

\*\*\* DRAFT – NOT FOR FILING \*\*\*

3745-512-224      Embankment.

[Comment: For dates of non-regulatory government publications, publications of recognized organizations and associations, test methods, federal rules, and federal statutory provisions referenced in this rule, see rule 3745-500-03 of the Administrative Code titled "Incorporation by reference."]

(A) Embankment material shall be placed by the owner or operator in lifts to attain uniform compaction. Each lift shall conform to the following:

- (1) Be free of foreign material and deleterious material.
- (2) Be free of industrial waste, solid waste, and C&DD.
- (3) Be free of objects exceeding six inches in any dimension.
- (4) Have plasticity properties lying above the A-line as described in ASTM D2487 (USCS), unless an alternative soil type that lies below the A-line is approved in accordance with rule 3745-512-17 of the Administrative Code.
- (5) Be constructed in loose lifts of eight inches thick or less.
- (6) Be constructed of a soil with a maximum clod size that does not exceed the lift thickness.
- (7) Be compacted to either at least ninety-five per cent of the maximum dry density as determined by ASTM D698 (standard proctor) or at least ninety per cent of the maximum dry density as determined by ASTM D1557 (modified proctor), or the density established in accordance with rule 3745-512-10 of the Administrative Code if that density is greater.

(B) If a flexible membrane liner is to be placed upon the embankment material, the surface of the embankment shall have no particles with a maximum dimension greater than 0.5 inches.

(C) If a vegetated surface is specified in the authorizing document, the embankment shall be constructed by the owner or operator to conform to the following:

- (1) The top lift of the embankment shall meet the following criteria:
  - (a) Be of sufficient thickness and fertility to support a complete and dense cover of vegetation.
  - (b) Be comprised of soil that shall result in an erosion rate of not more than five tons per acre per year as calculated using the "Universal Soil Loss

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Equation," "Revised Universal Soil Loss Equation," or the "Water Erosion Prediction Project Model" corresponding to the maximum slope length between ditches and assuming disturbed soils and that the soils are highly susceptible to rill erosion.

(c) Not later than seven days after construction, be covered with mulch or other material. The mulch or other covering material shall result in an erosion rate of not more than five tons per acre per year as calculated using the "Universal Soil Loss Equation," "Revised Universal Soil Loss Equation," or the "Water Erosion Prediction Project Model" corresponding to the maximum slope length between ditches and assuming the mulch or other material is a disturbed soil that is highly susceptible to rill erosion.

(2) Permanent vegetation shall consist of perennial-type, low-growing, spreading grasses that minimize erosion and can be mowed. The permanent vegetation shall not consist of crown vetch, alfalfa, or deep-rooted plants.

(D) Testing on embankment material shall be performed by the owner or operator in conformance with the following:

(1) Pre-construction testing on representative samples to determine shear strength in accordance with rule 3745-512-10 of the Administrative Code.

(2) Pre-construction testing on representative samples in accordance with rule 3745-512-15 of the Administrative Code.

(3) Construction testing on the constructed lifts to determine the density and moisture content according to ASTM D6938 (nuclear method), ASTM D1556 (sand cone), ASTM D2167 (rubber balloon), or ASTM D6780 (TDR) at a frequency of not less than five tests per acre per lift. The locations of the individual tests shall be adequately spaced to represent the constructed area and shall be offset from one lift to the next lift. Any penetration shall be repaired by the owner or operator using bentonite.

(E) Certification of embankment by the owner or operator shall include the following:

(1) Record drawings showing the location and plan views with topographic representation of final elevations of the embankment, as constructed.

(2) Results of all construction testing performed under paragraph (D)(3) of this rule.

(3) Results of all testing and verification that the embankment meets the standards in paragraphs (A) to (C)(1) of this rule and the specifications in the authorizing document. If an alternative material is used, the evaluation conducted pursuant to rule 3745-512-17 of the Administrative Code was submitted prior to use of the alternative material and therefore verification is not required to be submitted

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with the construction certification report under this rule. However, results of all testing to verify that the alternative material meets material specifications are required in the construction certification report.