

Storage Racks, Display Cases, and Shelving

Permit Requirements:

Height of Highest Shelf:	Requirement:
Up to 5'9" above the floor	No permit required
5'9" to 8' above the floor	Anchors and bracing. Building permit required. No engineering requirements.
Higher than 8' above the floor	Building permit required. Engineering Required.

The following information must be submitted along with your permit application:

- A location plan showing which building and suite is involved.
- Three copies of floor plan showing where the storage units will be located within the building and the layout of the units.
- Two sets of Engineering calculations for vertical & lateral loads (*if top shelf is higher than 8'*), with wet seal and signature of engineer on the plans and calculations.
- Construction details for the racks or shelves, including dimensions (*cross-section of entire system*).
- Lateral bracing details.
- Anchorage details including type, size, depth, and spacing of anchors. The anchorage details must be clearly shown on the plans.
- High Pile Combustible Storage form. (*if required*)
- *Tenant Information and Emergency Information forms signed by the owner of the business (*if required*).
- *Special inspection information (*if required*).

*Tenant and Emergency Information forms are not applicable if there is no tenant, however, before the building space(s) can be released for occupancy, this information must be submitted and approved.

*Dependant upon your design and engineering calculations, special inspection may be required for anchoring racks to floor and for welding of rack components. Special inspections are inspections performed by an approved, independent inspection agency in addition to City inspections.

Note: Fire sprinklers are required for some rack and shelving installations. That decision is based upon several factors, including the type of sprinkler system (*if any*) that exists in the building, the type of storage system proposed (*single/double/multiple units*), open versus solid shelving, height of racks or shelves, height of storage, and type and quantity of material/commodity stored. Plastic commodity storage exceeding 6' may require fire sprinkler protection in the storage rack shelving.

Fire sprinkler protection is based on storage height, not the shelf or rack structure height, and the type of commodity placed in the storage system. For additional requirements please contact Fire Prevention at (925)-454-2362.

**HIGH-PILED COMBUSTIBLE STORAGE PLAN
CFC CHAPTER 32**

Business Name: _____

Business Address: _____

1. Commodity class(es): _____

Source: IFC NFPA IFC Art. 23

2. General description of storage: _____

3. Maximum height of storage: _____ ft.

4. Method of storage is: (check all that apply)

- | | |
|---|--|
| <input type="radio"/> Encapsulated in plastic | <input type="radio"/> Non-encapsulated |
| <input type="radio"/> Wooden pallets | <input type="radio"/> Plastic pallets |
| <input type="radio"/> On racks with solid shelves | <input type="radio"/> On racks without solid shelves |
| <input type="radio"/> Bin box | <input type="radio"/> Solid pile |

5. Type of racks: (check all that apply)

- Wooden pallets Double row Plastic pallets

6. Area of storage (aggregate of all individual areas):

- | | |
|--|--|
| <input type="radio"/> 0 - 500 sq. ft. | <input type="radio"/> 12,001 - 20,000 sq. ft. |
| <input type="radio"/> 501 - 2,500 sq. ft. | <input type="radio"/> 20,001 - 300,000 sq. ft. |
| <input type="radio"/> 2,501 - 12,000 sq. ft. | |

Are individual areas separated by 1 hour separations? YES NO

7. Sprinkler Information:

- a) Sprinkler density _____ b) rack sprinklers? YES NO
- c) Temperature of sprinkler head in: Ceiling _____ Racks _____
- d) Fire hose racks? YES NO

8. Building height? _____ ft.

9. Distance from top of storage to fire sprinkler deflector? _____ ft.

10. Smoke vents? YES NO Ratio _____ : _____ sq. ft.

11. Draft curtains? YES NO _____ sq. ft. sections

12. Aisle width between racks and storage: _____ ft.

13. Smoke detection system? YES NO

14. Maximum volume in cubic feet per pile:

- 50,000 cu. Ft. 100,000 cu. Ft. 200,000 cu. ft. 400,000 cu. ft.

15. Access roadways within 150 feet of all portions of exterior walls? YES NO

16. Access doors provided every 100 L.F. on exterior walls that face access roadways? YES
NO

17. Attach a floor plan. Ensure the following information is shown: locations and dimensions of storage areas, numbers of tiers in each rack, aisle dimensions, maximum pile volume of each area, location and classification of commodities and if banded or encapsulated, fire department access doors, fire sprinkler system control valves, smoke vents and curtain boards, dimension and location of transverse and longitudinal flue spaces.

18. Plastics

- a. Group type of plastics? (see list below)
 - A B C No Plastics
- b. Percentage of plastic in storage? _____%
- c. If group type is "A", check each item below that applies to your commodity.
 - Expanded Non-expanded Free flowing Class IV
 If expanded, how is the plastic packaged? (NFPA 231, Chapter 7, Section 7-12)
 - Exposed Cartoned
 If expanded, how is the plastic piled? (NFPA 231, Chapter 7, Section 7-1.2)
 - Stable Unstable
 If non-expanded, how is the plastic piled?
 - Stable Unstable
 If non-expanded and stable, how is the plastic packaged?
 - Solid unit load Cartoned Exposed

Group A	Group B (Class IV)	Group C (Class III)
ABS (Acrylonitrile-Butadiene - Styrene Copolymer)	Cellulosics (Cellulose Acetate, Cellulose Acetate Butyrate, Ethyl Cellulose)	Fluoroplastics (PCTFE-Polychlorotrifluoroethylene; PTFE-Polytetrafluoroethylene)
Acrylic (Polymethyl Methacrylate)	Chloroprene Rubber	Melamine (Melamine Formaldehyde)
Acetal (Polyformaldehyde)	Fluoroplastics (ECTFB-Ethylene Chlorotrifluoroethylene Copolymer; ETFE-Ethylene)	Phenolic
Butyl Rubber		
EPDM (Ethylene-Propylene Rubber)	Tetrafluoroethylene Copolymer; FEP-Fluorinated Ethylene-Propylene Copolymer)	PVC (Polyvinyl Chloride-rigid or lightly plasticized, e.g., pipe, pipe fittings)
FRP (Fiberglass Reinforced Polyester)	Natural Rubber (not expanded)	PVDC (Polyvinylidene Chloride)
Natural Rubber (if expanded)	Nylon (Nylon 6, Nylon 6/6)	PVF (Polyvinyl Fluoride)
Nitrile Rubber (Acrylonitrile-Butadiene Rubber)	Silicone Rubber	PVDF (Polyvinylidene Fluoride)
PET (Thermoplastic Polyester)		Urea (Urea Formaldehyde)
Polybutadiene		
Polycarbonate		
Polyester Elastomer		
Polyethylene		
Polypropylene		
Polystyrene		
Polyurethane		
PVC (polyvinyl Chloride-highly plasticized, e.g., coated fabric, unsupported film)		
SAN (Styrene Acrylonitrile)		
SBR (Styrene-Butadiene Rubber)		

Signature: _____ Tel. No. _____