



CITY OF
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**FIRE DEPARTMENT
INFORMATION BULLETIN**

SUBJECT: HIGH-PILED COMBUSTIBLE STORAGE

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Code Reference: 2001 California Fire Code (CFC), Article 81, Standards 81-1, 81-2 and 81-3
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NOTE: This bulletin is a summary of Fire Department interpretations of City, State, and Federal Codes. Information contained herein applies to typical instances and may not address all circumstances

The California Fire Code, Article 81, regulates storage within a building of combustible materials in closely packed piles, and combustible materials on pallets, racks, or on shelves where the top of the items being stored is greater than twelve (12) feet in height. High-pile combustible storage also includes certain high-hazard commodities such as rubber tires, Group A plastics, flammable liquids, idle pallets, and similar commodities where the top of the storage is greater than six (6) feet in height.

HIGH-PILED STORAGE AREA

An area within a building, which is designated, intended, proposed or actually used for high-piled combustible storage. The total area of high-piled storage includes the floor area "footprint" of the commodity stored and the required aisles between storage areas.

RACK STORAGE

A storage array consisting of an open framework of vertical, horizontal and diagonal members that support stored materials where the product containers span between rack members. Racks may be fixed or portable.

SHELF STORAGE

A storage array consisting of storage on solid shelves less than thirty (30) inches deep with the distance between the shelves not exceeding three (3) feet vertically.

**INFORMATION BULLETIN
HIGH-PILED COMBUSTIBLE STORAGE**

COMMODITY

A combination of products, packing materials and containers.

PERMIT APPLICATION SUBMITTAL REQUIREMENTS

A permit from the Fire Department is required to use a building for high-piled combustible storage. At the time of permit application, plans and specifications shall be submitted for review and approval. The plans shall include the following:

1. Dimensioned or scaled floor plan of the entire building and site showing:
 - a. Locations and dimensions of high-piled storage areas.
 - b. Aisle dimensions between each storage array.
 - c. Location and size of fire department access roadways.
 - d. Location, size and spacing of all doors into the storage area.
 - e. Location of sprinkler riser and all valves controlling the water supply of ceiling and in-rack sprinklers.

2. Dimensioned or scaled reflected ceiling plan of the storage area showing:
 - a. Location and type of fire-detection and fire-suppression systems.
 - b. Location and depth of curtain board systems, with reference to a sectional detail of curtain board construction.
 - c. Location and size of roof vents or other smoke removal system elements.

3. Dimensional or scaled enlarged typical rack or shelving plans and sections or elevations showing:
 - a. Usable storage height for each storage area.
 - b. Number of shelves or number of tiers within each rack, with vertical spacing between shelves or tiers dimensioned.
 - c. Dimension and location of transverse and longitudinal flue spaces.
 - d.

4. Dimensioned or scaled building section showing:
 - a. Curtain board construction, if applicable.
 - b. Commodity clearance between top of storage and sprinkler deflectors for each storage arrangement.

**INFORMATION BULLETIN
HIGH-PILED COMBUSTIBLE STORAGE**

5. A table of commodities being stored, referenced to the floor plan, showing:
 - a. Size, quantity, location and description of products, packing materials and containers. The Fire Department will determine the classification of commodities in accordance with California Fire Code, Section 8101.4.
 - b. Size, quantity, and location of items, which are banded or encapsulated.

Banding is a method of packaging, consisting of stretch wrapping around not more than four (4) sides of a pallet load.

Encapsulating is a method of packaging, consisting of a plastic sheet completely enclosing the side and top of a pallet load. The term encapsulated does not apply to banding or individual plastic-enclosed items inside a large, non plastic-enclosed container.

6. Specifications of the fire protection and smoke removal systems proposed or existing:
 - a. Sprinkler design density, K-factor and activation temperature rating of sprinkler heads, and pressure at the base of the riser, from existing riser plate or hydraulic calculations.
 - b. Manufacturer, model number, clear opening, source of electrical power (if applicable) and means of activation of mechanical roof vents.
 - c. Manufacturer, model number, fan rating (cfm), source of electrical power and means of activation of mechanical ventilating (fan) system.

In addition to the requirements of California Fire Code, Article 81, aerosols shall be stored in accordance with Article 88, flammable and combustible liquids in accordance with Article 79, and hazardous materials in accordance with Article 80.