

3879

3879
Agricultural Lime

3879.1 SCOPE

This Specification covers Agricultural Liming Material (ALM) containing calcium and/or magnesium compounds that are capable of neutralizing soil acidity and also providing a reasonable increase in soil pH within 6 months of soil incorporation.

3879.2 REQUIREMENTS

The ALM includes the following forms: limestone (calcitic or dolomitic), burned lime, slaked lime and marl. Gypsum is not a liming product. The lime product shall contain at least 80 percent Total Neutralizing Power (TNP). It shall be ground sufficiently fine so that 90 percent, including all the fine particles obtained in the grinding process, will pass through a 2.36 mm (# 8) sieve; at least 60 percent will pass through a 850 µm (#20) sieve; and at least 50 percent will pass through a 250 µm (# 60) mesh sieve. The maximum water content of the lime material shall be 10%. The ALM shall have a minimum rating of 1120 kg ENP per metric ton (**1000 lbs of ENP per ton**) of ALM.

The ALM must be obtained from a Minnesota Department of Agriculture's (MDA) licensed distributor or producer. For ALM supplied in bulk, the ALM must be delivered to the Project with the following information on a billing, delivery invoice or scale ticket label: 1) Distributor or producer's name, address, telephone number, and source of production or stockpile location; 2) Customer's name; 3) Date of sale or transfer; 4) Type of ALM; 5) Minimum kg of ENP per metric ton (**lbs of ENP per ton**), accurate within 3 percent; and 6) Weight or cubic meters (**cubic yards**) of ALM distributed and approximate weight per cubic meter (**cubic yard**). For ALM supplied in bags or other container types the following information must be affixed to the bag or container: 1) Distributor or producer's name and address; 2) Minimum kg ENP per metric ton (**lbs ENP per ton**), accurate to within 3 percent; and 3) the net weight.

3879.3 SAMPLING AND TESTING

Samples shall be collected in accordance with the Minnesota Department of Agriculture's (MDA) Agricultural Lime Official Sampling Methods. Samples must be submitted to either MDA or the University of Minnesota testing lab for analysis of %TNP, % passing the 2.36 mm, 850 µm and 250 µm (# 8, 20 and 60) sieves, % Dry Matter, and the kg ENP per metric ton (**lbs ENP per ton**) of Agricultural Lime Material (ALM) rating. Sampling and testing must take place within 90 days before applying the lime material to the land. The kg ENP per metric ton (**lbs ENP per ton**) of ALM is defined as the product of 1000 kg ALM per Metric ton (**2000 lbs ALM per ton**) x (%)

3880.3

ENP/100) x (% of Dry Matter/100). Material furnished under this Specification may be accepted on the basis of the Distributor's or Producer's guaranteed analysis. However, the Department reserves the right to sample, test, inspect and accept or reject the material bases on its own tests.

3880
Peat Moss

3880.1 SCOPE

This Specification covers peat moss used as a soil amendment for landscape plantings.

3880.2 REQUIREMENTS

Peat moss shall be of the hypnum, sphagnum, or reed sedge types as defined in ASTM D 2607. Other peaty soils will not be acceptable. The peat moss shall be a processed product reasonably free of wood and other extraneous matter and shall contain no weed seed or bacterium that may affect plant growth. The peat moss shall be uniform throughout meeting the requirements of Table 3880-1:

TABLE 3880-1
PEAT MOSS REQUIREMENTS

	Minimum	Maximum
Moisture Content, % by mass	25	70
Ash Content, % by mass	--	25
pH	3.0	7.5
Fiber Content, %	33	--

At the time of delivery the peat moss shall be in an air-dried condition.

Quantity shall be expressed as loose volume. Package contents shall be determined by measuring loose material in a 0.03 m³ (**1 cubic foot**) measure.

3880.3 SAMPLING AND TESTING

Test samples shall be provided upon request and at a rate designated by the Engineer. Testing will be in accordance with the methods prescribed in ASTM D 2974. Testing for fiber content shall be as described in ASTM D 2607.

When delivered in package form, the material may be accepted on the basis of the manufacturer's guaranteed analysis.

3881

3881
Fertilizer

3881.1 SCOPE

This Specification covers fertilizer used for establishing vegetative cover and landscape plantings.

3881.2 REQUIREMENTS

A General

Fertilizer furnished under this Specification shall be a manufactured grade of the inorganic or organic type, produced in granular or granulated form. The fertilizer shall contain at least the minimum analysis specified, and shall be furnished as a blend or homogeneous form containing the specified percentages of total nitrogen, available phosphoric acid (or phosphorous), and water soluble potash (or potassium), in that order.

When the fertilizer is furnished in closed containers, they shall be clearly marked with the mass, type of nutrients, and the producer's guaranteed analysis, all in accordance with State and Federal regulations.

When the fertilizer is furnished in bulk, each shipment shall be accompanied by a suitable bill-of-lading giving the mass, type of nutrients and a certificate of the producer's guaranteed analysis.

B Types

Fertilizer shall conform to one of the following types, as specified in the Plan.

B1 Type 1- Commercial Fertilizer

Commercial fertilizer shall consist of dry granulated nutrients produced by mining and manufacturing processes and commonly used in the agricultural or lawn care industries. It shall contain the three major plant nutrients of nitrogen, phosphorous, and potassium. Commercial fertilizer may be furnished as a homogenous or blended form.

B2 Type 2- Phosphorous Free Fertilizer

Phosphorous free fertilizer shall meet the requirements of Type 1 commercial fertilizer except that it shall contain no phosphorous.

B3 Type 3- Slow Release Fertilizer

Slow release fertilizer shall be specifically processed to release nitrogen at a slow rate over a growing season. It shall contain the three major plant nutrients of nitrogen, phosphorous and potassium. Primary nitrogen sources shall be a coated prilled urea form. A minimum of 70% of the nitrogen component shall be a slow release water insoluble nitrogen.

3882.2

B4 Type 4- Natural Based Fertilizer

Natural based fertilizer shall have a minimum of 50% of the mass and 50% of the macronutrients derived from natural or organic material. The product shall be a dry granulated product with a moisture content of less than 10%. The approximate size of the granules shall be between 2.8 – 0.6 mm (# 7 and 30 sieve). Primary plant food sources are derived from aerobically composted turkey litter, hydrolyzed feathermeal, ammonium sulfate, ferrous sulfate and sulfate of potash. The product shall be free of any sewage sludge, raw manure or uncomposted organic matter.

3881.3 SAMPLING AND TESTING

Fertilizer may be accepted on the basis of the manufacturer's guaranteed analysis, but the Department reserves the right to sample and test the material at any time. Chemical analysis will be in accordance with methods established by the Association of Official Agricultural Chemists.

3882

Mulch Material

3882.1 SCOPE

This Specification covers mulch material for controlling erosion and establishing vegetative cover.

3882.2 REQUIREMENTS

Mulch material shall conform to the requirements for one of the following types, as specified in the Contract.

TYPE 1

Type 1 mulch shall consist of grain straw, hay, cuttings of agricultural grasses and legumes. When Type 1 is used in conjunction with native grasses (300 series Mixtures), it shall consist of grain straw only. The material shall be free of seed bearing stalks of noxious grasses or weeds as defined by the rules and regulations of the Minnesota Department of Agriculture.

Mulch containing Canada thistle or leafy spurge fragments or seeds shall be rejected. In addition, Type 1 mulch shall not contain the following species: cattail (*Typha sp*), reed canary grass (*Phalaris arundinacea*), birds-foot trefoil (*Lotus corniculatus*) or crown vetch (*Coronilla varia*). At the time of delivery the mulch shall be in an air dried condition. Bales used for bale barriers shall be densely packed rectangular shaped 350 x 450 x 850 mm (**14 x 18 x 36 inches**) minimum nominal size. Bales shall be tightly wrapped with two strands of twine or wire.

3882.2

TYPE 2

Blank

TYPE 3

Type 3 mulch shall consist of clean grain straw (i.e. oats, wheat) that is certified by the Minnesota Crop Improvement Association (MCIA) to be weed free. All mulch bales shall be in an air dried condition at the time of delivery and shall have an MCIA inspection tag attached indicating that the mulch has passed inspection.

TYPE 4

Type 4 mulch shall consist of a combination of Type 1 mulch and Type 5 Hydraulic Soil Stabilizer. The combination shall consist of 3.4 metric ton/hectare (**1 ½ tons/acre**) of Type 1 mulch and 840 kg/ha (**750 pounds per acre**) of Type 5 Hydraulic Soil Stabilizer.

TYPE 5

Type 5 mulch shall consist of raw wood slash from either hard or soft timber harvested during clearing and grubbing operations on the Project. It shall be a product of a mechanical chipper, hammermill, or tub grinder. The material shall all pass a 100 mm (**4 inch**) screen and not more than 20 percent by mass of the material shall pass a 2.36 mm (**0.1 inch**) sieve. Maximum length of individual pieces shall not exceed 500 mm (**20 inches**).

TYPE 6

Type 6 mulch shall consist of raw wood material from either hard or soft timber and shall be a product of a mechanical chipper, hammermill, or tub grinder. The material shall be substantially free of mold, dirt, sawdust, and foreign material and shall not be in an advanced state of decomposition. The material shall not contain chipped up manufactured boards or chemically treated wood, including but not limited to wafer board, particle board, and chromated copper arsenate (CCA) or penta treated wood. The material, when air dried, shall all pass a 100 mm (**4 inch**) screen and not more than 20 percent by mass of the material shall pass a 2.36 mm (**0.1 inch**) sieve. Unattached bark or green leaf composition, either singly or combined, shall not exceed 20 percent each by mass. Maximum length of individual pieces shall not exceed 500 mm (**20 inches**).

TYPE 7 (Prairie Mulch)

Prairie mulch shall be of a type that has been thrashed to remove seeds so that it consists of clippings, chaff, or residue from harvesting or cleaning operations. This material may be harvested from native stands or from native grass production fields. Prairie mulch shall be free of noxious weed seeds, and shall be from the Approved Sources list for native seeds on file on the Mn/DOT web pages under the Materials Engineering Section.

3883.2

TYPE 8 (Prairie Hay)

Prairie hay shall be of a type that has not been thrashed to remove seeds so that it consists of material that has been bailed directly. This material may be harvested from native stands or from native grass fields. Prairie hay shall be free of noxious weed seeds, and shall be from the

Approved Sources list for native seeds on file on the Mn/DOT web pages under the Materials Engineering Section.

TYPE 9

Aggregate mulch will be 9.5 to 50 mm (**3/8 to 2 inches**), with 5 percent by mass allowable passing the 9.50 mm (**3/8 inch**) sieve. Crushing is allowable, but not required.

3882.3 SAMPLING AND TESTING

Test samples, when required, shall be obtained at a rate determined by the Engineer. Testing for moisture content will be in accordance with ASTM D 4444 and sieve analysis in accordance with ASTM D 422. Type 5 Hydraulic Soil Stabilizer will be accepted on the basis of the manufacturer's certified results in accordance with 1603.

3883

Erosion Control Netting

3883.1 SCOPE

This Specification covers biodegradable mesh placed over Type 1 mulch, on the bottom of freshly placed sod, or on top of hydraulic soil stabilizer, or alone to reinforce the materials while vegetation is establishing.

3883.2 REQUIREMENTS

A Netting material shall conform to the following requirements for one of the following types, as specified in the Contract.

Type 1

Polypropylene netting shall consist of polypropylene plastic net with bonded joints. Mesh openings shall be a minimum of 15 mm (**½ inch**) to a maximum of 25 mm (**1 inch**) measured in either direction. The net shall have a minimum mass of 12.2 g/m² (**2.5 pounds per 1,000 square feet**). The minimum tensile force shall be 90 N per 4 strands (**20 pounds/4 strands**) in the length direction and 70 N (**16 pounds**) per 4-strands in the width direction. Tensile force shall be the average of three tests.

3883.2

Type 2

Jute netting shall consist of jute yarn woven into an open mesh with approximate 25 mm (**1 inch**) openings. The net shall have a minimum mass of 0.40 kg /m² (**0.92 pounds per square yard**). Each strand shall be no less than 3.6 mm (**0.14 inch**) in diameter with a minimum yarn count of no less than 50 per meter (**164 per foot**).

Type 3

Coir netting shall be 100% coconut, woven material. The yarns shall be of machine spun coir twine uniformly twisted, with average thickness 4 mm-7.5 mm (**0.16-0.3 inch**). With 37-40 curls per 0.3 m (**1 foot**). The percent opening area shall be 48-68%.

B Staples

Wire staples used to secure the netting shall be 3 mm (**11 gauge**) or heavier, steel wire, "U" shaped, and have a length of not less than 150 mm (**6 inches**), unless otherwise specified in the Contract.

3883.3 SAMPLING AND TESTING

Samples for testing shall be of such size and numbers as requested by the Engineer.

3884

Hydraulic Soil Stabilizer

3884.1

SCOPE

This specification covers soil-stabilizing materials, which are applied by hydro spreading and used for controlling erosion and establishing vegetative cover.

3884.2

REQUIREMENTS

Hydraulic soil stabilizers shall easily mix with water and shall be noncorrosive to hydraulic application equipment. They shall be nonfoaming and contain mixture enhancers to prevent foaming and mixing problems during agitation in the application equipment. Application equipment shall have both mechanical agitation and also slurry bypass.

Hydraulic soil stabilizers shall be considered safe to the applicator, adjacent workers, and the environment when properly applied according to Environmental Protection Agency (EPA) and other regulatory agencies. Material Safety Data Sheets (MSDS) shall be submitted annually to the Office of Environmental Services, Erosion Engineering Unit. The materials shall be nontoxic to plants, fish and other wildlife and shall be 100% biodegradable.

A Type 1–Natural Tackifier

Water soluble natural proteins, vegetable gums, guar gums, starch, psyllium, pitch, or rosen type blended with gelling and hardening agents, or a water soluble blend of hydrophilic polymers, viscosifiers, sticking aids and other gums. Proof of the proper application rate as indicated by the manufacturer product label for the site conditions and time of year will be required.

Guar gum based tackifiers shall consist of a minimum of 95% guar gum, by weight. The remaining 5% shall consist of dispersing and cross-link additives. Starch shall be a non-ionic, cold-water soluble (pre-gelatinized) granular cornstarch. For use needing less than three months of lasting duration. Psyllium shall be a finely ground muciloid coating of plantago seeds that is applied as a dry powder or in a wet slurry to the surface of the soil. Pitch and Rosen shall be a non-ionic pitch and rosin emulsion that has a minimum solids content of 48 percent. The rosin shall be a minimum of 26 percent of the total solids content. The soil stabilizer shall be a non-corrosive, water-dilutable emulsion that cures to water-insoluble binding and cementing agent upon application.

B Type 2–BLANK**C Type 3–BLANK****D Type 4–BLANK****E Type 5–Hydromulch**

Type 5 shall consist of wood cellulose fibers that shall contain no germination or growth inhibiting factors. It shall not contain nor be processed from sawdust or pulverized newspaper. It shall be dyed an appropriate color to allow visual metering of its application, and shall have the property of becoming dispersed and suspended when agitated in water. It shall contain 2.5 to 5.0 percent tackifier (Type1) by weight when premixed in the bag. When Type 1 is added independently to the Type 5 mulch, it shall be added at the rate of the manufacturer's recommendations. The tackifier shall be incidental to the Type 5 hydromulch material. When sprayed uniformly on the surface of the soil, the fibers shall form a blotter-like ground cover that readily absorbs water and allows infiltration to the underlying soil. Moisture content shall not exceed 15 percent at the time of delivery. When washed on an 850 µm sieve at least 50 percent shall be retained on the sieve.

F Type 6–Hydromulch blend

Type 6 shall meet the requirements of Type 5 above except that it shall be a blend of 40 to 60% recycled paper and 40 to 60% wood cellulose fibers by weight.

G Type 7–BLANK

3884.2

H Type 8–Bonded Fiber Matrix

Type 8 shall be composed of 100% wood or wood by products. A minimum of 25% of the fibers shall average 10.16 mm (**0.4 inches**) in length and 50% or more shall be retained on a Clark Fiber Classifier 24-mesh screen. Fibers shall be colored with water soluble, non-toxic dye, to aid in uniform application over the site. The material shall contain a hydrocolloid based (guar gum) binder equaling 10% or greater by volume. The crosslinker shall contain slow-release and agricultural based fertilizers or other proprietary chemicals equaling less than 2 % by volume. These binder and crosslinkers shall not dissolve or disperse upon rewetting. The moisture content of the matrix shall be 12%+/-3% by weight. The mix ratio shall be 378-473 L (**100 to 125 gallons**) water to 24 kg (**50 pounds**) material.

3884.3 SAMPLING AND TESTING

Samples for laboratory testing shall be of numbers and size requested by the Engineer. Testing for moisture content will be in accordance with ASTM D4444 and particle sieve analysis in accordance with ASTM D422. For Type 8 hydraulic soil stabilizer a field “slump-test” or equivalent shall be performed to measure product specific free water movement in one time unit. This must be demonstrated to the Mn/DOT inspector prior to placement.

3884.4 CERTIFICATION AND TRAINING

Certification of Applicator will consist of Manufacture/Vendor Training program, consisting of a minimum of 4 hours of Classroom and Field Experience. Successful completion of the certification program shall be good for 2 years from the training date. Contractors wishing to use this specification shall provide written proof annually from the Manufacture/Vendor of a list of the individuals passing the Certification within the company. The Training program shall be subject to approval by Mn/DOT.

3885

Erosion Control Blankets

3885.1 SCOPE

This Specification covers biodegradable rolled out products used for controlling erosion, aiding the establishment of vegetation, and reinforcing vegetation on slopes, ditch bottoms and shorelines. The blankets are designed to reduce erosion until the vegetation is established. Typical uses for the blanket categories are as follows:

3885.1

<u>Category</u>	<u>Service Life</u>	<u>Use</u>
00	6-8 weeks	Flat areas, mowed areas
0	6-8 weeks	Flat areas, mowed areas
1	6-8 weeks	Flat areas, shoulder drain outlets, roadway shoulders, and lawns.
2	One Season	Slopes 1v:3h to 1v:2h less than 15 m (50 feet) long, ditches with gradients of 2 percent or less, flow velocities less than 1.0 m/second (3.5 feet/sec.).
3	One Season	Slopes 1v:3h to 1v:2h more than 15 m (50 feet) long, ditches with gradients of 3 percent or less, flow velocities less than 1.4 m/second (4.5 feet/sec.), flow depth 50 mm (2 inches) or less.
4	Semi-permanent	Slopes 1v:2h and steeper, ditches with gradients of 4 percent or less, flow velocities less than 1.7 m/sec. (5.5 feet/sec.), flow depth 75 mm (3 inches) or less.
5	Semi-permanent	Ditch bottoms with gradients of 5 percent and less, flow velocities less than 1.8 m/sec. (6 feet/sec.), and under 100 mm (4 inches) flow depth, water course banks within the normal flow elevation.
6	Permanent	Ditch bottoms with gradients of 6 percent and less, flow velocities less than 2 m/sec. (6.5 feet/sec.), and under 150 mm (6 inches) flow depth.
7	Permanent	Ditch bottoms with gradients of 7 percent and less, flow velocities less than 2.1 m/sec. (7 feet/sec.), and under 150 mm (6 inches) flow depth.

3885.2

3885.2 REQUIREMENTS

A Acceptable Types

Acceptable types of blankets allowed in the various categories shall be as follows:

<u>Category</u>	<u>Acceptable Types</u>
00	Wood Cellulose 1S, NT, RD
0	Wood Fiber 0S, RD
1	Straw RD 1S, or Wood Fiber RD 1S
2	Straw 1S, or Wood Fiber 1S
3	Straw 2S, or Wood Fiber 2S
4	Straw/Coconut 2S, or Wood Fiber HV 2S
5	Straw/Coconut 2S
6	Straw/Coconut 3S, or Wood Fiber 3S
7	Coconut 3S, or Wood Fiber 3S

The lettering designation shall be defined as follows:

0S-	No netting, stitching only
1S -	Netting on one side
2S -	Netting on two sides
3S-	More than 2 nettings forming a three dimensional matrix
RD -	Rapidly degradable netting and stitching
NT-	No thread/stitching
HV -	High velocity

B Physical Requirements

For Categories 1 through 5, the netting and stitching shall be composed of materials that have the same life expectancy. Blankets shall conform to the general requirements listed below and to their respective table requirements. Categories 00, 0, and 1 shall conform to Table 3885-1 Categories 2, 3, 4, and 5 shall conform to Table 3885-2. Categories 6 and 7 shall conform to Table 3885-3.

**TABLE 3885-1
RAPID DEGRADABLE BLANKET CRITERIA**

	Category 00	Category 0	Category 1	
	Wood Cellulose Fiber 1S, NT, RD	Wood Fiber 0S, RD	Straw 1S, RD	Wood Fiber 1S, RD
Min. weight per m ² (yd ²)	0.20 kg (0.38 lb.)	0.4 kg (0.73 lb.)	0.27 kg (½ lb.)	0.35 kg (0.64 lb.)
Fiber Length. 80% must be greater than	12.7 mm (½ in.)	150 mm (6 in.)	75 mm (3 in.)	150 mm (6 in.)
Material	100% Wood Cellulose	100% Excelsior Fibers	100% Straw Cuttings	100% Excelsior Fibers
Netting & Stitching Service Life	6-8 weeks (No stitching)	6-8 weeks (No netting)	1-3 Months	1-3 Months
Netting & Stitching Material	Rapid Photodegradable Polypropylene	Rapid Photodegradable Polypropylene	Rapid Photodegradable Polypropylene	Rapid Photodegradabl e Polypropylene
Netting Opening, Min.	13 x 13 mm (½ x ½ in.)	--	13 x 13 mm (½ x ½ in.)	19 x 19 mm (¾ x ¾ in.)
Min. Netting Weight per 836 m ² (1000 Sq. Yd)	8 kg (17.7 lb.)	--	8 kg (17.7 lb.)	8 kg (17.7 lb.)

3885.2

**TABLE 3885-2
STANDARD BLANKET CRITERIA**

	Category 2		Category 3		Category 4		Category 5
	Straw 1S	Wood Fiber 1S	Straw 2S	Wood Fiber 2S	Straw-Coconut 2S	Wood Fiber HV 2S	Coconut-Straw 2S
Min. weight per m ² (yd ²)	0.27 kg (½ lb.)	0.35 kg (0.64 lb.)	0.27 kg (½ lb.)	0.35 kg (0.64 lb.)	0.27 kg (½ lb.)	0.72 kg (1.33 lb.)	0.27 kg (½ lb.)
Fiber Length. 80% must be greater than	75 mm (3 in.)	150 mm (6 in.)	75 mm (3 in.)	150 mm (6 in.)	75 mm (3 in.)	150 mm (6 in.)	75 mm (3 in.)
Material	100% Straw Cuttings	100% Excelsior Fibers	100% Straw Cuttings	100% Excelsior Fibers	Straw 70% plus Coconut Fibers 30%	100% Excelsior Fibers	Straw 30% plus Coconut Fibers 70%
Netting & Stitching Backing Service Life	6-9 months	6-9 Months	6-9 Months	6-9 Months	24-36 Months	24-36 Months	24-36 Months
Netting and Stitching Material ¹	Polypropylene or Natural	Polypropylene or Natural	Polypropylene or Natural	Polypropylene or Natural	Polypropylene or Natural	Black UV Stabilized Polypropylene	Black UV Stabilized Polypropylene
Netting Opening, Min.	13 x 13 mm (½ x ½ in.)	19 x 19 mm (¾ x ¾ in.)	13 x 13 mm (½ x ½ in.)	19 x 19 mm (¾ x ¾ in.)	13 x 13 mm (½ x ½ in.)	19 x 19 mm (¾ x ¾ in.)	15 x 15 mm (0.6 x 0.6 in.)
Netting Weight per 836 m ² (1000 sq. yd) Min. Top	--	8 kg (17.7 lb.)	8 kg (17.7 lb.)	8 kg (17.7 lb.)	15 kg (33.1 lb.)	15 kg (33.1 lb.)	15 kg (33.1 lb.)
Netting Weight per 836 m ² (1000 Sq. Yd.) Min. Bottom	8 kg (17.7 lb.)	--	8 kg (17.7 lb.)	8 kg (17.7 lb.)	15 kg (33.1 lb.)	15 kg (33.1 lb.)	15 kg (33.1 lb.)

¹Natural fibers required for netting and stitching required when "All natural netting and stitching" is specified in the Plan.

**TABLE 3885-3
PERMANENT BLANKET CRITERIA**

	Category 6		Category 7	
	Straw-Coconut 3S	Wood Fiber 3S	Coconut 3S	Wood Fiber 3S
Min. weight per m ² (yd ²)	0.35 kg (0.64 lb.)	0.66 kg (1.21 lb.)	0.48 kg (0.88 lb.)	0.95 kg (1.76 lb.)
Fiber Length. 80% must be greater than	75 mm (3 inches)	150 mm (6 inch)	75 mm (3 inches)	150 mm (6 inches)
Material	70% Straw and 30% Coconut Fibers	100% Excelsior Fibers	100% Coconut Fibers	100% Excelsior Fibers
Netting & Stitching Service Life	Longer than 36 months	Longer than 36 months	Longer than 36 months	Longer than 36 months
Netting & Stitching Material	Black UV Stabilized Polypropylene	Black UV Stabilized Polypropylene	Black UV Stabilized Polypropylene	Black UV Stabilized Polypropylene

B-1 Material Fiber

Each erosion control blanket shall consist of a uniform web of interlocking fibers. The blanket shall be of uniform thickness with the material fibers being evenly distributed over the entire area of the blanket. The blankets shall have sufficient porosity to shield the underlying soil surface from erosion and promote plant growth. All blankets shall be smolder resistant.

B-2 Netting

For Category 00 blankets, the netting shall start to break down within 6 weeks. For Category 1 blankets, the netting shall start to break down after 1 month with 80 percent breakdown occurring within 3 months. For Category 2 and 3 blankets, the netting shall contain sufficient UV stabilization for breakdown to occur within a normal growing season. For Category 4 and 5 blankets, the netting shall be UV stabilized to provide a service life of 2 to 3 years. For blankets designated as 2S, the fiber material shall be contained between an attached top and a bottom layer of netting.

All layers of netting or net-like material forming the 3-dimensional matrix of Category 6 and 7 blankets shall be UV stabilized to provide for permanent netting and vegetation reinforcement. The 3-dimensional matrix shall provide a minimum NRCS Vegetation Class E retardance and sediment trapping troughs.

3885.2

B-3 Stitching

The material fiber in each blanket, except Category 00, shall be securely attached with stitching to the netting to prevent movement of the fiber in relation to the netting. For blankets consisting of 75 mm (**3 inch**) material fibers, the blanket shall be fastened together at a spacing not to exceed 50 mm (**2 inches**). For blankets consisting of 150 mm (**6 inch**) material fibers, the blanket shall be fastened together at a spacing not to exceed 100 mm (**4 inches**).

B-4 Anchors

Anchors for each category blanket shall be as defined in Table 3885-4.

**TABLE 3885-4
ANCHOR SPECIFICATION**

Blanket Category	Material	Type	Min. Bearing Width	Length
00 & 0	Biodegradable	Hook shaped stake	9.5 mm (0.375 in.) diameter	125 mm (5 inch)
1 & 2	Steel Wire	11 Gauge	25 mm (1 inch)	100 mm (4 inch)
3 & 4	Steel Wire	11 Gauge	25 mm (1 inch)	150 mm (6 inch)
5, 6, & 7	Steel Wire	11 Gauge	25 mm (1 inch)	200 mm (8 inch)

3885.3 SAMPLING AND TESTING

Approved products for this specification are on file on the Mn/DOT web page under the Materials Engineering Section.