



INFORMATION PACKAGE FOR A SEWAGE SYSTEM APPLICATION

The design, construction, operation and maintenance of various class of sewage systems located within properties and systems up to 10,000 Litres capacity serving one lot is governed by the Ontario Building Code made under the Ontario Building Code Act.

No person shall construct a sewage system unless a permit has been issued therefore by the Chief Building Official.

CLASSIFICATIONS OF SEWAGE SYSTEMS

- CLASS 1** A sewage system used for the disposal of human body wastes (no added water) and includes all forms of privy. A permit is not required for the construction of a Class 1 sewage system.
- CLASS 2** A sewage system, leaching pit, used for disposal of grey water, (sink, tub, shower and laundry waste).
- CLASS 3** A sewage system, cesspool is used for the disposal of human body wastes such as waste from a composting toilet or privy.
- CLASS 4** A sewage system which consists of a treatment unit of leaching bed system.
- CLASS 5** A sewage system using a holding tank for the retention of on-site sewage and must be emptied by a licensed sewage hauler.

Guide For Completing An Application Form

A. Project Information

Any agent authorized by the owner to act on their behalf must attach a written authorization to the application form. Some property descriptions are plan/sub lot or concession/part lot specific or both. Attach a copy of the tax bill, assessment notice, Land transfer/deed or property survey map to verify the proper property description.

B. Applicant

Applicant or Owner information with mailing address.

C. Owner

If different from applicant.

D. Builder

Optional

E. Purpose of application

Indicate purpose of application. The use of a building will determine the size and design of the sewage system.

F. Tarion Warranty Corporation

Ontario New Home Warranty Program

G. Attachments

Applicable Law: Before a permit for a sewage system may be issued applicable law must be complied with. This includes regulation and bylaw made by the municipality, conservation authority, or other approval authorities or agencies. Examples would be; when replacing a sewage system to service a duplex where it is unknown by the health unit if the municipality has a zoning bylaw prohibiting multiple dwelling units. Replacing a sewage system in a flood plain where it is not known by the health unit if the conservation authority has a bylaw preventing this installation.

H. Declaration of applicant

Information in application and/or attached documents are true. Owner/applicant signature required.

Schedule 1: Designer Information

A person is exempt from the requirement to comply with the qualifications of the code regarding design activities if a sewage system to be constructed by that person is owned by that person. Simply, fill out Schedule 1 if you are the owner of the property installing your own sewage system.

Schedule 2: Sewage System Installer Information

This Schedule 2 should be completed by a Licensed Sewage System Installer. Signature by Owner/Applicant is required.

Site and Design Information

Describe your water supply, depth of well casing and number of sewage system to be used.

State number of fixture units: Using the chart to determine the number of fixture units. Include fixture units in the basement or accessory buildings.

Water Closets	x 4	<p>Example if you have 2 Flush toilets (Water Closets) x 4 = 8 fixture units.</p> <p>Continue with next unit and multiply each to calculate the Total Fixture Units.</p>
Kitchen sink	x 1.5	
Wash Basin	x 1.5	
Bath tub and/or shower	x 1.5	
Dishwasher	x 1.5	
Clothes Washing Machine	x 1.5	
Single or Double Laundry Tub	x 1.5	

Total Number of bedrooms: Include bedrooms in the basement and sleeping cabins on the property.

Total Floor Area of buildings: State area in square metres. This does not include the area of a finished basement or garage.

Total Daily Design Flow Rate: The total daily design flow rate is referred to as Q in the formulas you will encounter in the guideline and regulation. For residential occupancies, the total daily design flow rate shall be determined using the volume (Litres) in column 2 of the following table.

Table 8.2.1.3.A. Residential Occupancy	Volume (Litres)
Boarding houses a: Per person, i) with meals and laundry facilities, or ii) without meal or laundry facilities, and b: Per non-resident staff per 8 hour shift	200 150 40
Boarding School - per person	300
Dwellings a) 1 bedroom dwelling b) 2 bedroom dwelling c) 3 bedroom dwelling d) 4 bedroom dwelling e) 5 bedroom dwelling f) Additional flow for ⁽²⁾ i) each bedroom over 5. ii) A) each 10 m ² (or part thereof) over 200 m ² up to 400 m ² B) each 10 m ² (or part thereof) over 400 m ² up to 600 m ² and C) each 10 m ² (or part thereof) over 600 m ² iii) each fixture unit over 20 fixture units	750 1100 1600 2000 2500 500 100 75 50 50
Hotels and Motels (excluding bars and restaurants) a) Regular, per room b) Resort hotel, cottage, per person c) Self service laundry, add per machine	250 500 2500
Work Camp/Construction Camp, semi-permanent per worker	250
Column 1	2

Notes for Table 8.2.1.3.A:

1. The occupant load shall be calculated using Subsection 3.1.16.
2. Where multiple calculations of sewage volume is permitted the calculation resulting the highest flow shall be used in determining the design daily sanitary sewage flow.
3. Total finished area, excluding the area of the finished basement.

For all other occupancies, the total daily design flow rate shall be at least the value as stated in Column 2 from Table 8.2.1.3.B of the Ontario Building Code.

Percolation Rate: A test hole, 1.8 metres deep, provides a method by which you can observe the subsoil profile and ground water conditions below grad at the proposed location of the leaching bed.

The test hole must be open and available for inspection purposes. Ensure the test hole is protected for safety reasons.

The percolation rate “T” means the average time in minutes that is required for water to drop one centimetre during a percolation test onsite or as determined by soils analysis.

Approximate Relationship to Soil Types To Permeability and Percolation Time			
Soil Type	Coefficient of Permeability K- cm/sec.	Percolation Time T- mins/cm.	Comment
G.W. - Well graded gravels, gravel-sand mixtures, little or fines.	10^4	< 1	very permeable unacceptable
G.P. - Poorly graded gravels, gravel-sand mixtures, little or no fines.	10^4	< 1	very permeable unacceptable
G.M. - Silty gravels, gravel sand silt mixtures.	$10^2 - 10^4$	4 - 12	Permeable to medium permeable depending on amount of silt.
G.C. - Clayey gravels, gravel-sand-clay mixtures.	$10^4 - 10^4$	12 - 50	Important to estimate amount of silt and clay
S.W. - Well graded sands, gravelly sands little or no fines.	$10^4 - 10^4$	2 - 12	medium permeability
S.P. - Poorly graded sands gravelly sand, little or no fines.	$10^4 - 10^3$	2 - 8	medium permeability
S.M. - Silty sands, sand, sand-silty mixtures.	$10^3 - 10^5$	8 - 20 permeability	medium to low
S.C. - Clayey sands, sand-clay mixtures.	$10^4 - 10^6$	12 - 50	medium to low permeability (depends on amount of clay)
M.L. - Inorganic silts and very fine sands, rock flour, silty or clayey fine sands, clayey silts with slight plasticity	$10^5 - 10^6$	20 - 50	medium to low permeability
C.L. - Inorganic clays of low to medium plasticity, gravelly clays, sandy clay, lean clays	10^5 and less	over 50	unacceptable
O.L. - Organic silts, organic silty clays of low plasticity; liquid limit less than 50	10^5 and less	20 - over 50	acceptable depends on clay content.
M.H. - Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts	10^6 and less	over 50	unacceptable
C.H. - Inorganic clays of medium to high plasticity, organic silts	10^7 and less	over 50	unacceptable
O.H. - Organic clays of medium to high plasticity-organic silt; liquid limit over 50	10^6 and less	over 50	unacceptable

Proposed Sewage System Design:

There are two critical pieces of information that must be known in order to design a sewage system.

The amount of sewage entering the system that will be generated from the building each day = Q
and,

The Percolation Rate = T

Note: The inspector will not design a sewage system. The owner, agent, contractor, design consultant or engineer must propose the design.

Class of Sewage System Applied For:

Class 2 Sewage System:

The total design flow for a Class 2 sewage system shall be calculated on the fixtures discharging to the system as follows:

- a) 200 L per fixture unit where there is a supply of pressurized water, and
- b) 125 L per fixture unit where there is no pressurized water.

The total daily design flow to the system may not exceed 1000 L/day.

The system shall be designed and constructed so that the loading rate to the side walls shall be not more than the value calculated using formula:

$$L_r = \frac{400}{T}$$

Where L_r = Loading rate of sidewalls in litres per day/m²
T = Percolation time

Class 4 Sewage System:

Septic Tank: Size of Treatment Unit. There are many types of sewage treatment units. The most common in Peterborough County is the Septic Tank. The minimum capacity of a septic tank shall not be less than twice the daily design flow for residential occupancies or three times the daily design flow for all other occupancies. The minimum size of a septic tank is 3600 Litres.

Absorption Trench Construction:

The length of distribution pipe is calculated using the formula: $L = \frac{QT}{200}$

Where L = total length of distribution pipe in metres

Q = daily design flow

The length of distribution pipe may differ depending on the use of various other treatment units.

Depth of excavation:

Indicate the depth of the absorption trench. The depth of the trench may not be within .9 metres of the ground water table or bedrock.

Filter beds:

Filter beds are the most common type of leaching beds in Peterborough County. The filter bed is calculated using the following formula:

$$\frac{Q}{75 \text{ L}} \quad \text{Where the daily design flow does not exceed 3000 L/day, or}$$

$$\frac{Q}{50 \text{ L}} \quad \text{Where the daily design flow exceeds 3000 L/day.}$$

Filter beds may not be used in conjunction with a septic tank when the daily design flow exceeds 5000 L/day. The maximum size of a filter bed is 50 m². A copy of the filter media receipts from the aggregate supplier must be supplied to the inspector at the time of final inspection.

Depth of excavation:

Indicate the depth of the excavation for the filter bed.

Expanded Contact Area:

The expanded contact area is an additional area of filter medium placed at the base of the filter bed and is 250 mm in depth. An expanded contact area is required when the T of soil exceeds 12 min/cm. The expanded contact area can be calculated using the following formula:

$$A = \frac{Q T}{850}$$

Where, A = The area of contact in m² between the base of the filter medium and the underlying soil.
 Q = Daily design flow
 T = The percolation time

Construction Requirements of Other Distribution System:

There are many different types of distribution systems on the market. For example, The Infiltrator Chamber System and a shallow buried trench system which both use the formula, $\frac{Q T}{300}$

Other design and construction specific systems may be a Waterloo Biofilter system or Ecoflo system. These systems are designed specifically for your property and design details must be attached to the application.

Class 5 Sewage Systems:

When designing a Class 5 System, Holding Tank, the minimum capacity of the tank is 9000 Litres and for dwellings the tank must have a 7 day capacity.

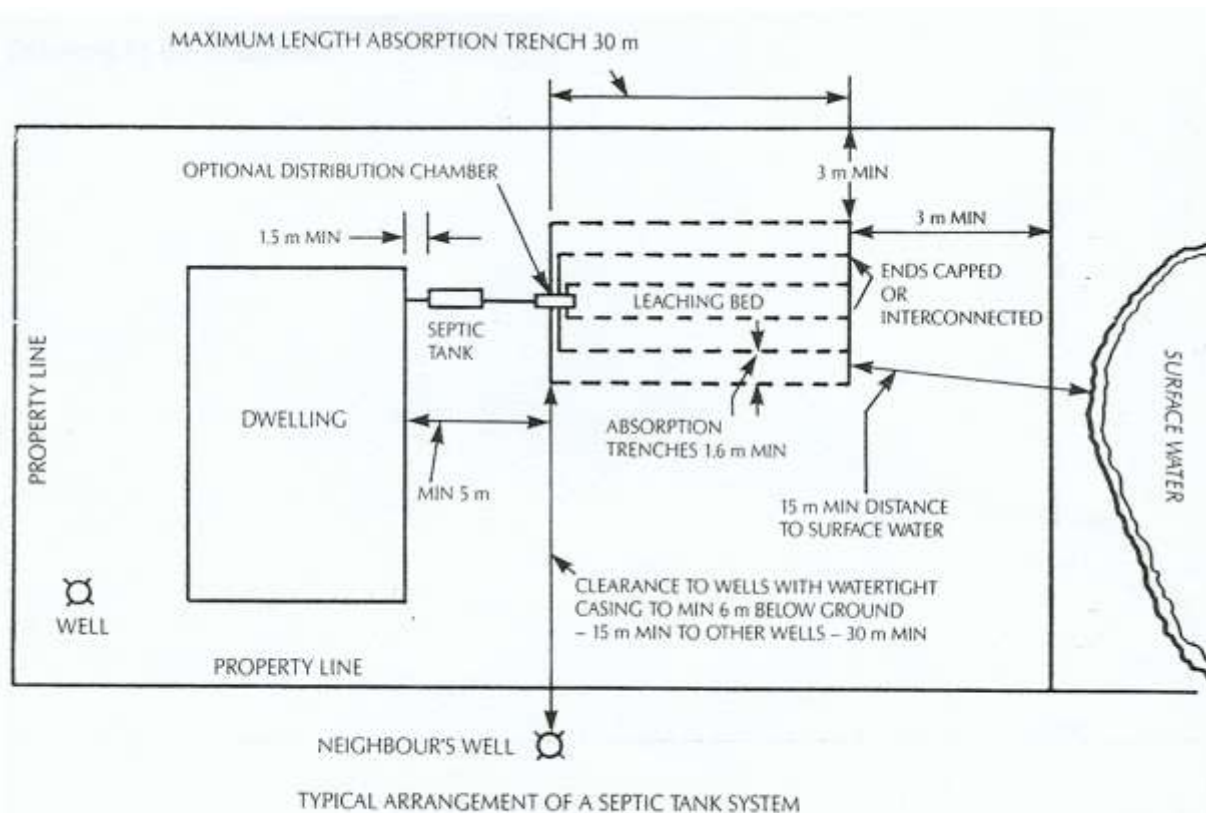
A written agreement for the disposal of sanitary sewage from the sewage system shall be entered into with a hauled sewage system operator and submitted with the application.

Site Plan Requirements:

This is the most important piece of information submitted with the application. The completed lot diagram must include:

- existing and proposed well location and depth of casing
- neighbouring existing and proposed well locations and depth of casing
- property lines, lot size and dimensions of the property
- detailed sewage system diagram, dimensions and lay out of the leaching bed
- setbacks from the sewage system to wells, property lines, buildings, lakes, rivers, streams, reservoirs, ponds and water drainage courses
- driveways, right of ways, easements and utility corridors
- drainage patterns

Typical Arrangement of a Septic Tank System:



NOTES:

1. The above layout is suitable for a leaching bed using normal construction methods.
2. Location of tank and leaching bed to be on lower ground than adjacent wells or springs, if possible.
3. Internal plumbing and main drainage outlet should be designed with a view to connecting to possible future sanitary sewers.
4. Roof water, surface water, discharge from footing drains, etc. must be excluded from entry to septic tank.
5. Leaching beds NOT to be located in swampy ground or in ground liable to flooding.
6. See the Regulation regarding details for the siting of the septic tank and tile bed.

No sewage system shall have horizontal clearance distances of less than those indicated in the tables below:

Table 8.2.1.6.A.(O.B.C.) Forming part of Sentence 8.2.1.6.(1)		Table 8.2.1.6.B. Forming part of Sentence 8.2.1.6.(2)	
<u>Minimum Clearances for Treatment Units:</u>		<u>Minimum Clearances for Distribution Piping:</u>	
Structure	1.5m	Structure	5 m
Well	15 m	Well with a watertight casing to a depth of 6m:	15 m
Lake	15 m	Any other Well	30 m
Pond	15 m	Lake	15 m
Reservoir	15 m	Pond	15 m
River	15 m	Reservoir	15 m
Spring	15 m	River	15 m
Stream	15 m	A spring not used as a source of potable water:	15 m
Property Line	3 m	Stream	15 m
		Property Line	3 m

TABLE 8.2.1.5. Forming Part of Sentence 8.2.1.5.(1)				
Clearance Distances for Class 1, 2, and 3 Sewage Systems:				
	Minimum horizontal distance in metres from a well with watertight casing to a depth of at least 6m.	Minimum horizontal distance in metres from a spring used as a source of potable water or well other than well with a watertight casing of at least 6m.	Minimum horizontal distance in metres from a lake, river, pond, stream, reservoir, or a spring not used as a source of potable water.	Minimum horizontal distance in metres from a Property Line.
Earth Pit Privy	15	30	15	3
Privy Vault Pail Privy	10	15	10	3
Grey water System	10	15	15	3
Cesspool	30	60	15	3

This guideline is to be used as a tool to help you complete the application. Part 8 of the Ontario Building Code governs the design, construction, operation and maintenance of various class sewage systems located within properties. It only addresses sewage systems up to 10,000 Litres capacity serving one lot. Questions not answered in this guideline may be addressed from the Building Code.

Once you have reviewed this guideline and completed the application, it is ready for submission to the Health Unit.
Incomplete Applications will be returned to the applicant.

Notice Requirements for Inspections:

The installer must notify the inspector of the readiness to commence the installation.

The installed system must be inspected and approved prior to back filling.

Fee Schedule

Service	Type	Fee
Sewage System Permits	Permit for Class 4 Sewage System, design capacity less than or equal to 4500 litres per day	\$680.00
	Permit for Class 4 Sewage System, design capacity greater than 4500 litres per day and less than 10,000 litres per day	\$950.00
	Permit for Class 4 Sewage System Tank Replacement Only	\$340.00
	Permit for Class 5 Sewage System (Holding Tank)	\$680.00
	Permit for Class 3 Sewage System (Cesspool)	\$340.00
	Permit for Class 2 Sewage System (Greywater System)	\$340.00
	Sewage System Permit for Trench Bed Repair or extension of 16 metres or less	\$340.00
	Sewage System Permit for Filter Bed Repair or extension of 6 sq. metres or less	\$340.00
Change of Use Permit	Existing System Inspection (Sewage System Permit for change of use or building addition, comments on minor variance, or re-zoning)	\$225.00
Rezoning or minor variance	Rezoning or minor variance comments requiring a site visit	\$225.00
Severance or Subdivision Comments	First lot.....	\$225.00
	Each additional lot.....	\$125.00
Copies	Copies of archived permits	\$25.00
File Search	File Search, copies and letter	\$100.00

As of June 1/2011