

**KANSAS DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION TO THE
STANDARD SPECIFICATIONS, EDITION 2015**

Delete SECTION 905 and replace with the following:

SECTION 905

MULCHING

905.1 DESCRIPTION

Provide and uniformly place mulching materials as shown in the Contract Documents.

BID ITEMS

Mulching
Mulching Tacking Slurry
HECP*

UNITS

Tons
Pound
Pound

* Hydraulic Erosion Control Products Type

905.2 MATERIALS

Provide materials that comply with the applicable requirements.

Mulch, HECP and Mulching Tacking Slurry **DIVISION 2100**
Water **DIVISION 2400**

905.3 CONSTRUCTION REQUIREMENTS

a. Mulching. Place and punch the mulch immediately after the fertilizing and seeding operations. Do not allow the mulching operations to lag behind the fertilizing and seeding operations more than 24 hours. If rain is forecast, make every effort to mulch areas the same day they are seeded.

A sufficient length of mulching material is needed for the mulch to interlap and bind together. Short stemmed mulching material is more vulnerable to wind action. When the mulching is applied with a straw blower, if required, remove the cutting knives to prevent cutting the mulch too short.

After an area is fertilized and seeded, uniformly spread the mulch over the area. Apply the mulch at the rates shown in the Contract Documents. The rates shown in the Contract Documents are a guide. The Engineer will determine if the applied mulch is sufficient to protect the seeded area.

After the mulch is applied to an area, punch the mulching material (except wood chips) approximately 2 inches into the ground. Perform the punching operation longitudinally, using a mulch puncher. When needed, use weights on the mulch puncher to punch the mulching material into the soil.

When the slope is too steep to use a mulch puncher, "pat" the mulch with forks as it is placed on the slope. Apply mulching tacking slurry or cover with a light application of soil or sand to reduce wind loss.

On lawns and small areas in urban areas, apply the mulch material using hand methods, unless otherwise approved by the Engineer. As the mulch is placed, "pat" the mulch with a fork.

Apply mulching tacking slurry or cover with a light application of soil or sand to reduce wind loss.

b. Mulching Tacking Slurry. Place and punch the mulch immediately after the fertilizing and seeding operations according to **subsection 905.3a**.

Immediately after the designated areas are mulched and punched, use hydraulic slurry equipment to apply the mulching tacking slurry. Unless shown otherwise in the Contract Documents, apply the mulching tacking slurry at the rate of 900 pounds per acre. Distribute the mulching tacking slurry uniformly over the mulch, leaving no bare spots. Arrange work so the mulching tacking slurry can be placed within 24 hours after each area has been mulched.

c. Hydraulic Erosion Control Product (HECP). Apply the HECP over the specified areas by means of a standard hydraulic slurry seeding machine. Demonstrate, to the Engineer's satisfaction, that the equipment and methods will result in a uniform application of the HECP. Mix the dry HECP with water and agitate according to the recommendations of the product manufacturer.

Apply the HECP immediately after the seeding and cultipacking to maximize adhesion and minimize slumping. Obtain complete coverage from a consistent angle of approach while applying HECP. Achieve no more than 65% coverage from the primary angle of application, and at least 35% coverage from the secondary angle of coverage. Maintain secondary angles of coverage of between 175° and 185° from the primary angle.

The typical application rates in **TABLE 905-1** may be adjusted based on the manufacturer's recommendations with the approval of the Engineer.

TABLE 905-1: HECP Typical Applications		
Type	Application Rate (lbs/acre)	Maximum Slope
A	1800	4:1
B	2500	3:1
C	3500	2:1

905.4 MEASUREMENT AND PAYMENT

a. Measured Quantities. All area measurements in this section will be based upon slope measurements.

The Engineer will measure the mulching by the ton.

The Engineer will measure mulching tacking slurry by the pound. Payment will be made based on the dry package weight of the recycled paper fibers and tacking agent. Water will not be measured separately, but is subsidiary to the mulching tacking slurry.

The Engineer will measure HECP by the pound. Payment will be made based on the dry package weight of the HECP. Water will not be measured separately, but is subsidiary to the HECP.

b. Payment. Payment for "Mulching Tacking Slurry", "HECP (Type *)" and "Mulching" at the contract unit prices is full compensation for the specified work.

When the quantity of "Mulching Tacking Slurry," "HECP (Type *)" and "Mulching" overruns or underruns the contract quantity by any amount, the contract unit price shall govern.

Delete SECTION 2110 and replace with the following:

SECTION 2110

MULCH

2110.1 DESCRIPTION

This specification covers material suitable for use as mulch.

2110.2 REQUIREMENTS

a. General Mulch Materials. Prairie hay is the preferred mulch material. Use prairie hay containing primarily Bluestem grasses, switchgrass, indiagrass and other desirable perennial grasses, normally found in Bluestem pastures. Additional materials acceptable for mulching include sudan grass hay or excelsior mulch.

Provide written evidence to the Engineer if none of the preferred/additional mulching materials are available. The Engineer may permit the use of wheat straw, oat straw, sawdust, shredded wood, peat moss or pulverized corn cobs.

Do not provide mulching material containing *Sericea Lespedeza*, *Multiflora Rose* or any noxious weed identified by the Kansas Department of Agriculture.

b. Shredded or Chipped Wood Mulch. Provide shredded or chipped hardwood, cypress or cedar wood mulch for use around trees, shrubs and other plants as designated in the Contract Documents. Chipped wood mulch is to be substantially free of mineral, organic or vegetative matter other than wood. The mulch is to have no more than one calendar year between the time of cutting and shredding or chipping and the time of application to the current project. Do not use this chipped wood mulch around small perennials and vines.

c. Composted Mulch. Use only composted wood mulch around small perennials and vines.

d. Hydraulic Erosion Control Products. Provide a Hydraulic Erosion Control Product (HECP) manufactured from non-toxic, degradable fibers combined with an organic or synthetic tackifier that contains no growth or germination inhibiting factors. The HECP shall contain a visible dye to facilitate placement and inspection of the application. The dye shall be nontoxic to plants, animals and aquatic life and shall not stain concrete or painted surfaces. All HECPs shall comply with **TABLE 2110-2**:

Property	Requirement
Organic matter	90% minimum
“Dry” Moisture Content	15% maximum
pH	5.5 – 7.5
Water holding capacity	800% minimum

HECPs will be designated by Type according to **TABLE 2110-3**:

Type	Maximum Cover Factor (ASTM D6459) at R=162	Minimum Germination Enhancement (ASTM D7322)
A	0.20	200%
B	0.10	400%
C	0.01	400%

Other products not meeting the requirements of this subsection may be approved provided they meets the following criteria:

- (1) Contain non-toxic tackifiers that, upon drying, become insoluble and non-dispersible to eliminate direct raindrop impact on soil according to ASTM D7101 and EPA 2021.0-1.
- (2) Contain no germination or growth inhibiting factors and do not form a water-resistant crust that can inhibit plant growth.
- (3) Contain a minimum 90% organic material (ASTM D2974).
- (4) Have a rainfall event (R-factor) greater than 140 (ASTM D6459).
- (5) Have a cover factor no greater than 0.03 (ASTM D6459).
- (6) Have a minimum Vegetation Establishment of 400% (ASTM D7322).
- (7) Have a minimum Water Holding Capacity of 600% (ASTM D7367).

2110.3 PREQUALIFICATION

Hydro-mulches must be prequalified. Submit a written request to be evaluated for prequalification to the Bureau of Right of Way, Environmental Services Section. Provide the following for each brand and type of material to be evaluated:

- (1) Name, address, and telephone number of the manufacturer and the preferred contact person.
- (2) Name of product and manufacturers application recommendations.
- (3) Material Safety Data Sheets.

(4) Results of tests from the AASHTO National Transportation Product Evaluation Program (NTPEP) or other independent testing laboratory demonstrating compliance with the above criteria.

2110.4 BASIS OF ACCEPTANCE

a. The Engineer will accept straw or hay bales based on the following:

- North American Weed Management Association (NAWMA) Standards.
- Receipt of a statement that this material “meets the North American Weed Free Forage Standards” on a Transit certificate with the vehicle tag number, the type and number of bales being transported or a Forage tag on each bale.

Contact the Kansas Department of Agriculture to request inspection or for certifications. For a Certified Weed-Free Forage/Mulch Growers Listing contact the Kansas Department of Agriculture.

b. Hydraulic Erosion Control Products will be accepted based on visual inspection of the container label to verify compliance with this specification and receipt and approval of a Type C certification as specified in **DIVISION 2600**.

c. All other mulch materials are accepted based on a visual inspection by the Engineer.

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