Howden Risk engineering

Property Newsletter June'25

Are you aware of the active risks within your Warehouse?

Warehouses are the backbone of manufacturing, retail and e-commerce industry. Managing the fire risks becomes critical in warehouses for smooth functioning of the supply chain networks.

Fires in Distribution centers have not only caused Property Damage to the client but has also resulted in substantial Business Interruption losses which have largely gone unnoticed for clients without adequate Fire Loss of Profits coverage in place.

As the corporates are battling through ongoing Geopolitical tensions, economic volatility and climate change, it important to understand whether the warehouse risks within their business are adequately covered.
There have been multiple major warehouse fires in the last 6 months within India.

The below have been major fires in the past 3 months across India-

Date of Loss: 02-Apr-2025

Details- Massive fire at a garment warehouse in Gurugram which quickly spread to two adjoining warehouses of liquor and shoes resulting in a 12-hour operation to douse the blaze. More than 20 fire tenders and 200 fire fighters were deployed to control the fire

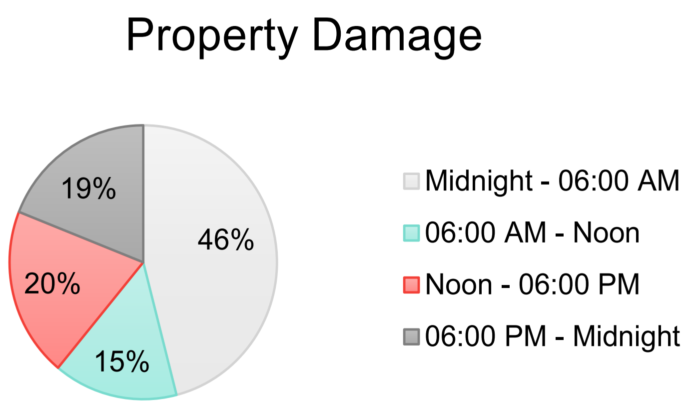
Date of Loss: 14-May-2025

Details- Fire broke out at a warehouse used for the storage of lubricants near Nelamangala at around 03:30 AM. 11 fire engines with over 100 fire personnels took nearly 11 hours to douse the fire. The warehouse was spread over 35,000 square feet. The initial investigation revealed the cause of fire could be short circuit however the final investigation reports are awaited. The initial estimate for the overall loss is ~ Rs 30 crore.

Date of Loss: 13-May-2025

Details- Fire broke out at the Kerala State Beverages Corporation (Bevco) warehouse in Pulikeezh on May 13, night, destroying liquor worth crores of rupees. the fire, which broke out around 8.15 p.m., gutted a significant portion of the warehouse. Seven fire engines were deployed to the site to control the blaze. Despite relentless efforts for over an hour, the fire could not be brought under control and a large section of the facility was reduced to ashes. The fire caused small explosions with the burning of liquor bottles.

A recent 2022 NFPA Warehouse Structure Fire Assessment report suggests Annual $283 Million in direct property damage. There were a total of 1450 Structure Fires per year.



Is your warehouse risks well taken care of?

Key considerations within Warehouse facility-

- Flue Spacing
- Storage Arrangement
- Commodity Classification
- Protection of Special Storages
- Type of Protection Installed
- Maintenance of Fire Protection System
- Supervision
- Fire Separation

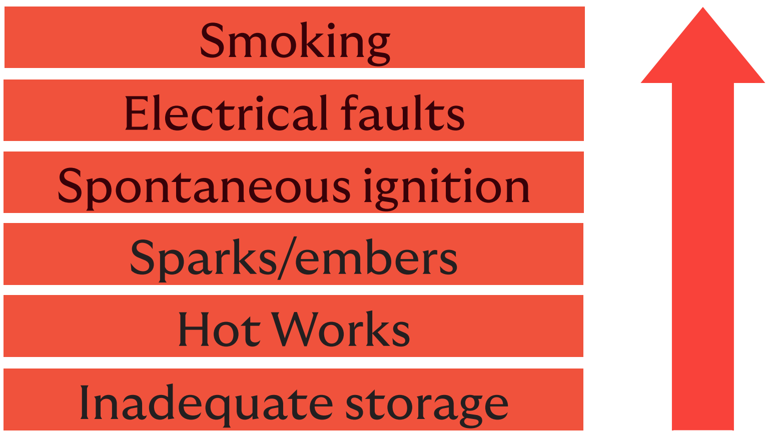


Fig. 1 - Cause of fires

Warehouses are the backbone of manufacturing, retail and e-commerce industry. Managing the fire risks becomes critical in warehouses for smooth functioning of the supply chain networks.

It is estimated that the total warehousing space will grow at a Compounded Annual Growth Rate (CAGR) of 5% in the next 5 years. Warehouses often encompass large open spaces occupied by one few people. Common hazards and ignition sources generally associated with warehouses are hot work operations, failure of electrical equipment, incendiarism, ignition from material handling equipment.

Fig. 1 Highlights the cause of loss for fires in the Warehouse.

The fire load varies across warehouses and is a function of the nature of the product, type of packaging as well as storage type in the warehouse. The introduction of automation, Internet of Things and robotics has complicated the entire fire assessment inside the warehouses.

Risk Assessments within the Warehouse can be broadly categorised into 2 approaches-

a. Loss Prevention:

Systems designed to minimize fire actuation by the facility design and operating procedures.

i. Warehouse Construction- Constructions with combustible materials including light wood are not advisable in view of their rapid combustion. Usage of Sandwich panels and other combustible composite panels is discouraged.

ii. Operating procedures- Defined passage for forklifts, dedicated area for battery charging,

iii. Flue space maintenance- Applicable for rack storage arrangement. Longitudinal and transverse flue spacing needs to be maintained.

iv. Detection system- Active detection system to be in place as warehouses are bound to have fewer personnel within the facility. The detection should be installed in line with IS 2189.

v. Dedicated space for different commodities- Classification of commodities is essential within the warehouse. Depending on the quantity and classification, storage type needs to be defined for products.

vi. Maintenance of Fixed Protection System- Maintenance of fire protection equipment and installations must be carried out in accordance with the regulations IS 3594 and IS 15105 for Fire Protection Installations. The hydrant system needs to adhere to IS 13039.

b. Loss Mitigation:

Minimization of the damage caused by fire through active and passive protection as well as emergency response procedures adopted at the site.

i. Automatic Sprinkler system- The best means of preventing building damage is to control and suppress the fire through the presence of active protection measures such as automatic sprinkler installations.

ii.Emergency Response Plan- The Public fire brigade awareness of the faiclity and the commodity stored is vital in fire fighting. The response time of fire station is key. In addition, the mutual aid with nearby facilities also helps in quick response to fire fight the fire.

Modern warehouses and storage occupancies are especially subject to rapidly developing fires of great intensity, because complex configuration of storage and building layout are usually conducive to fire spread, presenting numerous obstacles to manual fire suppression efforts. The only proven method of controlling a warehouse fire is with properly designed and maintained automatic sprinkler systems.

Managing the change of products and operations occurring in the facility is key to ensure they don’t surpass fire and life safety system.

Best Practices for Risk Management-

a. Clear Aisle spacing with no obstruction and materials kept within the racks

b. Impact damage can be considered due to movement of various material vehicles inside the warehouse.

c. Hazardous / flammable goods or solvents and aerosols/gases stored in separate fire-resistant and temperature controlled areas.

d. Material compatibility check to be incorporated prior to storage.

e. Minimum 6 inches of Transverse & Longitudinal flue space should be maintained on either sides of racks. Flue space allows fire vents to flow upwards and it can properly detected by sprinkler or detection system for further mitigation of fire

f. Minimum 18 inches distance should be maintained between sprinkler heads and goods storage on the top racks to prevent blocking the water flow for fire fighting.

g. The installation and maintenance of electrical wiring and equipment should comply with the provisions mentioned in IS 1646:1982

h. Fire rated partitions and flameproof electrical connections to be used across the warehouse.

i. Install and maintain fire suppression classified for cold warehouses. Ensure that sprinklers are protected from ice plugs forming.

j. Regular fire protection trainings and mock drills to be conducted across the site in line with the scenarios mentioned in the Emergency Response Plan.

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