- alternate shallow limiting zone elevated absorption area

Smaller Absorption Areas, Steeper Slope

Absorption areas that require percolation testing may be eligible for a reduction in the absorption area sizing if an Eljen GSF System is proposed.

An Eljen GSF System may be placed on sites with slopes not exceeding 15 percent.

These items will be covered in Lesson 2-1



When Can An SEO Issue a Permit That Uses an Eljen GSF System?



Eljen GSF® Listing IV

An SEO can issue a permit for an Eljen GSF system if,

An SEO who has successfully completed this web based training course; or

An SEO who has received review delegation in writing from the DEP

If an SEO has not had appropriate training or obtained delegation status, then the permit application must be submitted to the department for review and comments prior to issuing a permit

Copies of the plans, specifications, and the design are to be attached to the sewage permit application for the applicant, SEO, and department.