

Sewage System Calculation Page

1. Daily design sewage flow (DDSF) (Q)							
See Table 1 – DDSF values for bedrooms _____ (litres per day) (A)							
Total floor area _____ (metres ²)							
For every 10 metres ² or part thereof over 200 metres ² , up to 400 metres ² x 100 = _____ (litres per day)							
For every 10 metres ² or part thereof over 400 metres ² , up to 600 metres ² x 75 = _____ (litres per day)							
For every 10 metres ² or part thereof over 600 metres ² _____ x 50 = _____ (litres per day)							
Total DDSF for floor area _____ (litres per day) (B)							
See Table 2 - Total fixture units _____							
Each fixture unit over 20 _____ x 50 = _____ (litres per day) (C)							
DDSF (Q) = _____ (A) + _____ (larger of (B) or (C)) = _____ (litres per day) (Q)							
2. Leaching bed size (metres)							
Conventional - Total length of distribution pipe (L) = (Q x T) ÷ 200							
Treatment systems or chambers - Total length of distribution pipe (L) = (Q x T) ÷ 300							
Total length of distribution pipe (L) = (_____ (Q) x _____ (T)) Percolation time of native or imported soil ÷ (200 or 300) = _____ (metres)							
3. Filter bed loading area (metres²)							
If Q ≤ 3000 litres per day, use Q ÷ 75							
If Q > 3000 litres per day, use Q ÷ 50							
Level II-IV treatment unit only, use Q ÷ 100							
Loading area = _____ (Q) ÷ _____ (75, 50 or 100) = _____ (metres²)							
4. Filter bed contact area (metres²)							
Contact area = (_____ (Q) x _____ (T)) ÷ 850 = _____ (metres²)							
Contact area = (Q x T) ÷ 850							
Use T of native soil; if contact area < loading area, use loading area for both values							
5. Shallow buried trenches (metres)							
See Table 4 - Shallow buried trench length (L) = _____ (Q) ÷ _____ (75, 50 or 30) = _____ metres							
6. Type A dispersal bed (metres²)							
Stone layer							
If Q ≤ 3000 litres per day, use Q ÷ 75							
If Q > 3000 litres per day, use Q ÷ 50							
Stone layer = _____ (Q) ÷ _____ (75 or 50) = _____ (metres²)							
Sand layer							
If T is between 1 and 15 use (Q x T) ÷ 850							
If T is greater than 15 use (Q x T) ÷ 400							
Sand layer = (_____ (Q) x _____ (T)) ÷ (850 or 400) = _____ (metres²)							
Use T of native soil; if sand layer area < stone layer area, use stone layer area for both values							
7. Type B dispersal bed (metres²)							
Area = (Q x T) ÷ 400							
Area = ((Q) _____ x _____ (T)) ÷ 400 = _____ (metres²)							
Linear loading rate							
If T < 24 minutes, use 50 litres per minute							
If T ≥ 24 minutes, use 40 litres per minute							
Pump chamber capacity (Q) = _____ (litres)							
Table 1 – DDSF values for bedrooms <small>(Ontario Building Code, Division B, Part 8, Table 8.2.1.3.A)</small>				Table 2 – Fixture units <small>(Ontario Building Code, Division B, Part 7, Table 7.4.9.3)</small>		Table 3 – Loading rates for fill based absorption trenches and filter beds <small>(Ontario Building Code, Division B, Part 8, Table 8.7.4.1)</small>	
Bedrooms	Litres per day	Bedrooms	Litres per day		Number of units	Percolation time (T) of soil (minutes)	Loading rates (litres per metres ²) per day
1	750	4	2000	Bathroom group (3 to 4 piece bathroom)	_____ x 6.0 = _____	1 < T ≤ 20	10
2	1100	5	2500	Bathtub (with or without shower)	_____ x 1.5 = _____	20 < T ≤ 35	8
3	1600	Per bedroom over 5	500	Toilet	_____ x 4.0 = _____	35 < T ≤ 50	6
				Clothes washer	_____ x 1.5 = _____	T > 50	4
				Dishwasher	_____ x 1.0 = _____	Table 4 – Shallow buried trench length <small>(Ontario Building Code, Division B, Part 8, Table 8.7.3.1)</small>	
				Laundry tubs	_____ x 1.5 = _____	Percolation time (T) of soil (minutes)	Length of distribution pipe (metres)
				Shower drain	_____ x 1.5 = _____	1 < T ≤ 20	Q ÷ 75 metres
				Sinks	_____ x 1.5 = _____	20 < T ≤ 50	Q ÷ 50 metres
				Other	_____ x . = _____	50 < T < 125	Q ÷ 30 metres
				Total	= _____		

Sewage System Specifications Page

OFFICE USE ONLY	Application number
Name	Date Submitted
Fee number	Fee amount
Renewal date	Date entered

Structure	<input type="checkbox"/> New <input type="checkbox"/> Existing	<input type="checkbox"/> Residential <input type="checkbox"/> Commercial	If the sewage system is non-residential, attach a separate copy of the specifications and plans.	
Number of bedrooms	Number of fixture units	Total finished area _____ (metres ²) <input type="checkbox"/> Including walkout basement	Daily design sewage flow (Q) _____ (litres per day) Account for backwash water from any water treatment unit (i.e. water softener)	Septic tank capacity (2 x Q) _____ (litres) (minimum of 3600 litres)

Water supply	<input type="checkbox"/> Proposed <input type="checkbox"/> Existing	<input type="checkbox"/> Drilled Well Casing depth _____ (metres)	<input type="checkbox"/> Dug, bored, or blasted well <input type="checkbox"/> Sandpoint or drivepoint	<input type="checkbox"/> Municipal <input type="checkbox"/> Cistern	<input type="checkbox"/> Surface water <input type="checkbox"/> Shore well
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Soils
Indicate soil types (sand, silt, clay), bedrock, and the high ground water table below.

Test Pit (metres)

0.0	_____
0.3	_____
0.6	_____
0.9	_____
1.2	_____
1.5	_____

Estimated percolation rate of native soil
T = _____ (minutes per centimeter)

Tested percolation rate of imported soil
T = _____ (minutes per centimeter)

Holding tank capacity (7 x Q) (Class 5 only)
(minimum of 9000 litres)

_____ (litres)

Class 4 sewage system type

Conventional leaching bed
 Chamber system leaching bed
 Filter media bed
 Building Materials Evaluation Committee area bed
 Shallow buried trenches*
 Type A dispersal bed*
 Type B dispersal bed*

* These sewage systems **require** a Level IV treatment unit certified to the CAN/BNQ 3680-600 standard, or a treatment unit described in Supplementary Standard SB-5.

Treatment unit

Level II Level III Level IV
 Service agreement provided
 Manufacturer _____
 Model _____

Building Materials Evaluation Committee authorization provided

Conventional leaching bed (minimum 40 metres)

Total distribution pipe _____ (metres)

Mantle required Pump required

Chamber system leaching bed (minimum 40 metres)

Total chamber length _____ (metres)

Manufacturer _____
 Model _____

Number of pieces _____

Mantle required Pump required

Filter media bed

Loading area _____ (metres²)
 Contact area _____ (metres²)
 Total distribution pipe _____ (metres)

Mantle required Pump required

Shallow buried trenches (minimum 30 metres)

Total trench length _____ (metres)

Building Materials Evaluation Committee area or type A dispersal bed

Stone layer area _____ (metres²) Sand layer area _____ (metres²) Mantle required

Type B dispersal bed Stone layer area _____ (metres²) Linear loading rate 50 litres per metre 40 litres per metre
 Pump chamber capacity _____ (litres)

Loading rate (from Table 3) = _____ (Q) ÷ _____ (litres per metres² per day) = _____ area (metres²)

Recommendations or conditions (for office use only)

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Sewage System Plans Page

Office Use Only
Application number
Name

Lot diagram and sewage system plan (drawing must be accurate, to scale, indicate north point and show the following):

(a) Location of sewage system components (e.g. tank(s), leaching bed(s), etc). Locate and show horizontal distances from system to adjacent existing or proposed buildings, water supplies (including neighbours), existing on-site systems, driveways, property lines, lakes, rivers, springs, water courses, swimming pools.

(b) Lot dimensions topographic features (e.g., swamps, steep slopes) near system.

Benchmark

1 square = _____ (metres or feet)

DRAW TO SCALE

Sewage System Cross Section (For new sewage systems only)

Approved Rejected (See recommendations on previous page)

Inspector: _____

Date: _____

Chief Building Official: _____

Date: _____

Permit to install a Class 2, 3, 4, 5 Sewage System under section 8-(1) (2) of the Building Code Act, S.O. 1992, C.23. This permit is issued to the owner to construct, install, alter, extend, enlarge or continue to use a Class _____ sewage system. Any person who is not issued a permit may apply to the Building Code Commission for any issues involving the Building Code or Compliance to the Code.

NOTE: This approval expires 12 months after the date of issue.