

3745-256-100

**Applicability- containment buildings.**

Rules 3745-256-100 to 3745-256-102 of the Administrative Code apply to owners or operators who store or treat hazardous waste in units designed and operated under rule 3745-256-101 of the Administrative Code. The owner or operator is not subject to the definition of "land disposal" in rule 3745-270-02 of the Administrative Code provided that the unit:

- (A) Is a completely enclosed, self-supporting structure that is designed and constructed of man-made materials of sufficient strength and thickness to support the materials, 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 hazardous wastes to which the materials 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).
- (B) Has a primary barrier that is designed to be sufficiently durable to withstand the movement of personnel and handling equipment within the unit.
- (C) If used to manage a hazardous waste containing free liquids (the presence of which is determined by the paint filter test, a visual examination, or other appropriate means), has all of the following:
  - (1) A primary barrier designed and constructed of materials to prevent migration of hazardous constituents into the barrier.
  - (2) A liquid collection system designed and constructed of materials to minimize the accumulation of liquid on the primary barrier.
  - (3) A secondary containment system designed and constructed of materials to prevent migration of hazardous constituents into the barrier, with a leak detection and liquid collection system capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest possible time, unless the unit ~~has been~~was granted a variance from the secondary containment system requirements under paragraph (B)(4) of rule 3745-256-101 of the Administrative Code.
- (D) Has controls as needed to prevent fugitive dust emissions to meet the no visible emission standard in paragraph (C)(1)(d) of rule 3745-256-101 of the Administrative Code.
- (E) Is designed and operated to ensure containment and prevent the tracking of materials from the unit by personnel or equipment.

Effective: 9/29/2021

Five Year Review (FYR) Dates: 6/7/2021 and 06/05/2026

CERTIFIED ELECTRONICALLY

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Certification

09/14/2021

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Date

Promulgated Under: 119.03  
Statutory Authority: 3734.12  
Rule Amplifies: 3734.12  
Prior Effective Dates: 12/07/2000, 12/07/2004, 02/16/2009, 10/31/2015

3745-256-101

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

(A) All containment buildings shall comply with all of the following design standards:

- (1) The containment building 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, shall be designed and constructed of ~~man-made~~ materials of sufficient strength and thickness to support the materials, 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 floors 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 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 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~~ paragraph (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 both of these criteria:
  - (a) The light-weight doors and windows provide an effective barrier against fugitive dust emissions under paragraph (C)(1)(d) of this rule.
  - (b) The unit is designed and operated in a fashion that assures that wastes will not actually come in contact with these openings.
- (3) Incompatible hazardous wastes or treatment reagents shall not be placed in the unit or the unit's secondary containment system if the incompatible hazardous wastes or treatment reagents could cause the unit or secondary containment system to leak, corrode, or otherwise fail.
- (4) A containment building 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~~ that contain 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 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).
  - (2) A liquid collection and removal system to prevent the accumulation of liquid on the primary barrier of the containment building:
    - (a) The primary barrier shall be sloped to drain liquids to the associated collection system.
    - (b) Liquids and waste shall be collected and removed to minimize hydraulic head on the containment system at the earliest practicable time that protects human health and the environment.
  - (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.
      - (ii) Constructed of a granular drainage material with a hydraulic conductivity of  ~~$1 \times 10^{-21}$~~   $1 \times 10^{-2}$  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  ~~$3 \times 10^{-53}$~~   $3 \times 10^{-5}$  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 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 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. Containment buildings can serve as secondary containment systems for tanks placed within the building under certain conditions. A containment building can serve as an external liner system for a tank, provided the containment building complies with paragraph (E)(1) of rule 3745-66-93 of the Administrative Code. In addition, the containment building shall comply with paragraphs (B) and (C) of rule 3745-66-93 of the Administrative Code to be considered an acceptable secondary containment system for a tank.

~~{Comment: Containment buildings can serve as secondary containment systems for tanks placed within the building under certain conditions. A containment building can serve as an external liner system for a tank, provided the containment building complies with paragraph (E)(1) of rule 3745-66-93 of the Administrative Code. In addition, the containment building shall comply with paragraphs (B) and (C) of rule 3745-66-93 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 of rules 3745-256-100 to 3745-256-102 of the Administrative Code. In making this demonstration, the owner or operator shall do all of the following:
- (a) Provide written notice to the director of the owner's or operator's request. This notification shall describe the unit and ~~its~~the unit's 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.
  - (c) Fulfill the terms of the revised plans, if such plans are approved by the director.

(C) Owners or operators of all containment buildings shall do all of the following:

- (1) Use controls and practices to ensure containment of the hazardous waste within the unit, and, at a minimum:

- (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 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 shall be designated to decontaminate equipment and any rinsate shall be collected and properly managed.
  - (d) Take measures to control fugitive dust emissions such that any openings (doors, windows, vents, cracks, etc.) exhibit no visible emissions. In addition, all associated particulate collection devices (e.g., fabric filter, electrostatic precipitator) shall be operated and maintained with sound air pollution control practices. This state of no visible emissions shall be maintained effectively at all times during normal operating 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 complies with paragraphs (A) to (C)(4) of this rule.
- (3) Throughout the active life of the containment building, if the owner or operator detects a condition that could lead to or has caused a release of hazardous waste, the owner or operator shall repair the condition promptly, 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 shall do all of 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 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.

- (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 the schedule for accomplishing the work.
  - (b) The director will review the information submitted, make a determination regarding whether the containment building shall be completely or partially removed from service until repairs and cleanup are complete, and 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 shall notify the director in writing and provide a verification, signed by a qualified, registered professional engineer, that the repairs and cleanup ~~have been~~were completed according to the written plan submitted in accordance with paragraph (C)(3)(a)(iv) of this rule.
  - (4) ~~Inspect~~At least once every seven days, 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 that immediately surrounding the containment building, to detect signs of releases of hazardous waste.
- (D) For a containment building that contains both areas with and without secondary containment, the owner or operator shall do all of the following:
- (1) Design and operate each area in accordance with 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.
  - (3) Maintain in the facility's operating ~~log~~record a written description of the operating procedures used to maintain the integrity of areas without secondary containment.
- (E) Notwithstanding any other provision of rules 3745-256-100 to 3745-256-102 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.

Effective: 9/29/2021  
Five Year Review (FYR) Dates: 6/7/2021 and Exempt

CERTIFIED ELECTRONICALLY

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Certification

09/14/2021

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Date

Promulgated Under: 119.03  
Statutory Authority: 3734.12  
Rule Amplifies: 3734.12  
Prior Effective Dates: 12/07/2000, 12/07/2004, 09/05/2010, 10/31/2015

**3745-256-102      Closure and post-closure care of containment buildings.**

- (A) At closure of a containment building, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless paragraph (D) of rule 3745-51-03 of the Administrative Code applies. The closure plan, closure activities, cost estimates for closure, and financial responsibility for containment buildings must meet all of the requirements specified in rules 3745-66-10 to 3745-66-21 and 3745-66-40 to 3745-66-48 of the Administrative Code.
  
- (B) If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in paragraph (A) of this rule, the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, he must close the facility and perform post-closure care in accordance with the closure and post-closure requirements that apply to landfills (rule 3745-68-10 of the Administrative Code). In addition, for the purposes of closure, post-closure, and financial responsibility, such a containment building is then considered to be a landfill and the owner or operator must meet all of the requirements for landfills specified in rules 3745-66-10 to 3745-66-21 and 3745-66-40 to 3745-66-48 of the Administrative Code.

Effective: 12/07/2004  
119.032 review dates: Exempt  
Promulgated under: 119.03  
Statutory authority: 3734.12  
Rule amplifies: 3734.12  
Prior effective dates: 12/07/2000

3745-256-200

**Applicability- military munitions.**

~~The requirements of rules~~ Rules 3745-256-200 to 3745-256-202 of the Administrative Code apply to owners or operators who store hazardous waste munitions and hazardous waste explosives, except as rule 3745-65-01 of the Administrative Code provides otherwise.

[Comment: Depending on explosive hazards, hazardous waste munitions and hazardous waste explosives may also be managed in other types of storage units, including containment buildings (rules 3745-256-100 to 3745-256-102 of the Administrative Code), tanks (rules 3745-66-90 to ~~3745-66-101~~3745-66-100 of the Administrative Code), or containers (rules 3745-66-70 to 3745-66-77 of the Administrative Code). See rule 3745-266-205 of the Administrative Code for storage of waste military munitions.]

Effective: 10/5/2020

Five Year Review (FYR) Dates: Exempt

CERTIFIED ELECTRONICALLY

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Certification

09/21/2020

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Date

Promulgated Under: 119.03  
Statutory Authority: 3734.12  
Rule Amplifies: 3734.12  
Prior Effective Dates: 12/07/2004, 09/05/2010

3745-256-201

**Design and operating standards for military munitions.**

- (A) Hazardous waste munitions and hazardous waste explosives storage units must be designed and operated with containment systems, controls, and monitoring, that:
- (1) Minimize the potential for detonation or other means of release of hazardous waste, hazardous constituents, hazardous decomposition products, or contaminated run-off, to the soil, ground water, surface water, and atmosphere;
  - (2) Provide a primary barrier, which may be a container (including a shell) or tank, designed to contain the hazardous waste;
  - (3) For wastes stored outdoors, provide that the waste and containers will not be in standing precipitation;
  - (4) For liquid wastes, provide a secondary containment system that assures that any released liquids are contained and promptly detected and removed from the waste area, or vapor detection system that assures that any released liquids or vapors are promptly detected and an appropriate response taken (e.g., additional containment, such as overpacking, or removal from the waste area); and
  - (5) Provide monitoring and inspection procedures that assure the controls and containment systems are working as designed and that releases that may adversely impact human health or the environment are not escaping from the unit.
- (B) Hazardous waste munitions and hazardous waste explosives stored under rules 3745-256-200 to 3745-256-202 of the Administrative Code may be stored in one of the following:
- (1) Earth-covered magazines. Earth-covered magazines must be:
    - (a) Constructed of waterproofed, reinforced concrete or structural steel arches, with steel doors that are kept closed when not being accessed;
    - (b) Designed and constructed:
      - (i) To be of sufficient strength and thickness to support the weight of any explosives or munitions stored and any equipment used in the unit;

- (ii) To provide working space for personnel and equipment in the unit; and
    - (iii) To withstand movement activities that occur in the unit; and
  - (c) Located and designed, with walls and earthen covers that direct an explosion in the unit in a safe direction, so as to minimize the propagation of an explosion to adjacent units and to minimize other effects of any explosion.
- (2) Above-ground magazines. Above-ground magazines must be located and designed so as to minimize the propagation of an explosion to adjacent units and to minimize other effects of any explosion.
- (3) Outdoor or open storage areas. Outdoor or open storage areas must be located and designed so as to minimize the propagation of an explosion to adjacent units and to minimize other effects of any explosion.
- (C) Hazardous waste munitions and hazardous waste explosives must be stored in accordance with a standard operating procedure specifying procedures to ensure safety, security, and environmental protection. If these procedures serve the same purpose as the security and inspection requirements of rule 3745-65-14 of the Administrative Code, the preparedness and prevention procedures of rules 3745-65-30 to 3745-65-37 of the Administrative Code, and the contingency plan and emergency procedures requirements of rules 3745-65-50 to 3745-65-56 of the Administrative Code, then these procedures will be used to fulfill those requirements.
- (D) Hazardous waste munitions and hazardous waste explosives must be packaged to ensure safety in handling and storage.
- (E) Hazardous waste munitions and hazardous waste explosives must be inventoried at least annually.
- (F) Hazardous waste munitions and hazardous waste explosives and their storage units must be inspected and monitored as necessary to ensure explosives safety and to ensure that there is no migration of contaminants out of the unit.

Effective: 09/05/2010

R.C. 119.032 review dates: 04/14/2010 and Exempt

CERTIFIED ELECTRONICALLY

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Certification

07/23/2010

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Date

Promulgated Under: 119.03  
Statutory Authority: 3734.12  
Rule Amplifies: 3734.12  
Prior Effective Dates: 12/07/2004

**3745-256-202          Closure and post-closure care of military munitions.**

- (A) At closure of a magazine or unit which stored hazardous waste under rules 3745-256-200 to 3745-256-202 of the Administrative Code, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components, contaminated subsoils, and structures and equipment contaminated with waste, and manage them as hazardous waste unless paragraph (D) of rule 3745-51-03 of the Administrative Code applies. The closure plan, closure activities, cost estimates for closure, and financial responsibility for magazines or units must meet all of the requirements specified in rules 3745-66-10 to 3745-66-21 and 3745-66-40 to 3745-66-48 of the Administrative Code, except that the owner or operator may defer closure of the unit as long as it remains in service as a munitions or explosives magazine or storage unit.
  
- (B) If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in paragraph (A) of this rule, the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, he must close the facility and perform post-closure care in accordance with the closure and post-closure requirements that apply to landfills (see rule 3745-68-10 of the Administrative Code).

Effective: 12/07/2004  
119.032 review dates: Exempt  
Promulgated under: 119.03  
Statutory authority: 3734.12  
Rule amplifies: 3734.12  
Prior effective dates: None