RECOMMENDED INSTALLATION GUIDELINES

Detailed instructions for successfully installing the FLEX-Drain product are offered in this document. Simply begin by selecting the version of FLEX-Drain that's right for your application:

Solid FLEX-Drain- A solid pipe, appropriate in applications that involve moving water from one point to another (away from downspouts). Does not allow water to seep in or out anywhere except pipe ends.

Perforated FLEX-Drain- A pipe with spaced perforations, appropriate for ground water drainage (French drains, dispersing water from flower beds) in applications where surrounding soil is sufficiently coarse not to pose an issue with clogging/filling up of the pipe. This pipe allows water to seep into and out of the pipe.

Perforated FLEX-Drain With Sock- A pipe with spaced perforations, covered with removable polyester sock. Appropriate for ground water drainage (French drains, dispersing water from flower beds) in applications where surrounding soil or sand is fine enough to require filtration. This pipe allows water to seep into and out of the pipe.

Then proceed to install as described below.

NOTE:
Specifications for installing flexible pipe for construction and civil engineering projects are governed by various government agencies as well as local building codes. These guidelines are intended to assist with the typical "Do it yourself" project in a residential situation. Adherence to applicable codes and regulations is the responsibility of the installer.

What you should know before you start.

The ability of **ANY** flexible pipe to carry the weight of the soil and traffic loads is due to the composite strength of the pipe-backfill structure. As weight is applied the pipe flexes to equalize the load while the surrounding backfill forms a structural arch that transfers the load around the pipe and into the bedding. The final load carrying capacity of the pipe-backfill composite depends on the quality of the pipe, backfill material and the installation.

Recommended bedding and backfill

For most residential applications satisfactory results can be obtained using the excavated soil as the bedding and backfill material. However, the results will depend on the type of soil encountered. Remember, the backfill forms a structural arch so the finer the grain of the soil and the more organic matter in it the more it will need to be compacted and the lower the load it can carry.

The best load capacity will be achieved using angular crushed stone (not pea gravel) between ½" and 1" with few or no pieces smaller than ½". Flexible plastic pipe is routinely installed under highways, railroads and airports using this form of bedding according to ASTM D2321.

STEP 1 -TRENCHING

Recommended Equipment

- Trenching machine—4" cut
- Post hole digger
- Shovel
- Water level
- Tape measure

1. Excavate the trench to the desired depth of the pipe plus the depth of bedding material and to the approximate grade.
    - The flex drain can bend around a 4.5" radius so the most direct route can be plotted.
    - The trench should be no wider than needed to install the pipe and backfill.
    - Remove loose material and any large rocks, roots, or stumps from the bottom or sides of the trench.
2. Use a water level to check the rough grade of the trench from end to end and adjust as necessary until you have approximately the angle desired. The pipe does not need a steep downward angle from the point where the water enters the pipe to the outlet point, but you should be sure that there are no "sags" or points where the water would have to travel uphill.

STEP 2 -BEDDING

Recommended Equipment and materials

- Post hole digger
- Shovel
- Water level
- 2" x 4" wood post 6 feet long
- Angular crushed stone (not pea gravel) between ½" and 1" with few or no pieces smaller than ½".

1. Shovel in bedding material to a uniform depth—1" to 2" should be adequate.
2. Tamp with the end of a 2" x 4" post or other object…
    - The bedding should provide firm but not hard support

- If the bottom of the trench is used as bedding be sure it is relatively flat and free of large rocks or obstructions

3. Check and adjust the final grade using the water level.

STEP 3 -INSTALLING PIPE

1. Extend pipe to its full length by bending it right and left while pulling.
2. Snap male and female cuffs together to connect pipe sections.
3. Lay pipe along side of trench and form it into the desired shape
   - Remember to leave extra length for connecting to upstream waterway
   - Use a knife to trim excess pipe, or simply leave unneeded length collapsed.
4. Drop pipe into place.

STEP 4 -SUPPORT

Recommended Equipment and materials

- Shovel
- 2" X 4" post 6 feet long
- Angular crushed stone (not pea gravel) between ½" and 1" with few or no pieces smaller than ½"

1. Shovel 1 inch bedding material onto each side of pipe. If using excavated soil as bedding, remove any large rocks.

° For very high load applications use bedding material up to 6 inches deep—angular crushed stone will provide the highest load capacity when properly installed.

2. Compact the bedding material (not the pipe) using the 2" x 4" post
3. Continue adding and compacting layers of bedding material until pipe is covered by 1 inch of material.

STEP 5 -INITIAL BACKFILL

Recommended Equipment and materials

- Shovel
- 2" X 4" post 6 feet long
- Excavated soil

1. Shovel initial backfill material into the trench.
    - For residential applications in coarse-grained inorganic soils the excavated soil may provide suitable initial backfill. (See recommended backfill section)
2. Compact the initial backfill material using the 2" x 4" post
3. Continue adding and compacting layers of backfill material until pipe is covered by the depth desired.

STEP 5 -FINAL BACKFILL

Recommended Equipment

- Shovel
- 2" X 4" post 6 feet long
- Excavated soil

4. Shovel final backfill material into the trench until full. This is typically topsoil or a portion of the excavated soil.
5. Compact the final backfill material using your foot or a tamper.

Perforated pipe should always be installed in gravel and if no sock is on the pipe, the trench should have landscape fabric lining it and covering the gravel/pipe before dirt is replaced.

Note: If you are using Wyes or Tees in your project, the FLEX-Drain® product works best with Hancor brand fittings. The male end or cut end will engage with the corrugations just inside the cuff. If you only have access to ADS brand Wyes and Tees, the female end of our product works best with those. If you need 2 female ends on the part, please ask your supplier about FLEX-Drain Coupler. It is recommended that you secure the fittings to the pipe using sheet metal screws which will hold everything in place until you can begin backfilling.