

**1505.3080 SECONDARY CONTAINMENT AREAS.**

Subpart 1. **General requirements.** Liquid bulk pesticide storage containers must be confined to a secondary containment area that is adequate, in the event of a release, to prevent the movement of liquid pesticides to surface or ground water. The loading area as specified in part 1505.3070 must not be located, designed, or constructed in such a way so as to compromise the required secondary containment of subpart 2. The secondary containment provisions also apply to liquid bulk pesticides stored in a location covered by a roof. A secondary containment area must consist of:

- A. a wall and liner as provided under subparts 4 and 5;
- B. a prefabricated secondary containment basin as provided under subpart 6; or
- C. other safeguards approved by the commissioner.

Subp. 2. **Capacity.** The capacity of a secondary containment area for a bulk pesticide storage facility must be at least equal to the sum of all of the following:

- A. the greatest volume of liquid bulk pesticide or liquid bulk fertilizer that could be released from the largest storage container within the secondary containment area;
- B. 25 percent of the capacity of the largest liquid bulk pesticide or liquid bulk fertilizer storage container located within the secondary containment area for an outdoor storage container, or ten percent of the capacity of the largest liquid bulk pesticide container or liquid bulk fertilizer if stored in a location covered by a roof; and
- C. the total volume of released liquid which would be displaced by the portions of all other storage containers within the secondary containment area to the height of the containment wall and all other fixtures and materials located within the secondary containment area (including pesticide or fertilizer diluent, empty pesticide containers, recovered pesticide or fertilizer releases, and liquid pesticide or fertilizer metering equipment).

Subp. 3. **Storage with other commodities or equipment.**

A. Liquid bulk pesticide, liquid bulk fertilizer, pesticide or fertilizer diluent, empty pesticide containers, recovered pesticide or fertilizer releases, or liquid pesticide or fertilizer metering equipment may be stored within the bulk pesticide secondary containment area.

B. The total containment capacity calculated in subpart 2 may not be compromised by storing liquid bulk pesticide or liquid bulk fertilizer, pesticide or fertilizer diluent, pesticide containers, pesticide or fertilizer releases, pesticide or fertilizer metering equipment, or other equipment or products in amounts greater than the amounts which were originally calculated as necessary displacement in subpart 2.

C. A liquid bulk pesticide storage containment area may be located within the boundary of a liquid bulk fertilizer containment area if:

- (1) the containment areas are separated by a wall described in subpart 4;
- (2) the bulk pesticide is contained in an anchored prefabricated containment unit as described in subpart 6; or
- (3) each bulk pesticide storage container and its appurtenances is effectively protected from corrosion and flotation by liquid bulk fertilizers.

Subp. 4. **Walls.** The walls of a secondary containment area must be made of ferrous metal, inorganic soil, stainless steel, reinforced concrete, or solid reinforced masonry and must be designed to withstand a full hydrostatic head of any released liquid. Cracks and seams must be sealed as needed to prevent leakage. Walls constructed of inorganic soil must be lined as provided under subpart 5, item D, be protected from erosion, and have a horizontal to vertical slope of at least three to one, unless a steeper slope is consistent with good engineering practice. Walls may not exceed six feet in height above the interior grade.

A. All bulk pesticide tanks must be placed a minimum of one foot from a secondary containment area wall.

B. Tanks over ten feet high stored outdoors must be located at least three feet from the secondary containment area wall.

C. The walls of a secondary containment area may not contain a drain or other similar opening.

D. Masonry walls must be reinforced, capped with concrete, and parged on the interior.

E. The joint between a masonry wall and any floor or subsurface that it is constructed on must be constructed, sealed, and protected in such a way that it prevents any pesticide leakage from leaving the containment area.

Subp. 5. **Lining.**

A. The base of a secondary containment area and any inorganic soil walls of a secondary containment area must be lined with reinforced concrete, a synthetic liner, an inorganic soil liner, ferrous metal, or stainless steel designed to limit the permeability of the base and walls. Liners must meet the requirements of this subpart. The base of a secondary containment area may not contain a drain or other similar opening used to release pesticides or precipitation. Dissimilar materials may not be used together for a wall and liner combination unless approved by the commissioner.

B. Concrete liners must be designed according to good engineering practices to withstand any foreseeable loading conditions, including a full hydrostatic head of released liquid. Cracks and seams must be sealed to prevent leakage.

C. Synthetic liners must have a minimum thickness of 30 mils (0.8 millimeters), be chemically compatible with the materials being stored within the secondary containment area, be photo-resistant, and be puncture resistant. Confirmation of chemical compatibility and an estimate of liner life must be retained by the firm for inspection upon request by the Department of Agriculture. The synthetic liner must be protected by a 12-inch (30-centimeter) layer of inorganic soil or half-inch diameter rounded stone above the liner and a six-inch (15-centimeter) layer of inorganic soil below the liner. Soil layers must be free of large rocks, angular stones, sticks, or other materials that may puncture the liner. Synthetic liners must be installed according to the manufacturer's recommendations and, if necessary, under the supervision of a qualified representative of the manufacturer, and all field-constructed seams must be tested, and repaired if necessary, in accordance with the manufacturer's recommendations. Pesticide releases onto the inorganic soil portion of a synthetic liner containment area must be managed by the removal of contaminated soils. Disposition of contaminated soils is subject to approval from the Department of Agriculture. Integrity of the inorganic soil portion of the synthetic liner containment area must be restored under all circumstances.

D. Soil liners must comply with subitems (1) to (5).

(1) A liner may be constructed of inorganic soil treated with bentonite clay if the liner meets the requirements of this subitem. The liner must be designed and constructed according to good engineering practices, extend a minimum of six feet beyond the wall, and achieve a coefficient of permeability not to exceed  $1 \times 10^{-6}$  cm/sec, with a thickness of not less than six inches (15 centimeters). The liner must be covered by an inorganic soil layer not less than six inches (15 centimeters) thick. Liners may not be constructed of frost-susceptible soils, which include silts and silty sand.

(2) Bentonite-treated liners must consist of a uniform mixture of inorganic soil and bentonite. The inorganic soil used in the mixture must have a plasticity index of at least 12. At least 30 percent by weight of the inorganic soil must pass a No. 200 sieve, and less than five percent of the inorganic soil must be retained on a No. 4 sieve. Ninety percent of the bentonite by weight must pass a No. 80 sieve, and the inorganic soil-bentonite mixture must contain at least five percent bentonite by weight.

(3) An inorganic soil may not be used as part of a soil liner if less than 50 percent by weight of the soil passes a No. 200 sieve, or if more than five percent by weight of the inorganic soil is retained on a No. 4 sieve.

(4) Soil liners must be maintained to prevent cracking or other conditions that may compromise the integrity of containment. Pesticide releases into an inorganic

soil-bentonite liner containment area must be managed by removal of contaminated soils within 48 hours. Contaminated soils must be used at labeled rates consistent with labeled end uses for the intended crop, or stored and used later at labeled rates consistent with labeled end uses for the intended crop, or disposed of according to local, state, and federal regulations. Integrity of the inorganic soil walls and inorganic soil-bentonite liner after a spill must be restored under all circumstances.

(5) An owner or manager shall submit to the commissioner, upon request, certification by a registered engineer practicing in the geotechnical field to verify that the coefficient of permeability of the liner does not exceed  $1 \times 10^{-6}$  cm/sec or that the inorganic soil lined containment area will contain released liquid to the height of the containment wall for at least 72 hours.

Subp. 6. **Prefabricated secondary containment basin.** A prefabricated secondary containment basin must be composed of a rigid prefabricated basin having both a base and walls constructed of steel or synthetic materials which are resistant to corrosion, puncture, or cracking. Materials used for the prefabricated basin must be chemically compatible with the products being stored in the bulk pesticide tank. A written confirmation of compatibility from the basin manufacturer must be kept on file at the storage facility or at the nearest local office from which the storage facility is administered. The prefabricated facility must be designed and installed to contain the amounts listed in subpart 2, including the tank load and a full hydrostatic head of any released liquid. Multiple basins connected to provide the capacity required under subpart 2, must be connected in a way that assures an unrestricted transfer of released liquid between basins. A prefabricated containment basin may not be located where fire could damage the containment vessel and compromise the intended containment.

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