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3745-512-611

Cap system recompacted soil layer.

[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) The cap system recompacted soil layer shall be constructed by the owner or operator in lifts to attain uniform compaction. Each lift shall meet the following criteria:

(1) Be free of foreign material and deleterious material.

(2) Be free of industrial waste, solid waste, and C&DD.

(3) Be constructed with soil meeting the following criteria:

(a) One hundred per cent of the particles shall have a maximum dimension not greater than two inches.

(b) Not more than ten per cent of the particles by weight shall have a dimension greater than 0.75 inches.

(c) Have plasticity properties lying above the A-line as described in ASTM D2487 (USCS).

(4) Either of the following:

(a) The recompacted laboratory hydraulic conductivity shall not exceed 1.0 times ten to the negative six centimeters per second when each lift is compacted in accordance with the following:

(i) The loose lifts are of a thickness which shall not exceed the length of the compactor tines.

(ii) The soil has a maximum clod size that does not exceed three inches.

(iii) One of the following dry density standards:

(a) For compaction equipment applying an approximate compactive effort of twelve thousand four hundred foot-pounds per cubic foot, at least ninety-five per cent of the maximum dry density as determined by ASTM D698 (standard proctor).

(b) For compaction equipment applying an approximate compactive effort of fifty-six thousand foot-pounds per cubic foot, at least

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ninety per cent of the maximum dry density as determined by ASTM D1557 (modified proctor).

(c) If the maximum dry density established in accordance with rule 3745-512-10 of the Administrative Code is greater than the density established in paragraphs (A)(4)(a)(iii)(a) and (A)(4)(a)(iii)(b) of this rule, that higher maximum dry density.

(iv) One of the following minimum soil moisture standards:

(a) For compaction equipment applying an approximate compactive effort of twelve thousand four hundred foot-pounds per cubic foot, not less than the optimum moisture content as determined by ASTM D698 (standard proctor).

(b) For compaction equipment applying an approximate compactive effort of fifty-six thousand foot-pounds per cubic foot, not less than the optimum moisture content as determined by ASTM D1557 (modified proctor).

(c) If the optimum moisture content established in accordance with rule 3745-512-10 of the Administrative Code is less than the moisture content established in paragraphs (A)(4)(a)(iv)(a) and (A)(4)(a)(iv)(b) of this rule, that lower moisture content.

(b) Be compacted in accordance with corresponding construction details as established in the recompacted soil liner test pad certification report in accordance with rule 3745-512-21 of the Administrative Code that was approved or concurred with by the director, or for C&DD facilities, the concurring authority.

(B) Testing of material used for the cap system recompacted soil layer shall be conducted 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 times 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. At least one test per lift shall be

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located within five feet of the edge of the construction phase. Any penetration shall be repaired using bentonite.

(C) Certification of the cap system recompacted soil layer by the owner or operator shall include the following:

- (1) Record drawings showing the location, including the run-out if applicable, and plan views with topographic representation of the basal and final elevations of the recompacted soil layer, as constructed.
- (2) The table of survey information described in rule 3745-512-50 of the Administrative Code and a comparison of the survey data to the elevations in the authorizing document.
- (3) Results of all construction testing of the recompacted soil layer material performed under paragraph (B)(3) of this rule.
- (4) Results of all testing and verification that the constructed lifts of recompacted soil layer meet the standards in paragraph (A) of this rule and the specifications in the authorizing document.