

3745-205-101

**Design and operating standards for containment buildings.**

(A) All containment buildings ~~must~~shall comply with the following design standards:

- (1) The containment buildings ~~must~~shall be completely enclosed with a floor, walls, and a roof to prevent exposure to the elements (e.g., precipitation, wind, run-on), and to assure containment of managed wastes.
- (2) The floor and containment walls of the unit, including the secondary containment system if required under paragraph (B) of this rule, ~~must~~shall be designed and constructed of ~~man-made~~man-made materials of sufficient strength and thickness to support ~~themselves~~such floor and walls, the waste contents, and any personnel and heavy equipment that operate within the unit, and to prevent failure due to pressure gradients, settlement, compression, uplift, physical contact with the wastes to which ~~they~~such floor and walls are exposed, climatic conditions, and the stresses of daily operation (including the movement of heavy equipment within the unit and contact of such equipment with containment walls). The unit ~~must~~shall be designed so that ~~it~~the unit has sufficient structural strength to prevent collapse or other failure. All surfaces to be in contact with hazardous wastes ~~must~~shall be chemically compatible with those wastes. Ohio EPA will consider standards established by professional organizations generally recognized by the industry such as the American concrete institute (ACI) and the American society of testing materials (ASTM) in judging the structural integrity requirements of paragraphs (A) to (A)(4) of this rule. If appropriate to the nature of the waste management operation to take place in the unit, an exception to the structural strength requirement may be made for light-weight doors and windows that meet ~~these~~the following criteria:
  - (a) ~~They~~The doors and windows provide an effective barrier against fugitive dust emissions under paragraph (C)(1)(d) of this rule; ~~and~~.
  - (b) The unit is designed and operated in a manner that assures that wastes will not actually come in contact with these openings.
- (3) Incompatible hazardous wastes or treatment reagents ~~must~~shall not be placed in the unit or ~~its~~the unit's secondary containment system if ~~they~~such substances could cause the unit or secondary containment system to leak, corrode, or otherwise fail.

- (4) A containment building ~~must~~shall have a primary barrier designed to withstand the movement of personnel, waste, and handling equipment in the unit during the operating life of the unit and appropriate for the physical and chemical characteristics of the waste to be managed.
- (B) For a containment building used to manage hazardous wastes containing free liquids or treated with free liquids (the presence of which is determined by the paint filter test, a visual examination, or other appropriate means), the owner or operator ~~must~~shall include all of the following:
- (1) A primary barrier designed and constructed of materials to prevent the migration of hazardous constituents into the barrier (e.g., a geomembrane covered by a concrete wear surface);<sub>2</sub>
  - (2) A liquid collection and removal system to minimize the accumulation of liquid on the primary barrier of the containment building;<sub>2</sub>
    - (a) The primary barrier ~~must~~shall be sloped to drain liquids to the associated collection system;~~and~~<sub>2</sub>
    - (b) Liquids and waste ~~must~~shall be collected and removed at the earliest practicable time to minimize hydraulic head on the containment system ~~at the earliest practicable time~~.
  - (3) A secondary containment system including a secondary barrier designed and constructed to prevent migration of hazardous constituents into the barrier, and a leak detection system that is capable of detecting failure of the primary barrier and collecting accumulated hazardous wastes and liquids at the earliest practicable time.
    - (a) The requirements of the leak detection component of the secondary containment system are satisfied by installation of a system that is, at a minimum, both:
      - (i) Constructed with a bottom slope of one per cent or more;~~and~~<sub>2</sub>
      - (ii) Constructed of a granular drainage material with a hydraulic conductivity of  $1 \times 10^{-2}$  centimeters per second or more and a thickness of twelve inches (30.5 centimeters) or more, or constructed of synthetic or geonet drainage materials with a transmissivity of  ~~$3 \times 10^{-5}$~~   $3 \times 10^{-5}$  meters squared per second or

more.

- (b) If treatment is to be conducted in the building, an area in which such treatment will be conducted ~~must~~shall be designed to prevent the release of liquids, wet materials, or liquid aerosols to other portions of the building.
- (c) The secondary containment system ~~must~~shall be constructed of materials that are chemically resistant to the waste and liquids managed in the containment building and of sufficient strength and thickness to prevent collapse under the pressure exerted by overlaying materials and by any equipment used in the containment building.

[Comment: Containment buildings may serve as secondary containment systems for tanks placed within the building. A containment building may serve as an external liner system for a tank, provided ~~it meets the requirements of the containment building complies with~~ paragraph (E)(1) of rule 3745-55-93 of the Administrative Code. In addition, the containment building ~~must meet the requirements of~~shall comply with paragraphs (B), (C)(1), and (C)(2) of rule 3745-55-93 of the Administrative Code to be considered an acceptable secondary containment system for a tank.]

- (4) For existing units other than ninety-day generator units, the director may delay the secondary containment requirement for up to two years, based on a demonstration by the owner or operator that the unit substantially meets the standards in rules 3745-205-100 to 3745-205-102 of the Administrative Code. In making this demonstration, the owner or operator ~~must~~shall do the following:
  - (a) Provide written notice to the director of ~~their~~the owner's or operator's request. This notification ~~must~~shall describe the unit and its operating practices with specific reference to the performance of existing containment systems, and specific plans for retrofitting the unit with secondary containment~~;~~.
  - (b) Respond within thirty days to any comments from the director on these plans~~; and~~.
  - (c) Fulfill the terms of the revised plans if such plans are approved by the director.

(C) Owners or operators of all containment buildings ~~must~~shall:

- (1) Use controls and practices to ensure containment of the hazardous waste within the unit; and, at a minimum, do all of the following:
  - (a) Maintain the primary barrier to be free of significant cracks, gaps, corrosion, or other deterioration that could cause hazardous waste to be released from the primary barrier;
  - (b) Maintain the level of the ~~stored/treated~~ stored or treated hazardous waste within the containment walls of the unit so that the height of any containment wall is not exceeded;
  - (c) Take measures to prevent the tracking of hazardous waste out of the unit by personnel or by equipment used in handling the waste. An area ~~must~~ shall be designated to decontaminate equipment, and any rinsate ~~must~~ shall be collected and properly managed; ~~and~~.
  - (d) Take measures to control fugitive dust emissions such that any openings (doors, windows, vents, cracks, etc.) exhibit no visible emissions (see method 22 in appendix A to 40 CFR Part 60, ~~appendix A, method 22~~-visual determination of fugitive emissions from material sources and smoke emissions from flares). In addition, all associated particulate collection devices (e.g., fabric filter, electrostatic precipitator) ~~must~~ shall be operated and maintained with sound air pollution control practices (~~see 40 CFR Part 60, subpart 292 for guidance~~). This state of no visible emissions ~~must~~ shall be maintained effectively at all times during routine operating and maintenance conditions, including when vehicles and personnel are entering and exiting the unit.
- (2) Obtain and keep on-site a certification by a qualified professional engineer that the containment building design ~~meets the requirements of~~ complies with paragraphs (A) to (C)(4) of this rule.
- (3) Throughout the active life of the containment building, repair promptly upon detection any condition that could lead to or has caused a release of hazardous waste, in accordance with the following procedures:
  - (a) Upon detection of a condition that has led to a release of hazardous waste (e.g., upon detection of leakage from the primary barrier), the owner or operator ~~must~~ shall do the following:
    - (i) Enter a record of the discovery in the facility operating record;

- (ii) Immediately remove from service the portion of the containment building affected by the condition;~~;~~
  - (iii) Determine what steps ~~must~~shall be taken to repair the containment building, remove any leakage from the secondary collection system, and establish a schedule for accomplishing the cleanup and repairs;~~and~~.
  - (iv) Within seven days after the discovery of the condition, notify the director of the condition, and within fourteen working days, provide a written plan to the director with a description of the steps taken to repair the containment building and with the schedule for accomplishing the work.
- (b) The director will review the information submitted, will make a determination regarding whether the containment building ~~must~~shall be removed from service completely or partially until repairs and cleanup are complete, and will notify the owner or operator in writing of the determination and the underlying rationale.
- (c) Upon completing all repairs and cleanup, the owner or operator ~~must~~shall notify the director in writing and provide a verification, signed by a qualified professional engineer, that the repairs and cleanup have been completed according to the written plan submitted in accordance with paragraph (C)(3)(a)(iv) of this rule.
- (4) Inspect and record in the facility's operating record, at least once every seven days, data gathered from monitoring equipment, leak detection equipment, the containment building, and the area immediately surrounding the containment building, to detect signs of releases of hazardous waste.
- (D) For a containment building that contains both areas with secondary containment and without secondary containment, the owner or operator ~~must~~shall do the following:
- (1) Design and operate each area in accordance with ~~the requirements in~~ paragraphs (A) to (C)(4) of this rule;~~;~~
  - (2) Take measures to prevent the release of liquids or wet materials into areas without secondary containment;~~and~~.

- (3) Maintain in the facility's operating record a written description of the operating procedures used to maintain the integrity of areas without secondary containment.
- (E) Notwithstanding any other provisions of rules 3745-205-100 to 3745-205-102 of the Administrative Code, the director may waive requirements for secondary containment for a permitted containment building where the owner or operator demonstrates that the only free liquids in the unit are limited amounts of dust suppression liquids required to meet occupational health and safety requirements, and where containment of managed wastes and liquids can be assured without a secondary containment system.

[Comment: For dates of non-regulatory government publications, publications of recognized organizations and associations, federal rules, and federal statutory provisions referenced in this rule, see rule 3745-50-11 of the Administrative Code titled "Incorporated by reference."]

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Five Year Review (FYR) Dates: 11/29/2016 and 11/29/2021

CERTIFIED ELECTRONICALLY

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Certification

02/15/2017

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Date

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