

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-228-1

CODE: (SP)

DATE: 04/13/2011

SUBJECT: Erosion Control Blanket

Section 907-228, Erosion Control Blanket, is hereby added to and made a part of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction as follows.

SECTION 907-228 - EROSION CONTROL BLANKET

907-228.01--Description. This work consists of furnishing, placing, and maintaining a Erosion Control Blanket (ECB) of the type specified on seeded or other designated areas in accordance with the plans and specifications.

907-228.02--Materials. The erosion control blankets shall be a temporary, organic and/or inorganic re-vegetative blanket with non-organic, photodegradable or biodegradable netting. The netting shall be bonded sufficiently to the parent material to prevent separation of the net from the parent material for the life of the product. For those blankets that have netting attached, the netting and stitching shall be photodegradable and/or biodegradable. The photodegradable stitching shall be of the same material with similar properties as the netting such that the expected degradation periods are the same. The weight of the netting shall not exceed 15% of the total blanket weight.

The Contractor will be permitted to furnish and install a multi-width blanket with seams securely bonded by stapling, staking, stitching, or other methods meeting the approval of the Engineer.

The erosion control blanket must be one from the Department's current "List of Approved Sources" for the type indicated.

907-228.02.1--Blanket Types. There are four types of erosion control blankets.

Type I blankets shall be a processed degradable natural and/or polymer fibers mechanically bound together by a single rapidly degrading, synthetic or natural fiber netting or an open weave textile of processed rapidly degrading natural or polymer yams or twines woven into a continuous matrix.

Type II blankets shall be a processed degradable natural and/or polymer fibers mechanically bound together between two rapidly degrading, synthetic or natural fiber nettings.

Type III blankets shall be an erosion control blanket composed of processed slow degrading natural or polymer fibers mechanically bound together between two slow degrading synthetic or natural fiber nettings to form a continuous matrix or an open weave textile composed of processed slow degrading natural or polymer yams or twines woven into a continuous matrix.

Type IV blankets shall be an erosion control blanket composed of processed slow degrading natural or polymer fibers mechanically bound together between two slow degrading synthetic or natural fiber nettings to form a continuous matrix or an open weave textile composed of processed slow degrading natural or polymer yams or twines woven into a continuous matrix.

In addition to being on the Department's current "List of Approved Sources", the blankets must meet the following general requirements.

TYPES OF BLANKETS

Type	Maximum Gradient	C Factor *, **	Minimum Tensile Strength ***
I	<3:1 (H:V)	<0.15	50 lbs/ft
II	≤2:1 (H:V)	<0.20	75 lbs/ft
III	≤1.5:1 (H:V)	<0.25	100 lbs/ft
IV	≤1:1 (H:V)	<0.25	125 lbs/ft

* "C" Factor calculated as the ratio of soil loss from the ECB protected slope (tested at specified or greater gradient, h:v) to the ratio of soil loss from unprotected (control) plot in large-scale testing.

** Acceptable large-scale test methods may include ASTM Designation: D 6459, or other independent testing deemed acceptable by the Engineer.

*** Minimum Average Roll Values using ASTM Designation: D 6818.

907-228.02.2--Stakes. Unless otherwise specified by the manufacturer of the erosion control blanket, stakes used to secure the blanket shall be one of the following.

- 1) a double prong "U" shaped wire staple made from 11-gauge or heavier steel wire with an approximate length of eight inches (8") after bending,
- 2) a biodegradable anchoring device meeting the requirements of ASTM Designation: D 5338, or
- 3) an equal approved by the Engineer.

907-228.02.3--Acceptance Procedure. Prior to use, the Contractor must furnish the Engineer three copies of the manufacturer's certification for each shipment of erosion control blanket material stating the number of rolls furnished and that the material in the shipment conforms to the same composition as that listed on the Department's current "List of Approved Sources".

When wire staples are used, also furnish the Engineer three copies of a certification from the manufacturer or distributor stating the wire size for staples for each shipment.

The certifications by the manufacturer or distributor will be prima facie evidence of the materials meeting the requirements of the specifications.

907-228.03--Construction Requirements. The Contractor shall furnish and install protective covering blankets for erosion control on prepared areas of slopes at locations shown on the plans or

designated by the Engineer.

Erosion control blankets shall be installed according to manufacturer recommendation or install according to the detail plan sheet. The design plan sheet is to be used as a guide in lieu of the manufacture recommendations.

907-228.03.1--Site Preparation. The area to receive the erosion control blanket should be fine graded to a smooth profile and relatively free from all weeds, clods, stones, roots, sticks, or other foreign material that may prevent the blanket from bearing completely on the surface. Any voids on the slope shall be filled and properly compacted.

Any seeded areas damaged or destroyed during placement of the erosion blanket shall be reseeded as specified for the original seeding at no additional costs to the State.

907-228.03.2--Trench Preparation. An anchor trench shall be prepared at the top of the slope by excavating a trench six inches deep by six inches wide. The erosion control blanket shall be anchored into the trench by staking on 1-foot centers. The stakes shall be driven at least flush with the soil surface. The anchor trench shall be backfilled and compacted with soil. A minimum of three feet shall be allowed from the anchor trench to the crest of the slope.

A similar anchor trench shall be installed at the bottom of the slope to terminate the installation. The trench shall be installed similar to the above except the erosion control blanket shall be rolled 24 inches past the toe of the slope. The terminal end of the erosion control blanket shall be staked on 1-foot centers.

On long slopes, an intermediate anchor trench shall be installed at 50-foot intervals.

907-228.03.3--Placement of Blanket. Starting at the crest of the slope, the erosion control blanket shall be rolled down the slope in a controlled manner. Approximately every 25 feet, the erosion control blanket shall be pulled to take out any excess slack. The goal is to have the erosion control blanket contour and initiate full contact with the soil.

The typical installation will require one stake placed at 3-foot to 5-foot intervals along the vertical length of the erosion control blanket. Stakes shall be staggered 18 to 24 inches horizontally across the erosion control blanket. If the erosion control blanket needs to be spliced in the middle of a slope, the erosion control blanket shall be "shingled" with up-slope erosion control blanket overlapping the down-slope erosion control blanket. There should be a minimum of six inches of overlap in a splice. The joint splice shall be made by placing a row of stakes six inches on center and then placing a second row of stakes six inches on center, staggered from the first row. All overlaps and the edges shall be secured with stakes. All longitudinal and transverse laps shall be a minimum 6-inch joint with the upgrade section on top. All transverse laps shall be staked with two staggered rows of stakes on 6-inch centers. All longitudinal laps shall be staked with two staggered rows on 3-foot to 5-foot centers. The staking shall firmly anchor the fabric netting to the soil surface.

On the downstream end of blankets adjoining a structure, the anchor trench shall be omitted and

the material folded six inches and butted tightly against the structure and one row of stakes installed on six-inch centers. An edge adjacent to a paved ditch shall be butted tightly against the paved ditch and a row of stakes installed on 12-inch centers. All stakes shall be driven flush with the soil surfaces.

907-228.03.2--Protection and Maintenance. The Contractor shall maintain and protect the blankets until release of maintenance or until the Engineer has determined that the blankets have served their useful life, whichever occurs first. Maintenance shall consist of repairs necessitated by erosion, rain, wind, fire, or other cause.

907-228.04--Method of Measurement. Erosion control blankets of the type specified will be measured by the square yard of surface area covered. Any over width of material installed wider than ordered, laps, and anchor slots will not be measured for payment.

907-228.05--Basis of Payment. Erosion control blankets, measured as prescribed above, will be paid for at the contract unit price per square yard and shall be full compensation for all materials, equipment, labor, maintenance and all work necessary to complete the work.

Payment will be made under:

907-228-A: Erosion Control Blanket, Type - per square yard