

Storage Rack Safety

Loss Control Bulletin

Storage racks are essential in just about every place of business. They are indispensable because they create efficiency in storing merchandise, operating supplies, and other business essentials. Storage racks are available to permit storage of materials of nearly any weight or shape.

Many injuries that occur while working from or near storage racks tend to be serious and costly for employers. Injuries typically include back injuries from lifting, falls from raised platforms, and being struck by falling objects, forklift trucks, or other powered material handling equipment. Investing time in planning and designing storage arrangements can significantly reduce the potential for such injuries.

Designing Storage Areas

When a new facility is in the designing phase, management has a unique opportunity to optimize the layout of storage areas for safety and efficiency. In such cases, seeking professional advice is desirable to assure that storage plans factor in both safety and efficiency. Designing for safety and efficiency can result in increased productivity, fewer worker injuries, and reduction in damaged merchandise.

The most basic considerations in designing storage derive from just three factors: stored material characteristics, space limitations, and material handling requirements. All other design considerations originate from these factors.

Storage Rack Set-Up

Storage racks need to be designed and set up to safely support loads they are expected to carry. The storage racks must also be sturdy enough to survive earthquake motion and hold up reasonably well to the rigors of contact with forklift trucks and other mechanized equipment. When the shape, weight, and size of equipment and materials to be stored are considered, the design specifications for needed storage arrangements become apparent. For storage racks to perform adequately under these conditions, their design and erection must include:

- Structural engineering designed to safely support the loads the racks will carry,
- Engineered earthquake bracing, including wall ties and floor anchoring, Steel ties to maintain spacing of back-to-back racks,
- Special design and erection to accommodate special shaped items—steel tubing, drum storage, etc.,
- Set-back front posts to protect upright frame posts from forklift damage,
- Frame corner guards to protect from forklift damage,
- Safety netting,
- Ease of assembly and adjustable configuration,
- Adequate access area provided for material moving equipment,
- Where aisle space is limited, use specially designed vehicles for narrow aisles.

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Safety Considerations

Non-structural safety considerations are equally important in protecting workers near storage racks. These include:

- Clear marking and enforcement of pedestrian and motorized equipment traffic patterns throughout the plant. Maintenance of a safety zone between pedestrian traffic walkways, storage rack areas particularly the backsides