COMPOSTED WOOD MULCH SPECIFICATION FOR STORMWATER BIOTREATMENT AREAS

Overview: This specification for composted wood-based mulch was developed for use in engineered stormwater biotreatment areas. The specification provides for a consistent mulch product that enhances water quality; improves water retention and plant health; has been treated to reduce any potential pathogens, insects or invasive weed seeds; and has reduced floating and migration potential. There are three parts of the specification: feedstocks, processing and testing.

A. Feedstocks: This mulch shall be derived from plant debris with at least 90% consisting of clean (minimal trash) woody vegetation such as "Arbor Mulch" (i.e., tree trunks, branches, stumps, and brush). Up to 10% by volume may be derived from other clean source-separated feed stocks, such food scraps, and/or other woody materials, such as clean uncoated lumber.[1]

B. Processing: These feedstock materials shall be: 1) composted; 2) meet the PFRP (Process to Further Reduce Pathogens) standard to reduce weed seeds, pathogens, and deleterious materials under 14 CA Code of Regs §17868.3 (i.e., reaching the required minimum temperature of 55 degrees Celsius for the required length of time[2]); and 3) screened to meet the specifications in Table 1 below[3]. No dyes or gorilla hair (fiber mulch) shall be used in the finished mulch product.

C. Testing and laboratory-related requirements: All testing of the mulch product shall be completed within 120 days prior to delivery to the site by an STA Program-approved laboratory[4]. A 3- to 4-gallon sample of the mulch product shall be submitted to the laboratory for testing, to provide enough fines from the product to complete the specific testing procedures.

Table 1: Specifications for Composted Wood Mulch for Stormwater Biotreatment Areas

Property	Test Method/Units[5]		Requirement	
1. pH	TMECC 04.11-A	Elastomeric pH 1:5 slurry method (pH units)	6.0 – 8.5	
2. Soluble salts	TMECC 04.10-A	Electrical conductivity 1:5 slurry method (dS/m or mmhos/cm)	≤ 6.0	
3. Moisture Content	TMECC 03/09-A	Total solids & moisture at 70±5 °C (% wet weight basis)	30-55%	
4. Organic matter content	TMECC 05.07-A	Loss-on-ignition organic matter method (% dry weight basis)	≥ 65	
5. Maturity	TMECC 05.05-A	Germination and vigor (% relative to positive control)	--	
		Seed emergence	≥ 80	
		Seedling vigor	≥ 80	
6. Stability	TMECC 05.08-B	Carbon dioxide evolution rate (mg CO_2-C/g OM per day)	≤ 5	
7. Pathogen	TMECC 07.01-B	Salmonella (MPN per 4 grams, dry weight basis)	< 3	
8. Pathogen	TMECC 07.01-B	Fecal coliform bacteria (MPN per gram, dry weight basis)	< 1,000	
9. Physical contaminants	TMECC 02.02-C	Human-made inert removal and classification: plastic, glass, and metal (% > 4 mm fraction)	combined total: < 0.5%	
10. Physical contaminants	TMECC 02.02-C	Film plastic: (% > 4 mm fraction)	< 0.1%	
11. Sizing	TMECC 02.02-B	Sample sieving for aggregate size classification (% dry weight basis)	**Min**	**Max**
		Pass 3-inch sieve	100%	--
		Pass 2-inch sieve	90%	--
		Pass 3/8-inch sieve	20%	40%

[1] Unacceptable feedstocks: dyed mulches, plywood, laminated wood products, glued laminated timber (Glulam), oriented strand board (OSB), painted wood, stained wood, pressure-treated wood or other treated wood waste (TWW), or any other manufactured wood products with non-wood ingredients, such as adhesives, or wood treated with chemicals of any kind. Metal concentrations in compost must not exceed the maximum listed in 14 CA Code of Regs §17868.2.

[2] https://govt.westlaw.com/calregs (§17868.3. Pathogen Reduction)

[3] Based on the Caltrans specification for "Coarse Compost" with modifications for use in biotreatment systems.

[4] List of approved testing laboratories: www.compostingcouncil.org/page/CertifiedLabs

[5] TMECC refers to "Test Methods for the Examination of Composting and Compost," published by the United States Department of Agriculture and the United States Compost Council (USCC).