

SEPTIC INSTALLATION GUIDE



THE IMPORTANCE OF A COMPLIANT FOR THE QUALITY OF OUR ENVIRONMENT

Wastewater from an isolated residence poses a risk to public health and the environment when left untreated or treated improperly. They are the cause of nuisance and contamination of water intended for consumption as well as surface water (lakes, rivers, streams, etc.).

Since 1981, municipalities have been responsible for executing and enforcing the Provincial Regulation respecting wastewater disposal systems for isolated dwellings (Q-2, r.22).

The obligation for everyone to have a compliant septic system offering adequate performance is a major element of the quality of our environment. The owners of isolated residences as well as the municipalities therefore have a common responsibility to ensure that their septic systems comply with the standards established to ensure the protection of the environment.

DESCRIPTION OF A SEPTIC SYSTEM

A standard septic installation includes two components: the septic tank (primary treatment system) and the filtration element (secondary, advanced secondary or tertiary treatment systems).

SEPTIC TANK

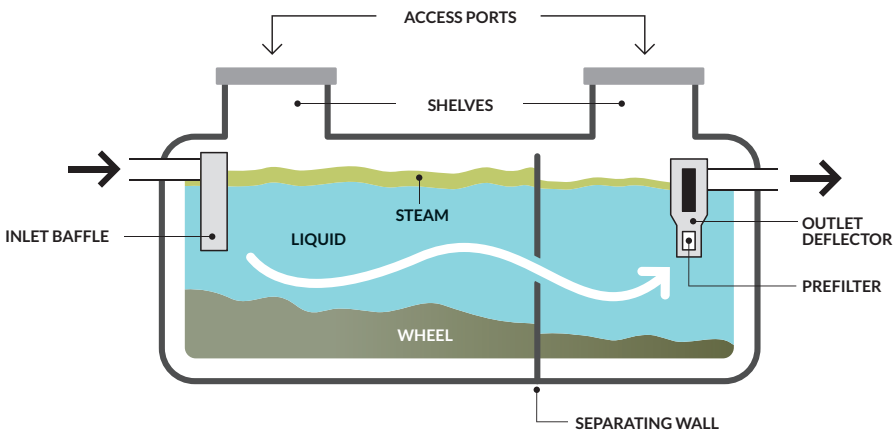
The tank consists of two compartments. The first is used to separate solids and liquids by settling. The heaviest solids settle to the bottom of the tank and form sludge, while on the surface, scum and grease remain in suspension.

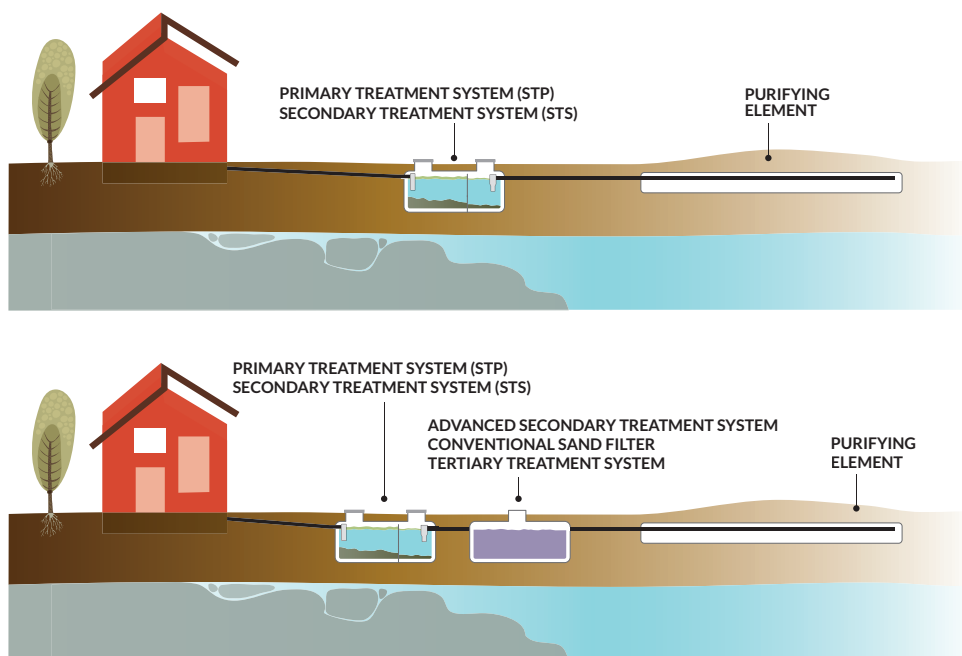
Under normal conditions, a septic tank is always filled with liquid. Thus, each time water enters the tank, an equal amount of liquid comes out to the second compartment.

The water that comes out of the septic tank is then routed to a filtration element.

The septic tank pre-filter is normally located after the septic tank outlet. It helps to filter out solids by suspended in the wastewater before it reaches the filtration element.

Just like your septic system in general, **the pre-filter requires regular maintenance.**





FILTRATION ELEMENT

The purpose of the filtration element is to provide secondary treatment of wastewater. The type of filtration element used varies according to several factors, including the nature and permeability of the natural soil, the slope of the land, the surface area available according to the location standards, the hydraulic capacity of the device (according to the number of bedrooms or the total daily flow) and the thickness of the natural soil layer in relation to the level of groundwater, rock or an impermeable or low-permeability soil layer, as the case may be.

Secondary treatment

The secondary treatment system is a system designed to treat either domestic water, greywater or toilet water, or the effluent from a primary treatment system. Absorption fields, seepage beds, seepage pits, above-ground sand-filter beds and standard sand-filter beds are types of secondary treatment systems.

Advanced secondary treatment

The advanced secondary treatment system is a treatment system whose effluent quality is more advanced than that of the primary and secondary treatment systems for the removal of suspended solids (SS) and carbon pollution (CBOD₅).

The quality level of the effluent makes it possible to reduce the requirements for subsequent treatment. The effluent from an advanced secondary treatment system must be sent to a polishing field, a tertiary treatment system or be discharged into the environment according to the conditions provided for in the section relating to other discharges into the environment.

Several manufacturers have developed systems approved in Quebec. These systems are a little more expensive to install in the short term, but their longer lifespan makes them a better long-term investment in addition to offering better environmental protection.

The Bionest, Ecoflo, Hydro-Kinetec, Enviro-Septic (System O) treatment system are advanced secondary treatment systems. These types of systems must be always bound by contract with the manufacturer of the system, its representative or a qualified third party with the stipulation that a minimum annual maintenance of the system will be carried out to achieve the expected performance.

Tertiary treatment

Tertiary treatment systems can be a complete treatment system designed to treat wastewater, greywater or water closets or be a complementary treatment system for the effluent of a primary treatment system, secondary, a conventional sand filter or an advanced secondary treatment system.

The tertiary treatment system is a system that allows, in addition to complying with the discharge standards set for an advanced secondary level effluent, to comply with additional standards for total phosphorus or for fecal coliforms.

This system is used when it is impossible to evacuate the effluent from the systems named above by infiltration or when the characteristics of the receiving environment do not allow the effluent from the said systems to be evacuated by dilution in a watercourse. systems.

The owner of a tertiary treatment system with disinfection, with phosphorus removal or with disinfection and phosphorus removal must, at least once every 6 months, have a sample of the system's effluent analyzed in order to establish the concentration, according to the cases, faecal coliforms or total phosphorus. This type of system must be always bound by contract with the system manufacturer, its representative or a qualified third party.

GOOD PRACTICES

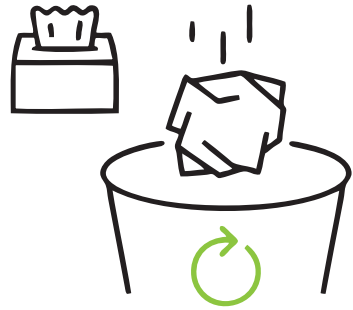
INSIDE THE RESIDENCE

Use of products

When routed to a septic system, some products are harmful to wastewater treatment and can contaminate groundwater and surface water. Some products can also increase the amount of sludge and grease that accumulates in the septic tank, cause premature clogging of the pre-filter and require more frequent emptying of the tank.

Here are examples of products that should not be disposed of in your septic system (neither directly into the tank nor through your toilets or sinks):

- > paint;
- > toxic or flammable products;
- > floor waxes, carpet cleaners;
- > products to unclog pipes;
- > chlorine, chloride, spa or pool maintenance products;
- > medications;
- > too much household cleaning products (it is recommended to use **ecological household products**);
- > cat litter, tea bags, ground coffee, eggshells, dryer filter lint and cigarette butts;
- > newspapers, paper towel, sanitary napkins, diapers and condoms;
- > cooking oils and fats and body oils;



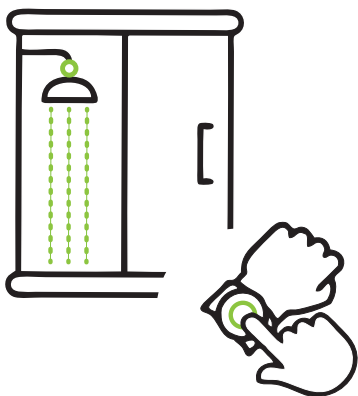
In fact, it's best to use the toilet only for what it was designed for and not throw anything else in it. Tissues and other waste should be composted, recycled or thrown in the trash rather than down the toilet.

Drinking water consumption

As the owner of a septic installation, it is to your advantage to adopt drinking water saving practices. Less water used in the home means less water directed to the treatment device.

Here are well-known drinking water saving practices:

- > taking short showers or not overfilling the bath;
- > do not let the water run unnecessarily when brushing teeth, washing hands or dishes;
- > promote the use of the dishwasher or washing machine only when the quantities of dirty dishes or laundry are large;
- > when possible, do not wash several times in a short period of time (spread them over a few days);



- > use water savers for taps and showers;
- > when it's time to change the toilet, the washing machine or the dishwasher, buy a model that consumes less water.
- > make sure toilets and taps are not leaking. It should be noted that a leaking toilet can use 10 to 20 times more water in one day than the amount normally used by the entire residence in the same period.

Try to spread out your water usage to avoid water surges in the septic tank. A water surge occurs when a large quantity of water arrives in the tank in a very short time, creating turbulence and putting solids back in suspension, which favors their entrainment towards the other components of the septic installation. For example, the simultaneous use of the dishwasher, the washing machine and the shower can create a significant water supply in the tank.

Softeners and other drinking water treatment systems

Before purchasing and installing a water softener or other drinking water treatment system, it is recommended that you seek the advice of the manufacturer of your septic system or a competent professional to know if your installation is designed to receive wastewater from this equipment.

Some manufacturers of certified treatment systems prohibit these discharges to their treatment system.

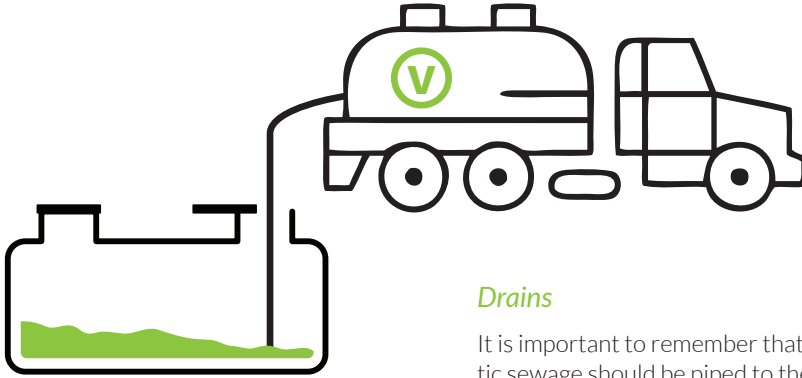
Additives for septic tanks

The use of additives does not exempt the owner from emptying the sludge from the septic tank connected to his residence, as required by the Regulation respecting wastewater disposal systems for isolated dwellings (Regulation Q-2, r.22). The use of additives in septic tanks is left to the discretion of each owner.

However, the Ministry of Sustainable Development, Environment and the Fight against Climate Change does not recommend their use. Indeed, studies indicate that the use of additives does not prevent the accumulation of sludge. In addition, some types of additives promote the solubilization of fats, while others interfere with the sedimentation of solids. Fats and solids that are not intercepted in the tank are transported by the water to the other components of the septic system, which can affect their performance and their lifespan. In addition, bacteria added to septic tanks can destroy those already present in the wastewater, which decreases the efficiency of the tank.

GOOD PRACTICES

OUTSIDE THE RESIDENCE



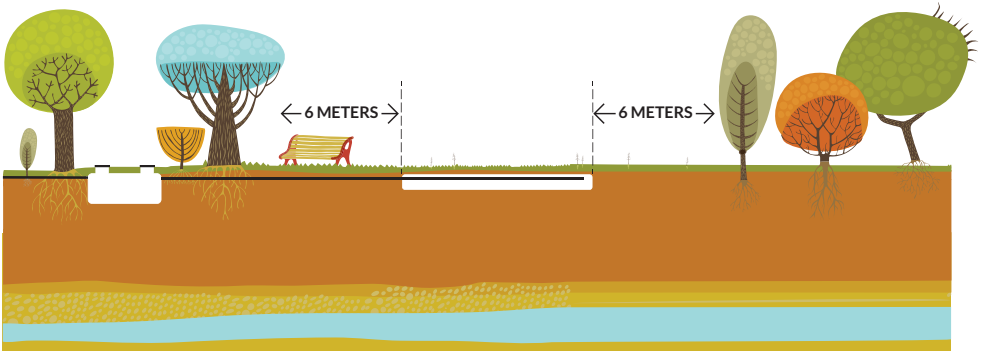
Septic tank

The lids of the septic tank must be secure and in good condition to avoid any risk of falling inside the tank. The covers must be always accessible to allow emptying of the tank. The emptying should be done regularly to avoid excessive accumulation of sludge and scum. If your tank is equipped with a pre-filter, it must be cleaned regularly to avoid clogging. The presence of a prefilter, its proper maintenance and regular emptying of the septic tank optimize the useful life of the septic system by limiting the quantity of floating matter (oils, grease, etc.) and suspended matter that are routed to the other components of the septic system.

Drains

It is important to remember that only domestic sewage should be piped to the septic tank. Gutters and foundation drains should not be connected to your septic system. If necessary, it is important to disconnect them so as not to overload your septic system and reduce its useful life.

If a garage floor drain is connected to the septic system, it is important not to drain large quantities of water into it (beware of the large volume of water generated by car washing). It is also important not to throw products in the garage drain that are likely to affect the septic system, for example, fuel, oil, solvents, antifreeze, paint, pesticides or fertilizers.



Precautions to take above the septic installation

To promote the proper functioning of your septic system and prevent breakage, certain precautions can be taken outside your home. Some of these precautions aim to avoid soil compaction or to maintain a good supply of oxygen to the treatment device.

Above your septic installation, it is important not to:

- > build or install a swimming pool, a patio, a shed, a parking lot or any other structure;
- > travel in a motorized vehicle;
- > to dig;
- > backfill;
- > make a garden;
- > plant trees or shrubs near drainage pipes; their roots could clog them and prevent the passage of water.

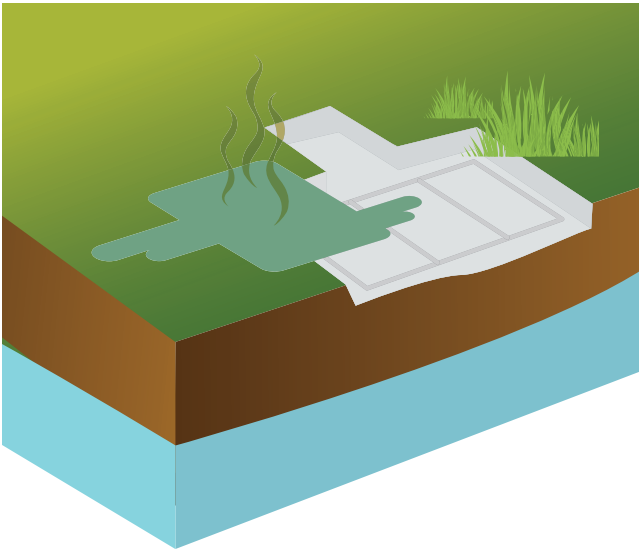
To promote the proper functioning of your septic installation, you should:

- > divert runoff water (gutters, sloping ground, etc.) away from your septic system so as not to overload it;
- > in winter, leave the snow cover in place, which is a natural insulator for your septic system. However, it is important not to compact the snow in order to maintain maximum ventilation;
- > in summer, leave a plant cover (type of vegetation whose roots will not obstruct the pipes).

INDICATIONS OF A DEFECT

Certain clues may tell you that your septic system is defective. If you observe one or more of the following signs, contact a qualified professional so that they determine the source of the problem and that you can plan the repair work required:

- > Fumes are noticeable near your septic system (sewage smell);
- > The evacuation of wastewater from your residence is slow;
- > Near your septic installation, the grass is much thicker, greener or longer than on the rest of the land, or the grass is spongy even in times of drought;
- > Resurgences of water occur near your septic installation;
- > The presence of bacterial contamination or nitrates is noted during the analysis of the water in your well or that of your neighbour.



MUNICIPAL PROGRAM RELATED TO SEPTIC INSTALLATIONS

Scum and sludge measurement program

The provincial regulation on the disposal and treatment of wastewater (Q-2, r.22) provides for two possible approaches: emptying at fixed intervals (every two years for permanent residences and every four years for seasonal residences), or emptying if necessary, by measuring the sludge and scum. The municipality decided to proceed with the emptying by measuring the sludge and scum. Your septic tank should be emptied when the sludge layer reaches 30 cm thick, or when the scum layer reaches 12 cm thick.

Septic installation management program

This program applies to septic systems that are 35 years old or more, as well as to all septic systems not listed on the territory of the municipality and whose installation date is unknown. This by-law also applies, regardless of their year of construction, to installations consisting of a septic tank made of steel, fiberglass or non-approved plastic, as well as cesspools, barrels used as a tank, or any other type of installation that does not contain a septic tank. This program makes it possible to ensure the proper functioning of sanitary facilities thanks to the evaluation carried out by a professional designated by the municipality every five years.

All to ensure that the septic systems on the territory comply with the standards provided for in the Regulation respecting the evacuation and treatment of wastewater for isolated dwellings and to protect its main bodies of water and the groundwater table, reduce the phosphorus in the environment, curb the proliferation of cyanobacteria, protect public health and curb pollution.

Assistance program for the replacement of septic installations

The program aims to protect the environment by bringing septic systems up to standard, for the repair of non-functional septic systems present throughout its territory. To facilitate the replacement of a non-functional septic system, the municipality grants in the form of a refundable cash advance. The financial assistance granted is limited to the actual cost of carrying out the work, up to a maximum amount of \$30,000. This work may include professional services, the site characterization study, and the drilling of a well, when necessary, to comply with the provisions of the by-law concerning the evacuation and treatment of wastewater from isolated dwellings (Q- 2, r.22).

TO FIND OUT MORE

Municipal regulations

<http://www.boltonest.ca/Environnement/Reglements.aspx>

Septic installation

Consult the Owner's Guide provided by the manufacturer

Provincial regulation on wastewater disposal for isolated dwellings

Ministère du Développement durable, de l'Environnement
et de la Lutte contre les changements climatiques (MDDELCC)

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