



City of San Diego
Development Services
1222 First Ave., MS-401
San Diego, CA 92101

High-Piled Combustible Storage

FORM
DS-164
July 2017

This form is required to be completed in order to determine if the proposed storage will include high-piled combustible storage as defined in the California Fire Code (CFC) and requirements associated with such storage. All applicants must complete Sections I and II. Sections III and IV must be completed, as indicated.

SECTION I: GENERAL INFORMATION/DECLARATION

Project Name:	Project Number: <i>For City Use Only</i>
Tenant Name:	Permit Number: <i>For City Use Only</i>

Job Address:

Building/Unit/Suite Number: Phone #:

I declare under penalty of perjury that, to the best of my knowledge, the responses made herein are true and correct.

Name of Owner/Occupant/Authorized Agent (*circle one*) Signature Date

SECTION II: COMMODITIES

List all commodities stored over 6 feet in height in the table below. List all aerosol products and all flammable/combustible liquids stored over 1 container high.

Material(s) - Include Description of Product, Packaging, & Type of Pallet (Plastic or Wood)	Individual Commodity Class (CFC 3203)	Max. Storage Height (ft)	Aisle Width (ft)	Cartoned or Open Top Containers or Bin Box?	Encapsulated (Y/N)	Palletized or Solid Piled Storage?	Single-, Double-, Multiple-Row Racks, Shelf, Automated or Carousel?	Solid Shelving (Y/N)
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								

Total High-Piled Combustible Storage Area: _____ ft² Ceiling/Roof Height: _____ ft

Overall Commodity Classification Based Upon Highest Hazard Commodity (Per CFC 3203):
 I II III IV or High Hazard: Expanded Group A Unexpanded Group A Other _____

No high-piled combustible storage. This facility will not contain storage of high hazard commodities (including plastics) over 6 feet in height measured to the top of storage or over 12 feet in height of storage of any other commodity.

High-piled combustible storage. This facility will contain storage of high hazard commodities over 6 feet in height measured to the top of storage or over 12 feet in height of any other commodity. **Must complete Sections III and IV.**

For City Use Only: Approved By City Employee: _____ Date: _____

Project Address/Location: _____	Project Number: <i>(For City use only)</i> _____
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SECTION III: HIGH-PILED COMBUSTIBLE STORAGE REQUIREMENTS

Complete all questions below. If the answer is **Yes** to the items containing an asterisk (*), provide the item on a reference plan.

- | | |
|--|---|
| 1. Is rack storage provided?
If Yes , the transverse flue space is ____ inches and the longitudinal flue space is ____ inches. | <input type="checkbox"/> Yes* <input type="checkbox"/> No |
| 2. Is solid piled or palletized storage provided?
If Yes , maximum pile dimension is ____ feet, maximum pile volume is ____ ft ³ , and pile height is ____ feet. | <input type="checkbox"/> Yes* <input type="checkbox"/> No |
| 3. Are smoke and heat vents provided?
If Yes , the required aggregate vent area is ____ ft ² . | <input type="checkbox"/> Yes* <input type="checkbox"/> No |
| 4. Is a mechanical smoke exhaust system(s) provided?
If Yes , the airflow exhaust rate is _____ cfm. Gross area of makeup air inlets is _____ ft ² . | <input type="checkbox"/> Yes* <input type="checkbox"/> No |
| 5. Are draft curtains provided?
If Yes , the draft curtain depth is ____ over ____ ft ² area. | <input type="checkbox"/> Yes* <input type="checkbox"/> No |
| 6. Are fire apparatus access roads provided 150 feet from all portions of exterior walls? | <input type="checkbox"/> Yes* <input type="checkbox"/> No |
| 7. Are access doors provided for each 100 lineal feet of the exterior walls facing FD apparatus roads? | <input type="checkbox"/> Yes* <input type="checkbox"/> No |
| 8. Is there a one-hour rated fire barrier between adjacent tenant spaces? | <input type="checkbox"/> Yes* <input type="checkbox"/> No |
| 9. Are exit passageway(s) provided? | <input type="checkbox"/> Yes* <input type="checkbox"/> No |
| 10. If Yes to Item 9 , are Class I standpipes provided? | <input type="checkbox"/> Yes* <input type="checkbox"/> No |
| 11. Is a fire detection system provided? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 12. Is an automatic sprinkler system provided? If Yes , complete Section IV below.
The system will be: <input type="checkbox"/> New <input type="checkbox"/> Existing <input type="checkbox"/> Upgraded | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 13. If Yes to Item 12 , is sprinkler protection extended in accordance with CFC 3206.2? | <input type="checkbox"/> Yes <input type="checkbox"/> No |

SECTION IV: FIRE SPRINKLER REQUIREMENTS - Complete the applicable information below. For more than two systems, complete and submit additional copies of Section IV.

System 1: Storage Area Description: _____	System Type: <input type="checkbox"/> CMDA <input type="checkbox"/> ESFR <input type="checkbox"/> CMSA <input type="checkbox"/> Other _____
Ceiling Sprinklers:	In-Rack Sprinklers: <input type="checkbox"/> Yes <input type="checkbox"/> No
1. NFPA 13 Section/Table/Figure/Curve: _____	If Yes, complete Items 9-13 below.
2. Sprinkler K-Factor: _____	9. NFPA 13 Table or Curve: _____
3. Design area: _____ ft ² Density: _____ gpm/ft ²	10. Number of levels of in-rack sprinklers: _____
4. _____ sprinkler heads calculated at _____ psi	11. Number of designed in-rack Sprinklers: _____
5. Hose stream allowance: _____ gpm for _____ min	12. Minimum in-rack pressure calculated: _____ psi
6. Sprinkler link temperature: _____ °F	13. Other sprinkler information:
7. Density reduction for storage height? <input type="checkbox"/> Yes <input type="checkbox"/> No Figure: _____	
8. Clearance above storage: _____ ft	
System 2: Storage Area Description: _____	System Type: <input type="checkbox"/> CMDA <input type="checkbox"/> ESFR <input type="checkbox"/> CMSA <input type="checkbox"/> Other _____
Ceiling Sprinklers:	In-Rack Sprinklers: <input type="checkbox"/> Yes <input type="checkbox"/> No
1. NFPA 13 Section/Table/Figure/Curve: _____	If Yes, complete Items 9-13 below.
2. Sprinkler K-Factor: _____	9. NFPA 13 Table or Curve: _____
3. Design area: _____ ft ² Density: _____ gpm/ft ²	10. Number of levels of in-rack sprinklers: _____
4. _____ sprinkler heads calculated at _____ psi	11. Number of designed in-rack sprinklers: _____
5. Hose stream allowance: _____ gpm for _____ min	12. Minimum in-rack pressure calculated: _____ psi
6. Sprinkler link temperature: _____ °F	13. Other sprinkler information:
7. Density reduction for storage height? <input type="checkbox"/> Yes <input type="checkbox"/> No Figure: _____	
8. Clearance above storage: _____ ft	

For City Use Only: Approved By City Employee: _____ Date: _____

Project Address/Location:

Project Number: *(For City use only)***SECTION V: DEFINITIONS FROM THE CITY OF SAN DIEGO, CFC & NATIONAL FIRE PROTECTION ASSOCIATION 13 (NFPA 13)**

Aisle Width: The horizontal dimension between the face of the loads in racks under consideration. NFPA 13

Automated Rack Storage: A stocking method whereby the movement of pallets, products, apparatus or systems are automatically controlled by mechanical or electronic devices. CFC

Back-to-Back Shelf Storage: Two solid or perforated shelves up to 30 inches in depth each, not exceeding a total depth of 60 inches, separated by a longitudinal vertical barrier such as plywood, particleboard, sheet metal, or equivalent, with a maximum 0.25 inch diameter penetrations and no longitudinal flue space and a maximum storage height of 15 feet. NFPA 13

Bin Box: A five-sided container with the open side facing an aisle. Bin boxes are self-supporting or supported by a structure designed so that little or no horizontal or vertical space exists around the boxes. CFC

Cartoned: A method of storage consisting of corrugated cardboard or paperboard containers fully enclosing the commodity. NFPA 13

Ceiling/Roof Height: The distance between the floor and the underside of the ceiling or roof deck above within the storage area. NFPA 13

Clearance: The distance from the top of storage to the ceiling sprinkler deflectors. NFPA 13

Commodity: A combination of products, packaging materials, containers, and pallets. CFC

Double-Row Rack: Racks less than or equal to 12 feet in depth or single-row racks placed back to back having an aggregate depth up to 12 feet, with aisles having an aisle width of at least 3.5 feet between loads on racks. NFPA 13

Encapsulation: A method of packaging consisting of a plastic sheet completely enclosing the sides and top of a pallet load containing a combustible commodity or a combustible package or a group of combustible commodities or combustible packages. Combustible commodities individually wrapped in plastic sheeting and stored exposed in a pallet load also are to be considered encapsulated. Totally non-combustible commodities on wood pallets enclosed only by a plastic sheet as described are not covered under this definition. Banding (i.e., stretch-wrapping around the sides only of a pallet load) is not considered to be encapsulation. Where there are holes or voids in the plastic or waterproof cover on the top of the carton that exceeds more than half of the area of the cover, the term encapsulated does not apply. The term encapsulated does not apply to plastic-enclosed products or packages inside a large, non-plastic, enclosed container. NFPA 13

High-Piled Combustible Storage: Storage of combustible materials in closely packed piles or combustible materials on pallets, in racks or on shelves where the top of storage is greater than 12 feet in height. High-piled 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 storage is greater than 6 feet in height. CFC

High-Piled Storage Area: An area within a building designated, intended, proposed, or actually used for high-piled combustible storage. This area shall include the floor area actually occupied by the storage racks, shelves, other storage structures, or solid piles, and it shall also include all adjacent aisles up to the minimum required width for the type of fire suppression being provided.

Longitudinal Flue Space: The space between rows of storage perpendicular to the direction of loading. CFC

Miscellaneous Storage: Storage that does not exceed 12 feet in height and is incidental to another occupancy use group. Such storage shall not constitute more than 10 percent of the building area or 4,000 ft² of the sprinklered area, whichever is greater. Such storage shall not exceed 1,000 ft² in one pile or area, and each such pile or area shall be separated from other storage areas by at least 25 feet. NFPA 13

Multiple-Row Racks: Racks greater than 12 feet in depth or single- or double-row racks separated by aisles less than 3.5 feet wide having an overall width greater than 12 feet. NFPA 13

Open-Top Container: A container of any shape that is entirely or partially open on the top and arranged so as to allow for the collection of discharging sprinkler water cascading through the storage array. NFPA 13

Palletized Storage: Storage of commodities on pallets or other storage aids that form horizontal spaces between tiers of storage. NFPA 13

Rack: Any combination of vertical, horizontal, and diagonal structural members that support stored materials or commodities. NFPA 13

Shelf Storage: Storage on shelves less than 30 inches deep with the distance between shelves not exceeding 3 feet vertically. CFC

Single-Row Racks: Racks that have no longitudinal flue space and that have a depth up to 6 feet with aisles having a width of at least 3.5 feet between loads on racks. NFPA 13

Solid Shelving: Shelving that is fixed in place, slatted, wire mesh, or other type of shelves located within racks. The area of a solid shelf is defined by perimeter aisle or flue space on all four sides or by the placement of loads that block openings that would otherwise serve as the required flue spaces. Solid shelves having an area equal to or less than 20 ft² are defined as open racks. Shelves of wire mesh, slats, or other materials more than 50 percent open and where the flue spaces are maintained are defined as open racks. NFPA 13

Storage Height: Storage of commodities on rack, floor, shelf, etc. measured from floor to top of highest storage.

Transverse Flue Space: The space between rows of storage parallel to the direction of loading. CFC