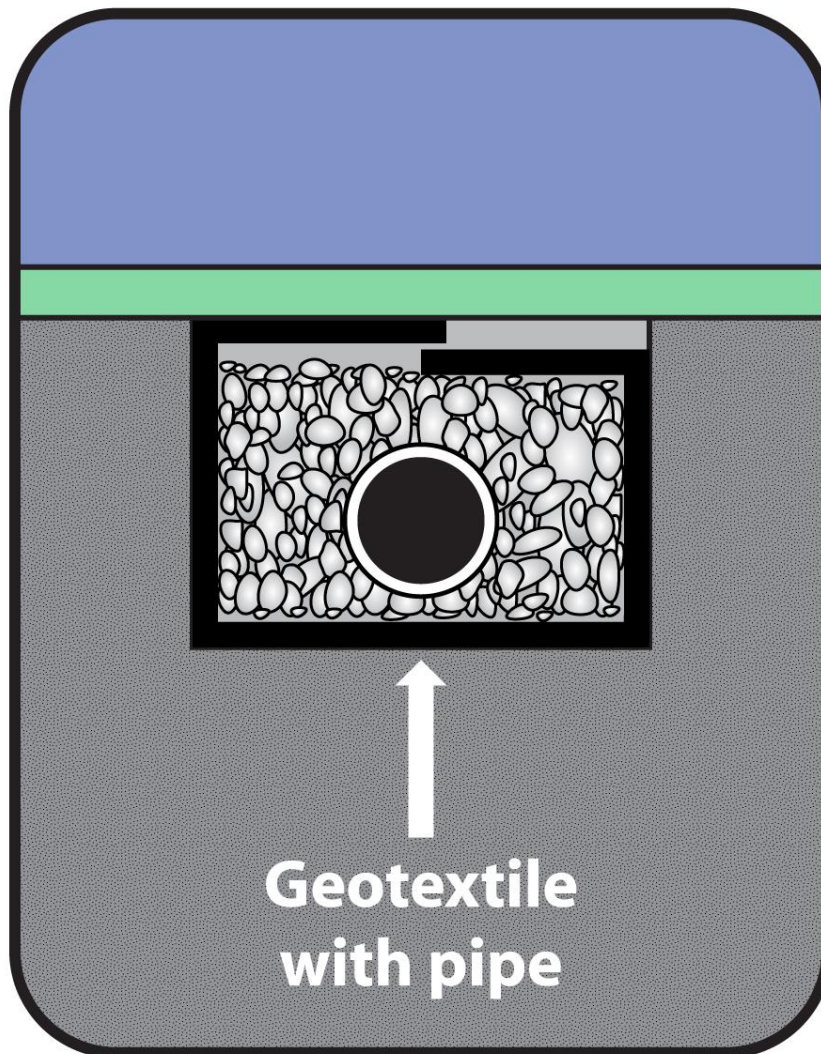




Construction Geosynthetics

## Geotextile Drain – Exterior Foundation – Installation Guide

# FRENCH DRAIN



## **1.0 General**

- 1) This guideline covers general installation of nonwoven geotextile in an exterior foundation wall French drain.
- 2) Where contradictions occur follow the instructions of the project engineer.

## **2.0 Equipment & Materials**

- 1) Bobcat excavator (for larger projects)
- 2) Vibratory compactor
- 3) Shovel, pick mattock, tamp and wheelbarrow
- 4) Tarp
- 5) 4 inch diameter perforated PVC pipe
  - a) Avoid cheaper pipe that can crush
- 6)  $\frac{3}{4}$  inch washed stone
- 7) Optional: Replacement soil that is non-cohesive
- 8) Filtration geotextile

## **3.0 Evaluate the Perimeter House**

- 1) Contact the local utility providers to identify any buried utilities.
- 2) Carefully move any bushes or small trees so they can be replanted when the job is done.
  - a) When replaced or replanted, make sure plantings are at least 1 foot away from the foundation.
- 3) Make sure your downspouts are discharging at least 5 feet away from your foundation.

## **4.0 Slope of Drain**

The usual recommended slope of the perforated pipe for a French drain system is a one inch drop per ten feet of horizontal run.

## **5.0 Excavate**

- 1) To avoid damaging the foundation wall during excavation, dig a trench 3 feet away from and parallel to the wall.
- 2) Pull the remaining dirt away from the wall down to the bottom of the footer.
- 3) Keep in mind the trench must have at least a  $\frac{1}{2}$  % slope towards the discharge area.
- 4) Place excavated soil on the tarp to protect grass.

## **6.0 Place Geotextile**

Place the filtration geotextile into the excavated trench with enough excess fabric to overlap the fill.

## 7.0 Place Initial Gravel Layer

Fill trench with 4 inches of stone and level.

## 8.0 Place Pipe

- 1) Place a 4 inch perforated PVC pipe in the trench on top of stone and next to the footer.
  - a) Do not place it on top of footer.
- 2) The perforated pipe is typically manufactured with two parallel rows of perforations on the down side of the pipe about 120 degrees apart.
  - a) The perforated pipe must be installed with the perforations down.
- 3) Connect the perforated pipe to a non-perforated drain pipe of same diameter and run downhill to a drywell or storm sewer.
  - a) If the natural lay of the land does not allow for this, connect pipe to a sump.

## 9.0 Place Remaining Gravel

- 1) Fill trench with  $\frac{3}{4}$  inch washed stone to at least 6 inches above the footer.
- 2) It may be beneficial to fill the entire trench with gravel to 6 inches below final grade.
  - a) This is particularly true if you are dealing with expansive clays.
    - i) These clays absorb moisture within each particle.
    - ii) These should be removed and replaced with gravel or a non-cohesive soil.
- 3) Overlap geotextile at the top.

## 10.0 Backfill & Compact

- 1) Back fill, compact and slope surface away from the home.
- 2) Improper compaction can lead to incorrect final elevations and ponding of water.
- 3) Always compact carefully around structures and foundations to avoid damage.

This material is presented for general information only. Always verify the suitability for a specific application with the project engineer. Where contradictions occur, follow the instructions of the project engineer. There is no implied or expressed warranty regarding the installation procedures or the geosynthetic products in this guide. Installation procedure and product choice is the sole responsibility of the contractor and contractor assumes all liability.