Enviro-STEP Technologies inc.

Innovative Eco-Efficient Solutions for Onsite Wastewater Treatment

NOVA SCOTIA
ELJEN GSF DESIGN SUMMARY

CALCULATING THE MINIMUM NUMBER OF ELJEN GSF MODULES

The minimum number of ELJEN GSF A-42 modules is calculated based on a module loading rate of 95 L/d per module, rounded up. For residential applications the following table can be used:

Number of bedrooms	Average daily flow (L/day)	Minimum number of ELJEN GSF modules
3 bedrooms of fewer with low water use fixtures	1000	11
3 bedrooms of fewer with high water use fixtures	1200	13
4 bedrooms with low water use fixtures	1350	15
4 bedrooms with high water use fixtures	1500	16
5 bedrooms with low water use fixtures	1700	18
5 bedrooms with high water use fixtures	2000	22
6 bedrooms with low water use fixtures	2050	22
6 bedrooms with high water use fixtures	2500	27
Each additional bedroom with low water use fixtures	350	4 per bedroom
Each additional bedroom with low water use fixtures	500	6 per bedroom

ELJEN GSF RECOMMENDED VERTICAL HYDRAULIC LOADING RATES

Soil type	Permeability "Ks" (hydraulic conductivity) m/s x 10^{-6}	Basal hydraulic loading rate[1] $L/d/m^2$
Medium to coarse sand	Ks ≥ 80	61 to 80
Fine sandy gravel	20 ≤ Ks < 80	41 to 60
Silty sand	8 ≤ Ks < 20	28 to 40
Sandy silt	3 ≤ Ks < 8	17 to 27
Clayey silt	0.8 ≤ Ks < 3	13 to 16
Silty clay	0.2 ≤ Ks < 0.8	9 to 12
Clay (if deemed permeable)	Ks < 0.2	8 or less

These loading rates are used to determine the contact area of Eljen GSF specified ASTM-C33 sand layer over the native soil.

[1] The designer must consider all the site characteristics in selecting the proper hydraulic loading rate (limiting conditions, topography, natural compaction, structure, etc.)