

CONSTRUCTION

and Materials

# TIPS



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**New Special  
Provision (SP) for  
Compost**

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The Specification Committee recently approved a new Special Provision (SP) to Item 161, "Compost." The SP eliminates the need for DMS-6360, "Compost," which includes a quality monitoring program and the associated Material Producer List.

### Highlights of the Special Provision include:

- TxDOT will neither sample nor pay for testing of compost on a scheduled basis. TxDOT, however, reserves the right to randomly sample and test product from the job site. All costs associated with sampling and testing are borne by the contractor.
- See Item 161, Compost, Table 1. Physical Requirements for Compost, for the requirement limit for Fecal Coliform.
- All composters providing material to TxDOT must be active members, in good standing, with the US Composting Council (USCC), Seal of Testing Assurance (STA) program. STA participants regularly sample and test their compost products based on production volumes.

### Items to be aware of when receiving compost at a project:

- Be familiar with the compost requirements found in Item 161.
- Know the material's place of origin. Confirm the composter is a current member of the USCC, STA program. The most current list may be found on the USCC's "[Participants](#)" page.
- Ask for the latest laboratory test report on the same type of compost needed for the project. Since composters are tested at least once each quarter, verify the test is not older than three months.
- Ask for required paperwork, such as STA certification, lab test reports, etc.
- If you have reason to suspect the compost does not meet the specification (usually evident by a strong odor that smells of raw feedstock material):
  - 1) take a field sample according to the directions found on the USCC's "[Seal of Testing Assurance](#)" page and
  - 2) fill out the Chain of Custody forms.

The contractor will make payment to the STA-certified lab chosen by the Department to test the compost. When the contractor's compost passes the test, the contractor will submit the lab invoices to the Department to document the material passing the test and for reimbursement of testing costs.

Composters participating in the USCC, STA program must undergo a rigorous testing schedule to ensure the quality of their product. When product comes from a participating composter along with the required laboratory report, the risk of receiving compost that does not meet specifications is reduced.

The attached Compost Fact Sheet offers additional information to help understand the requirements under Item 161.

# COMPOST FACT SHEET

## How can Item 161 “Compost” help to establish vegetation and control erosion?

Compost actually changes the structure of the soil, as well as providing an array of other soil improvements (additional organic matter, increased water-holding capacity, increased cation exchange capacity (CEC), and more). Poor quality soils can be amended with compost to increase chances for seed germination and continued establishment. Quick and dense vegetation will significantly reduce the chance for erosion.

## Why is the use of compost good for the environment?

Compost contains organic matter that would otherwise be landfilled. By returning this useful resource to the environment, TxDOT can achieve better vegetation establishment and, at the same time, help to divert organic matter from the waste stream. Compost can also be used as a binder for heavy metals and petroleum contaminants, resulting in cleaner water re-entering the aquifers.

## What do the references to the “40 CFR Part 503” mean?

These are regulations put forth by the EPA designed to encourage the beneficial use and reuse of biosolids, while protecting public health and the environment.

## Why are the references to TAC Chapter 332 Subchapter B Part 23 important?

This portion of the Texas Administrative Code defines acceptable industrial non-hazardous “wastes.” Beware of suppliers that add industrial by-products (like power plant waste that is a coal combustion by-product such as fly ash, gypsum, etc.) to soil and then attempts to market the product to TxDOT. These wastes are clearly defined as unacceptable and specifically forbidden by TCEQ.

## What is the difference between Class A, EQ and Class B Biosolids?

- Class A Biosolids are sewage sludges that have had their pathogen content reduced to specific regulated levels. Composted biosolids are always Class A products.
- Class A, EQ (exceptional quality) composted biosolids are also very low in “heavy metal” content. They can be used in various aspects of agriculture and can be distributed to the public with no additional recordkeeping. This class of material is identified as “normal” horticultural products by the EPA. All Seal of Testing Assurance (STA) compost products are required to meet Class A, EQ standards.
- Class B Biosolids have been treated to reduce pathogens significantly, but not to the same level as Class A. Class B products are more restricted in their usage and there are waiting periods before allowing public access.

## What are the “Physical Requirements” and why are their measurements important?

“Table 1. Physical Requirements for Compost” lists several material parameters. Each parameter is listed below along with the specific reason for their measurement:

- **Organic Matter Content** is the measurement of carbon-based materials in compost. Being aware of a product’s organic matter content may be necessary for determining compost application rates on specific applications.
- **Particle Size** measures the amount of compost meeting a specific size. A compost product’s particle size may also determine its usability in specific applications. For example, a yard trimmings compost screened through a 1/4" screen would probably not be appropriate to use as mulch, whereas the same product screened through a 1" screen could be acceptable.
- **Stability** is the level of biological activity in a moist, warm and aerated compost pile. Unstable, active compost demands nitrogen when applied to soil. This can cause nitrogen deficiency and can be detrimental to plant growth, causing death to plants in some cases.
- **pH** is the numerical measure of acidity (or alkalinity), or hydrogen ion concentration of a material. Specific plant species can flourish when grown within a specific pH range and based on typical compost application rates. The addition of compost can affect the pH of soil.

- **Salinity** is the concentration of soluble ions in a solution, measured by the ability of a medium to conduct an electric current. Although most soluble salts are actually plant nutrients, excess soluble salts can actually discourage plant growth. It is important to remember that many quality composts are manure-based and will tend to be higher in soluble salts. The knowledge of the anticipated use for the compost is important.

For instance, if a compost high in soluble salts was used annually to topdress a rest area (general use compost), the salt buildup could be harmful to the turf. If the same compost was applied one time to the right of way for vegetation establishment (compost for manufactured topsoil), no harm would be anticipated. Given these facts, the engineer can allow a manure-based compost to exceed the 5.0 max. salt level.

## At the Project Site

1. **Proper volume** – count the number of bills of lading and cubic yardage within them in order to make sure that the proper volume of compost or topsoil (total cubic yardage) was delivered to the project site. Remember, it takes 134 cubic yards to supply a 1" layer of product over an acre.
2. **Proper characteristics** – check the Compost Technical Data Sheet (CTDS) against the TxDOT specifications for the project. Make sure that the product characteristics meet the project requirements. Make sure that the STA CTDS report is current and not outdated (more than three months old).
3. **STA Participant** – at the [US Composting Council](#) site, go to Programs>> STA>> Participants. Scroll down to Texas. Verify the compost supplier is listed on the Web site as a current STA participant.
4. **Odors and Sizes** – make sure that there are no strange odors coming from the compost (e.g., ammonia, sulfur, "sludgy" or strong manure); this could be a sign of improperly or incompletely composted material. Visually inspect the compost to confirm that it has been screened to the appropriate size and no prohibited ingredients (e.g., treated wood, glass, etc.) have been included.
5. **Questions** – for STA participant verification, contact Al Rattie, [arconsulting1@verizon.net](mailto:arconsulting1@verizon.net) or (215) 258-5259.

## Bait and Switch

Know your material's place of origin. A compost supplier may only deliver compost produced at a STA-certified composting facility. If the project's contracted source of compost is *not available*, then the supplier must supply the remainder of the order from another STA-certified composting facility.