



South Carolina  
Department of Transportation

March 6, 2009

**INSTRUCTIONAL BULLETIN NO. 2009-1**

**SUBJECT:** SECTION 810 - SEEDING

**EFFECTIVE DATE:** APRIL 14, 2009 LETTING

**SUPERCEDES:** IB-2008-6 (CHANGES ARE SHOWN IN RED)

**RE:** SC-M-810(LATEST EDITION)

Section 810 of the Standard Specifications for Highway Construction has been deleted and replaced with SC-M-810(latest edition). The new specification is a major change from previous SCDOT specifications. This Instructional Bulletin is intended to aid designers who prepare plans for SCDOT projects. The designer should follow the guidelines listed herein in order to produce plan items and quantities in compliance with SC-M-810(latest edition).

**Seeding:**

Seeding is now referred to as "**Permanent Cover**" or "**Temporary Cover**". The pay items "Permanent Vegetation", "Seeding(Un/Mulched)", "Temporary Seeding", and "Temporary Vegetation" are no longer used.

Permanent Cover is measured by the acre. Calculate the estimated disturbed areas by measuring the length and width of slopes, shoulders, ditches, reclaimed areas, and other earthen areas that will need to be seeded. Many designers use CAD software to calculate these areas.

Temporary Cover is measured by the acre. Estimate the quantity as a percentage of the Permanent Cover quantity. Determine the percentage during the Design Field Review (DFR).

**Mulch:**

Mulch is required for all temporary and permanent cover applications. See Table 4: Mulch included in SC-M-810. Depending on the steepness and length of the slopes, select appropriate mulches. Table 4 lists the least performance mulch (least expensive) at the top, and the performance of the mulch increases (along with the associated cost) as your read down the table.

Measure the areas to receive mulch and total the quantity of mulch in acres or MSY. Each type of mulch has a corresponding pay item which can be found in Table 5: Bid Item Number included in SC-M-810.

The designer can weigh the options of using multiple types of mulches or combining items for worst case options. For example, if the quantities computed using the table were:

Straw or hay mulch with tackifier	2.346 acres
Bonded fiber matrix BFM	0.398 acres
Fiber reinforced matrix FRM	5.443 acres



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The designer could choose to only specify one type mulch for the entire project (worst case scenario):

Fiber reinforced matrix FRM	8.187 acres
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This would result in a higher project cost, but would simplify the construction operation in that the contractor would only supply one mulch and use the same method for the whole project.

Another option may be to combine just two of the three options as follows:

Straw or hay mulch with tackifier	2.346 acres
Fiber reinforced matrix FRM	5.841 acres

By combining the BFM with the FRM, the construction effort is simplified and the impact of the cost is minimal due to the small estimated quantity of BFM (0.398 acres).

It is acceptable to not combine at all and use all three mulches. Also, when combining, remember to always choose the superior performing mulch allowable from the chart. The mulches are listed such that the lower ones meet the requirements of the ones above.

### **Agricultural Granular Lime:**

Estimate the quantity of agricultural granular lime by using the rate of 2,000 lb per acre of permanent cover.

### **Agricultural Granular Fertilizer:**

Unless a specific blend of granular fertilizer is selected on the DFR or from experience, assume a 10-10-10 mix to calculate the estimated bid quantities for the three components of granular fertilizer. Calculate the quantity by assuming an application rate of 1,000 lb/acre for fertilizer.

For example, if a project has a quantity of 3.500 acres of permanent cover and the RCE recommends a 15-5-25 mix of fertilizer, calculate the estimated quantity as follows:

$$\text{FERTILIZER (NITROGEN)} = 0.15 \times 1,000\text{lb/acre} \times 3.500 \text{ acre} = 525 \text{ lb}$$

$$\text{FERTILIZER (PHOSPHORIC ACID)} = 0.05 \times 1,000\text{lb/acre} \times 3.500 \text{ acre} = 175 \text{ lb}$$

$$\text{FERTILIZER (POTASH)} = 0.25 \times 1,000\text{lb/acre} \times 3.500 \text{ acre} = 875 \text{ lb}$$

Remember the first number represents nitrogen, the second number phosphoric acid, and the third number potash (N - Ph. Acid - Pot.). The numbers are percentages, so you need to divide them by 100 before inserting into the formulas.

### **Compost:**

Compost can be used in locations where there is little or no topsoil or where a soil analysis shows that the seedbed is excessively nutrient deficient.

This information is generally unknown during the project development phase. Request input from the RCE during the DFR to determine if this bid item is needed and estimate the quantity based on past experience. The item is measured in cubic yards, so you will need to estimate the surface area and use a depth of 2 inches.

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## Watering:

Estimate watering to establish permanent cover. Calculate a quantity using the ratio 27,150 gallons per acre-inch of water. **Select the quantity of Watering from the following table based on the quantity of Permanent Cover.**


<b>Quantity of Permanent Cover</b>	<b>Estimated Quantity of Water</b>
less than ½ acre	None
½ acre to 5 acres	54,300 gallons
greater than 5 acres to 20 acres	135,750 gallons
greater than 20 acres	271,500 gallons

## Mowing:

Include the item of mowing when permanent or temporary cover is specified. Use a quantity equal to twice the sum of the permanent and temporary cover.

## Pay Items:

<b>Bid Item Number</b>	<b>Description</b>	<b>Units</b>
8100100	PERMANENT COVER	ACRE
8100200	TEMPORARY COVER	ACRE
8101105	COMPOST	CY
8101110	STRAW OR HAY MULCH WITH TACKIFIER	ACRE
8101115	HYDRAULIC MULCH (HM)	ACRE
8101120	STABILIZED MULCH MATRIX (SMM)	ACRE
8104005	FERTILIZER (NITROGEN)	LB
8104010	FERTILIZER (PHOSPHORIC ACID)	LB
8104015	FERTILIZER (POTASH)	LB
8105005	AGRICULTURAL GRANULAR LIME	LB
8109050	WATERING	GAL
8109901	MOWING	ACRE
8151011	BONDED FIBER MATRIX (BFM)	ACRE
8151021	FIBER REINFORCED MATRIX (FRM)	ACRE
8151111	TEMPORAR.EROS.CONTRL.BLANKET(CL-A)	MSY
8151103	TURF REINF.MATTING (TRM)-TYPE 3	MSY

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