

Compost for Green Infrastructure

The need for universal standards

Dan Goossen

Director of Composting,
Green Mountain Compost,
Chittenden Solid Waste District

Vermont Organics Recycling Summit
August 6, 2020







- 2019 - Reduction from 13 products down to 3
 - Compost
 - Garden Mix
 - Topsoil









Growing demand for soil blends

- 5-10 large project spec requests per year
- Large variety of specified soils

Wetland Muck/Soil
 1. Wetland soil shall be a uniform low-phosphorus mix of compost, sand, and fine soil to blend to a high % organic matter content soil (>15% organic matter).
 2. The phosphorus index (P-index) for the Wetland Soil shall be 10 - 30 mg/kg.
 3. Wetland soil shall have a pH of 6.0 - 7.0.
 4. Wetland soil shall have a low hydraulic conductivity between 0.1 - .01ft/day.
 5. The organic portion of the Wetland soil shall constitute 15% - 20% of the Total Wetland soil mixture. The organic portion shall be comprised of well pulverized and composted leaf mulch. Animal or poultry manure shall not be accepted.
 6. Granular soil shall constitute 80% - 85% of the total Wetland Soil mixture, and shall meet the following gradation:

Sieve Size % Passing by Weight

No. 16	100%
No. 40	85-100%
No. 60	40-100%
No. 200	5-10%

Physical Requirements for Topsoil
 Parameter Units Acceptable Range
 ♦ Organic Matter % Dry Weight 2-5%
 ♦ pH pH Units 6.0 to 7.5
 ♦ Soluble Salt* mmhos/cm or dS/m 3.5 or less
 ♦ Cation Exchange Capacity meQ/100g >8

Physical Requirements for Topsoil
 Parameter Units Acceptable Range
 ♦ Gravel > 2mm % Dry Weight Less than 10%
 ♦ Silt .002-.05 mm & % Dry Weight 15-20%
 ♦ Clay < .002mm % Dry Weight 20

- 8" MINIMUM DEPTH
- CLAY ≤ 15% BY VOLUME
- SILT LOAM WITH 10-20% BY MASS OF ORGANIC MATTER
- WETLAND SOIL NOT TO BE REMOVED FROM NATURAL WETLANDS
- PROVIDE SUBMITTAL ON TESTED MATERIAL AND SAMPLE TO ENGINEER

MATERIALS: The hydric soil shall be mar and some fine soils to blend to a high per (>15% organic matter). Avoid using clay the potential migration of fines into subsu hydric soil shall be between 5.0 and 7.0. the presence of invasive species. Gradation requirements:

Sieve Size	Percent Passing by Weight
No. 16	100
No. 40	85 - 100
No. 60	40 - 100
No. 200	5 - 10

Bioretention Planting Media Spec: NEED ABOUT 60 CY

Should be USDA sand to loamy sand Classification and meet the following gradation:

Sand	85-88%
Silt	8-12%
Clay	0-2%
Organic	3-5%
Phosphorus	Less the 0.2% - Required testing using the Morgan Method

sis PPM As required for the plants specified
 ductivity of a 1:1 soil water sample at 25 degrees

Growing demand for soil blends

- Variability in specifications between spec'd soils, even of similarly named materials
- Most require testing unique to spec'd blend
- Specifications often restrictive when combined
 - Low pH compost
 - Low P compost
 - Organic Matter
 - Particle size & distribution
 - Salts

Not all composts are the same!

- Variability between producers, batches at some facilities



Standardization needed!

- Standardization of compost specs
- Standardization of soil blend specs
- Labeling?

