LANDSCAPE ARCHITECTURE / DESIGN SPECIFICATIONS FOR COMPOST USE

SHORT FORMAT

- Turf Establishment with Compost
- Planting Bed Establishment with Compost
- Compost as a Landscape Backfill Mix Component
- Compost as a Landscape Mulch
- Compost as a Soil Blanket for Erosion Control
- Compost as a Filter Berm for Sediment Control

SPECIFICATION
TURF ESTABLISHMENT WITH COMPOST

Section _____,

Description:

This work shall consist of incorporating compost within the root zone to improve soil quality and plant growth. This specification applies to all types of turf establishment methods including seeding, sprigging, sodding, and hydroseeding.

Materials:

Compost shall be a well decomposed, stable, weed free organic matter source. It shall be derived from: agricultural, food, or industrial residuals; biosolids (treated sewage sludge); yard trimmings; source-separated or mixed solid waste. The product shall contain no substances toxic to plants and shall be reasonably free (< 0.5% by dry weight) of man-made foreign matter. The compost will possess no objectionable odors and shall not resemble the raw material from which it was derived.

Product Parameters:

Parameters[1,6]	**Reported as (units of measure)**	**General Range**
pH[2]	pH units	6.0 - 8.5
Soluble Salt Concentration[2] (electrical conductivity)	dS/m (mmhos/cm)	Maximum 10
Moisture Content	%, wet weight basis	30 – 60
Organic Matter Content	%, dry weight basis	30 – 65
Particle Size	% passing a selected mesh size, dry weight basis	95% pass through 3/8" screen or smaller
Stability[3]		
Carbon Dioxide Evolution Rate	mg CO_2-C per g OM per day	< 4
Maturity[3] (Bioassay)		
Seed Emergence and	%, relative to positive control	Minimum 80%
Seedling Vigor	%, relative to positive control	Minimum 80%
Physical Contaminants (inerts)	%, dry weight basis	< 0.5% (0.25% film plastic)
Chemical Contaminants[4]	mg/kg (ppm)	Meet or exceed US EPA Class A standard, 40 CFR § 503.13, Tables 1 and 3 levels
Biological Contaminants[5]		
Select Pathogens		
Fecal Coliform Bacteria,	MPN per gram per dry weight	Meet or exceed US EPA Class A standard, 40 CFR § 503.32(a) levels
or Salmonella	MPN per 4 grams per dry weight	

[1] Recommended test methodologies are provided in Test Methods for the Examination of Composting and Compost (TMECC, The US Composting Council)

[2] It should be noted that the pH and soluble salt content of the amended soil mix is more relevant to the establishment and growth of a particular plant, than is the pH or soluble salt content of a specific compost (soil conditioner) used to amend the soil. Each specific plant species requires a specific pH range. Each plant also has a salinity tolerance rating, and maximum tolerable quantities are known. Most ornamental plants and turf species can tolerate a soil/media soluble salt level of 2.5 dS/m and 4 dS/m, respectively. Seeds, young seedlings and salt sensitive species often prefer soluble salt levels at half the afore mentioned levels. When specifying the establishment of any plant or turf species, it is important to understand their pH and soluble salt requirements, and how they relate to existing soil conditions.

[3] Stability/Maturity rating is an area of compost science that is still evolving, and as such, other various test methods could be considered. Also, never base compost quality conclusions on the result of a single stability/maturity test.

[4] US EPA Class A standard, 40 CFR § 503.13, Tables 1 and 3 levels = Arsenic 41ppm, Cadmium 39ppm, Copper 1,500ppm, Lead 300ppm, Mercury 17ppm, Molybdenum 75ppm, Nickel 420ppm, Selenium 100ppm, Zinc 2,800ppm.

[5] US EPA Class A standard, 40 CFR § 503.32(a) levels = Salmonella <3 MPN/4grams of total solids or Fecal Coliform <1000 MPN/gram of total solids.

[6] Landscape architects and project (field) engineers may modify the allowable compost specification ranges based on specific field conditions and plant requirements.

Construction Requirements:

- Compost shall be uniformly applied over the entire area at an average depth of 1 to 2 inches
- Incorporate to a depth of 6 to 8 inches (for a 20% to 30% inclusion rate) using a rotary tiller or other appropriate equipment. Higher inclusion rates are necessary for upgrading marginal soils.
- Pre-plant fertilizer and pH adjusting agents (e.g., lime and sulfur) may be applied before incorporation, as necessary.
- Rake soil surface smooth prior to seeding, sprigging, sodding, or hydroseeding.
- 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.
- Water thoroughly after seeding, sprigging, or sodding.
- Where necessary, topdress newly seeded and sprigged turf areas with a 1/4 inch layer of fine compost (3/8 inch screen, minus), then water to protect against hot, dry weather or drying winds.

Method of Measurement:

Compost will be measured by the cubic yard or the ton at the point of loading.

Soil Analysis: Before any soil preparation procedures ensue, a soil analysis shall be completed by a reputable laboratory to determine any nutritional requirements, pH and organic matter adjustments necessary. Once determined, the soil shall be appropriately amended to a range suitable for the turf species to be established.
The landscape architect/designer shall specify the compost inclusion rate depending upon soil conditions and quality, plant tolerances, and manufacturer's recommendations. The use of stable, nutrient rich composts will reduce initial fertilizer requirements by the amount of available nutrients in the compost.

SPECIFICATION
PLANTING BED ESTABLISHMENT WITH COMPOST

Section _____,

Description:

This work shall consist of incorporating compost within the root zone in order to improve soil quality and plant growth. This specification applies to all types of plantings including; trees, shrubs, vines, ground covers, and herbaceous plants.

Materials:

Compost shall be a well decomposed, stable, weed free organic matter source. It shall be derived from: agricultural, food, or industrial residuals; biosolids (treated sewage sludge); yard trimmings; source-separated or mixed solid waste. The product shall contain no substances toxic to plants and shall be reasonably free (< 0.5% by dry weight) of man-made foreign matter. The compost will possess no objectionable odors and shall not resemble the raw material from which it was derived. For acid loving plants, only use a compost that has not received the addition of liming agents or ash by-products.

Product Parameters:

Parameters[1,6]	**Reported as (units of measure)**	**General Range**
pH[2]	pH units	6.0 - 8.5
Soluble Salt Concentration[2] (electrical conductivity)	dS/m (mmhos/cm)	Maximum 10
Moisture Content	%, wet weight basis	30 – 60
Organic Matter Content	%, dry weight basis	30 – 65
Particle Size	% passing a selected mesh size, dry weight basis	95% pass through 3/8” screen or smaller
Stability[3] Carbon Dioxide Evolution Rate	mg CO_2-C per g OM per day	< 4
Maturity[3] (Bioassay)		
Seed Emergence and	%, relative to positive control	Minimum 80%
Seedling Vigor	%, relative to positive control	Minimum 80%
Physical Contaminants (inerts)	%, dry weight basis	< 0.5% (0.25% film plastic)
Chemical Contaminants[4]	mg/kg (ppm)	Meet or exceed US EPA Class A standard, 40 CFR § 503.13, Tables 1 and 3 levels
Biological Contaminants[5] Select Pathogens		

Fecal Coliform Bacteria, or Salmonella	MPN per gram per dry weight MPN per 4 grams per dry weight	Meet or exceed US EPA Class A standard, 40 CFR § 503.32(a) levels

[1] Recommended test methodologies are provided in Test Methods for the Examination of Composting and Compost (TMECC, The US Composting Council)
[2] It should be noted that the pH and soluble salt content of the amended soil mix is more relevant to the establishment and growth of a particular plant, than is the pH or soluble salt content of a specific compost (soil conditioner) used to amend the soil. Each specific plant species requires a specific pH range. Each plant also has a salinity tolerance rating, and maximum tolerable quantities are known. Most ornamental plants and turf species can tolerate a soil/media soluble salt level of 2.5 dS/m and 4 dS/m, respectively. Seeds, young seedlings and salt sensitive species often prefer soluble salt levels at half the afore mentioned levels. When specifying the establishment of any plant or turf species, it is important to understand their pH and soluble salt requirements, and how they relate to existing soil conditions.
[3] Stability/Maturity rating is an area of compost science that is still evolving, and as such, other various test methods could be considered. Also, never base compost quality conclusions on the result of a single stability/maturity test.
[4] US EPA Class A standard, 40 CFR § 503.13, Tables 1 and 3 levels = Arsenic 41ppm, Cadmium 39ppm, Copper 1,500ppm, Lead 300ppm, Mercury 17ppm, Molybdenum 75ppm, Nickel 420ppm, Selenium 100ppm, Zinc 2,800ppm.
[5] US EPA Class A standard, 40 CFR § 503.32(a) levels = Salmonella <3 MPN/4grams of total solids or Fecal Coliform <1000 MPN/gram of total solids.
[6] Landscape architects and project (field) engineers may modify the allowable compost specification ranges based on specific field conditions and plant requirements.

Construction Requirements:

- Compost shall be uniformly applied over the planting area at an average depth of 1 to 2 inches.
- Incorporate uniformly to a depth of 6 to 8 inches using a rotary tiller or other appropriate equipment. Lower compost application rates may be necessary for salt sensitive crops or where composts possessing higher salt levels are used. For native species, not requiring much nutrition, use composts lower in nitrogen (and ammoniacal nitrogen) and stability (being stable to highly stable).
- Pre-plant fertilizer and pH adjusting agents (e.g., lime and sulfur) may be applied in conjunction with compost incorporation, as necessary.
- Rake soil surface smooth prior to planting.
- 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.
- Water thoroughly after planting.

Method of Measurement:

Compost will be measured by the cubic yard or the ton at the point of loading.

Soil Analysis: Before any soil preparation procedures ensue, a soil analysis shall be completed by a reputable laboratory to determine any nutritional requirements, pH and organic matter adjustments necessary. Once determined, the soil shall be appropriately amended to a range suitable for the turf species to be established.
The landscape architect/designer shall specify the compost inclusion rate depending upon soil conditions and quality, plant tolerances, and manufacturer's recommendations. The use of stable, nutrient rich composts will reduce initial fertilizer requirements by the amount of available nutrients in the compost.

SPECIFICATION
COMPOST AS A LANDSCAPE BACKFILL MIX COMPONENT

Section _____,

Description:

This work shall consist of excavating a planting hole and blending compost with the excavated soil to improve soil quality and plant growth. This specification applies to all types of bare root, containerized, and balled and burlapped plant material.

Materials:

Compost shall be a well decomposed, stable, weed free organic matter source. It shall be derived from: agricultural, food, or industrial residuals; biosolids (treated sewage sludge); yard trimmings; source-separated or mixed solid waste. The product shall contain no substances toxic to plants and shall be reasonably free (< 0.5% by dry weight) of man-made foreign matter. The compost will possess no objectionable odors and shall not resemble the raw material from which it was derived. For acid loving plants, provide only compost that has not received the addition of liming agents or ash by-products.

Composts containing available nutrients, primarily nitrogen, are preferred, while the use of unstable or immature compost is not approved. Care should be given when using composts possessing a basic pH (>7) near acid loving plants. A pH adjustment of the finished soil/compost mix may be necessary.

Product Parameters:

Parameters[1,6]	**Reported as (units of measure)**	**General Range**
pH[2]	pH units	6.0 - 8.5
Soluble Salt Concentration[2] (electrical conductivity)	dS/m (mmhos/cm)	Maximum 10
Moisture Content	%, wet weight basis	30 – 60
Organic Matter Content	%, dry weight basis	30 – 65
Particle Size	% passing a selected mesh size, dry weight basis	95% pass through 3/8” screen or smaller
Stability[3] Carbon Dioxide Evolution Rate	mg CO_2-C per g OM per day	< 4
Maturity[3] (Bioassay)		
Seed Emergence and	%, relative to positive control	Minimum 80%
Seedling Vigor	%, relative to positive control	Minimum 80%
Physical Contaminants (inerts)	%, dry weight basis	< 0.5% (0.25% film plastic)

Chemical Contaminants[4]	mg/kg (ppm)	Meet or exceed US EPA Class A standard, 40 CFR § 503.13, Tables 1 and 3 levels
Biological Contaminants[5] Select Pathogens Fecal Coliform Bacteria, or Salmonella	MPN per gram per dry weight MPN per 4 grams per dry weight	Meet or exceed US EPA Class A standard, 40 CFR § 503.32(a) levels

[1] Recommended test methodologies are provided in Test Methods for the Examination of Composting and Compost (TMECC, The US Composting Council)
[2] It should be noted that the pH and soluble salt content of the amended soil mix is more relevant to the establishment and growth of a particular plant, than is the pH or soluble salt content of a specific compost (soil conditioner) used to amend the soil. Each specific plant species requires a specific pH range. Each plant also has a salinity tolerance rating, and maximum tolerable quantities are known. Most ornamental plants and turf species can tolerate a soil/media soluble salt level of 2.5 dS/m and 4 dS/m, respectively. Seeds, young seedlings and salt sensitive species often prefer soluble salt levels at half the afore mentioned levels. When specifying the establishment of any plant or turf species, it is important to understand their pH and soluble salt requirements, and how they relate to existing soil conditions.
[3] Stability/Maturity rating is an area of compost science that is still evolving, and as such, other various test methods could be considered. Also, never base compost quality conclusions on the result of a single stability/maturity test.
[4] US EPA Class A standard, 40 CFR § 503.13, Tables 1 and 3 levels = Arsenic 41ppm, Cadmium 39ppm, Copper 1,500ppm, Lead 300ppm, Mercury 17ppm, Molybdenum 75ppm, Nickel 420ppm, Selenium 100ppm, Zinc 2,800ppm.
[5] US EPA Class A standard, 40 CFR § 503.32(a) levels = Salmonella <3 MPN/4grams of total solids or Fecal Coliform <1000 MPN/gram of total solids.
[6] Landscape architects and project (field) engineers may modify the allowable compost specification ranges based on specific field conditions and plant requirements.

Construction Requirements:

- 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 slightly higher than the final grade.
- Uniformly blend compost and excavated soil at a 1 compost : 2 or 3 soil ratio. For plants with lower nutritional requirements, use the 1: 3 rato.
- Backfill and firm the soil blend around the root ball within the planting hole.
- Water thoroughly during and after planting.

Method of Measurement:

Compost will be measured by the cubic yard or the ton at the point of loading.

Soil Analysis: Before any soil preparation procedures ensue, a soil analysis shall be completed by a reputable laboratory to determine any nutritional requirements, pH and organic matter adjustments necessary. Once determined, the soil shall be appropriately amended to a range suitable for the turf species to be established.
The landscape architect/designer shall specify the compost inclusion rate depending upon soil conditions and quality, plant tolerances, and manufacturer's recommendations. The use of stable, nutrient rich composts will reduce initial fertilizer requirements by the amount of available nutrients in the compost.

SPECIFICATION
COMPOST AS A LANDSCAPE MULCH

Section _____,

Description:

This work shall consist of applying compost to the soil surface after planting to help inhibit weed growth, conserve soil moisture, and reduce soil erosion.

Materials:

Compost mulch shall be a well decomposed, weed free organic matter source. It shall be derived from: agricultural, food, or industrial residuals; biosolids (treated sewage sludge); yard trimmings; or source-separated waste. The product shall contain no substances toxic to plants and be free (< 0.1% by dry weight) of man-made foreign matter. The compost will possess no objectionable odors and shall not resemble the raw material from which it was derived. For acid loving plants, only use a compost that has not received the addition of liming agents or ash by-products.

Product Parameters:

Parameters[1,5]	**Reported as (units of measure)**	**General Range**
pH[2]	pH units	5.5 – 9.0
Soluble Salt Concentration[2] (electrical conductivity)	dS/m (mmhos/cm)	Maximum 10
Moisture Content	%, wet weight basis	25 – 60
Organic Matter Content	%, dry weight basis	> 30
Particle Size	% passing a selected mesh size, dry weight basis	99% pass through 3" screen, >25% passing 3/8" screen
Physical Contaminants (inerts)	%, dry weight basis	< 0.1
Chemical Contaminants[3]	mg/kg (ppm)	Meet or exceed US EPA Class A standard, 40 CFR § 503.13, Tables 1 and 3 levels
Biological Contaminants[4] Select Pathogens Fecal Coliform Bacteria, or Salmonella	 MPN per gram per dry weight MPN per 4 grams per dry weight	 Meet or exceed US EPA Class A standard, 40 CFR § 503.32(a) levels

[1] Recommended test methodologies are provided in Test Methods for the Examination of Composting and Compost (TMECC, The US Composting Council)
[2] It should be noted that the pH and soluble salt content of the amended soil mix is more relevant to the establishment and growth of a particular plant, than is the pH or soluble salt content of a specific compost (soil conditioner) used to amend the soil. Each specific plant species requires a specific pH range. Each plant also has a salinity tolerance rating, and maximum tolerable quantities are known. Most ornamental plants and turf species can tolerate a soil/media soluble salt level of 2.5 dS/m and 4 dS/m, respectively. Seeds, young seedlings and salt sensitive species often prefer soluble salt levels at half the afore mentioned levels. When

specifying the establishment of any plant or turf species, it is important to understand their pH and soluble salt requirements, and how they relate to existing soil conditions.

[3] US EPA Class A standard, 40 CFR § 503.13, Tables 1 and 3 levels = Arsenic 41ppm, Cadmium 39ppm, Copper 1,500ppm, Lead 300ppm, Mercury 17ppm, Molybdenum 75ppm, Nickel 420ppm, Selenium 100ppm, Zinc 2,800ppm.

[4] US EPA Class A standard, 40 CFR § 503.32(a) levels = Salmonella <3 MPN/4grams of total solids or Fecal Coliform <1000 MPN/gram of total solids.

[5] Landscape architects and project (field) engineers may modify the allowable compost specification ranges based on specific field conditions and plant requirements.

When using compost for mulching, specific products may be considered more physically or visually acceptable for a given planting area. A representative sample of compost must be submitted to the Landscape Architect/Designer prior to field use since aesthetic preferences are subjective. Coarser-textured compost mulches are more effective in reducing weed growth and preventing water and wind erosion.

Construction Requirements:

- Compost mulch shall be uniformly applied over the entire area at an average depth of 2 to 3 inches as soon as possible after weed removal and planting.
- 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.
- All stones, roots, or other debris shall be removed from the surface of the mulched area.

Method of Measurement:

Compost will be measured by the cubic yard or the ton at the point of loading.

The landscape architect/designer shall specify the compost inclusion rate depending upon soil conditions and quality, plant tolerances, and manufacturer's recommendations. The use of stable, nutrient rich composts will reduce initial fertilizer requirements by the amount of available nutrients in the compost.
Generally, biosolids composts should not be applied at a depth greater than 2 inches, while most yard trimmings composts can be applied to a depth of 3 inches. Salt sensitive species typically prefer lower application rates.

SPECIFICATION
COMPOST AS A SOIL BLANKET FOR EROSION CONTROL

Section _____,

Description:

This work shall consist of applying compost to a sloped soil surface to reduce erosion for long term stabilization and to enhance riparian buffer areas.

Materials:

Soil blanket media shall be a composted, weed free organic matter source derived from: agricultural, food, or industrial residuals; biosolids (treated sewage sludge); yard trimmings; source-separated or mixed solid waste. Particle size shall be as described below in the product parameters table. The compost shall possess no objectionable odors, will be reasonably free (< 0.5% by dry weight) of man-made foreign matter and will meet the product parameters outlined below.

Product Parameters:

Parameters[1,4]	**Reported as (units of measure)**	**Blanket Media to be Vegetated**	**Blanket Media to be left Un-vegetated**
pH[2]	pH units	6.0 - 8.5	N/A
Soluble Salt Concentration[2] (electrical conductivity)	dS/m (mmhos/cm)	Maximum 5	Maximum 10
Moisture Content	%, wet weight basis	30 – 60	30 – 60
Organic Matter Content	%, dry weight basis	25 – 65	25-100
Particle Size	% passing a selected mesh size, dry weight basis	• 3” (75 mm), 100% passing • 1” (25mm), 90% to 100% passing • 3/4” (19mm), 65% to 100%passing • 1/4” (6.4 mm), 0% to 75% passing • Maximum particle length of 6” (152mm)	• 3” (75 mm), 100% passing • 1” (25mm), 90% to 100% passing • 3/4” (19mm), 65% to 100%passing • 1/4” (6.4 mm), 0% to 75% passing • Maximum particle length of 6” (152mm)
Stability[3] Carbon Dioxide Evolution Rate	mg CO_2-C per g OM per day	< 4	< 8
Maturity[3] (Bioassay) Seed Emergence and Seedling Vigor	%, relative to positive control %, relative to positive control	Minimum 80% Minimum 80%	N/A
Physical Contaminants (man-made inerts)	%, dry weight basis	< 0.5% (0.25% film plastic)	< 0.5% (0.25% film plastic)

Chemical Contaminants[3]	mg/kg (ppm)	Meet or exceed US EPA Class A standard, 40 CFR § 503.13, Tables 1 and 3 levels	Meet or exceed US EPA Class A standard, 40 CFR § 503.13, Tables 1 and 3 levels
Biological Contaminants[4] Select Pathogens Fecal Coliform Bacteria, or Salmonella	MPN per gram per dry weight MPN per 4 grams per dry weight	Meet or exceed US EPA Class A standard, 40 CFR § 503.32(a) levels	Meet or exceed US EPA Class A standard, 40 CFR § 503.32(a) levels

[1] Recommended test methodologies are provided in Test Methods for the Examination of Composting and Compost (TMECC, The US Composting Council)
[2] Each specific plant species requires a specific pH range. Each plant also has a salinity tolerance rating, and maximum tolerable quantities are known. When specifying the establishment of any plant or turf species, it is important to understand their pH and soluble salt requirements, and how they relate to the compost in use.
[3] Stability/Maturity rating is an area of compost science that is still evolving, and as such, other various test methods could be considered. Also, never base compost quality conclusions on the result of a single stability/maturity test.
[4] Landscape architects and project (field) engineers may modify the allowable compost specification ranges based on specific field conditions and plant requirements.

Use only a well-composted product that contains no substances toxic to plants where planting; immediate grass, wildflower, legume seeding or ornamental planting. Very coarse composts may need to be avoided if the slope is to be landscaped or seeded, as it will make planting and crop establishment more difficult. Composts containing fibrous particles that range in size produce a more stable mat.

Construction Requirements:

Compost mulch shall be uniformly applied to a depth described below. Areas receiving greater precipitation, possessing a higher erosivity index, or which will remain unvegetated, will require greater application rates.

Annual Rainfall/Flow Rate	**Total Precipitation & Rainfall Erosivity Index**	**Application Rate For <u>Vegetated*</u> Compost Surface Mulch**	**Application Rate For <u>Unvegetated</u> Compost Surface Mulch**
Low	1-25", 20-90	½ - ¾ " (12.5 mm – 19 mm)	1" – 1 ½" (25 mm – 37.5mm)
Average	26-50", 91-200	¾ - 1" (19 mm – 25 mm)	1 ½" – 2" (37 mm – 50 mm)
High	51" and above, 201 and above	1-2" (25 mm – 50 mm)	2-4" (50mm – 100mm)

*These lower application rates should only be used in conjunction with seeding, and for compost blankets applied during the prescribed planting season for the particular region.

Spread the compost uniformly on up to 1:2 slopes, then track (compact) the compost layer using a bulldozer or other appropriate equipment, if possible. Alternatively, apply compost using a pneumatic (blower) or slinger type spreader unit. Project compost directly at soil surface, thereby preventing water from moving between the soil-compost interface. Apply compost layer approximately 3 feet beyond the top of the slope or overlap it into existing vegetation. On highly unstable soils, use compost in conjunction with appropriate structural and diversion measures. Follow by seeding or ornamental planting if desired.

Method of Measurement:

Compost will be measured by the cubic yard or the ton at the point of loading.

The Landscape Architect/Designer shall specify the compost application rate depending upon specific site (e.g., soil characteristics, existing vegetation) and climatic conditions, as well as particular project related requirements. The severity of slope grade, as well as slope length, will also influence compost application.

SPECIFICATION

COMPOST AS A FILTER BERM AND FILTER SOCK MEDIA FOR SEDIMENT CONTROL

Section _____,

Description:

This work shall consist of constructing a raised berm of compost, or placement of a compost filled sock, on a soil surface to contain soil erosion**,** control the movement of sediment off site, and to filter storm water.

Materials:

Filter berm media shall be a composted, weed free organic matter source derived from: agricultural, food, or industrial residuals; biosolids (treated sewage sludge); yard trimmings; source-separated or mixed solid waste. Particle size may vary widely. The compost shall possess no objectionable odors, will be reasonably free (< 0.5% by dry weight) of man-made foreign matter and will meet the product parameters outlined below.

Product Parameters:

Parameters[1,4]	**Reported as (units of measure)**	**Filter Berm to be Vegetated**	**Filter Berm to be left Un-vegetated**	**Filter Sock Media**
pH[2]	pH units	6.0 - 8.5	N/A	5.0 - 8.5
Soluble Salt Concentration[2] (electrical conductivity)	dS/m (mmhos/cm)	Maximum 5	N/A	Maximum 10
Moisture Content	%, wet weight basis	30 – 60	30 – 60	< 60
Organic Matter Content	%, dry weight basis	25 – 65	25 – 100	25 – 100
Particle Size	% passing a selected mesh size, dry weight basis	• 3” (75 mm), 100% passing • 1” (25mm), 90% to 100% passing • 3/4” (19mm), 70% to 100% passing • 1/4” (6.4mm), 30% to 75% passing Maximum: • particle size length of 6” (152mm) (no more than 60% passing 1/4” (6.4 mm) in high rainfall/flow rate situations)	• 3” (75 mm), 100% passing • 1” (25mm), 90% to 100% passing • 3/4” (19mm), 70% to 100% passing • 1/4” (6.4mm), 30% to 75% passing Maximum: • particle size length of 6” (152mm) (no more than 50% passing 1/4” (6.4 mm) in high rainfall/flow rate situations)	• 2” (50 m), 99% to 100% passing • 3/8” (10 mm), maximum of 50% passing Maximum: • particle size length of 2” (50mm)
Stability[3] Carbon Dioxide Evolution Rate	mg CO_2-C per g OM per day	< 4	< 8	< 8

Maturity[3] (Bioassay) Seed Emergence and Seedling Vigor	%, relative to positive control %, relative to positive control	Minimum 80% Minimum 80%	N/A	N/A
Physical Contaminants (man-made inerts)	%, dry weight basis	< 0.5% (0.25% film plastic)	< 0.5% (0.25% film plastic)	< 0.5% (0.25% film plastic)
Chemical Contaminants3	mg/kg (ppm)	Meet or exceed US EPA Class A standard, 40 CFR § 503.13, Tables 1 and 3 levels	Meet or exceed US EPA Class A standard, 40 CFR § 503.13, Tables 1 and 3 levels	Meet or exceed US EPA Class A standard, 40 CFR § 503.13, Tables 1 and 3 levels
Biological Contaminants4 Select Pathogens Fecal Coliform Bacteria, or Salmonella	MPN per gram per dry weight MPN per 4 grams per dry weight	Meet or exceed US EPA Class A standard, 40 CFR § 503.32(a) levels	Meet or exceed US EPA Class A standard, 40 CFR § 503.32(a) levels	Meet or exceed US EPA Class A standard, 40 CFR § 503.32(a) levels

[1] Recommended test methodologies are provided in Test Methods for the Examination of Composting and Compost (TMECC, The US Composting Council)
[2] Each specific plant species requires a specific pH range. Each plant also has a salinity tolerance rating, and maximum tolerable quantities are known. When specifying the establishment of any plant or turf species, it is important to understand their pH and soluble salt requirements, and how they relate to the compost in use.
[3] Stability/Maturity rating is an area of compost science that is still evolving, and as such, other various test methods could be considered. Also, never base compost quality conclusions on the result of a single stability/maturity test.
[4] Landscape architects and project (field) engineers may modify the allowable compost specification ranges based on specific field conditions and plant requirements.

Where seeding of the berm or sock is planned, use only well composted product that contains no substances toxic to plants. Avoid coarser composts if the berm is to be seeded, as it will make establishment more difficult.

Construction Requirements:

Filter Berms – Install parallel to the base of the slope or other affected areas, construct a berm of compost to the size specifications outlined in the table below.

Annual Rainfall/Flow Rate	Total Precipitation & Rainfall Erosivity Index	Dimensions for the Compost Filter Berm (height x width)
Low	1-25”, 20-90	1’x 2’ – 1.5’ x 3’ (30 cm x 60 cm – 45 cm x 90 cm)
Average	26-50”, 91-200	1’x 2’ - 1.5’ x 3’ (30 cm x 60 cm – 45 cm x 90 cm)
High	51” and above, 201 and above	1.5’x 3’ – 2’ x 4’ (45 cm x 90 cm – 60cm x 120 cm)

In extreme conditions and where specified by the Landscape Architect/Designer, a second berm shall be constructed at the top of the slope or silt fencing shall be installed in conjunction with the compost berm. Where the berm deteriorates, it shall be reconstructed. Do not use filter berms in any runoff channels (concentrated flows).

Filter Socks – Install parallel to the base of the slope or other affected areas, placing the compost filled sock to the size specifications described below. They may be used to filter sheet or concentrated flows of water. The filter sock can be filled on site or delivered already filled. The filter sock shall be produced from 5-mil thick polyethylene (HDPE) or polypropylene yarn, or cotton.

Socks may be 8, 12 or 18" in diameter, based on the specific application or slope length. When used to treat concentrated flows of water and on many sloped conditions, the filter socks should be staked into the ground (no trenching of the sock is required). Using 2' stakes (50 mm), pierce the middle of the sock and project the stake several inches into the ground. Once installed, the sock may be stepped on to assure proper and complete ground contact.

Socks may be sleeved in order to extend their length. Socks may be installed at the top, bottom, or throughout a slope, based on its length and severity.

Method of Measurement:

Compost will be measured by cubic yard at the point of loading.

The Landscape Architect/Designer shall specify the berm dimensions or sock size depending upon specific site (e.g., soil characteristics, existing vegetation) and climatic conditions, as well as particular project related requirements. The severity of slope grade, as well as slope length, will also influence compost application.

Landscape Architect Specifications for Compost Utilization

Prepared for:

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