

PERMIT APPLICATION GUIDELINE

HIGH-PILED STORAGE

OF COMBUSTIBLE COMMODITIES IN EXCESS OF 12 FEET IN HEIGHT

**** PERMIT REQUIRED ****

This publication outlines the *International Fire Code, 2012 Ed.* permit and documentation requirements related to high-piled combustible storage and associated storage areas located inside new and existing buildings within Washoe County. This publication does not address outside storage and miscellaneous combustible storage (i.e., below 12 feet in height) located inside buildings.

*** PLEASE REVIEW THIS ENTIRE PUBLICATION BEFORE MAKING APPLICATION ***

This information refers to the storage of combustible materials where the top of the storage is greater than 12 feet in height or where high-hazard commodity storage exceeds 6 feet in height at the top of the storage.

OVERVIEW

The International Fire Code defines (IFC) "high-piled storage area" as the area within a building which is designated, intended, proposed, or actually used for high-piled combustible storage. High-piled combustible 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 in height. When required by the fire code official, high-piled combustible storage also includes certain high-hazard commodities, such as Group A plastics, rubber tires, flammable liquids, idle pallets, and similar commodities where the top of the storage is greater than 6 feet in height.

Required fire protection features for high-piled combustible storage are generally determined by the storage commodity type (i.e., combination of products, packing materials, and containers) as well as the height, quantity, and method of commodity storage. A key concept in the protection of buildings containing high-piled combustible storage is ensuring the level of fire protection provided is adequate for the commodity types and storage arrangements actually in place.

PERMIT REQUIRED. An operational permit (IFC Operational Permit) is required to use a building or a portion thereof as a high-piled storage area exceeding 500 square feet. The primary focus of this permit requirement is to ensure the required level of protection and planning (e.g., fire protection systems, portable fire extinguishers, smoke and heat vents, fire department access, evacuation plan, etc.) is adequate, code compliant, and properly maintained for a particular high-piled storage area. An Operational Permit for high-piled combustible storage will only be issued after documentation requirements have been satisfied.

HIGH-PILED STORAGE PLAN REQUIRED. In order to satisfy the requirements for a high-piled combustible storage operational permit, a high-piled combustible storage plan must be reviewed and approved by the Fire Marshal before the operational permit will be issued.

FIVE STEP PROCESS. The following steps form the procedural framework for completing the documentation submittal/retrieval, permit application, and inspection scheduling processes:

- STEP 1 - Prepare Required Documentation
- STEP 2 - Submit Required Documentation
- STEP 3 - Retrieve Approved Documentation
- STEP 4 - Make Application for a Permit (FPCP)
- STEP 5 - Schedule a Fire Marshal Site Inspection.

STEP 1 - PREPARE REQUIRED DOCUMENTATION

The following documentation requirements must be satisfied before a permit for high-piled combustible storage will be issued. Prior to making application for a permit, the high-piled combustible storage plan review application, plan review documents, and completed evacuation plan (for public accessible storage areas) must be submitted, reviewed, and approved by the Fire Marshal. Following approval, a copy of the approved high-piled combustible storage plan and plan review application shall be maintained on the premises in an approved location, readily available for inspection by the Fire Marshal.

Plan Review Documents. In accordance with Section 3201.3 of the IFC, at the time of building permit application for new structures designed to accommodate high-piled storage or when requesting a change of occupancy/use (storage hazard change), and at the time of application for a high-piled combustible storage permit, plans and specifications shall be submitted for review and approval. All plans, specifications, documents, or designs for high-piled combustible storage shall bear the name and address of the author and his/her occupation.

To avoid confusion with other construction documents associated with the building, approved documentation for high-piled combustible storage is known as the ***High-Piled Storage Plan***.

Floor Plan Specifications. Designers shall provide a **scaled** floor plan of the building showing locations and dimensions of all high-piled combustible storage areas and storage arrangements. Dimensional drawings are not acceptable. Scaled drawings shall be: **1/8 inch = 1 foot**

Plan Review Application. A high-piled combustible storage plan review application must be submitted with the high-piled combustible storage plan review documents. All applicable information in the application must be provided to process the plan review. The application may be obtained online at:

www.tmfpd.us

Fire Evacuation Plan. In accordance with Section 3201.4 of the Fire Prevention Code, an evacuation plan for public accessible areas and a separate set of plans indicating location and width of aisles, location of exits, exit access doors, exit signs, height of storage, and locations of hazardous materials shall be submitted at the time of permit application for review and approval. Following approval of the plans, a copy of the approved plans shall be maintained on the premises in an approved location. Mercantile shall comply with the following publication:

www.tmfpd.us

Minimum Required Copies. Three (3) copies of the high-piled combustible storage plan review application, plan review documents, and completed evacuation plan shall be included in the plan submittal. The minimum required contents for plan documents are outlined in this publication

PLAN REVIEW APPLICATION INSTRUCTIONS

The following information must be accurately provided on the plan review application:

(1) – STORAGE AREA IDENTIFICATION

A. Are there multiple storage areas separated by a 1-hour fire protection rating?

This question is based on defining the high-piled storage area. Section 3206.3.2 allows a storage area separated by a 1-hour fire barrier be considered a separate high-piled storage area for determining the requirements in Table 3206.2. If you answer YES, clearly show the 1-hour (or greater) fire barrier wall on the plans and fill out a separate application (items 1-7 only) for each area that meets this definition.

B. Description/Name of high-piled storage area.

This is the name of the high-piled storage area. Where item A is YES, this will help separate the multiple high-piled storage areas. These areas should be named on the plans.

C. Aggregate Area:

This is the total square footage of the high-piled storage area. When calculating high-piled storage area for shelf and solid-pile storage, the actual area used for storage (not including aisles) should be determined. When calculating high-piled storage area for rack storage, the aisle width required in NFPA 13 shall be included in the total area.

D. Ceiling Height:

Provide the minimum and maximum ceiling height in the high-piled storage area.

E. High-Piled Storage Area Accessible to the Public?

This is used to determine the options allowed in Table 3206.2. If YES, a separate evacuation plan shall be prepared and submitted with this plan.

(2) – COMMODITY CLASSIFICATION

A. Description of combustible materials stored: Provide a brief description of the commodities that are stored. If more space is needed, provided additional sheets.

B. Commodity classification(s) per IFC 3203: IFC 3203 defines each class of commodity. Provide the class of commodity that is to be stored.

C. Use of flame-retarding modifiers to change the commodity classification? IFC 3203.1 states that the use of flame-retarding modifiers could change the commodity classification. Are you claiming to use this allowance to change the commodity classification?

D. Does the physical form of the material change the commodity classification? IFC 3203.1 states that the change in physical form could change the commodity classification. Are you claiming to use this allowance to change the commodity classification?

E. If yes to C or D, provide documentation validating related changes in commodity classification. Provide documentation that supports the change in commodity classification. Documentation may include specifications, testing data, or other supporting documents.

- F. Specify commodity class limitations in accordance with IFC 3204.** Please review IFC 3204. The high-piled storage area is to comply with the highest commodity classification being claimed with exception. When IFC 3204.2 applies, clearly show on the plans the locations of the higher commodity being used.
- G. Amount of Group A plastics are classified as high-hazard commodity.** This is a declaration that Group A plastics, if applicable, have been determined not to constitute a commodity classification of High-Hazard. (IFC 3203.7.4)

(3) – HAZARDOUS MATERIALS

- A. Identify if the following hazardous materials are part of the proposed high-piled storage plan. Refer to the IFC chapter indicated for material-specific storage limitations and/or requirements.** When these hazards exist in the high-piled storage areas, other chapters also apply to the storage of these materials.
- B. Other Hazardous Materials.** Identify what other hazardous materials are being stored.
- C. MSDS for Hazardous Materials Stored Included with Plan Submittal.** When hazardous materials are stored in the high-piled storage area, please provide copies of all associated Material Safety Data Sheets (MSDS) or Safety Data Sheets (SDS).

(4) – FIRE PROTECTION / LIFE SAFETY REQUIREMENTS

- A. Automatic Fire-Extinguishing System Provided.** If YES, provide on the plans the complete information as to the sprinkler system type, density, and current design criteria for specific commodities, pipe types, sizes and sprinkler head characteristics. Hydraulic nameplate information from the sprinkler riser must be included.
- B. Fire Detection System Provided.** If YES, provide the type of fire detection system installed.
- C. Fire Department Access Doors Provided.** If YES, provide a description of exterior door hardware. Access doors shall have hardware and cylinder key locks. Roll-up doors shall not be used as part of the required building access unless written approval is given by the Fire Marshal's Office. Additional fire department key boxes may be required. Plans shall show the location of required access doors.
- D. Smoke and Heat Removal Provided.** If YES, provide information on the type, location, and specifications of smoke and heat removal. Plans shall show the location of the smoke and heat removal systems.
- E. Draft Curtains Provided.** If YES, provide information on the type, location, and specifications of the draft curtains used. Plans shall show the location of the draft curtains.
- F. Number and Rating of Fire Extinguishers Provided.** Provide the number and rating of fire extinguishers. The location of the fire extinguishers shall be shown on the plans. Example: Number of Extinguishers: 4 Rating: 4A:20B:C Locations: See Floor Plan
- G. Provide additional information if a footnote in IFC Table 3206.2 applies to this project.** If you are applying a footnote in IFC Table 3206.2, indicate which footnote and why it is being applied.

(5) – FIRE SPRINKLER SYSTEM

- A. Fire Sprinkler System Provided.** Is a sprinkler system provided in the high-piled storage area? If YES, plans shall show the location of all fire sprinkler system shutoff valves including in-rack sprinkler shutoff valves.
- B. Type of System.** What type of sprinkler system covers the high-piled storage area? This is used to determine requirements of 3204.2.
- C. Sprinkler System Design Density and Area.** Provide the sprinkler system design density and area.
- D. In-Rack Sprinklers Provided.** Are there in-rack sprinklers provided? If YES, clearly show the location of in-rack sprinklers and their shutoff valves on the plans.
- E. ESFR Sprinkler Heads Provided.** Are Early-Suppression Fast Response heads installed? This is to be indicated on the plans.
- F. Sprinkler K-Factor.** What is the K-factor of the sprinkler heads used?
- G. Sprinkler Head Temperature.** What is the temperature rating of the sprinkler heads installed?
- H. Sprinkler Spacing in Square Footage.** What is the spacing on the sprinkler heads?

NOTICE: Detailed information requested in items 6 and 7 listed below shall be provided for each separate high-piled combustible storage arrangement or configuration where storage methods or storage design specifications are different. For example, if solid-pile storage, rack storage, and bin box storage is to be located in the same high-piled storage area, a separate copy of page four of the applications will be required for each separate arrangement or configuration. In addition, each separate arrangement or configuration shall be shown in the plan.

(6) – STORAGE ARRANGEMENT / CONFIGURATION

- A. High-Piled Storage Arrangement:** Indicate the type of high-piled storage arrangement. The plans should clearly show the location of each type of storage.
- B. Shelf Information:** If shelf storage is indicated in item A, provide this information. Shelf storage is defined in IFC 3202. This information is used to determine if the dimensions meet the requirement to be defined as shelf storage.
- C. Rack Configurations:** If rack storage is indicated in item A, provide this information. This type of configuration is defined in NFPA 13. Plans shall indicate the number of tiers used.
- D. Pallet Information:** Where pallets are used, provide this information.
- E. Solid Pile Information:** If solid-pile storage is indicated in item A, provide this information. This indicates how the piles are being stored.
- F. Maximum Pile Dimension:** Refer to IFC Table 3206.2.
- G. Maximum Pile Height:** Refer to IFC Table 3206.2.
- H. Maximum Pile Volume:** Refer to IFC Table 3206.2.

(7) – AISLE WIDTH / STORAGE-RELATED DIMENSIONS

- A. Minimum Required Aisle Width:** Provide the minimum aisle width required by IFC 3206.9 or NFPA 13 design criteria, whichever one is more restrictive. Aisle widths shall be shown on the plans. When active restocking is in process, the aisle widths may be reduced to half of the required aisle width in accordance with IFC 3205.4.
- B. Transverse Flue Space:** See IFC 3208.3. The 25 feet indicated in the table references the maximum ceiling height. Transverse flue space configuration shall be detailed on the plans.
- C. Longitudinal Flue Space:** See IFC 3208.3. The 25 feet indicated in the table references the maximum ceiling height. Longitudinal flue space configuration shall be detailed on the plans.
- D. Maximum Storage Height:** Provide the maximum storage height as required by the sprinkler system design. In accordance with IFC 3205.6, a visual method shall be provided to indicate the maximum storage height. See below for the specifications on this method. Plans shall also include the maximum allowable storage height.
- E. Clearance from Top of Storage to Sprinkler Heads:** Indicate the minimum clearance allowed between the sprinkler heads and top of storage.

KEY BOX & SIGNAGE DETAILS. Locations and/or specifications for the following requirements shall be clearly illustrated on the high-piled storage plan as specified below.

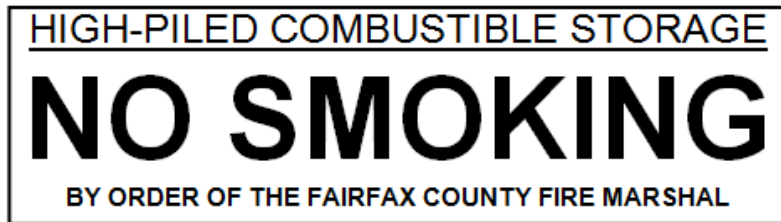
- A. Fire Department Building Access Door Signage (Show Locations and Specifications)
- B. Fire Department Key Boxes (Show Locations)
- C. No Smoking Signage (Show Locations and Specifications)
- D. Storage Height Limitation Signage (Show Locations and Specifications)

Fire Department Building Access Door Signage. Where fire department building access doors are required by IFC Table 3206.2, signage shall be placed on the exterior side of all required access doors. Signs shall be constructed of durable materials, permanently installed, and readily visible. Letters shall be a minimum of 6 inches high with a minimum stroke width of 0.75 inch on a contrasting background. Signs shall read “Fire Department Access Door”

Fire Department Key Boxes. Approved fire department key boxes shall be installed on the building required to have fire department building access doors in accordance with IFC Table 3206.2. Each key box provided under this requirement shall contain labeled sets of keys used to unlock the fire department building access doors.

Approved Key Boxes - In accordance with Section 506.1 of the IFC, where access to or within a structure or an area is restricted because of secured openings, or where immediate access is necessary for life-saving or fire-fighting purposes, a key box shall be installed in an approved location. The key box shall be of an approved type listed in accordance with UL 1037 and shall contain keys to gain necessary access, as required by the fire code official.

No Smoking Signage. No Smoking signs shall be provided. Sign specifications may be approved during the plan review phase and verified as compliant during a site inspection. Generally, signs should be clearly legible, visible from distances of approximately 25 feet, display lettering on a contrasting background, and proportion wording approximately as shown:



Storage Height Limitation Signage. In accordance with sections 3205.6 of the IFC, a visual indication shall be provided to show the maximum storage height. The preferred method used for storage along walls shall be a line placed at the maximum storage height. The preferred method used for open area and aisles shall be a sign with the maximum storage height posted and the bottom of the sign installed at the maximum storage height. Additional methods used shall be approved by the Fire Marshal. Specifications for all maximum storage height signage shall be clearly illustrated in the plan.

STEP 2 - SUBMIT REQUIRED DOCUMENTATION

Plan Submittal Instructions. Submit three (3) complete copies of the high-piled combustible storage plan review application, all plan review documents, and completed evacuation plan to the following address for review and approval:

Washoe County Building and Safety
1001 East Ninth St., Building A
Reno, NV 89509

STEP 3 - RETRIEVE APPROVED DOCUMENTATION

Notice about Fire Marshal Approval. In accordance with Section 107.7 of the IFC, plans approved by the fire official are approved with the intent that they comply in all respects to the IFC. Any omissions or errors on the plan review submittals (i.e., plan review application, high-piled storage plan, and evacuation plan) do not relieve the permit applicant of complying with all applicable requirements.

STEP 4 – MAKE APPLICATION FOR A PERMIT (FPCP)

In accordance with Section 3201.2 of the IFC, an Operational Permit is required to use a building or a portion thereof as a high-piled storage area exceeding 500 square feet. Furthermore, in accordance with Section 108.2, an Operational Permit shall be issued by the TMFPD Fire Prevention Bureau.

Permit Notice. In accordance with Section 108.3.6 of the IFC, the issuance or granting of an operational permit shall not be construed to be a permit for, or an approval of, any violation of any of the provisions of this code or of any other ordinance of the jurisdiction. Permits presuming to give authority to violate or cancel the provisions of this code or other

ordinances of the jurisdiction shall not be valid. The issuance of a permit based on other data shall not prevent the fire official from requiring the correction of errors in the provided documents and other data. Any addition to or alteration of approved documents shall be approved in advance by the Fire Official, as evidenced by the issuance of a new or amended permit.

STEP 5 - SCHEDULE A FIRE MARSHAL SITE INSPECTION

In accordance with Section 108.2.2 of the IFC, before a new operational permit is approved, the Fire Official is authorized to inspect the receptacles, vehicles, buildings, devices, premises, storage spaces, or areas to be used to determine compliance with this code or any operational constraints required. A copy of the approved high-piled combustible storage plan and plan review application shall be maintained on the premises in an approved location, readily available for inspection by the Fire Marshal. Site inspections may be scheduled by calling 775-326-6079.