

Pallet Storage Rack Safety Concerns: *Routine Inspection and Maintenance the Key!*

Many companies feel that, once installed, all types of pallet storage racking are a "set it ... and forget it" application. However, that is a dangerous position to take when it comes to safety in your facility. Pallet storage racking, like any other equipment in your facility, requires regular inspection and maintenance for safe and efficient operation. The consequences of unsafe racking and poor safety procedures can easily be seen on the many videos that have been posted to the internet.

The best way to avoid any catastrophic rack failure is to have a regular inspection and maintenance program in place. The program should include visual inspection of each section of racking, with a checklist for specific areas to review. If any item does not pass inspection, then an action plan for repair or replacement should be implemented.

Pallet Storage Rack Inspections should include the following items:

Plumb & Level: All pallet rack stability depends on the rack uprights being installed in a plumb vertical position and the cross beams being level. Note any evidence of racks being crooked, out of alignment in the row, or leaning from vertical in any direction.

Rust & Corrosion: Note any areas of rust, flaking paint, or corrosion on the rack uprights or beams. This may indicate a weakening of the metal in that area.

Upright Column Damage: Check horizontal and diagonal braces for bending or damage. Check footplates and floor lags for secure attachment to floor. Note any uprights that are twisted, dented, punctured, or buckled. Damage to the upright column can significantly reduce the capacity of that entire section of racking. Damaged uprights should be repaired or replaced.

Overloaded Beams & Uprights: This can be a difficult issue. Most older pallet storage racks are not marked with capacities for the uprights or beams. This can lead to overloading as your product mix changes or racks are reassigned for use in a different application.

Note any beams that are deflecting (bowing) in the center. The deflection should not be more than 1/180 of the length of the beam. That is about 1/2" deflection for an 8' long beam at the maximum load. In addition, the beam should return to a straight condition with no deflection when the load is removed. If it does not, then the beam has been permanently deflected by previous overloading and should be replaced.

Inspect the beam connections where they attach to the upright frame. Note any impact damage to the face of the beam, cracked or broken welds on the beam clip, or distortion or damage to the holes in the upright frame where the beam attaches.

Replace any damaged components.

Missing Safety Pins, Clips or Bolts: Storage Racks use a wide variety of connection methods. Some beams bolt in place, some clip into the upright, some have the beam

attach to a clip that hooks into the upright and some use a combination of clips and bolts. You should know the recommended attachment method for your brand or brands of storage rack. Ensure that all beams are securely fastened into the upright. In addition to the main beam attachment, there should be a safety pin, clip or bolt that prevents the beam from being accidentally dislodged from its connection to the upright frame. Note any missing nuts or bolts on rack connections and check to be sure all nuts and bolts are securely fastened. Note any beams where the safety pin or clip is missing or damaged. Missing or damaged hardware should be replaced immediately.

In addition to the items listed above for regular inspection, there are some general safety measures that can be employed to supplement the regular inspections and increase overall safety in your facility.

General Safety Procedures to be implemented along with regular inspections.

Employee Awareness: All employees working with and around the storage racks should be made aware of the potential rack problems listed above and notify their supervisor if they discover an unsafe condition.

Forklift Operator Training: All forklift operators should be trained in proper operation of their vehicle and in the safe and approved ways to load and unload the storage racks.

Use Proper Pallets: Poor quality or damaged pallets can lead to unstable loads and a potential for product to fall off the racks and cause serious damage or injury. Make sure the beams, supports and decking on your rack have sufficient capacity and are designed to hold the type of pallets you are using.

Posted Capacities: Post the beam capacities on the individual beams in your system in order to avoid an operator placing a load that is too heavy for the beams to support. Post the upright frame capacity for the rack system. The total of all the beam capacities in a section should not exceed the rated capacity of the upright frame. *Be advised that the total upright frame capacity is not a fixed number and varies with the spacing of the rack beam levels.* Upright frame capacity *decreases* as the vertical space between the beam (shelf) levels increases. In other words, the closer your beam levels, the closer you get to the maximum capacity of the upright frame; the greater the space between your beam levels, the more the upright frame capacity is reduced from the maximum capacity.

For a free Pallet Storage Rack Safety Checklist that your employees can use when checking your rack system, send an email to home@prefeq.com or visit their website at www.rackshelvingconveyor.com. For help evaluating your storage rack application, call Preferred Equipment Resource at 800-711-8698.