



FIRE PREVENTION STANDARD

Title: Secondary Containment for Hazardous Materials		
Number: G-02	Effective Date: 08/01/05	Revised Date: 10/14/09
Code References: 2007 California Fire Code (CFC) Sections 2703.2.2.1, 2704.2 through 2704.2.2.5, 3404.2.8.3, 3404.2.9.6.4 and 3404.3.8.2		
Note: <i>This standard is a summary of Fire Department clarifications of City and State Codes. Information contained herein applies to typical circumstances and may not address all situations.</i>		

Scope

The purpose of this standard is to provide guidelines for hazardous liquids.

Permits Required

A permit from the Roseville Fire Department is required for storage of hazardous materials when specified pursuant to Table 105.6.20, generally, in areas where dispensing occurs, this means when a container exceeds a capacity of 55 gallons or if the aggregate of small containers exceeds 100 gallons.

Purpose

The purpose of secondary containment is to: 1) provide for the safety of employees and fire fighters when working in the storage area or when responding to a fire, and 2) prevent a discharge from flowing into storm drains, sewers or the environment. Secondary containment is a general requirement for certain hazardous materials stored in excess of exempt amounts.

Design

The design of the area must be adequate to contain a spill from the largest container plus the flow rate of the automatic fire extinguishing system for a period of 20 minutes for the area or room of storage. Methods used to contain hazardous materials include: 1) a liquid-tight recessed floor in indoor or outdoor locations; 2) an area with raised berms or dikes; 3) sloped floors with sumps or collection systems, or 4) drainage systems leading to an approved location. If a storage area is open to rainfall, secondary containment shall be designed to include the volume of a 24-hour rainfall as determined by a 25-year storm. As a general rule, add an additional four inches to the height of secondary containment berm to accommodate for the storm history. Provisions must also be made to drain accumulations of rainwater.

To determine the volume or gallons of containment in a storage area, multiply length times width times height in feet times 7.48. To calculate the volume of fire sprinkler water generated over 20 minutes, multiply the area in square feet (length times width) times the sprinkler density (i.e. 0.3 gpm/square foot) times 20. To determine the volume of secondary containment required, add the capacity of the single largest container to the product of the above multiplication, and multiply that number by 0.134 (the constant for cubic foot per gallon). To determine the height or depth in feet of the storage room or area's containment, divide the



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result arrived at above by the square foot area of storage. As a general rule, an additional 10% of the volume calculated above may be added to compensate for the displacing of liquid contents that occupy a portion of the secondary containment area. Surfaces of secondary containment must hold up long enough to allow for time needed to mitigate a spill. Concrete for example, is etched by corrosives, and without a protective coating, solvents would eventually penetrate to the underlying ground layer.

Approved:

A handwritten signature in black ink, appearing to read "D. M. Mathisen", written over a horizontal line.

Dennis M. Mathisen, Division Chief/Fire Marshal