

**Moreno Valley Fire Department  
Fire Prevention Bureau**

**High Piled Storage**



Approved and Authorized By:

Doug Bloom, Fire Marshal

Issued: January 1<sup>st</sup> 2023

# High Piled Storage

## PURPOSE

This guideline has been prepared to assist those responsible for the design, installation, testing, and inspection of High Piled Storage to comply with 2022 NFPA 13; 2022 California Fire/Building Code and the Moreno Valley Municipal Code.

## SCOPE

This guideline applies to any high piled combustible for commercial buildings. This guideline defines the requirements to obtain a permit for any new or existing high piled storage arrangements for plan submittal requirements and Fire Department notes required to be applied onto plan

## SUBMITTAL REQUIREMENTS

Submit your digital plans through the City of Moreno Valley's [SimpliCITY](#) portal. Plans shall be scaled, complete technical data sheets/manufacturers' specifications, and a copy of the manufacturers' design and installation requirements. Fees are based on the number of linear feet of high piled storage proposed. These plans shall contain the following information and items:

1. **Scope of work** for the project.
2. **Business/ Contractor Information** shall be provided and include job site name, address, owner's contact name, owner's phone number; submitting company's name, address, contact name and number.
3. **Plan Design Statement** shall state: These plans have been designed in accordance with NFPA 13 (2022 edition), 2022 California Fire Code, and 2022 California Building Code, Moreno Valley Municipal Code, and the manufacturers design and installation requirements.
4. **Contractors License and Certifications** shall be provided and include a current Fire Protection Engineer.
5. **Racking Plan** shall be included and reviewed subsequent with this submittal. Any newly installed racking over 5'9" shall be provided with plans and engineering submitted to Moreno Valley Building and Safety Division to obtain a Building Permit.
6. **Technical Report** shall be completed with a detailed proposed high piled analysis in accordance with Chapter 32 of the California Fire Code. A detailed description and analysis shall be provided for classification the commodities. The technical report shall provide appropriate building features and details including fire protection system information as it pertains to proposed high piled storage configuration. All fire sprinkler system design requirements shall be in accordance with NFPA 13. If any fire protection system upgrades are necessary, those upgrades are to be clearly described on technical report. Items noted further on this guideline shall be addressed on this report and on plans.

7. **Site Plan** detailing the project's site is to include building's Knox box, fire department access doors, fire apparatus access roads, fire department water supplies, and connections.
8. **Floor Plan** detailed floor plan shall be put together in accordance with all required building features in accordance with the Fire Protection Technical Report. The floor plan shall indicate the location of all proposed racks/rack types, aisle spacing, fire access doors, portable fire extinguishers, smoke/heat vents, "NO SMOKING" signs, illuminated exit signs, and emergency lighting.
9. **Equipment Legend** for each required system/component noted on plans for reference on site and floor plan. Symbols used shall be in accordance with NFPA 170.
10. **Commodity Classification(s)** shall be classified as either Group I, II, III, IV, or High Hazard in accordance with Chapter 32 of the California Fire Code and NFPA 13.
11. **Storage Cross Section** details shall be shown on plans for all proposed rack types/solid pile storage top of storage configuration and clearance against fire sprinkler deflector and building ceiling height.
12. **Flue Spacing** shall be clearly noted on plans in accordance with the California Fire Code. Markings shall be provided on front of racks to maintain lateral flue spacing and pallet stops shall be provided at rear of racks to maintain longitudinal flue spacing.
13. **Floor Markings** shall be provided for all solid pile storage configurations by permanent means to maintain egress aisles.
14. **Portable Fire Extinguishers** shall be provided and distributed throughout high piled storage areas in accordance with Technical Report.
15. **No Smoking Signs** shall be posted on the inside and outside of all access points to high piled storage area(s).
16. **Fire Department Access Doors** (when required) shall be noted on the plans along with required "FIRE DEPARTMENT ACCESS DOOR DO NOT BLOCK" signage. Fire department access doors shall be distributed a minimum of 125' apart. If no change of occupancy is proposed, distance is allowed to be increased to 200'.
17. **Smoke and Heat Vents** (when required) shall be evenly distributed throughout high piled storage area(s). Number of required smoke and heat vents shall be determined by calculations addressed in section 910 in the California Fire Code. Smoke and heat vent fusible links shall have a temperature rating of 360°F.
18. **Fire Sprinkler System Protection** shall be assessed in accordance with NFPA 13 requirements and proposed storage configurations. Hydraulic Calculation Plate shall document and noted on plans for all existing fire sprinkler system(s). Any existing systems requiring upgrades (i.e. in-rack or upgraded densities) shall be clearly noted and addressed by a different fire sprinkler system submittal and approval. Column protection for buildings without fireproofing and storage heights over 15' will need to be addressed in accordance with NFPA 13.
19. **Multiple High Piled Storage Areas** shall be separated by a minimum of 1 hour fire barrier or separated by no less than 100' from one another. All areas not capable of providing such separation shall be considered one accumulative high piled storage area.

20. **Solid Shelving** on racks or shelves will need to be addressed with additional protection in accordance with NFPA 13.
21. **Approved Storage Layout** floor plan example shall be provided on the plan. This floor plan is to reflect the proposed high piled storage plan to include storage areas/dimensions, types of commodities, top of storage heights, distance from fire sprinkler head deflectors to top of storage, maximum pile dimensions for solid piled storage, fire department access doors, and any valves controlling water supply to ceiling and in-rack fire sprinkler systems.
22. **Hazardous Materials Inventory Permit** shall be obtained separately from this submittal. Please see Moreno Valley Fire Prevention Bureau's Chemical Classification Package for further details.

### **TESTING REQUIREMENTS**

1. **Building Department Structural Approval** for any new racking installations is to be granted before any racking or high piled storage inspections are requested from the Fire Prevention Bureau.
2. **Racking/High Piled Storage Pre-Load Inspection** is then to be conducted by the Moreno Valley Fire Prevention Bureau verifying all racking components/dimensions, flue space makings, pallet stops, floor markings (for solid pile configurations) and other fire protection systems/features are to be verified before the loading of any high piled storage commodities. Existing fire protection systems and features that require inspection, testing, and maintenance will need to be current and documentation shall be submitted to Fire Prevention Bureau for review. Any necessary deferred fire protection sub-permits will need to be inspected and approved in order to load commodities into structure in proposed configurations.
3. **High Piled Storage Final Inspection** shall be conducted verifying any required signage, commodities, flue spacing, and top of storage in accordance with technical report and approved plans. Storage layout site plan shall be installed in an approved location and approved plans shall be kept on site for the longevity of the high piled storage operational permit. Moreno Valley Building and Safety can then be called for the final permit inspection.

### **FIRE DEPARTMENT INSPECTION AND TESTING NOTES**

Fire Department Notes for Fire Sprinkler Systems are required to be added to plans verbatim.

1. **Operational Permit** is required to continue any high piled storage area(s.) The plans approved for this permit shall be kept on premise at all times for approval of operational permit.
2. **Storage Approval** shall be performed in accordance with the Moreno Valley Fire Prevention Bureau Guideline requirements. Racks shall not be loaded until Fire Prevention Bureau Staff verifies any necessary building/system upgrades have been approved and perform necessary rough rack inspection(s).
3. **Approved Storage Layout** shall be provided on a floor plan in accordance with

- approved plans and be mounted in an approved location protected from damage.
4. **Floor Markings** shall be provided with permanent means in accordance with approved plans for all solid pile storage configurations.
  5. **Flue Space Protection** shall be in-place in and provided by approved means (i.e. markings and pallet stops.)
  6. **Smoke and Heat Vents** that are existing they shall be inspected, tested, and maintained in accordance with NFPA 204. Records are to be kept on site for review of Fire Prevention Bureau Staff upon request.
  7. **Updated Building Keys** shall be labeled and installed in building's Know box for fire department access.
  8. **Existing Fire Protection System** will need to be inspected, tested, and maintained in accordance with governing standards and requirements. Records of system maintenance shall be kept on site.
  9. **"As Built" or Revised Plans** shall be submitted and reviewed by the Moreno Valle Fire Prevention Bureau prior to Final Inspection according to field inspection changes and Fire Inspector's discretion.

**For additional assistance please call Fire Prevention at (951) 413-3370 or  
Email us at [FirePlanCheck@Moval.org](mailto:FirePlanCheck@Moval.org)**

**To submit plans please use the [SimpliCITY](#) portal.**