**Section 724.1101 Design and Operating Standards**

a) All containment buildings must comply with the following design and operating standards:

1) The containment building must 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 subsection (b), must be designed and constructed of materials of sufficient strength and thickness to support themselves, the waste contents, and any personnel and heavy equipment that operate within the unit, and to prevent failure due to pressure gradients, settlement, compression, or uplift, physical contact with the hazardous wastes to which they 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 be designed so that it has sufficient structural strength to prevent collapse or other failure. All surfaces to be in contact with hazardous wastes must be chemically compatible with those wastes. The containment building must meet the structural integrity requirements established by professional organizations generally recognized by the industry such as the American Concrete Institute (ACI) and the American Society of Testing Materials (ASTM). 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 the following criteria:

A) They provide an effective barrier against fugitive dust emissions under subsection (c)(1)(D); and

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 must not be placed in the unit or its secondary containment system if they could cause the unit or secondary containment system to leak, corrode, or otherwise fail.

4) A containment building must 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 include the following design features:

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 minimize the accumulation of liquid on the primary barrier of the containment building, as follows:

A) The primary barrier must be sloped to drain liquids to the associated collection system; and

B) Liquids and waste must be collected and removed 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, as follows:

i) It is constructed with a bottom slope of 1 percent or more; and

ii) It is constructed of a granular drainage material with a hydraulic conductivity of 1 x 10-2 cm/sec or more and a thickness of 12 inches (30.5 cm) or more, or constructed of synthetic or geonet drainage materials with a transmissivity of 3 x 10-5 m2/sec or more.

B) If treatment is to be conducted in the building, an area in which such treatment will be conducted must 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 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 it meets the requirements of Section 724.293(e)(1). In addition, the containment building must meet the requirements of Section 724.293(b), (c)(1) and (c)(2) to be an acceptable secondary containment system for a tank.)

4) This subsection (b)(4) corresponds with 40 CFR 264.1101(b)(4), which is now obsolete and without effect. This statement maintains structural consistency with the federal rules.

c) An owner or operator of a containment building must do each of the following:

1) It must use controls and practice to ensure containment of the hazardous waste within the unit, and at a minimum do each of the following:

A) It must 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) It must 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) It must 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 be designated to decontaminate equipment and any rinsate must be collected and properly managed; and

D) It must take measures to control fugitive dust emissions such that any openings (doors, windows, vents, cracks, etc.) exhibit no visible emissions (see Reference Method 22 (Visual Determination of Fugitive Emissions from Material Sources and Smoke Emissions from Flares) in appendix A to 40 CFR 60 (Test Methods), incorporated by reference in 35 Ill. Adm. Code 720.111(b)). In addition, all associated particulate collection devices (e.g., fabric filter, electrostatic precipitator, etc.) must be operated and maintained with sound air pollution control practices (see 40 CFR 60 for guidance). This state of no visible emissions must be maintained effectively at all times during routine operating and maintenance conditions, including when vehicles and personnel are entering and exiting the unit.

BOARD NOTE: At 40 CFR 264.1101(c)(1)(iv) (2005), USEPA cites "40 CFR part 60, subpart 292". At 57 Fed. Reg. 37217 (Aug. 18, 1992), USEPA repeats this citation in the preamble discussion of adoption of the rules. No such provision exists in the Code of Federal Regulations. While 40 CFR 60.292 of the federal regulations pertains to control of fugitive dust emissions, that provision is limited in its application to glass melting furnaces. The Board has chosen to use the general citation: "40 CFR 60".

2) It must obtain and keep on site a certification by a qualified Professional Engineer that the containment building design meets the requirements of subsections (a) through (c).

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, it must repair the condition promptly, in accordance with the following procedures:

A) Upon detection of a condition that has led to a release of hazardous wastes (e.g., upon detection of leakage from the primary barrier) the owner or operator must do the following:

i) Enter a record of the discovery in the facility operating record;

ii) Immediately remove the portion of the containment building affected by the condition from service;

iii) Determine what steps must 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 Agency in writing of the condition, and within 14 working days, provide a written notice to the Agency with a description of the steps taken to repair the containment building, and the schedule for accomplishing the work.

B) The Agency must review the information submitted, make a determination in accordance with Section 34 of the Act, regarding whether the containment building must be removed from service completely or partially until repairs and cleanup are complete, and notify the owner or operator of the determination and the underlying rationale in writing.

C) Upon completing all repairs and cleanup the owner and operator must notify the Agency in writing and provide a verification, signed by a qualified, registered professional engineer, that the repairs and cleanup have been completed according to the written plan submitted in accordance with subsection (c)(3)(A)(iv).

4) It must inspect and record in the facility's operating record data gathered from monitoring and leak detection equipment, as well as the containment building and the area immediately surrounding the containment building, to detect signs of releases of hazardous waste at least once every seven days.

d) For a containment building that contains areas both with and without secondary containment, the owner or operator must do the following:

1) Design and operate each area in accordance with the requirements enumerated in subsections (a) through (c);

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 log a written description of the operating procedures used to maintain the integrity of areas without secondary containment.

e) Notwithstanding any other provision of this Subpart DD, the Agency must, in writing, allow the use of alternatives to the requirements for secondary containment for a permitted containment building where the Agency has determined that the facility owner or operator has adequately demonstrated 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.

(Source: Amended at 42 Ill. Reg. 22614, effective November 19, 2018)