

Sewage System Installation Proposal

This sheet to be submitted with Sewage Permit Application. Provide to the Huntsville Building Department.

Dwelling Details

Total # of Bedrooms	Total Floor Area	m ²
Total Plumbing Fixture Units	Total Daily Design Flow Rate (Expressed in Litres/day)	Q =

Is a Pump Required? Yes No Raw Sewage Effluent

Test Hole

Sub-surface conditions encountered:

Rock and G.W.T.	Depth (m)	Soil Type	“T” Time
	0		
	-0.25		
	-0.50		
	-0.75		
	-1.00		
	-1.25		
	-1.50		

Propose to Construct

Class 4 Filter Bed

Proof of Approved Filter Material **must** be provided prior to final inspection.

Provide Calculation Sheet with Permit Application.

Dug into Existing Soil	Raised	If Raised, How Far Above	m	Contact Area	m ²

Class 2 Grey-Water Pit or Class 3 Cesspool

Wall Structure:

Concrete Block Rock Other: _____

Dimensions of Pit:

Length: _____ Width: _____ Height: _____ Type of Cover: _____

Type of Class 1 to be Used:

Privy Composting Chemical Electrical Other: _____

Class 5 Holding Tank

Pump out contract must be provided.

Tank Details:

Concrete Polyethylene Other _____

Size (L)	Alarm is Audio	Alarm is Visual
Location of Visual Alarm		

Table 8.7.4.1. - Loading Rates for Fill Based Absorption Trenches and Filter Beds

Forming Part of Sentences 8.7.4.1.(1) and 8.7.5.2.(2)

Percolation Time (T) of Soil (min/cm)	Loading Rates (L/m ² /day)
1 < T ≤ 20	10
20 < T ≤ 35	8
35 < T ≤ 50	6
T ≤ 50	4
Column 1	2

Sewage System Calculations

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Q = the Total Daily Design Sewage Flow in Litres

T = the Percolation Time of Soil

Septic Tank Size

Working Capacity of Septic Tank:

Residential: = Q x 2 = _____ Litres

Commercial: = Q x 3 = _____ Litres

In no case shall the working capacity of septic tank be less than 3600 litres.

Absorption Trenches

Length of Distribution Pipe (for systems with septic tank):

$$L = \frac{Q \times T}{200}$$
$$= \frac{\quad \times \quad}{200} = \text{_____ Metres}$$

The total length of distribution pipe shall not be less than 40 metres.

Loading Rate Area (unsaturated suitable soil in area of bed and mantle)

$$\text{Loading Rate Area Required:} = Q \div 6$$
$$= \text{_____} \div 6 = \text{_____ Sq. Metres}$$

Filter Bed

Size of filter required.

$$\text{If Q is 3000 litres or less:} = Q \div 75$$
$$= \text{_____} \div 75 = \text{_____ Sq. Metres}$$

$$\text{If Q is more than 3000 litres:} = Q \div 50$$

$$= \underline{\hspace{2cm}} \div 50 = \underline{\hspace{2cm}} \text{ Sq. Metres}$$

Base of Filter Medium shall extend to a thickness of 250mm over the following area:

$$\begin{aligned} \text{Area} &= \frac{Q \times T}{850} \\ &= \frac{\underline{\hspace{2cm}} \times \underline{\hspace{2cm}}}{850} = \underline{\hspace{2cm}} \text{ Sq. Metres} \end{aligned}$$

“T” is the Percolation Time of the Native Soil upon which the filter material is placed.

Loading Rate Area (unsaturated suitable soil in area of bed and mantle)

$$\begin{aligned} \text{Loading Rate Area Required:} &= Q \div \text{Loading Rate (based on "T" Time of native soil)} \\ &= \underline{\hspace{2cm}} \div \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \text{ Sq. Metres} \end{aligned}$$

Suitable soil, existing or imported, in the loading rate area must have a “T” of 15 minutes or less, if imported material is used for the leaching bed or filter.

Total Daily Design Flow Rates for Residential Occupancy “Q” (Litres/Day)

Always Refer to the Ontario Building Code for Current Regulations.

Daily Design Flow Rates for Residential Occupancy “Q”	Litres per day
1 bedroom dwelling	750
2 bedroom dwelling	1100
3 bedroom dwelling	1600
4 bedroom dwelling	2000
5 bedroom dwelling	2500
Additional Flow	Litres per day
Each bedroom over 5	500
each 10m ² (or part thereof) over 200m ² up to 400 m ² ⁽³⁾	100
each 10m ² (or part thereof) over 400m ² up to 600 m ² ⁽³⁾ and	75
each 10m ² (or part of it) over 600m ² ⁽³⁾	50
or each fixture unit over 20 fixture units	50

⁽³⁾ Total finished area, excluding the area of the finished basement.

Example of how to determine daily design flow rate

Using a 4 bedroom, 235m² home with 22 fixture units. From Chart above:

- 4 bedroom home > 200m² or > 20 fixture units = 2000 litres/day
- Additional 35m² = 400 litres/day
- Additional 2 fixture units = 100 litres/day

*Q (total daily design flow rate) = 2400 litres/day

If, as in the example above, there is a choice in arriving at the flow rate (e.g., fixture units vs. floor area) use the **one** calculation that provides the greatest daily flow rate value.

Approximate Soil Percolation Rates “T”

The following are estimated typical ranges of “T” times. Actual “T” times may vary significantly due to on-site soil conditions.

Soil Type *	Clean Medium to Course Sand			Silty Gravelly Sands		Silty Sands Sandy Silts		Sandy Silty Clays			Silty Clays		Clay
“T” (min/cm)*	1	3	6	8	10	16	20	25	29	33	38	44	50+

Clearance Distances for Components of Sewage Systems (metres)

If the bed is raised, add 2 metres for every 1 metre of rise.

Class	Wells (with 6m casing)	Wells (not 6m casing)	Springs Potable	Springs not Potable	Surface Water (lake, river, etc.)	Property Lines	Dwellings Structures
Class 4 Distribution Pipe	15	30	30	30	30	3	5
Class 4 Septic Tank	15	15	15	15	15	3	1.5
Class 5 Holding Tank	15	30	30	15	nil	3	1.5
Class 1 Privy	15	30	30	30	30	3	nil
Class 2 Grey-Water Pit	15	30	30	15	30	3	nil

Residential Plumbing Worksheet

Description	# Units per Fixture	Dwelling #1		Dwelling #2		Sleeping cabin		Other	
		# of Fixtures	Total	# of Fixtures	Total	# of Fixtures	Total	# of Fixtures	Total
Bathroom Group	6								
Toilet	4								
Wash Basin (Lavatory)	1.5								
Bathtub or Shower	1.5								
Bidet	1								
Kitchen Sink (single or double)	1.5								
Bar Sink	1.5								
Washing Machine (Domestic)	1.5								
Other									
TOTAL FIXTURE UNITS									
FINISHED FLOOR AREA									
# OF BEDROOMS									