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# Eljen GSF System Overview



Geotextile Sand Filter



Certified to NSF/ANSI Standard 40

[www.eljen.com](http://www.eljen.com)

# GSF System Description

The Eljen GSF Geotextile Sand Filter system technology is based on research conducted by nationally recognized engineering scientists from the University of Connecticut. Eljen Corporation has over 25 years of success in the onsite wastewater industry, with tens of thousands of systems currently in use. The GSF is recognized by industry leaders as one of the most reliable treatment technologies in the marketplace today. The system specifications are founded on this research and history of installations of the GSF worldwide.

The Eljen GSF system is a cost-effective upgrade from other septic technologies. Comprised of a proprietary two-stage Bio-Matt™ pre-treatment process, the geotextile modules apply a better-than-secondary septic tank effluent to the soil, increasing the soil's ability to accept the effluent. The result is superior treatment in a smaller soil absorption area.

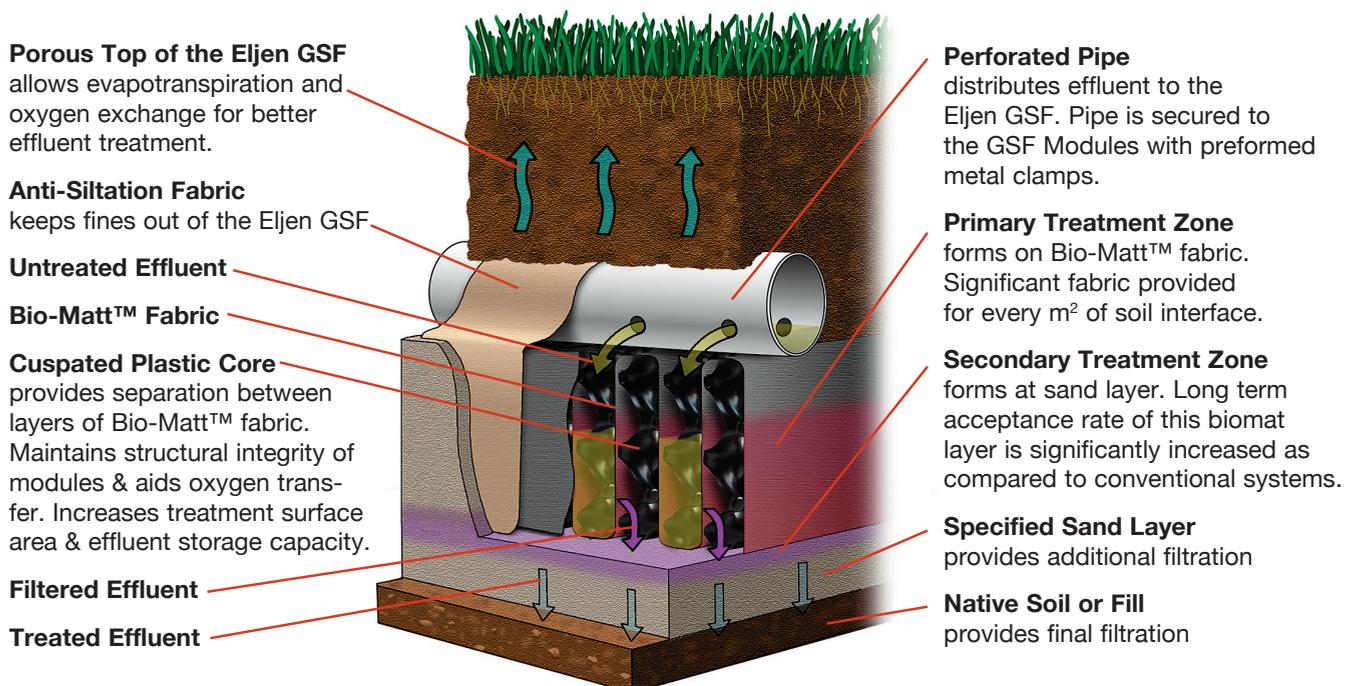
## PRIMARY TREATMENT ZONE

- Perforated pipe is centered above the GSF Module to distribute septic effluent over and into corrugations created by the cusped core of the geotextile Module.
- Septic effluent is filtered through the Bio-Matt fabric. The Module's unique design provides increased surface area for biological treatment that greatly exceeds the Module's footprint.
- Open air channels within the Module support aerobic bacterial growth on the Module's geotextile fabric interface, surpassing the surface area required for traditional absorption systems.
- An anti-siltation geotextile fabric covers the top and sides of the GSF Module and protects the Specified Sand and soil from clogging, while maintaining effluent storage within the Module.

## SECONDARY TREATMENT ZONE

- Effluent drips into the Specified Sand layer and supports unsaturated flow into the native soil. This Specified Sand/soil interface maintains soil structure, thereby maximizing the available absorption interface in the native soil. The Specified Sand supports nitrification of the effluent, which reduces oxygen demand in the soil, thus minimizing soil clogging from anaerobic bacteria.
- The Specified Sand layer also protects the soil from compaction and helps maintain cracks and crevices in the soil. This preserves the soil's natural infiltration capacity, which is especially important in finer textured soils, where these large channels are critical for long-term performance.
- Native soil provides final filtration and allows for groundwater recharge.

**FIGURE 1: GSF System Operation**



# Testing and Performance

The GSF technology is based on scientific principles which show that improving the effluent quality prior to infiltration into the native soil increases soil absorption rates and reduces the risks of clogging.

To ensure onsite system designers can confidently specify Eljen's GSF model A42 product, rigorous and official third-party independent testing was conducted following stringent protocols. Additionally, the system has been tested and Certified to NSF/ANSI Standard 40. Testing also included additional sampling verification for Fecal Coliform, as well as monitoring performances during cold weather conditions to demonstrate its capacity to sustain northern climate environments.

The third-party testing results listed below were taken over a 12 month consecutive period. This extended sampling period provided verification to the stability and consistency of the Eljen GSF model A42's performance and capability to handle colder weather conditions.

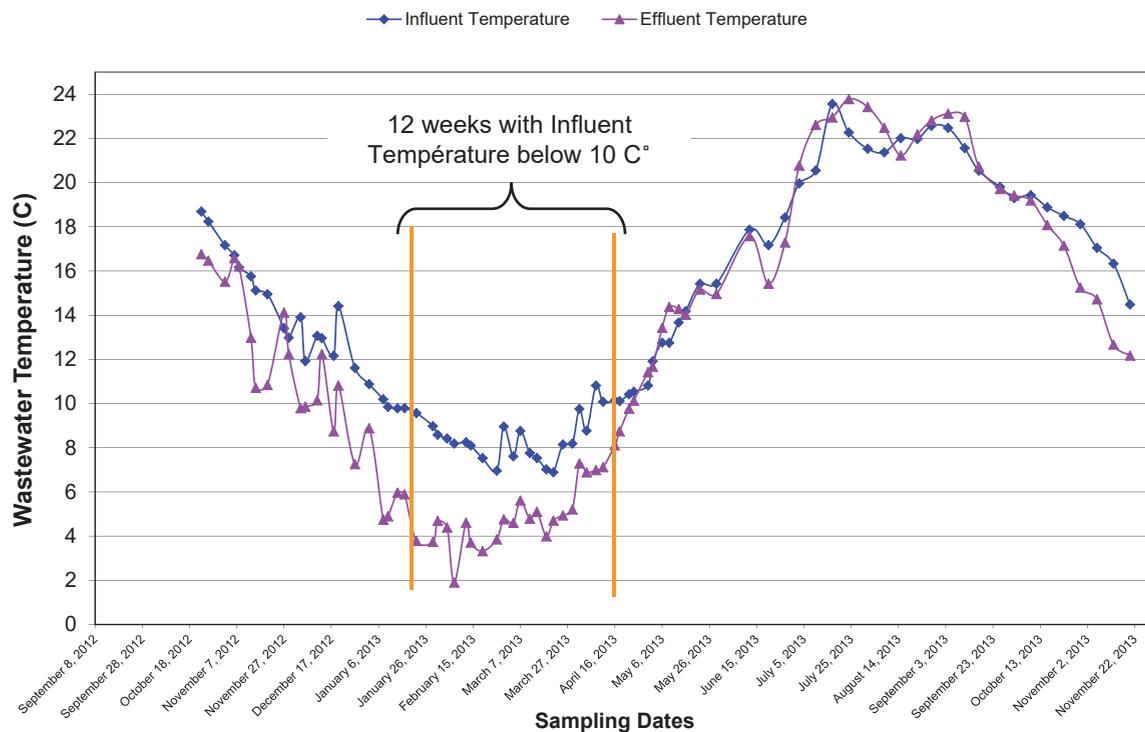
The intrinsic characteristics of the Eljen GSF system, combining simplicity, robustness and optimized natural biological processes, make it one of the best options for onsite wastewater treatment in the industry.

A summary of the test results from the independent third-party evaluation are listed below:

Eljen GSF A42 Modules Treatment Performance during third party 12 months testing (includes 12 consecutive weeks with influent temperature below 10°C)			
	CBOD (mg/L)	TSS (mg/L)	Fecal Coliform (MPN/100ml)
Average	2.0	2.7	66*
Average (cold water period)	1.2	1.7	13*
Median	1.0	2.5	71*
Min Value	1.0	2.5	2*
Max Value	7.2	7.0	10 965*

\*Geometric average

**Eljen GSF - A42 Influent and Effluent Temperature (degree C)**



## Features and Advantages:

- Independent 3rd Party Testing
- Exceeds Level B-IV and D-I of CAN/BNQ 3680-600 (see table above)
- Tested and Certified by NSF to NSF/ANSI Standard 40
- Easy to Install
- Passive and Lightweight
- Reduced Installation Area
- No Mechanical Parts
- No Energy Consumption
- Minimal Maintenance
- Maintain Natural Soil Infiltration Capacity
- Cold Climate Proven

## COMPANY HISTORY

Established in 1970, Eljen Corporation created the world's first prefabricated drainage system for foundation drainage and erosion control applications. In the mid-1980s, we introduced our Geotextile Sand Filter products for the passive advanced treatment of onsite wastewater in both residential and commercial applications. Today, Eljen is a global leader in providing innovative products and solutions for protecting our environment and public health.

## COMPANY PHILOSOPHY

Eljen Corporation is committed to advancing the onsite industry through continuous development of innovative new products, delivering high quality products and services to our customers at the best price, and building lasting partnerships with our employees, suppliers, and customers.

Your Local Distributor:



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