



# Fire Department

## HEADQUARTERS

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## CODE SUMMARY

### PERMITS – HIGH PILED COMBUSTIBLE STORAGE

A code summary is a compilation of code sections related to a specific occupancy or permit. This code summary lists sections of code pertaining to occupancies and operations as defined by the **California Fire Code**. Under each heading you will find the correlating code language and the reference cited. These requirements pertain to existing buildings. New construction may be subject to additional requirements. Please feel free to direct any questions to the Fire Prevention Division at (805) 681-5500.

#### **SCOPE**

High-piled combustible storage shall be in accordance with Chapter 32 of the 2013 *California Fire Code*. Chapter 32 provides applicable Classification of Commodities. In addition, the following material-specific requirements shall apply:

1. Aerosols shall be in accordance with Chapter 51
2. Flammable and combustible liquids shall be in accordance with Chapter 57.
3. Hazardous materials shall be in accordance with Chapter 50.
4. Storage of combustible paper records shall be in accordance with NFPA 13
5. Storage of combustible fibers shall be in accordance with Chapter 52
6. General storage of combustible material shall be in accordance with Chapter 3. (CFC 3201.1)

#### **1. Evacuation Plan may be required.**

When required by the fire code official, an evacuation plan for public accessible areas and a separate set of plans indicating location and width of aisles, location of exits, exit access doors, exit signs, height of storage and locations of hazardous materials shall be submitted for review prior to permit issuance. A copy of the plans shall be maintained on site in an approved location. (CFC 3201.4)

#### **2. Classification of Commodities.**

Commodities shall be classified as Class I, Class II, Class III, Class IV or high hazard, in accordance with CFC Chapter 32. Plastics shall be classified as Group A, B or C in accordance with CFC 3203.7. To determine the proper commodity classification of products with limited quantities of Group A plastics in mixed commodities, use CFC Figure 3203.7.4. This figure identifies the quantity of Group A plastics allowed to be stored in a package, carton or on a pallet without increasing the hazard and commodity classification. (CFC 3203.1)

#### **3. Designation of High Piled Storage Areas.**

High-piled storage areas, and portions of high-piled storage areas intended for storage of a different commodity classification than adjacent areas, shall be designed and specifically designated to contain Class I, Class II, Class III, Class IV, or high-hazard commodities. The designation of a high-piled combustible storage area, or portion thereof intended for storage of different commodity class, shall be based on the highest hazard commodity class stored except as provided in CFC Section 3204.2 or designation may be based upon engineering analysis (see CFC Chapter 32). (CFC 3204.1)

**4. Housekeeping & maintenance required.**

Clearance between ignition sources and the combustible storage shall be maintained in an approved manner. (CFC Section 3205.2)

**5. Smoking shall be prohibited.**

Approved "NO SMOKING" signs shall be conspicuously posted throughout the storage area. (CFC 3205.3)

**6. Aisle Maintenance required.**

When restocking is not being conducted, aisles shall be kept clear of storage, waste material and debris. Fire department access doors, aisles and exit doors shall not be obstructed. During restocking operations using manual stocking methods, a minimum unobstructed aisle width of 24 inches shall be maintained in 48 inch or smaller aisles, and a minimum unobstructed aisle width of one-half of the required aisle width shall be maintained in aisles greater than 48 inches. During mechanical stocking operations, a minimum unobstructed aisle width of 44 inches shall be maintained. (CFC 3205.4)

**7. General Fire & Life-Safety Provisions required.**

Where required by Table 3206.2, fire detection systems, smoke and heat removal, draft curtains, and fire sprinkler design densities shall extend the lesser of 15' beyond the HPS area, or to a permanent partition. For fire protection of mixed commodities, the fire protection required by Table 3206.2 shall be for the most restrictive design requirements. (CFC 3206.2)

**8. Separation of High-Piled Storage Areas.**

The aggregate of all high-piled storage areas within a building shall be used for the application of Table 3206.2 unless such areas are separated from each other by 1-hour fire barriers constructed in accordance with the *California Building Code*. (CFC 3206.3.1)

**9. Fire Sprinkler Systems required for Protection of High Piled Combustible Storage, Solid-Piled and Shelf Storage.**

When fire sprinklers are required by CFC Table 3206.2, an approved automatic sprinkler system shall be installed throughout the building or to one-hour fire barrier walls constructed in accordance with the *California Building Code*. Openings in such walls shall be protected by opening protective assemblies having 1-hour fire protection ratings. The design and installation of the automatic sprinkler system and other fire protection shall be in accordance with the *California Building Code*, and NFPA 13. (CFC 3206.4)

A. Plastic pallets and shelves - Storage on plastic pallets or plastic shelves shall be protected by approved specially engineered fire protection systems. (3208.2.1)

Exception:

1.) Plastic pallets listed and labeled in accordance with UL 2335 shall be treated as wood pallets for determining required sprinkler protection.

**10. Fire detection systems required.**

Where fire detection is required by CFC Table 2306.2, an approved automatic fire detection system shall be installed throughout the high-piled storage area. The system shall be monitored and be in accordance with CFC Section 907. (CFC 3206.5)

**11. Building access required.**

- A. Where building access is required by CFC Table 3206.2, fire apparatus access roads shall be provided to within 150 feet of all portions of the exterior walls of the building used for high-piled storage. (CFC 3206.6)  
Exception:
  - 1.) Where fire apparatus access roads cannot be installed because of topography, railways, waterways, non-negotiable grades or other similar conditions, the fire code official is authorized to require additional fire protection.
- B. Where access doors are required by CFC Table 3206.2, fire department access doors shall be provided in each 100 lineal feet, or fraction thereof, of the exterior walls which face the required fire apparatus access roads. Access doors shall not be less than 3 feet in width and 6 feet 8 inches in height. Roll-up doors shall not be used unless approved. (CFC 3206.6.1)

**12. Smoke & heat removal required.**

Where smoke and heat removal are required by CFC Table 3206.2, smoke and heat vents shall be provided in accordance with CFC Section 910. Smoke and heat vents shall be listed and labeled to indicate compliance with UL 793. They shall be capable of being operated by approved automatic and manual means.

**13. Aisle requirements in sprinklered buildings.**

Aisles in sprinklered buildings shall be a minimum of 44 inches wide. Aisles shall be a minimum of 96 inches wide in high-piled storage areas exceeding 2500 square feet in area, which are accessible to the public and designated to contain high-hazard commodities. Aisles shall be a minimum of 96 inches wide in areas accessible to the public where mechanical stocking methods are used. (CFC 3206.9.1.1.)

**14. Aisle requirements in non-sprinklered buildings.**

Aisles in non-sprinklered buildings shall be a minimum of 96 inches wide. (CFC 3206.9.1.2.)

**15. Clear height requirements.**

The required aisle width shall extend from floor to ceiling. Rack structural supports and catwalks are allowed to cross aisles at a minimum height of 6 feet 8 inches above finished floor level, provided that such supports do not interfere with fire department hose stream trajectory. (CFC 3206.9.2)

**16. Portable fire extinguishers required.**

Portable fire extinguishers shall be provided in accordance with CFC Section 906. (CFC 3206.10)

**TABLE 903.3(1)  
FIRE EXTINGUISHERS FOR CLASS A FIRE HAZARDS**

|   | Light (Low)<br>Hazard<br>Occupancy | Ordinary<br>(Moderate) Hazard<br>Occupancy | EXTRA (High)<br>HAZARD<br>OCCUPANCY |
|---|------------------------------------|--|-------------------------------------|
| Minimum rated single extinguisher       | 2-A                                | 2-A  | 4-A                                 |
| Maximum floor area per unit of A        | 3,000 sq. ft.                      | 1,500 sq. ft.                              | 1,000 sq. ft.                       |
| Maximum floor area for extinguisher     | 11,250 sq. ft.                     | 11,250 sq. ft.                             | 11,200 sq. ft.                      |
| Maximum travel distance to extinguisher | 75 feet                            | 75 feet                                    | 75 feet                             |

**17. System maintenance required.**

Fire detection, alarm, and extinguishing systems shall be maintained in an operative condition at all times, and shall be replaced or repaired where defective. Non-required fire protection systems and equipment shall be inspected, tested and maintained or removed. (CFC 901.6)

## TECHNICAL ASSISTANCE

For additional specific requirements referenced above, contact the Santa Barbara County Fire Department Fire Prevention Services Division at 805-681-5500. Due to the complex building design of the requirements specified within the CFC and adopted standards, it is often necessary to obtain the service of a fire protection design professional to assist with developing a protection scheme that meets the requirements of both the business and the California Fire Code.

The reference table for High-Piled Combustible Storage is as follows:

**TABLE 3206.2  
GENERAL FIRE PROTECTION AND LIFE SAFETY REQUIREMENTS**

| COMMODITY CLASS | SIZE OF HIGH-PILED STORAGE AREA* (square feet) (see Sections 3206.2 and 3206.4) | ALL STORAGE AREAS (See Sections 3206, 3207 and 3208) <sup>b</sup> |  |                                      |   |                                     | SOLID-PILED STORAGE, SHELF STORAGE AND PALLETIZED STORAGE (see Section 3207.3) |  |                                  |
|-----------------|---|---|--|--------------------------------------|---|-------------------------------------|--|--|----------------------------------|
|                 |   | Automatic fire-extinguishing system (see Section 3206.4)          | Fire detection system (see Section 3206.5) | Building access (see Section 3206.6) | Smoke and heat removal (see Section 3206.7) | Draft curtains (see Section 3206.7) | Maximum pile dimension <sup>c</sup> (feet)                                     | Maximum permissible storage height <sup>d</sup> (feet) | Maximum pile volume (cubic feet) |
| I-IV            | 0-500   | Not Required <sup>a</sup>   | Not Required                               | Not Required <sup>e</sup>            | Not Required                                | Not Required                        | Not Required   | Not Required   | Not Required                     |
|                 | 501-2,500   | Not Required <sup>a</sup>   | Yes <sup>i</sup>                           | Not Required <sup>e</sup>            | Not Required                                | Not Required                        | 100  | 40   | 100,000                          |
|                 | 2,501-12,000<br>Public accessible   | Yes   | Not Required                               | Not Required <sup>e</sup>            | Not Required                                | Not Required                        | 100  | 40   | 400,000                          |
|                 | 2,501-12,000<br>Nonpublic accessible (Option 1)                                 | Yes   | Not Required                               | Not Required <sup>e</sup>            | Not Required                                | Not Required                        | 100  | 40   | 400,000                          |
|                 | 2,501-12,000<br>Nonpublic accessible (Option 2)                                 | Not Required <sup>a</sup>   | Yes  | Yes                                  | Yes <sup>j</sup>                            | Yes <sup>j</sup>                    | 100  | 30 <sup>f</sup>  | 200,000                          |
|                 | 12,001-20,000   | Yes   | Not Required                               | Yes                                  | Yes <sup>j</sup>                            | Not Required                        | 100  | 40   | 400,000                          |
|                 | 20,001-500,000  | Yes   | Not Required                               | Yes                                  | Yes <sup>j</sup>                            | Not Required                        | 100  | 40   | 400,000                          |
|                 | Greater than 500,000 <sup>g</sup>   | Yes   | Not Required                               | Yes                                  | Yes <sup>j</sup>                            | Not Required                        | 100  | 40   | 400,000                          |
| High hazard     | 0-500   | Not Required <sup>a</sup>   | Not Required                               | Not Required <sup>e</sup>            | Not Required                                | Not Required                        | 50   | Not Required   | Not Required                     |
|                 | 501-2,500<br>Public accessible  | Yes   | Not Required                               | Not Required <sup>e</sup>            | Not Required                                | Not Required                        | 50   | 30   | 75,000                           |
|                 | 501-2,500<br>Nonpublic accessible (Option 1)                                    | Yes   | Not Required                               | Not Required <sup>e</sup>            | Not Required                                | Not Required                        | 50   | 30   | 75,000                           |
|                 | 501-2,500<br>Nonpublic accessible (Option 2)                                    | Not Required <sup>a</sup>   | Yes  | Yes                                  | Yes <sup>j</sup>                            | Yes <sup>j</sup>                    | 50   | 20   | 50,000                           |
|                 | 2,501-300,000   | Yes   | Not Required                               | Yes                                  | Yes <sup>j</sup>                            | Not Required                        | 50   | 30   | 75,000                           |
|                 | 300,001-500,000 <sup>g, h</sup>   | Yes   | Not Required                               | Yes                                  | Yes <sup>j</sup>                            | Not Required                        | 50   | 30   | 75,000                           |

For SI: 1 foot = 304.8 mm, 1 cubic foot = 0.02832 m<sup>3</sup>, 1 square foot = 0.0929 m<sup>2</sup>.

- When automatic sprinklers are required for reasons other than those in Chapter 32, the portion of the sprinkler system protecting the high-piled storage area shall be designed and installed in accordance with Sections 3207 and 3208.
- For aisles, see Section 3206.9.
- Piles shall be separated by aisles complying with Section 3206.9.