

## Installation Guidelines for Gravelless Pipe For Septic Tank Leach Fields

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### Scope

As an alternative to gravel filled soil absorption trenches for septic tanks, the Hancor Gravelless Pipe system is recommended. Corrugated high density polyethylene pipe is factory inserted in a synthetic filter material of Cerex® Type 25 protective wrap. It is available in both 8" and 10" diameters (inside) and in standard 20' lengths.

### Design Factors

1. Sites suitable for conventional gravel drain fields are suitable for Gravelless Pipe systems, in most cases. Limitations may be enforced by local health officials as relating to soil textural classifications.
2. The performance of all soil absorption systems, which include conventional as well as gravelless, are severely affected by high water tables and/or soils with low permeability. A Gravelless system will NOT perform better than a conventional system in restrictive or tight soils.
3. The methods of effluent distribution are the same for both conventional and gravelless systems, i.e. distribution boxes, hillside boxes, serial distributions, manifolds, etc.
4. Gravelless systems utilizing serial distribution should be installed with each line following the contour of the land. To ensure the upper line is filled to capacity before overflow of the effluent into the next, the individual lines are joined by connection them with laterals that provide a 1" maximum head on the upper line.
5. All plumbing connections between the house and the gravelless leach field, including the septic tank, should be identical to conventional gravel systems as dictated by local building code regulations.
6. Local building code regulations applying to conventional septic leach fields relative to all setback and distance from soil absorption lines to property lines, wells, lake shores, seasonal groundwater, bedrock, etc. will also apply to the gravelless system.
7. Any locally approved septic tank or aerobic unit can be used in conjunction with the gravelless system.
8. Fine sands tend to be problematic for leach fields in general. Research conducted on the gravelless concept indicates broad applications are in order. The pipe performed well in those soils test, except for fine grain soils. Gravel filled trenches would likely perform in a similar manner.

### Excavation

1. Gravelless drain fields should be installed in trenches with sufficient width to allow enough room for backfill material to fall easily between the ditch sidewalls and the haunches of the pipe, completely filling the void area with little or no compaction.
2. Normal trench depths of 18" to 24" allow for 6" to 12" of native soil backfill. No gravel is required.  
Note: The flow line of the septic tank is to be at least 1" above the top of the pipe.
3. Length of the trenches should not exceed the maximum allowable trench length for conventional systems. Maximum invert slope of 1" per 100 lineal feet is recommended if a level invert is not feasible or practical.

### Installation

1. Remove Hancor Gravelless Pipe from the black shipping bag prior to installation.

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2. Place the 20' length of Gravelless Pipe in the trench with the white marking stripe up at the top of the pipe. The pipes are joined with a Hancor split collar connection and fastened with the provided plastic tie. The Cerex filter material is then pulled over the join to reduce soil infiltration.
3. The end of each line can either be capped with a plastic end cap or with an optional inspection/cleaning port, as shown in Drawing 4.
4. Gravelless Pipe should be restrained to prevent movement during initial backfilling of the trench.
5. Care should be taken to prevent large clumps, rocks, etc. from being used as backfill material.
6. To prevent soil erosion due to rainfall, the leach field should be seeded as soon as possible after backfilling is completed.
7. It is recommended that the minimum trench width is 18" to insure proper backfilling in and around the pipe haunches.
8. Minimum cover is recommended to be no less than 6", and, although Hancor Gravelless Pipe may be installed to greater depths, a maximum cover of 12" is recommended.

### Additional Information

For technical assistance, call Hancor Application Engineering at 800-2HANCOR, ext. 809.