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SOIL AMENDMENT (COMPOST)

– for general landscaping purposes, including turf and planting bed establishment and tree/shrub backfilling procedures.

MATERIALS

Compost must comply with the following:

1. The compost provider must be a compost producer and a participant in the United States Composting Council (USCC) Seal of Testing Assurance (STA) program.

2. The compost producer must be fully permitted as a compost producer in accordance with requirements of the California Integrated Waste Management Board (CIWMB), Local Enforcement Agencies (LEA) and any other State and Local Agencies that regulate solid waste facilities. If exempt from State permitting requirements, the composting facility must certify that it follows all guidelines and procedures for production of compost meeting the environmental health standards of Title 14, California Code of Regulations, Division 7, Chapter 3.1, Article 7.

3. Compost may be derived from any single or mixture of any of the following feedstock materials: Green material consisting of chipped, shredded, or ground vegetation; or clean processed recycled wood products, Biosolids, Manure or Mixed food waste.

4. Compost the feedstock materials such that weed seeds, pathogens and deleterious materials are reduced as specified under Title 14, California Code of Regulations, Division 7, Chapter 3.1, Article 7, Section 17868.3.

5. Metal concentrations in the composted mulch must not exceed the maximum metal concentrations listed in Title 14, California Code of Regulations, Division 7, Chapter 3.1, Section 17868.2.

6. Compost must comply with the following table (see next page):

Physical and Chemical Requirements

Property	Test Method	Requirement
pH	TMECC 04.11-A Elastometric pH 1:5 Slurry Method pH Units	6.0–8.0
Soluble Salts	TMECC 04.10-A Electrical Conductivity 1:5 Slurry Method dS/m (mmhos/cm)	0–10.0
Moisture Content	TMECC 03.09-A Total Solids & Moisture at 70+/- 5 deg C % Wet Weight Basis	30–60
Organic Matter Content	TMECC 05.07-A Loss-On-Ignition Organic Matter Method (LOI) % Dry Weight Basis	30–65
Maturity	TMECC 05.05-A Germination and Vigor, % Relative to Positive Control Seed Emergence Seedling Vigor	 80 or Above 80 or Above
Stability	TMECC 05.08-B Carbon Dioxide Evolution Rate mg CO_2-C/g OM per day	8 or below
Particle Size	TMECC 02.02-B Sample Sieving for Aggregate Size Classification % Dry Weight Basis	Inches % Passing 5/8 95% 3/8 70% Max. Length 4 inches
Pathogen	TMECC 07.01-B Fecal Coliform Bacteria < 1000 MPN/gram dry wt.	<1000 (Pass)
Pathogen	TMECC 07.01-B Salmonella < 3 MPN/4 grams dry wt.	<3 (Pass)
Physical Contaminants	TMECC 02.02-C Man Made Inert Removal and Classification: Plastic, Glass and Metal % > 4mm fraction	Combined Total: < 1.0
Physical Contaminants	TMECC 02.02-C Man Made Inert Removal and Classification: Sharps % > 4mm fraction (Sewing needles, hypodermic needles)	 None Detected

NOTE: 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).

7. Before compost application, submit a copy of the composter's Compost Technical Data Sheet and a copy of the compost producers STA certification. The Compost Technical Data Sheet must include laboratory analytical test results, directions for product use, and a list of product ingredients.

INSTALLATION

Turf and Planting Bed Establishment

- Apply compost to a depth of ___inches *(1-2 inch application rate is typical)* by hand or by using specialized equipment such as a pneumatic blower or side discharge spreader.
- Incorporate the compost by hand; by using a backhoe, bulldozer, or grading blade to a depth between 6 and 8 inches.
- Following incorporation, rake and/or compact the area as directed by the Engineer or Project Manager. The soil surface shall be reasonably free of large clods, roots, stones greater than 2 inches, and other material which will interfere with planting and subsequent site maintenance.
- Rake soil surface smooth prior to plating or seeding, sprigging, sodding, or hydroseeding.
- Thoroughly water after planting or seeding.

Tree & Shrub Backfilling

- Excavate a planting hole slightly shallower and 2 to 3 times the width of the root ball or container.
- Set the root ball on firm soil so that the top of the root ball will sit at ground level or slightly higher than the final grade.
- Uniformly blend the compost and excavated soil at a 2 soil : 1 compost ratio.
- Backfill and firm the soil blend around the root ball within the planting hole.
- Thoroughly water after planting.

MEASUREMENT AND PAYMENT

- Quantities of compost will be measured by the cubic yard and will be measured in the vehicle at the point of delivery.
- The contract price paid per cubic yard of compost includes all transport fees, etc. associated with the product's delivery. Delivery schedule and stockpiling location will be confirmed by the Engineer or Project Manager.

MULCH

– for use in planting areas (basins) and mulched areas (including embankment slopes, excavation slopes 2:1 H:V or flatter)

MATERIALS

Mulch must comply with the following:

1. The mulch provider must be a compost producer and a participant in the United States Composting Council (USCC) Seal of Testing Assurance (STA) program.

2. The mulch producer must be fully permitted as a compost producer in accordance with requirements of the California Integrated Waste Management Board (CIWMB), Local Enforcement Agencies (LEA) and any other State and Local Agencies that regulate solid waste facilities. If exempt from State permitting requirements, the composting facility must certify that it follows all guidelines and procedures for production of compost meeting the environmental health standards of Title 14, California Code of Regulations, Division 7, Chapter 3.1, Article 7.

3. Compost may be derived from any single or mixture of any of the following feedstock materials: Green material consisting of chipped, shredded, or ground vegetation; or clean processed recycled wood products, Biosolids, Manure or Mixed food waste.

4. Compost the mulch materials such that weed seeds, pathogens and deleterious materials are reduced as specified under Title 14, California Code of Regulations, Division 7, Chapter 3.1, Article 7, Section 17868.3.

5. The metal concentrations in the composted mulch must not exceed the maximum metal concentrations listed in Title 14, California Code of Regulations, Division 7, Chapter 3.1, Section 17868.2.

6. Composted mulch materials must comply with the following table:

Physical and Chemical Requirements		
Property	Test Method*	Requirement
pH	TMECC 04.11-A Elastometric pH 1:5 Slurry Method pH Units	6.0–8.5
Soluble Salts	TMECC 04.10-A Electrical Conductivity 1:5 Slurry Method dS/m (mmhos/cm)	0–10.0
Moisture Content	TMECC 03.09-A Total Solids & Moisture at 70+/- 5 deg C % Wet Weight Basis	N/A
Organic Matter Content	TMECC 05.07-A Loss-On-Ignition Organic Matter Method (LOI) % Dry Weight Basis	30–100
Maturity	TMECC 05.05-A Germination and Vigor Seed Emergence and Seedling Vigor % Relative to Positive Control	N/A N/A
Stability	TMECC 05.08-B Carbon Dioxide Evolution Rate mg CO_2-C/g OM per day	N/A
Particle Size	TMECC 02.02-B Sample Sieving for Aggregate Size Classification % Dry Weight Basis	Inches % Passing 3 99% 3/8 < 25% Max. Length 4 inches
Pathogen	TMECC 07.01-B Fecal Coliform Bacteria < 1000 MPN/gram dry wt.	<1000 (Pass)

Pathogen	TMECC 07.01-B Salmonella < 3 MPN/4 grams dry wt.	<3 (Pass)
Physical Contaminants	TMECC 02.02-C Man Made Inert Removal and Classification: Plastic, Glass and Metal % > 4mm fraction	Combined Total: < 1.0
Physical Contaminants	TMECC 02.02-C Man Made Inert Removal and Classification: Sharps % > 4mm fraction (Sewing needles, hypodermic needles)	None Detected

**NOTE: 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).*

7. Before mulch application, submit a copy of the mulch producer's Compost Technical Data Sheet and a copy of the compost producers STA certification. The Compost Technical Data Sheet must include laboratory analytical test results, directions for product use, and a list of product ingredients.

INSTALLATION

- Spread mulch to a uniform thickness of ___ inches. *(2-3 inches is typical applied)* Extend mulch to the edge of retaining walls, dikes, paving and to within 4 feet from the flow line of paved and unpaved drainage ditches.
- Avoid placing mulch against the trunk or stem of any plant material.
- Water thoroughly before and after mulching to saturate the root zone and entire mulch layer.
- Apply mulch when an area is ready to receive it as determined by the Engineer or Project Manager.

MEASUREMENT AND PAYMENT

- Quantities of mulch will be measured by the cubic yard and will be measured in the vehicle at the point of delivery.
- The contract price paid per square yard for applied mulch includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in applying the mulch complete in place, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer or Project Manager.

COMPOST (INCORPORATE)

– for use on sloped surfaces (4:1 H:V or flatter) where natives are to be established or related restoration sites.

MATERIALS

Compost must comply with the following:

1. The compost provider must be a compost producer and a participant in the United States Composting Council (USCC) Seal of Testing Assurance (STA) program.

2. The compost producer must be fully permitted as a compost producer in accordance with requirements of the California Integrated Waste Management Board (CIWMB), Local Enforcement Agencies (LEA) and any other State and Local Agencies that regulate solid waste facilities. If exempt from State permitting requirements, the composting facility must certify that it follows all guidelines and procedures for production of compost meeting the environmental health standards of Title 14, California Code of Regulations, Division 7, Chapter 3.1, Article 7.

3. Compost may be derived from any single or mixture of any of the following feedstock materials: Green material consisting of chipped, shredded, or ground vegetation; or clean processed recycled wood products, Biosolids, Manure or Mixed food waste.

4. Compost the feedstock materials such that weed seeds, pathogens and deleterious materials are reduced as specified under Title 14, California Code of Regulations, Division 7, Chapter 3.1, Article 7, Section 17868.3.

5. Metal concentrations in the composted mulch must not exceed the maximum metal concentrations listed in Title 14, California Code of Regulations, Division 7, Chapter 3.1, Section 17868.2.

6. Compost must comply with the following table:

Physical and Chemical Requirements

Property	Test Method	Requirement
pH	TMECC 04.11-A Elastometric pH 1:5 Slurry Method pH Units	6.0–8.0
Soluble Salts	TMECC 04.10-A Electrical Conductivity 1:5 Slurry Method dS/m (mmhos/cm)	0–10.0
Moisture Content	TMECC 03.09-A Total Solids & Moisture at 70+/- 5 deg C % Wet Weight Basis	30–60
Organic Matter Content	TMECC 05.07-A Loss-On-Ignition Organic Matter Method (LOI) % Dry Weight Basis	30–65
Maturity	TMECC 05.05-A Germination and Vigor, % Relative to Positive Control Seed Emergence Seedling Vigor	 80 or Above 80 or Above
Stability	TMECC 05.08-B Carbon Dioxide Evolution Rate mg CO_2-C/g OM per day	8 or below
Particle Size	TMECC 02.02-B Sample Sieving for Aggregate Size Classification % Dry Weight Basis	Inches % Passing 3 99% 3/8 < 25% Max. Length 4 inches
Pathogen	TMECC 07.01-B Fecal Coliform Bacteria < 1000 MPN/gram dry wt.	<1000 (Pass)
Pathogen	TMECC 07.01-B Salmonella < 3 MPN/4 grams dry wt.	<3 (Pass)
Physical Contaminants	TMECC 02.02-C Man Made Inert Removal and Classification: Plastic, Glass and Metal % > 4mm fraction	Combined Total: < 1.0
Physical Contaminants	TMECC 02.02-C Man Made Inert Removal and Classification: Sharps % > 4mm fraction (Sewing needles, hypodermic needles)	 None Detected

NOTE: 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).

7. Before compost application, submit a copy of the composter's Compost Technical Data Sheet and a copy of the compost producers STA certification. The Compost Technical Data Sheet must include laboratory analytical test results, directions for product use, and a list of product ingredients.

INSTALLATION

Before application of compost, soil surface preparation must comply with Section 19-2.05, "Slopes," of the Standard Specifications. Vegetative growth, temporary erosion control materials, and other debris must be removed from areas to receive Compost (Incorporate).

Apply and incorporate compost in separate applications in the following sequence to embankment and excavation slopes:

1. Apply compost to a depth of 4 inches by using specialized equipment such as a pneumatic blower or side discharge spreader.
2. Incorporate the compost by hand; by using a backhoe, bulldozer, or grading blade to a depth between 12 and 18 inches. Do not incorporate compost to a strip 2 feet wide adjacent to the edge of pavement.
3. Following incorporation, rake and/or compact the area as directed by the Engineer or Project Manager.
4. Apply erosion control measures as directed by the Engineer or Project Manager.

MEASUREMENT AND PAYMENT

- Quantities of compost will be measured by the cubic yard and will be measured in the vehicle at the point of delivery.
- The contract price paid per square yard for Compost (Incorporate) includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in applying Compost (Incorporate) complete in place, as shown on the plans and as directed by the Engineer or Project Manager.

EROSION CONTROL (COMPOST BLANKET)

– for use on surfaces 2:1 H:V or flatter, where normal grass vegetation is to be established, for erosion and sediment control in sheet water flow applications. Is an approved equal to erosion control blankets and related measures.

MATERIALS

Compost

Compost must comply with the following:

1. The compost provider must be a compost producer and a participant in the United States Composting Council (USCC) Seal of Testing Assurance (STA) program.

2. The compost producer must be fully permitted as a compost producer in accordance with requirements of the California Integrated Waste Management Board (CIWMB), Local Enforcement Agencies (LEA) and any other State and Local Agencies that regulate solid waste facilities. If exempt from State permitting requirements, the composting facility must certify that it follows all guidelines and procedures for production of compost meeting the environmental health standards of Title 14, California Code of Regulations, Division 7, Chapter 3.1, Article 7.

3. Compost may be derived from any single or mixture of any of the following feedstock materials: Green material consisting of chipped, shredded, or ground vegetation; or clean processed recycled wood products, Biosolids, Manure or Mixed food waste.

4. Compost the feedstock materials such that weed seeds, pathogens and deleterious materials are reduced as specified under Title 14, California Code of Regulations, Division 7, Chapter 3.1, Article 7, Section 17868.3.

5. Metal concentrations in the composted mulch must not exceed the maximum metal concentrations listed in Title 14, California Code of Regulations, Division 7, Chapter 3.1, Section 17868.2.

6. Compost must comply with the following table (see next page):

Physical and Chemical Requirements

Property	Test Method	Requirement
pH	TMECC 04.11-A Elastometric pH 1:5 Slurry Method pH Units	6.0–8.0
Soluble Salts	TMECC 04.10-A Electrical Conductivity 1:5 Slurry Method dS/m (mmhos/cm)	0–10.0
Moisture Content	TMECC 03.09-A Total Solids & Moisture at 70+/- 5 deg C % Wet Weight Basis	30–60
Organic Matter Content	TMECC 05.07-A Loss-On-Ignition Organic Matter Method (LOI) % Dry Weight Basis	30–65
Maturity	TMECC 05.05-A Germination and Vigor, % Relative to Positive Control Seed Emergence Seedling Vigor	 80 or Above 80 or Above
Stability	TMECC 05.08-B Carbon Dioxide Evolution Rate mg CO_2-C/g OM per day	8 or below
Particle Size	TMECC 02.02-B Sample Sieving for Aggregate Size Classification % Dry Weight Basis	100% Passing, 3 inch 90-100% Passing, 1 inch 65-100% Passing, 3/4 inch 0 - 75% Passing, 1/4 inch Maximum length 6 inches
Pathogen	TMECC 07.01-B Fecal Coliform Bacteria < 1000 MPN/gram dry wt.	<1000 (Pass)
Pathogen	TMECC 07.01-B Salmonella < 3 MPN/4 grams dry wt.	<3 (Pass)
Physical Contaminants	TMECC 02.02-C Man Made Inert Removal and Classification: Plastic, Glass and Metal % > 4mm fraction	 Combined Total: < 1.0
Physical Contaminants	TMECC 02.02-C Man Made Inert Removal and Classification: Sharps % > 4mm fraction (Sewing needles, hypodermic needles)	 None Detected

NOTE: 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).

7. Before compost application, submit a copy of the composter's Compost Technical Data Sheet and a copy of the compost producers STA certification. The Compost Technical Data Sheet must include laboratory analytical test results, directions for product use, and a list of product ingredients.

Seed

Seed must comply with the following:

1. Seed for erosion control (Compost Blanket) must comply with Section 20-2.10, "Seed," of the Standard Specifications. Seed not required to be labeled under the California Food and Agricultural Code shall be tested for purity and germination by a seed laboratory certified by the Association of Official Seed Analysts or by a seed technologist certified by the Society of Commercial Seed Technologists. Measure and mix individual seed species in the presence of the Engineer or Project Manager.
2. Seed must contain at most 1.0 percent total weed seed by weight.
3. Seed must be free of the specific weed species:_____, _____, and _____.
4. Deliver seed to the job site in unopened separate containers with the seed tag attached. Containers without a seed tag attached will not be accepted. The Engineer or Project Manager takes a sample of approximately 1 oz or 0.25 cup of seed for each seed lot greater than 2 pounds.
5. Seed must comply with the following:

Seed Botanical Name (Common Name)	Percent Germination (Minimum)	Pounds Pure Live Seed Per Acre (Slope Measurement)

INSTALLATION

Before application of compost, soil surface preparation must comply with Section 19-2.05, "Slopes," of the Standard Specifications. Remove vegetative growth, temporary erosion control materials, and other debris from areas to receive erosion control (Compost Blanket).

Apply and incorporate compost in separate applications in the following sequence to embankment and excavation slopes:

1. Apply compost uniformly to a thickness of ___ inches. *(1-2 inch application rate is typical).*
2. Apply compost layer approximately 3 feet beyond the top of the slope or overlap it into existing vegetation.
3. Seed may be either applied mechanically in a dry condition or with hydroseeding equipment. If you elect to hydroseed, a minimum of 525 pounds of fiber per acre must be mixed and applied with the seed. The fiber must be furnished and applied at no expense to the (Customer). If seed is applied with hydroseeding equipment it must be applied within 60 minutes after the seed has been added to the hydroseeder.
4. Erosion control (Compost Blanket) must extend to the edge of retaining sidewalks, walls, curbs, dikes, paving, and to within 4 feet from the flow line of paved and unpaved drainage ditches.

MEASUREMENT AND PAYMENT

- Erosion Control (Compost Blanket) will be measured by the cubic yard of compost in the vehicle at the point of delivery.
- The contract price paid per cubic yard for erosion control (Compost Blanket) includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in applying erosion control (Compost Blanket), including providing and applying seed, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

COMPOST SOCK

– for use in erosion and sediment control in concentrated and sheet water flow applications. An approved equal to silt fences and other erosion control measures.

MATERIALS

Compost

Compost must comply with the following:

1. The compost provider must be a compost producer and a participant in the United States Composting Council (USCC) Seal of Testing Assurance (STA) program.

2. The compost producer must be fully permitted as a compost producer in accordance with requirements of the California Integrated Waste Management Board (CIWMB), Local Enforcement Agencies (LEA) and any other State and Local Agencies that regulate solid waste facilities. If exempt from State permitting requirements, the composting facility must certify that it follows all guidelines and procedures for production of compost meeting the environmental health standards of Title 14, California Code of Regulations, Division 7, Chapter 3.1, Article 7.

3. Compost may be derived from any single or mixture of any of the following feedstock materials: Green material consisting of chipped, shredded, or ground vegetation; or clean processed recycled wood products, Biosolids, Manure or Mixed food waste.

4. Compost the feedstock materials such that weed seeds, pathogens and deleterious materials are reduced as specified under Title 14, California Code of Regulations, Division 7, Chapter 3.1, Article 7, Section 17868.3.

5. Metal concentrations in the composted mulch must not exceed the maximum metal concentrations listed in Title 14, California Code of Regulations, Division 7, Chapter 3.1, Section 17868.2.

6. Compost must comply with the following table:

Physical and Chemical Requirements

Property	Test Method	Requirement
pH	TMECC 04.11-A Elastometric pH 1:5 Slurry Method pH Units	6.0–8.5
Soluble Salts	TMECC 04.10-A Electrical Conductivity 1:5 Slurry Method dS/m (mmhos/cm)	0–10.0
Moisture Content	TMECC 03.09-A Total Solids & Moisture at 70+/- 5 deg C % Wet Weight Basis	<60
Organic Matter Content	TMECC 05.07-A Loss-On-Ignition Organic Matter Method (LOI) % Dry Weight Basis	30–100
Maturity	TMECC 05.05-A Germination and Vigor Seed Emergence and Seedling Vigor % Relative to Positive Control	N/A N/A
Stability	TMECC 05.08-B Carbon Dioxide Evolution Rate mg CO_2-C/g OM per day	N/A

Particle Size	TMECC 02.02-B Sample Sieving for Aggregate Size Classification % Dry Weight Basis	Inches % Passing 3 99% 3/8 30-50% Max. Length 2 inches
Pathogen	TMECC 07.01-B Fecal Coliform Bacteria < 1000 MPN/gram dry wt.	<1000 (Pass)
Pathogen	TMECC 07.01-B Salmonella < 3 MPN/4 grams dry wt.	<3 (Pass)
Physical Contaminants	TMECC 02.02-C Man Made Inert Removal and Classification: Plastic, Glass and Metal % > 4mm fraction	Combined Total: < 1.0
Physical Contaminants	TMECC 02.02-C Man Made Inert Removal and Classification: Sharps % > 4mm fraction (Sewing needles, hypodermic needles)	None Detected

NOTE: 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).

7. Before compost application, submit a copy of the composter's Compost Technical Data Sheet and a copy of the compost producers STA certification. The Compost Technical Data Sheet must include laboratory analytical test results, directions for product use, and a list of product ingredients.

Sock

Sock must comply with the following:

1. A mesh tube, oval to round in cross section, 12 inches in diameter. Sock must have a minimum durability of one year after installation.
2. Composed of UV photodegradable plastic or polyester netting.
3. Composed of biodegradable jute, sisal, burlap, or coir fiber fabric. Fabric must be clean, evenly woven, and free of encrusted concrete or other contaminating materials and free from cuts, tears, broken or missing yarns and thin, open, or weak places.

Wood Stake

Wood stake must comply with the following:

1. Untreated fir, redwood, cedar, or pine and cut from sound timber
2. Straight and free of loose or unsound knots and other defects which would render the stakes unfit for use
3. Pointed on the end to be driven into the ground
4. At least 1 by 1 by 24 inches in size for Type 1 installation
5. At least 1 by 2 by 24 inches in size for Type 2 installation

Rope

For Type 2 installation, rope must:

1. Be biodegradable, such as sisal or manila
2. Have a minimum diameter of 1/4 inch

INSTALLATION

To ensure optimum performance, cut down or remove heavy vegetation, and level uneven surfaces to ensure that the compost sock uniformly contacts the ground surface. Clear the bedding area of obstructions including rocks, clods, and debris greater than one inch.

1. Fill socks uniformly with compost to the desired length such that the logs do not deform. Secure ends.
2. When more than one compost sock is required to achieve desired length, join socks longitudinally with a 1 foot 6 inch overlap.
3. Stakes shall be installed 24 inches apart along the length of the compost socks and stopped at 6 inches from each end of the sock. Stakes shall be driven to a maximum of 2 inches above, or flush with the top of the sock.
4. Place compost sock on slopes at the following spacing:

    a. 10 feet apart for slopes steeper than 2:1 (horizontal:vertical)
    b. 15 feet apart for slopes from 2:1 to 4:1 (horizontal:vertical)
    c. 20 feet apart for slopes from 4:1 to 10:1 (horizontal:vertical)
    d. 50 feet apart for slopes flatter than 10:1 (horizontal:vertical)

5. Install compost sock approximately parallel to the slope contour.
6. Backfill and repair ground disturbances including holes and depressions caused by the installation and removal of the compost sock.

Installation Options

Compost sock may be installed using installation method Type 1, Type 2, or a combination:

Installation method Type 1:

1. Place directly on the ground with good contact with the finish grade.
2. Secure with wood stakes every 4 feet along the length of the compost sock.
3. Secure the ends of the compost sock by placing a stake 6 inches from the end of the compost sock.
4. Drive the stakes into the soil so that the top of the stake is less then 2 inches above the top of the compost sock.

Installation method Type 2:

1. Place directly on the ground with good contact with the finish grade.
2. Secure with rope and notched wood stakes.
3. Drive stakes into the soil until the notch is even with the top of the compost sock.
4. Lace the rope between stakes and over the compost sock. Knot the rope at each stake.
5. Tighten the compost sock to the surface of the slope by driving the stakes further into the soil.

MAINTENANCE

- Inspect compost socks regularly, and after each rainfall event, to ensure that they are intact and functioning correctly. Remove sediment that builds up behind the sock before it interferes with the functionality of the sock. Deposit the removed sediment within the project limits so that the sediment is not subject to erosion by wind or by water.
- Repair or replace split, torn, or unraveling socks. Replace broken or split stakes. Sagging or slumping compost socks must be repaired with additional stakes or replaced. Correct locations where rills and other evidence of concentrated runoff have occurred beneath the socks. Compost socks must be repaired or replaced within 24 hours of identifying the deficiency.

- Remove compost sock mesh tubes when directed by the Engineer. Cut mesh and empty compost sock contents in place. .
- Backfill and repair ground disturbances including holes and depressions caused by removal of the compost sock under.

MEASUREMENT AND PAYMENT

- Quantities of compost sock are measured by the linear foot measured parallel with the ground slope along the centerline of the installed compost sock. Where compost socks are joined and overlapped, the overlap will be measured as a single installed sock.
- The contract price paid per linear foot for compost sock includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in installing and maintaining compost sock, and removing and disposing of compost mesh tubes, complete in place, as shown on the plans, as shown on the plans and as directed by the Engineer or Project Manager.

EROSION CONTROL (TYPE C/D)

– using compost as a media in hydroseeding or straw mulching and dry seeding, along with associated erosion control measures.

MATERIALS

Compost

Compost must comply with the following:

1. The compost provider must be a compost producer and a participant in the United States Composting Council (USCC) Seal of Testing Assurance (STA) program.

2. The compost producer must be fully permitted as a compost producer in accordance with requirements of the California Integrated Waste Management Board (CIWMB), Local Enforcement Agencies (LEA) and any other State and Local Agencies that regulate solid waste facilities. If exempt from State permitting requirements, the composting facility must certify that it follows all guidelines and procedures for production of compost meeting the environmental health standards of Title 14, California Code of Regulations, Division 7, Chapter 3.1, Article 7.

3. Compost may be derived from any single or mixture of any of the following feedstock materials: Green material consisting of chipped, shredded, or ground vegetation; or clean processed recycled wood products, Biosolids, Manure or Mixed food waste.

4. Compost the feedstock materials such that weed seeds, pathogens and deleterious materials are reduced as specified under Title 14, California Code of Regulations, Division 7, Chapter 3.1, Article 7, Section 17868.3.

5. Metal concentrations in the composted mulch must not exceed the maximum metal concentrations listed in Title 14, California Code of Regulations, Division 7, Chapter 3.1, Section 17868.2.

6. Compost must comply with the following table:

Physical and Chemical Requirements

Property	Test Method	Requirement
pH	TMECC 04.11-A Elastometric pH 1:5 Slurry Method pH Units	6.0–8.0
Soluble Salts	TMECC 04.10-A Electrical Conductivity 1:5 Slurry Method dS/m (mmhos/cm)	0–10.0
Moisture Content	TMECC 03.09-A Total Solids & Moisture at 70+/- 5 deg C % Wet Weight Basis	N/A
Organic Matter Content	TMECC 05.07-A Loss-On-Ignition Organic Matter Method (LOI) % Dry Weight Basis	30–65
Maturity	TMECC 05.05-A Germination and Vigor, % Relative to Positive Control Seed Emergence Seedling Vigor	 80 or Above 80 or Above
Stability	TMECC 05.08-B Carbon Dioxide Evolution Rate mg CO_2-C/g OM per day	8 or below
Particle Size	TMECC 02.02-B Sample Sieving for Aggregate Size Classification % Dry Weight Basis	Inches % Passing 5/8 95% 3/8 70% Max. Length depends on mode of application
Pathogen	TMECC 07.01-B Fecal Coliform Bacteria < 1000 MPN/gram dry wt.	<1000 (Pass)
Pathogen	TMECC 07.01-B Salmonella < 3 MPN/4 grams dry wt.	<3 (Pass)
Physical Contaminants	TMECC 02.02-C Man Made Inert Removal and Classification: Plastic, Glass and Metal % > 4mm fraction	Combined Total: < 1.0
Physical Contaminants	TMECC 02.02-C Man Made Inert Removal and Classification: Sharps % > 4mm fraction (Sewing needles, hypodermic needles)	 None Detected

NOTE: 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).

7. Before compost application, submit a copy of the composter's Compost Technical Data Sheet and a copy of the compost producers STA certification. The Compost Technical Data Sheet must include laboratory analytical test results, directions for product use, and a list of product ingredients.

Seed

Seed must comply with the following:

1. Seed for erosion control (Compost Blanket) must comply with Section 20-2.10, "Seed," of the Standard Specifications. Seed not required to be labeled under the California Food and Agricultural Code shall be tested for purity and germination by a seed laboratory certified by the Association of Official Seed Analysts or by a seed technologist certified by the Society of Commercial Seed Technologists. Measure and mix individual seed species in the presence of the Engineer or Project Manager.

2. Seed must contain at most 1.0 percent total weed seed by weight.

3. Seed must be free of the specific weed species:_____, _____, and _____.

4. Deliver seed to the job site in unopened separate containers with the seed tag attached. Containers without a seed tag attached will not be accepted. The Engineer or Project Manager takes a sample of approximately 1 oz or 0.25 cup of seed for each seed lot greater than 2 pounds.

5. Seed must comply with the following:

Seed Botanical Name (Common Name)	Percent Germination (Minimum)	Pounds Pure Live Seed Per Acre (Slope Measurement)

Commercial Fertilizer

Commercial fertilizer must comply with Section 20-2.02, "Commercial Fertilizer," of the Standard Specifications and have a guaranteed chemical analysis within 2 percent of __ percent nitrogen, __ percent phosphoric acid and __ percent water soluble potash.

Straw

Straw must comply with the following:

- Straw may be derived from wheat, barley or rice straw.
- Wheat and barley straw must be derived from irrigated crops.
- Before delivery of wheat or barley straw to the job site, provide the name, address and telephone number of the grower.
- Straw must be free of plastic, glass, metal, rocks, and refuse or other deleterious material.

Stabilizing Emulsion *(This specification is equivalent to Caltrans Erosion Control Type D is stabilizing emulsion is included, Type C if it is not)*

Stabilizing emulsion must comply with the following:

- Must be in a dry powder form.
- Must be a processed organic adhesive used as a soil tackifier.
- May be re-emulsifiable.

INSTALLATION

Apply erosion control materials in separate applications in the following sequence:

1. Apply the following mixture with hydroseeding equipment at the rates indicated within 60 minutes after the seed has been added to the mixture:

Material	Pounds Per Acre (Slope Measurement)
Seed	
Fiber	
Commercial Fertilizer	

Material	Cubic Yards Per Acre (Slope Measurement)
Compost	

2. Compost may be dry applied at the total of the rates specified in the preceding table and the following table instead of including it as part of the hydroseeding operations. In areas where the compost is dry applied, all compost for that area must be applied before the next operation.

3. Apply straw at the rate of ___ tons per acre based on slope measurements. Incorporation of straw will not be required. Distribute straw evenly without clumping or piling.

4. Apply the following mixture with hydroseeding equipment at the corresponding rates:

Material	Pounds Per Acre (Slope Measurement)
Fiber	
Commercial Fertilizer	
Stabilizing Emulsion (Solids)	

Material	Cubic Yards Per Acre (Slope Measurement)
Compost	

- The ratio of total water to total stabilizing emulsion in the mixture must be as recommended by the manufacturer.
- Once straw work is started in an area, complete stabilizing emulsion applications in that area on the same working day.
- The Engineer may change the rates of erosion control materials to meet field conditions.

MEASUREMENT AND PAYMENT

- Erosion Control Type C or D will be measured by the cubic yard of compost in the vehicle at the point of delivery.
- The contract price paid per cubic yard for Erosion Control Type C or D includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in applying Control Type C or D, including providing and applying seed, as shown on the plans, and as directed by the Engineer or Project Manager.

COMPOST USE CATEGORIES TABLE

Property	Test Method	Soil Amendment (Compost)	Mulch	Compost (Incorporate)	Erosion Control (Compost Blanket)	Compost Sock	Hydroseed Type C, Type D
pH	TMECC 04.11-A Electrometric pH 1:5 Slurry Method	6.0-8.0	6.0-8.5	6.0-8.0	6.0-8.0	6.0-8.5	6.0-8.5
Soluble Salts (Electrical Conductivity)	TMECC 04.10-A Electrical Conductivity 1:5 Slurry Method	0-10.0 dS/m	0-10.0 dS/m	0-10.0 dS/m	0-10.0 dS/m	N/A	0-10.0 dS/m
Moisture Content	TMECC 03.09-A Total Solids and Moisture at 70+/- 5 degrees C % Wet Weight Basis	30-60%	N/A	30-60%	<60%	< 60%	30-60%
Organic Matter Content	TMECC 05.07-A Loss-On-Ignition Method (LOI) % Dry weight basis	30–65%	30–100%	30–65%	30–100%	30–100%	30–65%
Maturity (Bioassay)	TMECC 05.05-A Germination and Vigor Seed Emergence Seedling Vigor *(% Relative to positive control)*	 80% or above 80% or above	 N/A N/A	 80% or above 80% or above	 80% or above 80% or above	 N/A	 80% or above 80% or above
Stability (Respirometry)	TMECC 05.08-B Carbon Dioxide Evolution Rate mg CO_2-C per g OM per day	8 or below	N/A	8 or below	8 or below	N/A	8 or below
Particle Size	TMECC 02.02-B "Sample Sieving for Aggregate Size Classification" % Dry Weight Basis	Inches % Pass 5/8 95% 3/8 70% Max. length 4"	Inches % Pass 3" 99% 3/8 < 25% Max length 4"	Inches % Pass 3 99% 3/8 <25%	Inches % Pass 3" 100% 1" 90 -100% 3/4" 65 - 100% 1/4" 0 - 75% Maximum particle length of 6"	Inches % Pass 3" 99% 3/8 30-50% (or 50-70% retained) Max length 2"	Inches % Pass 5/8 95% 3/8 70%
Pathogen (Fecal Coliform)	TMECC 07.01-B Fecal Coliform	Pass <1000 MPN/gram	Pass <1000 MPN/gram	Pass <1000 MPN/gram	Pass <1000 MPN/gram	Pass <1000MPN/gram	Pass <1000 MPN/gram
Pathogen (Salmonella)	TMECC 07.02 Salmonella	Pass <3 MPN/4 grams of TS	Pass <3 MPN/4 grams of TS	Pass <3 MPN/4 grams of TS	Pass <3 MPN/4 grams of TS	Pass <3 MPN/4 grams of TS	Pass <3 MPN/4 grams of TS
Physical Contaminants (Man-made inerts)	TMECC 02.02-C Man Made Inert Plastic, Glass & Metals Sharps > 4 mm fraction	 < 1% None Detected	 < 1% None Detected	 < 1% None Detected	 < 1% None Detected	 < 1% None Detected	 < 1% None Detected