



## Storage Racks • Display Cases • Shelving

### Purpose

This handout summarizes the requirements for a complete plan review submittal for the installation of storage pallet racks, movable shelf racks, fixtures and stacker-racks in commercial or industrial buildings. The following guideline shall be reviewed and approval must be obtained before commencing any work.

### Permits Required

- Storage racks less than 5-ft and 9-in in height - No permit required.
- Storage racks greater than 5-ft and 9-in in height - Building permit required for anchors and bracing. No engineering requirements.
- Storage racks greater than 8-ft above ground - Building permit required and engineered design for seismic lateral bracing. (ASCE 7 Section 15.5.3)
- High-piled storage racks greater than 12-ft above ground in any occupancy - Building permit required and engineered design for seismic lateral bracing. Fire Prevention permit required to comply with the California Fire Code. (CBC 413.1, CFC Chapter 23)
- Rolling rack systems require an engineered design. (CBC Table 16)

### High-Piled Storage

High-piled storage can include racks, shelving, solid piled or pallet storage 12-ft or higher. A Fire Prevention permit is required regardless if the rack height is less than 12-ft but the proposed storage will be 12-ft or higher. The overall height is taken from the ground to “top of storage”. It includes certain high hazard commodities such as rubber tires, Group A plastics, flammable liquids, idle pallets where the top of storage is greater than 6-ft in height. Design includes information such as commodity clearance between top of storage; fire sprinkler head locations; aisle clearances; location and classification of commodities; types of fire suppression and fire detection systems, etc. Contact **Fire Prevention** at (626) 963-0067 for detailed information.

### Plan Submittal for Construction

#### Quantity

- Three (3) complete sets of plans prepared and signed by a CA licensed engineer.
- Two (2) engineered calculation reports prepared and signed by a CA licensed engineer.
- Completed permit application form and plan check fee paid.

#### Plans

- Minimum 24-in x 36-in drawn to scale, fully dimensioned and legible.
- Plot plan and/or Cover sheet: job address and suite number; name, address, phone number of business owner /contractor /design professional.
- Complete description of scope of work; type of business; current codes; type of construction; occupancies; type of fire sprinkler system.
- Floor plans identifying location and square footage of all storage areas, racks and shelving; location of exit door, exit access doors and exit signs.
- Location of and dimensions of smoke vents and curtain boards (if required).
- Aisle clearances between racks (36-in minimum aisle width when serving only one side and 44-in minimum aisle width when serving both sides per CBC 1005.1 and 1133B.6.2).
- Shelf and rack support base anchorage connection details and specifications to reinforced concrete slab and footing foundation and/or elevated wood floor framing system.
- Rack details showing dimensions, number of tiers, if these are single, double or multiple racks.
- Shelving installation method, support and brace framing details; if utilizing drilled and inset expansion or epoxy type anchorage bolt systems, specify on plans “Special Inspection and Testing shall be required.
- Exception: Special Inspection is **not required** if 50% values are utilized. The bolts or expansion anchors to be referenced to a valid ICC-ES Research Report or equivalent.

## **Structural Calculations**

- Two (2) sets of wet-signed and stamped calculation reports prepared by a CA licensed engineer (if top shelf is higher than 8-ft).
- Lateral bracing details.
- Anchorage details including type, size, depth and spacing of anchors. The anchorage details must be clearly shown on the plans.

## **Special Inspection Forms**

Three (3) sets fully completed and wet-signed by all parties, if required.