



## DWR – NPDES-SOP – G – 16 –Erosion Prevention and Sediment Control Handbook – 01092026

### Erosion Prevention and Sediment Control Handbook

#### 4.2.6.2 Compost Blanket



Source: Full Circle Mushroom Compost

#### **Definition and Purpose**

A compost blanket is a layer of composted organic material applied to disturbed soils on construction sites to prevent erosion, improve soil stability, and support vegetation growth. Acting as a natural mulch, a compost blanket protects the soil by minimizing raindrop impact, retaining moisture, promoting infiltration, and regulating temperature, which enhances plant establishment. Made from materials like yard trimmings, food scraps, and biosolids, it also improves soil health by boosting microbial activity, aeration, and nutrient availability (USEPA, 2012).

#### **Appropriate Applications**

Compost blankets can be applied over any exposed or bare soil area. Their ability to be applied directly to the soil surface makes them especially useful for difficult terrain and projects where immediate stabilization is needed, such as those occurring late in the growing season or in areas with nutrient deficient soils. They remain effective over poor soils, rocky terrains, and steep slopes, where other measures become less effective. Compost blankets can be a temporary or permanent measure. When applied as a permanent measure, incorporating seed mixes to the compost is encouraged to promote vegetation growth (VDEQ, 2024). As a temporary measure, cover or nurse crops may be included to the blanket (NCDEQ, 2013).



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#### **Limitations and Maintenance**

Compost blankets should not be used in areas where nearby waterbodies have high nutrient levels, as compost blankets could contribute more to associated high nutrient impairment (NCDEQ, 2013). Additionally, compost blankets are not suitable in locations with concentrated or channelized flows unless paired with additional erosion control or runoff control measures. Also, they should not be exposed to vehicle traffic (VDEQ, 2024). On steep slopes, additional stabilization methods such as netting or confinement systems may be necessary to prevent displacement (USEPA, 2012). Regular inspections are essential, particularly after heavy rainfall, to identify any damage or areas where vegetation has failed to establish. If sections of the blanket are disturbed, they should be repaired by reapplying compost and seed to restore coverage. In cases where runoff continues to compromise the integrity of the blanket, implementing additional measures may be required to ensure long-term effectiveness.

#### **Planning and Design Considerations**

Compost is an organic material created through a controlled biological decomposition process that occurs under aerobic conditions that provides various biological, chemical, and physical benefits for plants and the surrounding soil (USEPA, 2012). Only compost products that meet all federal regulations are permitted for use. Therefore, products certified by the United States Composting Council's Seal of Testing Program are recommended ([www.compostingcouncil.org](http://www.compostingcouncil.org)). These products are regularly analyzed using specified test methods, provide product standards, and are easily comparable to one another (NCDEQ, 2013). While Tennessee does not impose state DOT standards, the neighboring states of North Carolina and Virginia do; Table 4.2.6.2-A provides a summary of the required chemical, physical, and biological compost specifications from these states and provide guidance on compost product specifications that are likely to function adequately in a similar climate.



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Table 4.2.6.2-A: Physical, chemical, and biological specifications of compost materials for use in North Carolina and Virginia. Sources: NCDEQ (2013), USSC, and VDEQ (2024).

Parameter	Test Method (USCC)	Unit of Measurement	State	Acceptable Range	
				Vegetated	Unvegetated
pH	TMECC 04.11-A	pH units	NC	5.0 - 8.5	NA
			VA	6.0 - 8.5	NA
Soluble Salt Concentration	TMECC 04.10-A	dS/m	NC	< 5	< 5
			VA	< 5	NA
Moisture Content	TMECC 03.09-A	% wet weight basis	NC	30 - 60	30 - 60
			VA	30 - 60	30 - 60
Organic Matter Content	TMECC 05.07-A	% dry weight basis	NC	25 - 65	25 - 100
			VA	25 - 65	25 - 100
Stability	TMECC 05.08-B	mg CO <sub>2</sub> -C per g OM per day	NC	< 8	NA
			VA	< 4	< 4
Maturity	TMECC 05.05-A	% seed emergence	NC	100%	90 - 100%
			VA	> 80	NA
Physical Contaminants	Biological Assays	% dry weight basis	NC	< 1	< 1
			VA	< 0.25	< 0.25
Particle Size	TMECC 02.12-B	screen size to pass through	NC	Max – 6 inch 3 inch: 99%	
			VA	1 inch: 90-100% 0.75 inch: 65-100% 0.25 inch: 0-75%	

The following guidelines help ensure proper compost blanket installation (NCDEQ, 2013; VDEQ, 2024):

1. Prepare the soil by removing any large obstructions such as trash, dirt clumps, rocks, roots and anything else that may hinder direct contact of the compost blanket and soil;
2. Apply the blanket to the soil uniformly, following application rates in Table 4.2.6.2-B and as specified in the plans. Rates should be based on site specific characteristics (soils, existing/native vegetation and seedlings) as well as climate. The blanket should be applied over the entirety of the sloped area such that no native soil is visible. Ideally, mix seed thoroughly with the compost blanket or if needed, apply the blanket



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- at time of seed application. Compost blankets can be applied by hand, bulldozer, skid steer, manure spreader, or pneumatic blower (most cost effective on steep slopes);
3. Install the blanket at least 10 feet extend beyond the top of the slope. Entrench the ending into existing vegetation or soil to ensure runoff does not undercut the blanket; and
  4. Blankets installed on slopes greater than or equal to 4H:1V shall be tracked while blankets on slopes 3H:1V shall be stabilized with adequate erosion controlled products. If the slope is 2H:1V or steeper, apply soil stabilization blankets or matting over the compost blanket. Supplement the blanket with filter socks (Section 4.4.9) across the slope to reduce the runoff velocity. Compost berms may be placed at the top of the slope to diffuse concentrated runoff before it reaches the compost blanket.

Table 4.2.6.2-B: Application rates of compost blankets based on local climate. Source: NCDEQ (2013).

Annual Rainfall and Flow Rates	Total Precipitation (in) and Rainfall Erosivity Index	Application Rate (in) for <i>Vegetated</i> Compost Blankets	Application Rate (in) for <i>Unvegetated</i> Compost Blankets
Low	1-2; 20-90	1-1.5	1-1.5
Average	26-50; 91-200	1-1.5	1.5-2
High	>51, >201	1-2	2-4

Note: Application rates on the lower end of the acceptable ranges should only be used in conjunction with seeding and for compost blankets applied during the prescribed planting season for the local region.

#### Example Application

No formal design or quantities are required for this measure and therefore are not presented here.

#### References

Full Circle Mushroom Compost. *Compost Blanket*.  
<https://www.fullcirclemushroomcompost.com/projects/mushroom-compost-blanket-pa/>.

NCDEQ. (2013). *Erosion and Sediment Control Planning and Design Manual*.

USCC. Compost – Erosion Control Uses: Compost Blanket Class Specific Guide. Retrieved from: <https://www.compostingcouncil.org/>.

USEPA. (2012). *Stormwater Best Management Practices: Compost Blankets*.

VDEQ. (2024). *Virginia Stormwater Management Handbook*.