

Basic Overview of Perc-Rite® Drip Dispersal System Operation

Perc-Rite® Drip Dispersal is a pre-engineered, packaged wastewater disposal system which incorporates timer-based dosing of drip dispersal tubing, filtration to protect the tubing from clogging, and pressure compensating emitters which provides uniform application of effluent across the receiving soils. The uniform application of small doses of effluent into the soil throughout the 24 hour cycle provides effective treatment, disposal, and management of the effluent.

The dispersal area is broken up into pre-configured zones. Effluent disposal is rotated through zones multiple times over a 24 hour period. The routine rest and recovery of the receiving soils provides long term system sustainability.

Each drip dispersal zone carries a specific flow rate. The flow rate is determined by calculating the linear feet of tubing installed, calculating the number of pressure compensating emitters in tubing, and multiplying the number of emitters by the flow rate of .61 gph. Zones can be different sizes and shapes yet provide the same equal distribution of effluent across the network of tubing.

A component called the hydraulic unit utilizes self-backwashing filters prior to discharging the effluent to the drip zones. A valve connected to the common return force main from the drip zones provides an automated mechanism to routinely flush the drip dispersal tubing, preventing any slime growth. So, the combination of filtration prior to dispersal and routine flushing will keep the drip dispersal tubing operating precisely.

Float inputs provide the system information to which it will operate on a full design flow capacity (peak level) or a reduced flow capacity (standard dose level). These different operating conditions allow the system to run/rest at different intervals providing peak or reduced conditions to maximize the 24 hour time cycle.

Like all other wastewater systems utilized in the northeast, Perc-Rite® Drip Dispersal is installed within the frost zone of the receiving soils. A common misconception is that since Perc-Rite® Drip Dispersal uses irrigation tubing as the mechanism of disposal, it acts like a traditional irrigation system which would need to be “winterized” by blowing out the lines. The force-mains that carry the

effluent to the drip zones are installed below frost. The vertical risers and manifolds that travel through the frost zone to the drip tubing are insulated to a high standard allowing for the winters of northern New England. **But, the most important aspect of cold climate operation is that the drip dispersal tubing utilized in a Perc-Rite® System self-drains into the soil after each pump cycle.**

Each of the emitters that are spaced 2' along the line act as a drain point. There are air relief valves tied into the manifolds of the zones which allow air to enter the tubing and evacuate the lines quickly. Therefore, when zones are not dosing, the drip tubing is empty. After the pump shuts off, the active zone drains into the soil through the emitters at a very quick rate. The combination of force mains below frost, insulated vertical risers, and self-draining drip tubing allows for Perc-Rite® Drip Dispersal Systems to be a viable option for cold climate effluent disposal at residential, commercial, and municipal projects.

Background of Perc-Rite® Drip Dispersal Systems

Perc-Rite® Drip Dispersal was developed and patented in the late 1980s by the American Manufacturing Company. The first systems were installed in Pennsylvania in 1990. The first New England system was installed in Charlestown, RI in 1999 through a pilot program with URI. This system is still in operation today.

Oakson became the distributor of the technology in 2004, received its Massachusetts state approval in late 2005, and installed the first system in 2006. Since then, the department agencies of the remaining 5 New England states all vetted the system and gave approvals for year-round primary effluent disposal.