

# **CARROLLTON FIRE RESCUE**

***FIRE MARSHAL'S OFFICE***



## **CONSTRUCTION GUIDE High-Piled Combustible Storage 2024 Edition**

Updated August 2024



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*Fire Marshal's Office*

## **Table of Contents**

<b>FIRE PREVENTION STAFF .....</b>	<b>3</b>
<b>GENERAL HIGH-PILED STORAGE PERMIT INFORMATION .....</b>	<b>4</b>
<b>SUBMITTAL REQUIREMENTS .....</b>	<b>5</b>
REQUIRED CONSTRUCTION DOCUMENTS .....	5
FLOOR PLAN REQUIREMENTS .....	6
FIRE SAFETY AND EVACUATION PLANS.....	6
RACK STORAGE.....	7
<b>INSPECTION REQUESTS, REQUIREMENTS &amp; PROCEDURES .....</b>	<b>7</b>
REQUIRED PROCEDURES WHEN REQUESTING AN INSPECTION .....	7
ON-SITE REQUIREMENTS.....	8



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## **GENERAL HIGH-PILED COMBUSTIBLE STORAGE PERMIT INFORMATION**

The goal of the Fire Prevention Division is to assist its customers in understanding our submittal, plan review and inspection process and policies, as they pertain to new construction and finish outs. Familiarity with and adherence to these guidelines can greatly assist you in compliance with local codes, ordinances and inspections.

This guide does not replace, nor supersede any adopted codes and/or ordinances adopted by the City of Carrollton, or determinations and positions of the Fire Chief or Fire Marshal.

To expedite the plan review and inspection processes, please refer to the information listed below:

1. **All permits shall be submitted online through the CityServe Portal.**
2. All plan review and inspection process steps must be followed. Deviation from the requirements may result in delays, possible rejection of plans or inspection delays.
  - o ***Conducting any work without an approved permit may result in a double permit fee in addition to citations and fines being assessed.***
3. All fire department inspection forms, permits and stamped drawings shall be kept in a permit packet on the job site until final inspection.
  - o Failure to have the approved drawings and permit on-site may result in a failed inspection and re-inspection fees.
4. All installations must concur with the approved plans. Any deviation from the approved plans requires a re-submittal to the Fire Prevention Division.
5. Any approval issued by the Fire Prevention Division does not release the contractor or property owner from the responsibility of full compliance with all applicable codes and ordinances relating to the construction project.
6. Plans approved by the City of Carrollton Fire Marshal's Office give authorization for construction only. Final approvals are subject to field verification.
7. The Fire Inspector will provide documented results after each inspection.

It is the goal of the Fire Prevention Division to complete your plan review within the shortest possible time. **We strive to complete your plan review within fifteen (15) business days from receipt of the plan submittal package.** Please be advised that revisions, changes, or an incomplete submittal package may delay your final plan approval.

## **HIGH-PILED COMBUSTIBLE STORAGE**

These guidelines are to be followed when a building or facility within the City of Carrollton proposes:

- To use a building or portion thereof with more than 500 square feet, including aisles, for high-piled combustible storage.
- The installation of or modification to a structure with more than 500 square feet, including aisles, of high-piled combustible storage. Maintenance performed in accordance with the 2021 IFC is not considered to be a modification and does not require a construction permit.

High-Piled Combustible Storage as defined in the IFC is the storage of combustible materials in closely packed piles or combustible materials on pallets, in racks or on shelves where the top of the storage is greater than 12 feet for Class I – IV commodities; or greater than 6 feet for High Hazard commodities as defined by the IFC

## **Plan Review Submittal Requirements for High-Piled Combustible Storage**

### **Required Construction Documents:**

1. Floor plan of the building showing locations and dimensions of *high-piled combustible storage areas*
2. Usable storage height for each storage area.
3. Number of tiers within each rack, if applicable.
4. Commodity clearance between top of storage and the sprinkler deflector for each storage arrangement.
5. Aisle dimensions between each storage array.
6. Maximum pile volume for each storage array.
7. Location and classification of commodities in accordance with section 3203 of the 2021 IFC.
8. Location of commodities that are banded or encapsulated.
9. Location of required fire department access doors.
10. Type of fire protection systems.
11. Location of the valves controlling the water supply of ceiling and in-rack sprinklers.

12. Type, location and specifications of smoke removal and curtain board systems.
13. Dimension and location of transverse and longitudinal flue spaces.
14. Analysis from a **Licensed Fire Protection Engineer** or a firm holding a **Sprinkler Certificate of Registration General (SCR)** from the Texas Department of Insurance which states that the existing or proposed fire sprinkler system is designed to adequately protect the proposed commodities and storage arrangement within the high-piled storage area.

**\*\*\* A printed copy of the FPE or SCR's report of legible size (30 inches x 40 inches), shall be mounted on a wall and protected from damage. The report shall be mounted in an approved location and accompanied by the Floor Plan as required below.**

**\*\* The final inspection of high-piled storage shall not be approved until any required fire sprinkler system work has been permitted \*\***

### **Floor Plan Requirements:**

A floor plan, of legible size (**min 30 inches x 40 inches**), shall be provided, **mounted on a wall and protected from damage**. The floor plan shall be mounted in an approved location and show the following:

1. Locations, dimensions and rack layout of *high-piled storage areas*.
2. Design storage height for each storage area.
3. Types of commodities.
4. Commodity clearance between top of storage and the sprinkler deflector for each storage arrangement.
5. Aisle dimensions between each storage array.
6. For palletized and solid-piled storage, the maximum pile volume for each storage array.
7. Location and classification of commodities in accordance with Section 3203 of the 2021 IFC.
8. Location of required fire department access doors.
9. Location of valves controlling the water supply of ceiling and in-rack sprinklers.

### **Fire Safety and Evacuation Plan:**

An approved fire safety and evacuation plan in accordance with Section 404 of the IFC shall be prepared for buildings with high-piled combustible storage in any of the following situations:

1. The high-piled storage area exceeds 500,000 square feet for Class I-IV commodities.
2. The high-piled storage area exceeds 300,000 square feet for high-hazard commodities.

3. The high-piled storage is located in a Group H occupancy.
4. The high-piled storage is located in a Group F occupancy with an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge.
5. The high-piled storage is located in a Group M occupancy with an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge.

## **Rack Storage:**

**In addition to the previous requirements, the installation or modification of storage racks requires the following information.**

- The design, erection and anchoring of steel storage racks constructed from cold-rolled and hot-rolled steel shall follow regulations set forth in the currently adopted IBC.
- The design of rack systems are required to comply with Rack Manufacturers Institute (RMI) MH16.1
- Engineered rack storage systems will require the construction plans and specifications have been reviewed, approved, and sealed by the licensed P.E.
- A permanent plaque is required on each rack that indicates the maximum allowable load for each rack tier.
- Racks must be anchored prior to requesting an inspection.
- Racks/Shelves must remain empty until approval from inspector.

**Each submission shall contain a total of 2 PDF documents uploaded through the portal**

1. **One set of digitally signed plans (DO NOT LOCK PDF)**
2. **One set of data/spec sheets and all other supporting documentation**

### **Plan Size and Clarity:**

- Plans shall be clear, legible and contain sufficient detail to enable a complete review
- All sheets shall be in a common and appropriate scale (minimum 1/8" = 1'0").
- Submittals done on electrical, lighting, or other "busy" plans are not acceptable.

## **INSPECTION REQUESTS, REQUIREMENTS & PROCEDURES**

### **Required Procedures When Requesting an Inspection**

- **All inspection requests shall be sent directly to the inspector listed on permit.**

- *Contact your inspector at least 48 hours in advance of the requested inspection.*

**All inspection requests shall be submitted in the following format:**

**Subject Line of e-mail shall contain:**

- Type of inspection Request- Address of installation - Permit #
- (i.e., Access Control Inspection Request – 1234 Any Street – Permit #202201120)

**Body of e-mail shall contain:**

- Name, complete address, phone number and e-mail of installing company
- Name, cell number and e-mail of on-site representative
- Photo of Fire Sprinkler System and Fire Alarm System inspection tags.
- Photo proof of installed Knox Box.
  - o Knox Box 3200 Series may be flush mounted or wall mounted versions.
  - o Must be sealed weathertight to the building with caulking.
  - o Keys inside shall be labeled descriptively and shall work on all FD access doors.
- Photo of Fire Department access door signage properly installed.
- Photo proof of permanently installed plaques indicating maximum allowable load for each rack tier.
- Photo proof of laminated or framed Floor Plan and Fire Protection Engineer or SCR's Report with inspectors stamp ready for mounting.

**On-Site Requirements:**

- A representative of the requesting company who can effectively communicate and answer any questions from the Fire Inspector must be present at time of inspection.
- City of Carrollton Fire Marshal's Office approved, stamped, and signed plans and permits must be kept on the job site and presented to the inspector upon arrival.