



Idle wood pallets present hazard

Idle wood pallets can present a severe fire hazard and significant challenge to sprinkler systems if they are not properly stored or protected. Although idle pallets can be found in almost any manufacturing or warehouse occupancy, they all share a common hazard – they all burn intensely and generate a great deal of heat. This is because they're made of combustible material and have vertical and horizontal flue openings that permit air (oxygen) to feed the burning surfaces. For this reason, the storage location and/or the sprinkler protection provided for the wood pallets is extremely important.

Idle pallet storage in non-sprinklered buildings

The storage arrangements for idle wood pallet storage for buildings without sprinklers (or with inadequate sprinklers) are listed in order of preference below:

- 1. Outside the building:** The best storage arrangement is outside, with a minimum separation distance of 50 feet. Smaller separation distances may be acceptable based on the number and height of pallets, construction of exposed walls, presence of windows, and presence of exterior sprinklers.
- 2. Detached building:** A shed, low value building or trailer may be used for idle pallet storage. The separation distance between the pallet storage and a primary building depends on various factors including the ability of the primary building's facing exterior wall to withstand radiated heat, and the quantity and storage height of the pallet storage. Recommended distance is usually 20-50 feet for small to medium quantities.
- 3. Cut-off rooms in primary buildings:** A cut-off room is a room located within a main building but against at least one outside wall. The cut-off room should have fire barrier walls of at least 2 hour fire resistance rating and wall openings should be protected by fire doors of at least 1½-hour rating.
- 4. Open storage areas or non-fire rated rooms in primary buildings:** This is the least preferred method. Very hot, fast spreading fires can occur, thus open area storage should be discouraged. Where necessary, temporary storage of pallets should not exceed three or four stacks at a maximum of six feet in height. Close observation of general storage rules, housekeeping and ignition source control is important.

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Idle pallet storage in sprinkler-protected buildings

Fire protection requirements for wood idle pallets stored inside:

Idle pallet storage up to six feet high

Where ceiling sprinkler protection is insufficient to meet at least Ordinary Hazard Group 2 (0.2/1500 GPM/ft²) design requirements, idle wood pallet storage should follow protection recommendations as if it were a non-sprinklered building.

Buildings protected by ordinary hazard Group 2 design sprinklers may store pallets up to a maximum of six feet high. Each pile should consist of no more than four stacks and separated from other pallet piles by at least an eight-foot clear space or 25 feet of stored commodity.

When storing pallets greater than six feet high

Where the building occupant desires to store idle wood pallets to heights greater than six feet high, consult your insurance loss control representative, a qualified sprinkler contractor or the fire department to determine if existing sprinklers will adequately protect the hazard. This person will reference the National Fire Code tables and charts to determine what minimum ceiling sprinkler protection design is required for the storage heights you desire.

Idle wood pallet fires burn very rapidly and generate great heat. The building owner or occupant may not realize that just storing the pallets two feet higher (up to eight feet high) requires a sprinkler system that can produce more than twice the gallons per minute (GPM) as an ordinary hazard sprinkler system to control the fire. Conversely, pallet storage above eight feet high requires sprinklers three times stronger than ordinary hazard type sprinklers to control the fire. This information is based on actual fire testing.

Protection for indoor storage of idle wood pallets may be provided by either standard spray, large drop, specific application or early suppression fast response (ESFR) sprinklers. These different type sprinkler systems each have specific design and size requirements to properly protect idle wood pallets.

Idle pallets stored in racks

Idle wood pallets should not be stored in racks as it is much more of a hazard than even storing them on the floor. Only very strong, high density sprinkler systems can control idle wood pallet fires when stored in racks.

Reference: NFPA 13, Standard for the Installation of Sprinklers.

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