

# Storage Occupancies Fire Loss Prevention

Fire presents the greatest potential for Loss in Storage Occupancies. Destruction of large quantities of high value merchandise in a warehouse fire can impair delivery schedules to the extent that the loss of business alone makes recovery impossible.

Recognition of the major causes of warehouse fires (electrical, smoking, welding/open flame), and actions taken to enhance fire safety will result in a degree of protection that minimizes fire risk.

The following should be considered:

## Construction

Large storage areas are normally divided by “fire walls” to reduce the loss from a single fire. Fire walls are also utilized to segregate or “cut off” higher hazard operations or storage from main high value storage areas. Areas which should be “cut off” from storage include production, maintenance shops, shipping/receiving, flammable/combustible liquid mixing, paint spraying and high hazard storage such as aerosol cans, flammable combustible liquid storage and storage of idle pallets.

Openings in fire walls should be kept to a minimum. Those openings which are necessary, such as doors and conveyor openings, should be protected with listed self-closing fire doors, automatic sprinklers or equivalent protection. It is especially important that fire doors remain unobstructed and undamaged so that they will operate in a fire. Stock or a vehicle left under a fire door, even during the work shift, can result in greatly increased fire losses.

Small openings in fire walls, such as those around conduit pipe or plumbing should be sealed with a UL listed and classified “Fire Stopping” material. (See Loss Control Data Guide F.13486 for details.)

### 1. New Locations

- When locating a new warehouse facility, the choice of one story noncombustible building construction, subdivision by fire walls and a building with an automatic sprinkler system (designed for both type and height/arrangement of merchandise) should be considered. Single story noncombustible buildings are preferred as they offer improved fire department access, do not contribute fuel to a fire, and resist collapse in a fire.

### 2. Building/Storage Height

- The height of a warehouse is of major importance. Fire tests have shown that protection of piled stock over 20' tall requires specialized sprinkler protection. For storage over 12', allowance should be made to maintain a 36" clearance between the top of stock and sprinkler deflectors (or

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ceiling in unsprinklered buildings). Depending on the height and commodity stored, high rack storage may require sprinklers in the racks as well as at ceiling level. Storage of certain highly combustible materials may limit storage height to as little as 8' to allow effective protection.

### 3. Arrangement of Stock

- Intense fires can develop in high piles or in rack storage of materials. The floor area of stockpiles should be kept as small as practicable. Ideally piles should be separated by aisles into 5,000 square foot areas to facilitate manual firefighting and sprinkler operation. Minimum 8' wide aisles are recommended to prevent fire from spreading horizontally. All storage of combustibles in aisles should be prohibited for the same reason. If draft curtains are provided, aisles located at the periphery of draft curtained areas should be centered under the draft curtains. Encapsulation of stock (plastic stretch wrap on sides and top of pallet loads) prevents sprinkler water penetration. When possible stretch wrapping should be limited to the sides of combustible stock.

### 4. Idle Pallets

- Represent an extremely high fire load. These should be stored outdoors, at least 50' away from buildings. Indoor storage should be separated into four pallet stacks and stored to a maximum height of five feet. Groups of pallet stacks should be separated from each other by 8' of clear space or 25' of stock. Large quantities of pallets indoors should be stored in a separate fire resistive room. Idle pallets should not be stored in racks.

### 5. Hazardous Materials

- Aerosols, flammable liquids, propane, etc., should be stored in separate fire resistive rooms or buildings.

## Ignition Sources

### 1. Smoking

- should be prohibited in all storage areas.

### 2. Electrical Equipment

- should be in good condition, listed for intended use and maintained by a licensed electrician.

### 3. Welding/Open Flame

- operations should be conducted only with a Hot Work Permit provided. (See Loss Control Data Guide F.13418 for details.)

### 4. Lift Trucks

- utilized in locations having ignitable or potentially ignitable concentrations of flammable vapor/gas, dust, or fibers should be listed for such use by a recognized testing laboratory.

## Protection

### 1. Sprinkler Systems

- Sprinkler systems are essential to properly protect high piled and

rack storage (over 12'). Hydraulically designed systems which deliver a prescribed water volume over a given area are preferred. The combustibility, arrangement of stock, and available water supplies are some of the factors which determine automatic sprinkler requirements. Relocation to a new building, change in type or packaging of stored goods, and changes in arrangement require reevaluation of sprinkler systems.

## 2. Alarms

- Sprinkler, heat, and smoke alarms should be provided. These should be monitored by a UL Certified Central Station Service.

## 3. Manual Protection

- Extinguishers and small hose should be provided throughout the storage area. Hoses should be capable of reaching all areas.

## 4. Employee Training

- Employees should be trained to call the Municipal Fire Department immediately in the event of fire. Emergency phone numbers should be posted.

The loss prevention information and advice presented in this brochure are intended only to advise our insureds and their managers of a variety of methods and strategies based on generally accepted safe practices, for controlling potentially loss producing situations commonly occurring in business premises and/or operations. They are not intended to warrant that all potential hazards or conditions have been evaluated or can be controlled. They are not intended as an offer to write insurance coverage for such conditions or exposures, or to simply that Great American Insurance Company will write such coverage. The liability of Great American Insurance Company is limited to the specific terms, limits and conditions of the insurance policies issued.  
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