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3745-512-17 [Alternative materials evaluation and reporting.](#)

[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 owner or operator may use an alternative material to construct an engineered component of the facility if the alternative material undergoes an evaluation in accordance with this rule prior to use. An alternative material shall not be used to construct the facility unless the use was approved prior to use by the permitting authority.

(B) The permitting authority may decline to act on the alternative material request.

(C) The alternative material evaluation shall be signed and sealed by a professional engineer and include the following:

(1) A narrative section that identifies the alternative material and the engineering component for which it will be used.

(2) A demonstration that the alternative material meets the approval requirements established in paragraph (G) of this rule, as applicable.

[Comment: As defined and instructed by the applicable program chapter, if use of the alternative material meets the definition of an alteration, the owner or operator shall also submit an alteration request (the alternative material evaluation may be included in the alteration request). If use of the alternative material meets the definition of a modification, the owner or operator shall also submit a permit to install application (the alternative material evaluation may be included in the permit to install application).]

(D) Procedures for requesting and acting on an alternative material request shall be pursuant to rule 3745-500-510 of the Administrative Code.

(E) The approval for use of an alternative material is valid only for the area identified in the alternative material request. If the alternative material is to be used in additional areas, the owner or operator shall submit another evaluation under this rule.

(F) Approval to use an alternative material does not relieve the owner or operator from complying with requirements established by this chapter and any specification in the authorizing document.

(G) The permitting authority shall not approve use of an alternative material unless it determines the following:

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- (1) The alternative material is not a solid waste.
- (2) Use of the alternative material does not interfere with the ability of the owner or operator to do the following:
 - (a) Construct, operate, close, and maintain during the post-closure care period the facility in compliance with Chapters 3704., 3714., 3734., and 6111. of the Revised Code or rules promulgated thereunder and with authorizing documents.
 - (b) Conduct corrective actions presently being taken or that are proposed to be taken at the facility or in the immediate area including but not limited to fire, gas, odors, or ground water corrective actions.
 - (c) Monitor the impact of the facility on the environment.
- (3) The owner or operator has demonstrated the ability or is otherwise capable of using the alternative material.
- (4) The alternative material meets the following applicable standards:
 - (a) For embankment material, the alternative soil type shall have low permeability, good compactability, good cohesiveness, and be free of foreign material, deleterious material, industrial waste, solid waste, C&DD, and objects exceeding six inches in any dimension.
 - (b) For liner system flexible membrane liner, the alternative material shall be chemically resistant to damage caused by leachate. To evaluate chemical resistance, the permitting authority shall determine that at least one of the following is used by the owner or operator:
 - (i) U.S. EPA method 9090 or ASTM D5747. The immersion temperature shall be fifty degrees Centigrade if ASTM D5322 (immersion) is used in conjunction with ASTM D5747.
 - (ii) Any documented data, including data regarding the permeance and permeability of the flexible membrane liner to the constituents in the leachate or other materials that may come in contact with the flexible membrane liner.
 - (c) For liner system flexible membrane liner, the alternative thickness shall result in a consistent seam.
 - (d) For liner cushion layer used in the leachate collection system granular drainage layer, the alternative material shall protect the liner system flexible

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membrane liner from damage caused by construction materials and construction activities.

(e) For granular drainage material used as the leachate collection system drainage layer, the alternative material shall conform to the following:

(i) Use of the material will not result in the depth of leachate above the basal elevation of the leachate collection system drainage layer to exceed one foot, except in a recessed sump.

(ii) Use of the material will not result in clogging of the sump.

(iii) Be chemically compatible with the leachate.

(f) For liner cushion layer used in the leachate collection system tire shred drainage layer, the alternative material shall be chemically resistant to damage caused by leachate. To evaluate chemical resistance, the permitting authority shall determine that at least one of the following is used by the owner or operator:

(i) ASTM D6389 for the geotextile component and ASTM D6388 for the geonet component. The immersion temperature shall be fifty degrees Centigrade if ASTM D5322 (immersion) is used.

(ii) Any documented data demonstrating that the alternative material is resistant to the constituents in the leachate or other materials that may come in contact with the liner cushion layer.

(g) For leachate collection system geocomposite drainage layer, the alternative material shall be chemically resistant to damage caused by leachate. To evaluate chemical resistance, the permitting authority shall determine that at least one of the following is used by the owner or operator:

(i) ASTM D6389 for the geotextile component and ASTM D6388 for the geonet component. The immersion temperature shall be fifty degrees Centigrade if ASTM D5322 (immersion) is used.

(ii) Any documented data demonstrating that the alternative material is resistant to the constituents in the leachate or other materials that may come in contact with the geocomposite.

(h) For pipes and risers in the leachate collection system, the alternative material shall be chemically and physically resistant to damage caused by waste, C&DD, leachate, and gas that may come in contact with the pipes and risers.

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- (i) For the geotextile filter layer in the leachate collection system, the alternative material shall be chemically resistant to damage caused by leachate. To evaluate chemical resistance, the permitting authority shall determine that at least one of the following is used by the owner or operator:

 - (i) ASTM D6389. The immersion temperature shall be fifty degrees Centigrade if ASTM D5322 (immersion) is used.
 - (ii) Any documented data demonstrating that the alternative material is resistant to the constituents in the leachate or other materials that may come in contact with the geotextile.
- (j) For conveyance pipes in the leachate management system, the alternative material shall be chemically and physically resistant to damage caused by waste, C&DD, leachate, and gas that may come in contact with the conveyance pipes.
- (k) For transitional cover material, the alternative soil type shall have low permeability, good compactability, good cohesiveness, and be free of foreign material, deleterious material, industrial waste, solid waste, C&DD, and large objects in such quantities that could interfere with the construction and intended purpose of the transitional cover.
- (l) For liner cushion layer in the gas collection layer, the alternative material shall protect the cap system flexible membrane liner from damage caused by construction materials and construction activities.
- (m) For cap system flexible membrane liner, the alternative material shall be chemically resistant to damage caused by leachate. To evaluate chemical resistance, the owner or operator shall determine that at least one of the following is used by the owner or operator:

 - (i) U.S. EPA method 9090 or ASTM D5747. The immersion temperature shall be fifty degrees Centigrade if ASTM D5322 (immersion) is used in conjunction with ASTM D5747.
 - (ii) Any documented data, including data regarding the permeance and permeability of the flexible membrane liner to the constituents in the leachate or other materials that may come in contact with the flexible membrane liner.
- (n) For cap system flexible membrane liner, the alternative thickness shall result in a consistent seam.
- (o) For liner cushion layer underlying the granular drainage layer in the cap system, the alternative material shall protect the cap system flexible

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membrane liner from damage caused by construction materials and construction activities.