

**NATURAL RESOURCES CONSERVATION SERVICE  
CONSERVATION PRACTICE STANDARD**

**MULCHING**

(acre)  
CODE 484

**DEFINITION**

Applying plant residues or other suitable materials not produced on the site to the soil surface.

**PURPOSE**

To conserve moisture; prevent surface compaction or crusting; reduce runoff and erosion; control weeds; and help establish plant cover.

**CONDITIONS WHERE PRACTICE APPLIES**

On soils subject to erosion on which low-residue-producing crops, such as grapes and small fruits, are grown; on critical areas; and on soils that have a low infiltration rate.

**CRITERIA**

If necessary, temporary or permanent (structural) erosion control measures shall be installed within or adjacent to the area to be mulched.

The site shall be graded and smoothed to a workable condition where equipment is used to traverse the site to be mulched.

Provide adequate drainage where internal water movement, especially at the toe of slopes, may cause seeps or soil slippage.

Where mulching is done in conjunction with vegetative establishment, perform all cultural practices on the contour where practical and provide seedbed preparation, liming, and

fertilizer according to the Critical Area Planting (342) Standard and Specifications.

Mulch materials, rates of application, and anchoring methods can be found in Tables 1 and 2. Mulching materials must be able to withstand wind, rainfall, and runoff until the site is stabilized by permanent vegetation. For approved commercial mulches or netting's not listed in tables, follow the manufacturer's recommendations for application.

In concentrated flow channels, mulching material shall be blankets or netted. It shall be held in place with stakes or staples.

**CONSIDERATIONS**

Consider soils, slopes, and adjacent drainageways or surface waters when selecting mulch materials.

Consider the germination time and growth rate of the seeding or plant protected by mulch. Seeded cover should be fully established before mulch has decomposed. Choose a mulch to meet the conditions.

Consider potential weed problems that may result if mulch is made up of residues that may contain viable seed.

Consider cost and availability of the material being recommended as a mulch.

**PLANS AND SPECIFICATIONS**

Plans and specifications for mulching shall be in keeping with this standard and shall describe

Conservation practice standards are reviewed periodically, and updated if needed. To obtain the current version of this standard, contact the Natural Resources Conservation Service. New Hampshire supplement is underlined.

the requirements for properly installing the practice to achieve its intended purposes.

### **OPERATION AND MAINTENANCE**

Check periodically to ensure proper mulch coverage. Replenish mulch if needed to protect soil until seeding is established. This is

especially critical in concentrated flow channels.

Remove bales, and/or other anchoring devices, from temporary locations after permanent vegetation is established.

**Table 1**

<b>Guide to Mulch Materials, Rates and Uses</b>					
<b>Mulch Materials</b>	<b>Quality Standards</b>	<b>Application Rates</b>		Depth of Application	<b>Remarks</b>
		<b>Per 1000 sq. ft.</b>	<b>Per Acre</b>		
Hay or Straw	Air-dried; free of undesirable seeds and coarse materials	80 – 100 lbs. 2-3 bales	1.7 – 2 tons 100-120 bales	Cover about 80% of surface	Use straw where mulch is maintained for more than 3 months. Subject to wind blowing unless anchored. This is the most commonly used mulching material. Best micro environment for germinating seeds.
Cornstalks, shredded or chopped	Air-dried, shredded into 8" to 12" lengths	150 – 300 lbs.	4 – 6 tons	-----	Effective for erosion control. Relatively slow to decompose. Excellent for mulch on crop fields. Resistant to wind blowing.
Wood chips or shavings	Green or air-dried. Free from objectionable coarse materials.	500 – 900 lbs.	6 tons	2" – 7"	Has about the same use and application as sawdust, but requires less N/ton (10-12 lb). Resistant to wind blowing. Decomposes slowly.
Wood Fiber Cellulose (Partly digested wood fibers)	Dyed green. No growth inhibiting factors. Air-dried 30% fibers 3.7 mm or longer.	25 – 30 lbs.	1000 – 1500 lbs.	-----	When applied for erosion control on critical areas double application rate. Apply with hydroseeder. No tie-down required. Packaged in 100 lb. bags. Use only on short, low-gradient slopes and during optimum seeding dates. Curosol or equiv. May be needed to hold mulch on site.
Grass clippings	Unbagged, free of debris; minimal odor	700 – 1400 lbs.	15 – 30 tons	1" – 2"	Must be spread within 24 hours of delivery. Incorporate with next tillage season for crop establishment.

NRCS, NHFOTG

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Table 1 Continued

## Guide to Mulch Materials, Rates and Uses

Mulch Materials	Quality Standards	Application Rates		Depth of Application	Remarks
		Per 1000 sq. ft.	Per Acre		
Leaves	No plastic bags, or household debris.	375 – 700 lbs.	8 – 15 tons	3" – 6"	Must be spread within 7 days of delivery. Must be incorporated prior to next growing season. Distribution should be even.
Gravel or Crushed Stone	Washed; Size ¾" to 1½"	9 cu. yds.	-----	3"	Excellent mulch for short slopes and around woody plants and ornamentals. Frequently used over black plastic for better weed control.
Peat Moss	Dried, compressed free of coarse material	200 – 400 cu. ft.	½ - 1 ton	2" – 4"	Most effective as a mulch around ornamentals. Subject to wind blowing unless kept wet. 1 lb. Bales (6 cu. ft.). Excellent moisture holding capacity.
Jute Twisted Yarn	Undyed, unbleached plain. Weave Warp 78 ends/yd 60-90 lbs/roll	48" x 50 yds. or 48" x 75 yds.	-----	-----	Use without additional mulch. Tie down as in manufacturing specification.
Excelsior Wood Fiber Mats	Interlocking web of excelsior fibers with photodegradable plastic netting.	48" x 100" 2-sided plastic 48" x 180" 1-sided plastic	-----	-----	Use without additional mulch. Excellent for seed establishment. Tie down as per manufacturer specifications. Approx. 72 lbs/roll for excelsior with plastic on both sides. Use two sided plastic for centerline of waterways.
Plastic	2 – 4 mills	Variable	-----	-----	Use black for weed control. Effective moisture conservation and weed control for small fruits and ornamentals.

Table 1 Continued

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Mulch Materials	Quality Standards	Application Rates		Depth of Application	Remarks
		Per 1000 sq. ft.	Per Acre		
Filter Fabrics	Woven or Spun	Variable	-----	-----	Primarily used as an underlayment.
Straw or coconut fiber or combination	Photodegradable plastic net on one or two sides.	Most are 6.5' x 83.5 ft.	81 rolls	-----	Designed to tolerate higher velocity flows in centerlines of waterways. 60 sq. yds./roll.
Glass Fiber	¼" thick, 7/16" diameter holes on 1" centers; 56 lb. Rolls	72" x 30 yds.	-----	-----	Use without additional mulch. Tie down with T bars as per manufacturer's specifications.

**Table 2**

<b>Mulch Anchoring Guide Specification Sheet</b>		
<b>Anchoring Method or Material</b>	<b>Kind of Mulch to be Anchored</b>	<b>How to Apply</b>
<b>Manual</b>		
1. Peg or twine	Hay or Straw	After mulching, divide areas into blocks approx. 1 sq. yd. Drive 4 – 6 pegs per block to within 2” to 3” of soil surface. Secure mulch to surface by stretching twine between pegs in criss-cross pattern on each block. Secure twine around each peg with 2 or more turns. Drive pegs flush with soil where mowing and maintenance is planned.
2. Mulch netting	Hay or Straw	Staple the light-weight paper, jute, wood fiber, or plastic nettings to soil surface according to manufacturer's recommendations. Should be biodegradable. Most products are not suitable for foot traffic.
3. Soil and Stones	Plastic	Plow a single furrow along edge of area to be covered with plastic. Fold about 6” of plastic into the furrow and plow slice back over plastic. Use stones to hold plastic down in other places as needed.
4. Cut-in	Hay or straw	Cut mulch into soil surface with square edged spade. Make cuts in contour rows spaced 18” apart. Most successful on contour in sandy soils.
<b>Mechanical</b>		
1. Wood cellulose fiber	Hay or Straw	Apply with hydroseeder immediately after mulching. Use 750 lbs. Wood fiber per acre. Some products contain an adhesive material.
2. Mulch anchoring tool or disk	Hay or straw, manure/mostly straw	Set in straight position and pull across slope with suitable power equipment. Mulch material should be “tucked” into soil surface about 3”.
3. Chemical	Hay or straw	Apply Terra Tack AR 120 lbs/ac in 480 gal. of water or Aerospray 70 (60 gal/ac) according to manufacturer's instructions. Avoid application during rain. A 24 hour curing period and a soil temperature higher than 45 degrees are required.

Table 2 Continued

## Mulch Anchoring Guide Specification Sheet

Anchoring Method or Material	Kind of Mulch to be Anchored	How to Apply
4. Asphalt Spray Emulsion	Compost, wood chips, wood shaving, hay or straw	Apply with suitable spray equipment using the following rates: Asphalt emulsion: on slopes use 200 gal/ac; on level, use 150 gal/ac; Liquid asphalt: (rapid, medium, or slow setting) 0.10 gals/sq. yd.; 400 gal/ac.
5. Pick chain	Hay or straw, manure, compost	Use on slopes steeper than 3:1. Pull across slopes with suitable power equipment.