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Storage of Idle Pallets

The storage of idle combustible pallets presents a significant fire hazard in both indoor and outdoor storage facilities.

A fire involving even a modest number of idle pallets inside a building can rapidly overtax a fire sprinkler system and quickly lead to structural failure of the building.

Although most often associated with warehouses, pallets can be found in nearly every industrial and commercial facility. Wherever pallets are used, the potential exists for the accumulation of excess or idle pallets. While initially these accumulations may be thought to be "temporary", the number of idle pallets can increase over time becoming a high fire hazard. Careful control and management of idle pallets is required to prevent accumulations from becoming a significant fire exposure.

The Danger

Material

- **Wood Pallets**

The conventional pallet is typically made from wood. As wood loses its moisture content, it becomes easier to ignite. In addition, as wood pallets dry out, their edges tend to become frayed and splintered. In this condition, a small ignition source can easily ignite them.

- **Plastic Pallets**

Plastic pallets represent an even higher hazard as plastic burns as hot as wood for a longer time. Burning pools of plastic can flow and spread fire to other areas of a facility. Further, the combustion of plastic may produce large quantities of smoke.

Storage

- **On Edge**

When pallets are stood on edge, they create a vertical flue space that allows for rapid

burning. A vertical configuration provides the greatest amount of surface area for combustion. A fire occurring at the base of a pallet will spread upward as the rising gases preheat the thin slats above it. This pre-heating and high airflow leads to a rapid fire spread throughout the pallet pile.

- **Flat Stacking**

Flat stacking of pallets provides less surface area for combustion. When one pallet is placed on the next, the thin slats typically cover each other, limiting the available surface area. However, the open area between slats provides a large vertical flue space for fire spread.

- **Racks**

Many facilities opt to store idle pallets in racks, which presents a significant fire risk. Pallets stored in racks have un-restricted airflow that will rapidly accelerate a fire and the high heat produced by burning pallets may lead to a failure of the rack assembly as the metal becomes fatigued.



Knowing your business matters.

Recommended Safety Measures

1. Minimize Idle Pallet Storage

- Accumulation of idle pallets can occur in any occupancy. It is important to monitor the number of pallets and storage arrangements on an ongoing basis. This should be part of your regular fire safety inspection.
- Idle pallet storage should be limited to the minimum needed to meet production demands.

2. Store Idle Pallets Outside

- Outside storage of idle pallets is the preferred method from a fire protection standpoint. By locating pallets outside, away from buildings and other exposures, property loss from a pallet fire will be restricted to the pallets.
- Store idle pallets in an outside, secured location, where sufficient clearances from exposures are maintained.
- All outdoor piles must be separated from other combustible storage and buildings by 50 ft (15m).
- Outside pallet storage should be located away from any air intakes, ducts or building openings that could allow smoke from burning pallets to enter the building.
- Pallets should not be stored next to walkways, driveways, or similar locations that may expose people or property in the event of a fire.

3. Store Idle Pallets Flat

- Avoid stacking pallets on edge; flat stacking is preferable. Arranging flat-stacked pallets at right angles to each other will limit the flue space in the pallet pile.

4. Do Not Store Pallets Indoors

- Indoor storage of idle pallets should not occur, do not allow any accumulation of idle pallets indoors.

An accumulation of idle pallets presents such a significant fire risk to your facility that it should be closely monitored.

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