

Irrigation

Proper irrigation water management is essential in order to promote a healthy landscape while maximizing existing water resource use. It is not until water supply is low or water restrictions are enforced that we realize that many of our irrigation systems are extremely inefficient. This inefficiency can stem from a number of sources including poorly designed and installed irrigation systems, lack of appropriate maintenance, and improper placement of sprinkler heads that do not consider runoff potential, terrain difficulty and windy sites. All of these things can be avoided if you take care in your decision to implement an irrigation system as well as care in choosing what kind of system would be best for you.

Ecologically-minded irrigation is sometimes not top priority for many companies that sell such items so it is important to be conscious of who you talk to and who you buy your pieces from. The Greywater Standards allow for two kinds of irrigation systems to be used for greywater: sub-surface drip irrigation or mini-leach fields. The following is a description of the various parts of a subsurface drip irrigation system:

- Part one, emitters: The minimum flow path of the emitters is 1200 microns. The coefficient of manufacturing variation (Cv) can be no more than 7%. Cv is a method of describing how evenly the emitters apply water at the time they come from the factory. According to the American Society of Agricultural Engineers, good emitters have a Cv of 5% or less, average emitters are between 5 and 10% and marginal emitters are between 10 and 15%.
- Part two, supply lines: PVC class 200 pipe or better and schedule 40 fittings must be used for all supply lines. All lines must be buried at least 8 inches deep.
- Part three, drip lines: Poly or flexible PVC tubing shall be used for drip lines, which must be buried at least 9 inches deep.
- Part four, pressure reducing valves: Where pressure at the discharge side of the pump exceeds 20 pounds per square inch (psi) a pressure reducing valve must be used to maintain pressure no greater than 20 psi downstream from the pump and before any emission device.
- Part five valves, switches, timers, and other controllers: These devices are used to rotate the distribution of greywater irrigation zones and to schedule the irrigations.
- Part six, automatic flush valve/vacuum breakers: These devices are required to prevent back syphoning of water and soil (Department of Water Resources, 1995). The dimension specification of the mini-leach field are found in the Greywater Standards, Section J-11. There are two main parts of such a system. The first is perforated pipe, which must be a minimum of 3-inch diameter and constructed of perforated high density, polyethylene, ABS, or PVC pipe, or approved material. Second are the filter materials. A clean stone, gravel, or similar material sized between $\frac{3}{4}$ and 2-1/2 inches must be used. This filter material is then covered with landscape filter fabric or similar porous material before being covered with earth (Department of Water Resources, 1995).