

PREMIER PLASTICS INC.

UNDERSTANDING THE FLOUT® DOSING SYSTEM FOR SEPTIC FIELDS.

The FLOUT® Dosing System offers a simple, self-contained and trouble free method of delivering intermittent dosing to gravity fed and pressure fed septic fields. Premier FLOUT® Dosing Tanks are completely pre-assembled, dose calibrated and ready for installation. Sites where the distribution field can be located at a lower elevation than the septic system discharge, provide the opportunity to avoid the cost and complexity of pumped delivery. This saves on standby volume, pumps, wiring, controls, installation and maintenance.

Hydraulically, there are two differences between pumped dosing and static head dosing:

1. In pumped dosing, the residual head and flow rate (independent variables) are determined, and a 'delivery device' (pump size) selected. In static head dosing the procedure is reversed. The 'delivery device' (FLOUT® size and static head) is selected first, then residual head and flow rate (dependent variables) determined.
2. In static head dosing, potential air entrapment in the transport pipe will reduce residual head and flow rate. Loss from air/water interaction cannot be predicted by calculation.

Flow rate from the FLOUT® is largely determined by:

1. The vertical distance between the Dosing Tank and field. (induced flow).
2. The percentage of complete flooding in the transport pipe. (Refer to Quick Ref. Guide.)
3. The resistance to flow at the field. That is, a small field will have a higher resistance than a larger field (with more orifice openings). Dominant variable is the total orifice area.

Squirt height will go up when the field resistance is high (small field) resulting in a lower flow rate and higher residual head. Conversely, squirt height will go down when the field resistance is low (large field) resulting in a higher flow rate and lower residual head. For reference, squirt height is nominally 75% of the residual head. Dosing tank must be properly vented to allow for a rapid exit of effluent. (Effluent filter at septic tank may restrict airflow.)

Premier Plastics has carried out a series of tests to better understand the interaction between effluent and air together in the transport pipe where either waterflow down or airflow up could be the dominant force, or at times be equal opposing forces. Air behaviour was observed through clear acrylic tubing. Tests were carried out for 20 to 120 orifices at 1/8" dia. and 3/16" dia. Average total static head used for tests – 142" and 42".

The data accumulated offers engineers and designers insight into the actual dynamics of these systems. A simple method to determine feasibility for a specific site is proposed.

Data provided by Premier Plastics is intended for information only and not as a substitute for evaluation performed by a registered professional. Premier Plastics does not assume any responsibility for the use of this data.

FLOUT® (floating outlet) is a trade name of Rissy Plastics in Torrington CT.