

ITEM 161
COMPOST

161.1. Description. Furnish and place compost as shown on the plans.

161.2. Materials. Furnish compost that has been produced by aerobic (biological) decomposition of organic matter and meets the requirements of Table 1. Compost feedstock may include, but is not limited to, leaves and yard trimmings, biosolids, food scraps, food-processing residuals, manure or other agricultural residuals, forest residues, bark, and paper. Ensure compost and wood chips do not contain any visible refuse, other physical contaminants, or any substance considered harmful to plant growth. Do not use materials that have been treated with chemical preservatives as a compost feedstock or as wood chips. Do not use mixed municipal solid waste compost. Provide compost meeting all applicable 40 CFR 503 standards for Class A biosolids and TCEQ health and safety regulations as defined in the TAC, Chapter 332, including the time and temperature standards in Subchapter B, Part 23. Meet the requirements of the United States Composting Council (USCC) Seal of Testing Assurance (STA) program.

Before delivery of the compost, provide quality control (QC) documentation that includes the following:

- the feedstock by percentage in the final compost product,
- a statement that the compost meets federal and state health and safety regulations,
- a statement that the composting process has met time and temperature requirements,
- a copy of the producer's STA certification, and
- a copy of the lab analysis, performed by an STA-certified lab, verifying that the compost meets the requirements of Table 1.

When furnishing biosolids compost, also provide a copy of the current TCEQ compliance statement signed by the facility manager.

**Table 1
Physical Requirements for Compost**

Property	Test Method	Requirement
Particle Size	TMECC ¹ 02.02-B, "Sample Sieving for Aggregate Size Classification"	95% passing 5/8 in. 70% passing 3/8 in.
Heavy Metals Content	TMECC 04.06, "Heavy Metals and Hazardous Elements": 04.06-As, Arsenic 04.06-Cd, Cadmium 04.06-Cu, Copper 04.06-Pb, Lead 04.06-Hg, Mercury 04.06-Mo, Molybdenum 04.06-Ni, Nickel 04.06-Se, Selenium 04.06-Zn, Zinc	Pass
Soluble Salts	TMECC 04.10-A, "1:5 Slurry Method, Mass Basis"	5.0 dS/m maximum ²
pH	TMECC 04.11-A, "1:5 Slurry pH"	5.5–8.5
Maturity	TMECC 05.05-A, "Germination and Root Elongation"	> 80%
Organic Matter Content	TMECC 05.07-A, "Loss-On-Ignition Organic Matter Method"	25–65% (dry mass)
Stability	TMECC 05.08-B, "Carbon Dioxide Evolution Rate"	8 or below
Fecal Coliform	TMECC 07.01-B, "Fecal Coliforms"	Pass

1. "Test Methods for the Examination of Composting and Compost," published by the United States Department of Agriculture and the USCC.

2. A soluble salt content up to 10.0 dS/m for compost used in compost manufactured topsoil will be acceptable.

Provide a designated project stockpile of unblended compost for sampling and testing at the producer's site. The Department will take samples from each stockpile for quality assurance (QA). Make payment to the STA-certified lab chosen by the Department for the required QA testing. Submit lab invoices for passing QA tests to the Department for reimbursement.

Maintain compost in designated stockpiles at the producer's site until accepted by the Engineer. The Engineer reserves the right to sample compost at the jobsite.

- A. **Compost Manufactured Topsoil (CMT).** CMT will consist of 75% topsoil blended with 25% compost measured by volume. Use CMT that is either blended on-site (BOS), blended in-place (BIP), or pre-blended (PB), as specified on the plans. Use topsoil conforming to Article 160.2, "Materials."
- B. **Erosion Control Compost (ECC).** ECC will consist of 50% untreated wood chips blended with 50% compost measured by volume. Use wood chips 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.
- C. **General Use Compost (GUC).** GUC will consist of 100% compost.

161.3. Construction. Prepare the types of compost for use on the project and stockpile at the jobsite.

- A. **Compost Manufactured Topsoil (CMT).** After excavation and embankment work is complete, remove and dispose of objectionable material from the topsoil before blending. Roll the CMT with a light corrugated drum.
 - 1. **Blended On-Site (BOS).** Furnish topsoil. Topsoil may be salvaged from excavation and embankment areas, in accordance with Item 160, "Topsoil." Apply CMT to the depth shown on plans or apply compost in a uniform layer and incorporate into the in place topsoil to the depth shown on plans.

2. **Blended In-Place (BIP).** Apply compost in a uniform layer and incorporate into the existing in place topsoil to the depth shown on the plans.
 3. **Pre-blended (PB).** Apply CMT in a uniform layer to the depth shown on the plans.
- B. Erosion Control Compost (ECC).** Use only on slopes 3:1 or flatter. After excavation and embankment work is complete, apply a 2-in. uniform layer, unless otherwise shown on the plans or as directed. When rolling is specified, use a light roller or other suitable equipment.
- C. General Use Compost (GUC).** Apply in a uniform layer as a top dressing on established vegetation to the depth shown on the plans. Do not bury existing vegetation. If using GUC as a backfill ingredient, in a planting soil mixture, for planting bed preparation, or as mulch, apply as shown on the plans.

161.4. Measurement. This Item will be measured by the 100-ft. station along the baseline of each roadbed, by the square yard complete in place, or by the cubic yard in vehicles at the point of delivery.

For CMT (BOS and PB only) and ECC cubic yard measurement, the quantity will be the composite material, compost and topsoil or wood chips.

161.5. Payment. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Compost Manufactured Topsoil (BOS)," "Compost Manufactured Topsoil (BIP)," "Compost Manufactured Topsoil (PB)," "Compost Manufactured Topsoil (BOS or PB)," "Erosion Control Compost," and "General Use Compost" for the depth specified, except for measurement by the cubic yard. This price is full compensation for loading, hauling, stockpiling, blending, placing, rolling, sprinkling, equipment, labor, materials (including topsoil for CMT (BOS and PB only) and wood chips for ECC), tools, and incidentals. Costs associated with passing QA testing will be paid for in accordance with the requirements of Article 9.5, "Force Account," at invoice price with no add-ons.