PALLET RACKING SAFETY

The Manufacturers' Health & Safety Association would like to thank North American Storage and Steel in Nisku, AB for their contribution and collaboration to this month's Safety Scoop on Pallet Racking Safety.

Why discuss Racking Safety Now?

Racking has been around for 40+ years but it is more prevalent than ever. More and more large-scale facilities are being constructed which incorporate racking systems. Loads being lifted, moved, and stored are getting heavier. Buildings are getting taller – 1970s: ~18', 1980s: ~32' and 2010s: 45'+, as building heights increase, the need for larger, taller racking systems with more integration and complexity increases. Racking is no longer limited to industrial workplaces – Racking is everywhere!

Legislation

Although there is no mention of pallet racking except for a reference to forklifts trucks and load handling in Federal Legislation, Part 12 - General Precautions of the Alberta Occupational Health and Safety Code, Section 187 outlines requirements for Pallets and Storage Racks. Employers must ensure that pallets used to transport or store materials do not create a danger to workers. Employers must ensure racks are designed, constructed, and maintained to support the load and placed on firm foundations. Workers must report damage to an employer as quick as practicable, Employer and workers must take all reasonable steps to prevent storage racks from being damaged.

Potential Issues

There are a few potential issues that could arise in the workplace involving racking systems.

Incidents involving pallets occur for five main reasons: 1) poor pallet design, 2) poor pallet construction, 3) inappropriate use of a pallet for load or storage method, and 4) poor handling.

The leading cause of storage racking system failures, acting alone or in combination, are: 1) poor storage design – the rack is inherently unsafe, 2) incorrect installation and assembly, 3) using the wrong material handling

Rocky View
Red Deer
Edmonton

1.888.249.2002

www.mhsa.ab.ca

equipment to load and unload, 4) operator error when using material handling equipment, and 5) structural problems with the floors or walls of the storage area – supporting structures may be overlooked, floors may not be sufficiently level.

Racks, shelving, fixtures, etc. should be regularly inspected for damage and other defects that might cause loss of strength or result in injury or damage. Workers must report to their employer any damage to storage racks as soon as is practical. It is expected that the employer will assess the damage and based on that assessment, may have the damage repaired or rack replaced.

Design Standards

Designs must adhere to the National Building Code, Provincial Building Code, and in some provinces, Special Code Publications for Racking Supported Structures (Mezzanines and Rack Supported Storage Systems). Permitting varies by municipality, ensure the check requirements. Other standards that should be consulted include the Alberta Fire Code and the National Fire Protection Association.

Design Standards followed by legitimate domestic manufacturers:

- Canada – CSA A344:24 – User Guide for Steel Storage Racks
- Canada (new) – CSA S16-14 Annex M
- USA – Rack Manufacturers Institute Inc. (ANSI – RMI MH 16.1-2008)
- USA – F.E.M.A. – specifically addresses racking in public.
- Europe – FEA – the only current code that addresses allowable damage.

Precedent to Develop a Racking Safety Program

Start small by simply adding a “Rack Walk” to your monthly health and safety inspections. Make a rack plan drawing to show the layout of racking in your facility. If necessary, call in an experienced racking specialist or engineer. Determine allowable rack capacities and ensure these capacities are conspicuously posted on the rack system. Minimize racking elevations. Leave installations and repairs to the Professionals.

Racking Repair or Replace

All businesses must consider and mitigate safety concerns for their employees, customers, and others on their premises. The fact that a racking system has not failed does not mean it is adequate or safe. Pallet racking systems support thousands, or even hundreds of thousands of pounds of material and a failure can led to serious injury or fatalities. Even if a failure in your pallet racking system doesn't injure a person, it can result in costly damage to products, property, and the racking itself. It may even cause a significant disruption to your business.

In the event of an accident the onus is on the company and its management team to demonstrate that they have taken the necessary measures, and performed due diligence, to ensure the adequacy and safety of the system.

Conclusion

Ensure racking is inspected regularly as part of the company's scheduled maintenance or facility inspections. Encourage a culture of safety awareness and reporting. Ensure that all and any damage to racking systems is reported immediately. Pallet racking is very tolerant of misuse but there is always a limit. Don't be the one that finds the limits. Samll changes now will set you on a proactive path to ensuring the safety and awareness of your employees.

Resources

North American Storage – Information provided by Jonathon Hirst, B.Eng.
Cam Industrial – Engineering and Design – Pallet Rack Regulations
Alberta Occupational Health and Safety Legislation

For more information or to register for a course, visit the MHSA website at https://www.mhsa.ab.ca or reach out to one of our knowledgeable Safety Advisors, today.

Rocky View
Red Deer
Edmonton

1.888.249.2002

www.mhsa.ab.ca