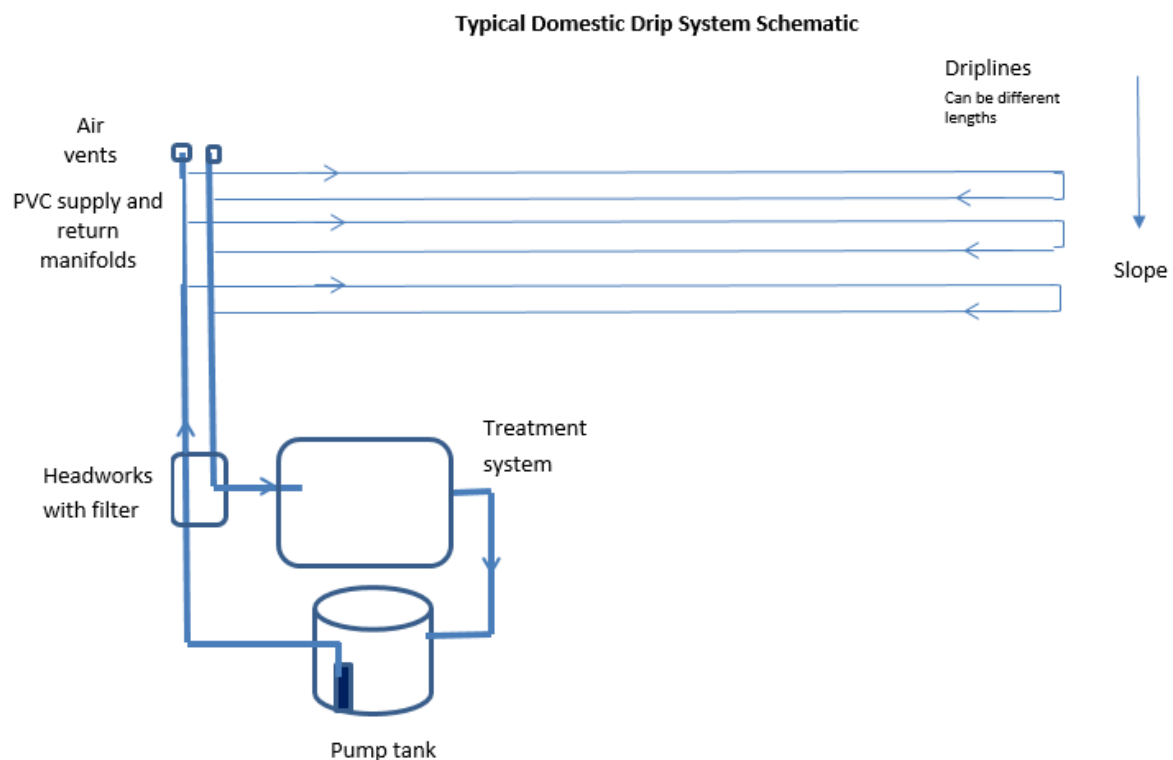




Drip Dispersal Systems FAQ's

The 2021 Waste Water Code of Practice (CoP) includes Drip dispersal systems for use with new house construction. Ashtecs has been instrumental in the introduction of this internationally tried and tested technology to Ireland and the UK for wastewater reuse of water and nutrients by irrigation and its safe return to the environment and eventual recharge of the aquifers.

We provide a turnkey design to commission service for drip dispersal systems through approved and trained professionals.



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What are drip dispersal systems?

Drip dispersal systems are irrigation systems which are used to disperse or distribute treated sewage and other waste water safely into the environment through soil infiltration. The waste water is treated, filtered and released into the topsoil where it is cleansed as it percolates through the biologically active topsoil. As the water is released at the root zone of the grass, the roots take up most of the nutrients (preventing nitrogen and phosphorous excess in nutrient sensitive areas), and a portion of the water by evaporation and plant transpiration processes known as evapotranspiration. This can significantly reduce the amount of water the soil has to absorb.

How do drip dispersal systems work?

Tiny amounts of water are released from a network of drippers evenly spaced every 2 feet (600mm) in the drip tubing at 6-9 inches (150-220mm) below the ground surface. The drip tubing is specially designed for wastewater and to repel roots. The water is filtered and pumped in controlled doses day and night. The tiny amounts of water (3ml/min) leaving each dripper easily infiltrates into the ground and is cleansed in the air filled topsoil by physical, chemical and biological processes.

Do drip systems need a large area?

No the area required is small compared to other systems. The site assessment will determine the percolation value PV, the depth of soil to limiting horizon such as water or rock and the groundwater protection response GWPR for the site. Higher PV sites require larger areas as the soils have lower permeability capacity to absorb the water without causing problems.

Drip area sizes for 4 bedroom house 6 PE from Table 10.1 of the 2021 EPA Code of Practice are below with typical drip dimensions.

Percolation value	Drip Dispersal 10.1 Option 5	Typical Drip Dimensions	Driplines at 600mm centres
	6 PE area M2		
PV < 3	-		
PV 3-20	30 m2	2.4m x 12.5m	4 x 13 m driplines
PV 21-40	84 m2	3.6m x 23.4m	6 x 24 m driplines
PV 41-50	96 m2	3.6m x 26.7m	6 x 27 m driplines
PV 51-75	132 m2	6m x 22m	10 x 22 m driplines
PV 76-90	204 m2	6m x 34m	10 x 34 m driplines
PV 91-120	324 m2	9.6 x 33.8	16 x 34 m driplines

Drip dispersal information for assessing sites and designing drip systems are available by email from Ashtecs or by download at www.ashtecs.com.

How are the driplines installed in the ground?

The dripline is usually inserted directly into the soil just inches below the ground surface by a small mole plough. Drip lines are spaced 600mm apart in a closed loop network. The water from the treatment system is pumped via a PVC pipe (through a filter that removes fine particles) to the drip network. Most domestic systems can be completed in less than a day.

Where the water table or other soil limiting horizon is less than 800-1100mm of the surface depending on the groundwater protection response rating, the driplines will be pegged on imported sand material and covered with 200mm of topsoil.

Are Drip systems a new technology?

Drip systems were introduced here by Ashtecs and have been used successfully in Ireland for over 10 years. Drip systems were developed in the 1960's to irrigate arid areas to grow crops. The drip tubing was modified in the 1980's to be used with wastewater. They are used extensively for wastewater in many countries and have been tried and tested with over 40 years use. The EPA 2021 CoP allows their use on developments of new construction in Ireland for the first time.

Have they been tested and used in Ireland or the UK?

Drip systems designed and supplied by Ashtecs were tested by Trinity College researchers on behalf of the EPA and the results were very successful. Drip systems designed and supplied by Ashtecs have been used successfully in Ireland since 2011 and in the UK since 2016.

Can my Engineer, Architect or Site Assessor get design assistance for drip systems anywhere?

Ashtecs provides a design service for all pumped infiltration systems to treatment system suppliers, engineers, architects, site assessors and building contractors. CPD training can be arranged with local authorities and professional bodies for design and planning application review purposes.

Are drip systems expensive to operate?

No they are very competitive with other soil infiltration systems to purchase and once installed use very little electricity and no more than a standard light bulb. Typically the 0.6 kW pump runs for less than 1 hour each day. All pumped systems and mechanical secondary treatment systems should be serviced annually and this includes drip systems.

Can I purchase a drip system from my local treatment system supplier?

Many wastewater treatment system suppliers will sell a combined wastewater package to include drip systems as an option. Ashtecs will provide training to the installers until they are experienced and certified drip installers by Ashtecs. Alternatively Ashtecs can arrange to do the drip installation where installers are independent of the treatment system supplier.

www.ashtecs.com; email: info@ashtecs.com.

Can I use any drip irrigation pipes for drip dispersal of wastewater?

The drip tubing must be suitable for use with wastewater or it will have a very short life. Non-wastewater drip tubing is not permitted in the CoP. Section 11.1 of the 2021 EPA Code states “*The dripline should be pre-treated to prevent bacterial deposits building up on the tubing walls and also to prevent root intrusion from trees and shrubs*”. Ashtecs dripline is specially manufactured by Geoflow for use with wastewater and is pre-treated to prevent bacterial deposits and root intrusion. This dripline was successfully evaluated by Trinity College researchers and approved by the EPA in research report 161.

Are there holes or orifices in the drip pipelines?

There are drip emitters moulded into the dripline at manufacture and spaced at 600mm in the drip tubing which release the water in drips when the pump is running. These emitters or drippers restrict the water to a drip trickle. Holes or orifices could not achieve the drip effect that is so beneficial.

Will the drippers block over time?

Our Geoflow Wasteflow drip tubing has an expected life of over 30 years. Ashtecs has over 10 years of trouble free use of drip systems in Ireland. Some commercial systems have been strenuously tested by intermittent upstream malfunctions releasing sludge to the drip system without clogging or blocking damage to the drip system. A system of continuous line flushing and filtering of the effluent together with the anti-bacterial and anti-root coating ensures a trouble-free life. Septic tank effluent containing more sewage particles is commonly used with drip in other countries but requires more maintenance, so our 90% cleaner secondary effluent will give a long and trouble-free life. However, drip tubing that is designed for use with potable water is likely to clog after a few years as the emitters and tubing are not suitable for wastewater and not permitted by the CoP.

Who will install and service the drip systems?

Ashtecs will train regional installers and operate a quality control certification programme for interested installers and treatment system suppliers to install and service the drip systems.

Can drip systems be used for large commercial systems and Industrial factories?

Yes there is no limit on the size of a drip dispersal system as pressure is maintained in large systems by the patented emitters and the use of multiple zones. Whole towns have been used with drip system internationally. Schools, hotels, and factories in un-sewered areas are viable and cost effective application for drip dispersal systems.

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