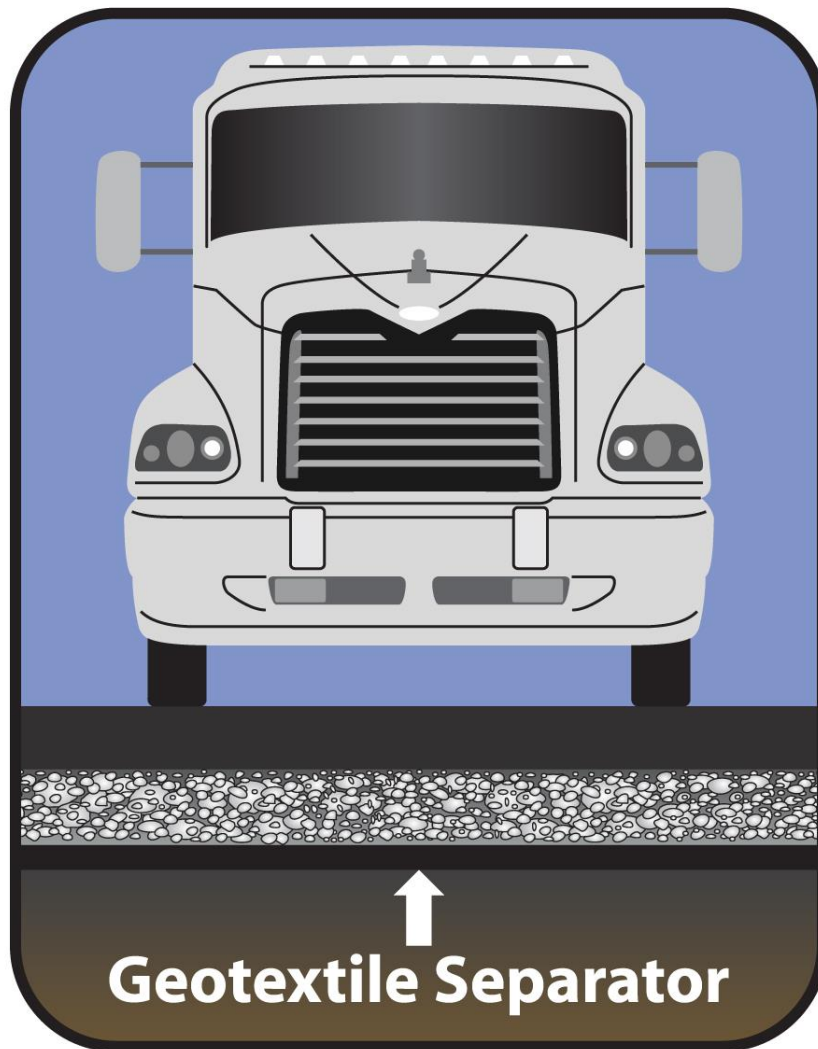




Construction Geosynthetics

Separation Geotextile Installation Guide

# HEAVYWEIGHT SEPARATION



## 1.0 General

- 1) This guideline covers general installation of heavy weight separation geotextiles in unpaved roads.
- 2) Where contradictions occur follow the instructions of the project engineer.

## 2.0 Prepare Site

- 1) Remove all tree stumps and any protruding objects such as large rocks.
  - a) Fill the depressions with a suitable granular material.
- 2) If smaller stone is already in place from an existing driveway or parking lot, it can be left in place.
- 3) Replace pockets of very weak soils with granular fill.
- 4) For areas that consistently hold water:
  - a) Replace the wet pumping soils with granular fill.
  - b) Install a drainage system or drain tile.

## 3.0 Smooth and Level Subgrade

- 1) Grade the area level as possible.
- 2) Excavate as shallow as possible to avoid creating an area that will hold water.
- 3) For very soft soils, contractor may consider leaving vegetation, roots and topsoil in place.

## 4.0 Place Separation Geotextile

- 1) Place the separation geotextile directly on the prepared subgrade.
  - a) Roll it out flat in the roll direction, minimizing folds and creases.
- 2) Soil CBR will determine if overlapping or sewing is the correct option. AASHTO offers these general guidelines for sewing versus overlapping:
  - a) Soil CBR > 3                      Minimum overlaps of 1 - 1.5 feet
  - b) Soil CBR 1-3                      Minimum overlaps of 2 - 3.25 feet
  - c) Soil CBR < 0.5                      Must be sewn

## 5.0 Overlapping

- 1) Geotextile should be overlapped both side-to-side and end-to-end in the direction of aggregate placement.
- 2) Curves may be accomplished by folding or cutting the fabric to conform to the curve.
- 3) Pins or staples are typically not required to hold the fabric in place.
  - a) If needed, 6 inch sod staples work well.

## 6.0 Place Gravel

- 1) Place gravel.
  - a) 8 to 12 inches is typically sufficient.
  - b) For very weak subgrades, thicker lifts may be required.
  - c) Dozer operator may identify areas in need of additional aggregate thickness by observing aggregate layer rutting.
- 2) Where possible, the preferred method is to dump aggregate onto the geotextile and push it outward with bulldozer blade tilted slightly upward.
- 3) Dump trucks and rubber-tired loaders may be driven directly on the geotextile if needed.
  - a) Avoid quick stops, starts and turns.
  - b) Keep speeds less than 10 mph.
  - c) Observe initial vehicle operation to insure geotextile is not damaged.
- 4) Spread the gravel in the same direction as any geotextile overlap to avoid separation between the two pieces.
- 5) Ensure geotextile is not moved out of position during aggregate spreading.

## 7.0 Compact Aggregate

- 1) Initial compaction is achieved by walking tracked bulldozer back and forth over the aggregate.
- 2) Construction traffic will work the aggregate until reasonable stability is achieved.
- 3) Final compaction is achieved by rolling area with vibratory compactor.
  - a) The first few passes are done without vibration.
  - b) The final passes are done with full vibration.
- 4) After final compaction, weak areas shall be filled with additional aggregate and compacted.
  - a) Do not grade down any ruts.

## 8.0 Type of Stone

- 1) The preferred aggregate is crushed and angular, ranging from 10% dust (or fines) up to 2 inches in diameter.
  - a) Limestone is a good option, but other stone will work fine.
  - b) Some names for this type of stone are dense grade aggregate (DGA) or crusher run.
  - c) A separation geotextile eliminates the need to utilize stone larger than 2 inch in size.
  - d) Do not use rounded stone.

## 9.0 Repair

In lieu of specific project guidelines, overlap damaged areas a minimum of 3 feet in all directions.

## 10.0 Storage

- 1) Separation geotextile rolls are wrapped in a UV protective cover.
- 2) If stored outdoors for a prolonged period, elevate the geotextile from the ground and cover with a tarpaulin or opaque plastic.
  - a) Contractor must insure rolls are adequately protected from:
    - i) Moisture
    - ii) Ultraviolet radiation
    - iii) Chemicals that are strong acids or bases
    - iv) Temperatures in excess of 140°F
    - v) Animal destruction

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.