

Geotextile – GE



DEFINITION

A geosynthetic fabric, either woven or non-woven, applied to either the soil surface or between materials.

PURPOSE

To reduce erosion by, and sediment found in, storm generated water by providing filtration, separation, or stabilization properties.

CONDITIONS

Geotextiles provide stabilization, filtration, and separation properties. This standard may be used when there is a need for separation between two materials that are likely to otherwise interfere with one another. Examples of this situation include:

- Separating subsoil from aggregate within a subsurface drain
- Separating subsoil from aggregate placed at the soil surface
- Stabilization of soil surface during temporary stream diversion

- To prevent the buildup of hydrostatic pressure behind gabion, decorative, or retaining walls

DESIGN CRITERIA

The application of geotextile does not require professional design for most uses. If hydrostatic pressure is a concern for stability of a retaining wall, consult a professional experienced in the selection of geotextile fabric.

Geotextile selection should be based on guidelines within AASHTO M288 Standard Specification.

CONSTRUCTION SPECIFICATIONS

Geotextiles should be non-toxic to vegetation, be inert to common chemicals, and be mildew and rot resistant. Materials should meet or exceed the strength, elongation, permittivity, apparent opening size, and ultraviolet stability properties of the requirements outlined in AASHTO M288 for the respective use.

INSTALLATION

Geotextiles should be installed according to manufacturer's specifications. The installation site should be prepared without voids, and without rocks, clods, or debris greater than 1 inch in size. The geotextile should be placed loosely, with no wrinkles or folds, in direct contact with the soil surface.

Overlap of successive sheets should place the upstream or upslope sheet on top of the downslope sheet. Field joining of sheets should be accomplished by sewing or thermal welding for critical applications such as stream diversions or steep slopes. Field joining for regular applications may also be accomplished by overlapping and then using stakes or staples in the overlapped portion. The amount of overlap depends on the size and positioning of the stakes or staples.

Aggregate should be placed carefully onto geotextile to prevent damage. It should never

be dumped from a height greater than five feet. Damaged portions may be patched with fabric overlapping on all sides a minimum of one foot, or the specified seam overlap, whichever is greater. Construction vehicles should not be driven directly onto the geotextile.

MAINTENANCE

Geotextiles are generally installed in conjunction with some other practice. Inspections should be conducted simultaneously, and should be made before anticipated storm events (or series of storm events such as intermittent showers over one or more days) and within 24 hours after the end of a storm event of 0.5 inches or greater, and at least once every fourteen calendar days. Maintenance needs identified in inspections or by other means shall be accomplished before the next storm event if possible, but in no case more than seven days after the need is identified.