

SOIL-CEMENT

1. **APPLICABILITY**

Construction Specification 29 is applicable to all soil-cement fills.

2. **MATERIAL SPECIFICATIONS**

The following specifications are complementary to Construction Specification 29:

- a. Portland Cement. Material Specification 531
- b. Curing Compound (For Concrete). Material Specification 534

3. **ITEMS TO BE INCLUDED IN CONTRACT SPECIFICATIONS AND DRAWINGS**

- a. Complete plans and cross-sections of the required soil-cement fills.
- b. Borrow areas or other sources of materials. Any grading and shaping requirements of borrow areas.
- c. Soil-cement soil gradation and Atterberg limits.
- d. Cement content of the soil-cement mixture.
- e. The cement type and types of admixtures.
- f. The required pozzolan content.
- g. Allowable range of moisture content of the soil-cement mixture at the time of compaction.
- h. Compaction requirement for subgrade and soil-cement.
- i. The maximum compacted layer thickness.
- j. Pay limits where applicable.
- k. The method of curing process required. If a concrete curing compound is designated, specify "type" of curing compound required.
- l. Minimum capacity of the mixing plant, if applicable.
- m. Any special instructions about the use of soil materials that do not have similar gradation and Atterberg limits to those tested.
- n. All surfaces that are to be bonding surfaces need to be identified: i.e., soil-cement surfaces that are to receive an overlying layer of soil-cement or concrete that requires bonding of the two materials.

- o. The minimum strength of soil-cement determined by the design investigation using available borrow materials and the cement content specified.
- p. If required, specify in Section 15 the durability requirements as outlined in ASTM D 559 and D 560 to evaluate alternative design mixes as provided in Section 2(b).

4. DISCUSSION OF METHODS

a. Methods in Section 5, Design of Soil-Cement Mixture, and Section 6, Mixing, are self-explanatory.

b. Section 12, Protecting and Curing

(1) Method 1 is an environmentally sound, economical curing process that will provide either a clear, or an opaque white, moisture barrier.

(2) Method 2 will provide the best environment for curing, but is likely to be the most expensive. It is suggested for small areas or to reduce shrinkage cracking to the least extent.

(3) Method 3 is adaptable for smaller areas and offers the economy to reuse sheeting. Windy conditions may disrupt this curing method.

c. Section 14, Measurement and Payment

(1) Method 1 is for use when cement is included in the unit price for soil-cement.

(2) Method 2 is for use when the cement is paid for as a separate unit priced item apart from the soil-cement.

d. Sections 5, 6, 12, and 14

When specifications are prepared using electronic procedures and all but one method are deleted for use in a contract specification, delete the following and left justify the remaining text:

Section 5 and Section 12, "All Methods"

Section 6, "All Methods The following provisions apply to all methods of mixing."

Section 14, "All Methods The following provisions apply to all methods of measurement and payment."