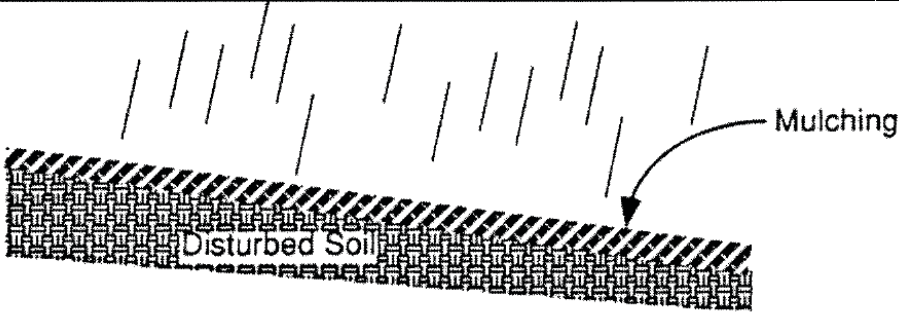



<h1>Mulching</h1> 	<h3>Applications</h3> <ul style="list-style-type: none"> Perimeter Control <input checked="" type="checkbox"/> Slope Protection Sediment Trapping Channel Protection <input checked="" type="checkbox"/> Temporary Stabilization Permanent Stabilization Waste Management Housekeeping Practices
<p>DESCRIPTION Mulching is the application of a layer of chopped straw, hay, chipped site vegetation, or other material, which is spread uniformly over barren areas to reduce the effects of erosion from rainfall. Types of mulch include organic materials (e.g. compost mixtures), straw, wood chips, bark, or other fibers. Another form of mulch, which has been commercialized, uses straw or other material with organic and inorganic binding systems which are typically sprayed over the control area. Some of these products may be very effective on steeper slopes where there is no vehicular or foot traffic to disrupt the application until vegetation is established. Mulch should not contain chipped manufactured boards or chemically treated wood such as particleboard, railroad ties or similar treated wood. Hay should not be used as a replacement for straw unless it can be determined that it is weed and seed free.</p> <p>PRIMARY USE Mulch is used to temporarily and/or permanently stabilize bare or freshly seeded areas. It protects the soil from erosion and moisture loss by lessening the effects of wind, water, and sunlight. It also decreases the velocity of sheet flow, thereby reducing the volume of sediment-laden water flow leaving the mulched area.</p> <p>APPLICATIONS Mulch may be used on most construction-related disturbed area for surface protection including:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Freshly seeded or planted areas, <input type="checkbox"/> Areas at risk due to the time period being unsuitable for growing vegetation, <input type="checkbox"/> Areas that are not conducive to seeding or planting. <input type="checkbox"/> Steep slopes (e.g. >3H:1V), provided the mulch is anchored to the soil by use of a combination of tackifiers and netting, or crimping. <p>DESIGN CRITERIA Mulch may be used by itself or in combination with netting or other anchors to promote soil stabilization.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Choice of mulch depends largely on slope, climate, and soil type in addition to availability of materials. <input type="checkbox"/> Mulch should be applied in an even and uniform manner where concentrated water flow is negligible. <input type="checkbox"/> The application of straw mulch should be approximately 2 tons dry straw per acre spread uniformly across the area. Other forms of mulch, such as wood chips or chopped site vegetation, should be placed in thicknesses of two-inches or greater over the area. 	<p>Targeted Constituents</p> <ul style="list-style-type: none"> ● Sediment ○ Nutrients Toxic Materials ○ Oil & Grease ○ Floatable Materials ○ Other Construction Wastes <p>Implementation Requirements</p> <ul style="list-style-type: none"> ● Capital Costs ● Maintenance ○ Training ○ Suitability for Slopes > 5% <p>Legend</p> <ul style="list-style-type: none"> ● Significant Impact ● Medium Impact ○ Low Impact ? Unknown or Questionable Impact <p style="text-align: center;">Fe=0.90</p> <p style="text-align: center;">E-5</p> <div style="text-align: center;">  <p>North Central Texas Council of Governments</p> </div>

Mulching

- Straw mulch should be anchored by application of a fiber mulch binder, by the application of a synthetic liquid mulch binder, by using a tractor-drawn crimper to punch into the soil, or by placing a netting above the mulch stapled to the ground, as required.
- Mulch hydraulically applied with tackifiers and binding agents is commercially available as a bonded fiber matrix (BFM) which may be particularly effective on slopes steeper than 2.5:1.
- Wood chips are suitable for areas that will not require mowing frequently and are heavy enough that they do not require anchoring. They do, however, deplete nitrogen from the soil, which is a necessary nutrient for all plants. To alleviate this condition, wood chips must be treated with 12 pounds of ammonium nitrate per ton of mulch used.
- Bark chips are popular for ornamental applications, as they do not require anchoring, do not decompose very rapidly, and serve as an excellent insulation material. When using bark chips, it is not necessary to treat for nitrogen deficiency or to fertilize.
- Compost and wood mulch mixtures should be a blend of 50% untreated wood mulch with 50% compost measured by volume. Wood mulch should be less than or equal to 5 in. in length with 95% passing a 2-in. screen and less than 30% passing a 1-in. screen. The compost shall meet the Physical Requirements specified in Table 1 of TxDOT Special Specification 1058, Compost, which can be found in Appendix F.
- Prior to the placement of any mulch, the area to be protected must be graded in accordance with plans.
- Fertilization and soil treatment should then be done prior to placement of mulch with the exceptions of when seed is to be applied by means of hydro-seed or when seed is distributed following straw mulch spreading during winter months.
- Organic mulches may be distributed by hand or by mechanical means, but to be effective a complete covering is required.
- Refer to the table on the following page for additional guidance.

LIMITATIONS

Mulches are subject to removal by wind or water under severe climatic conditions.

Mulches lower the soil temperature, which may result in longer seed germination periods.

Mulch should not be applied within the ordinary high-water mark of surface waters, as it can be a potential floatation material.

MAINTENANCE REQUIREMENTS

Mulched areas should be inspected regularly (at least as often as required by the TPDES Construction General Permit, Appendix A) for thin or bare spots caused by natural decomposition or weather related events. Mulch in high traffic areas should be replaced on a regular basis to maintain uniform protection. Excess mulch should be brought to the site and stockpiled for use during the maintenance period to dress problem spots.

SPECIFICATION

Specifications for construction of this item may be found in the Standard Specifications for Public Works Construction – North Central Texas Council of Governments, Section 201.17 Mulching.

Mulching

Mulch Standards and Guidelines			
Mulch Material	Quality Standards	Application Rates	Remarks
Straw	Air-dried, free from undesirable seed and from coarse material.	2"-3" thick, Approx 2 tons per acre.	Cost-effective when applied with adequate thickness. Hay can be used if weed and seed free. In windy areas and on steep slopes, straw must be held in place by crimping, using a tackifier, or covering with netting.
Chipped Site Vegetation	Should include gradation from fine to coarse to promote interlocking properties. Maximum size 6 inches in length.	2" minimum thickness over area; approx. 10 tons per acre.	Cost-effective manner of disposing of vegetative debris from site. Do not place in areas subject to flooding. Decomposition of chipped vegetation competes with nutrients important to subsequent grass establishment. Mulch must be free of waste materials such as plastic bag, metal debris, etc.
Wood Mulch and Compost Mixture	Compost shall meet the Physical Requirements (Table 1) of Appendix F.	2" minimum thickness over area; approx. 10 tons per acre.	Special caution is advised regarding the source and composition of wood mulches. Determine whether the preparation include weed seed control. Wood mulches are an excellent soil amendment, ultimately improving the organic content of the soil.
Hydromulch	No growth inhibiting factors.	Approx 25-30 lbs per 1000 sf or 1500-2000 lbs per acre.	Apply with a hydromulcher. Fibers should be kept to less than 3/4 inch to prevent clogging equipment. Best used in conjunction with seed at time of application.
Bonded Fiber Matrix	Hydraulically applied mulch with tackifiers and binding agents.	Follow the manufacturer's recommendations. (typically 3000 lbs per acre or greater).	Bonded fiber matrix may be particularly effective on slopes steeper than 2.5:1.