

Edge Protection: Keeping Your Facility Safe

BY JEAN FEINGOLD

Racks, mezzanines, staircases, walkways and storage shelves in material handling facilities have edges. Preventing people, boxes, pallets, tools, materials and packaging from falling off these edges onto the floor below is edge protection's goal.

Mezzanines maximize facilities' cubic space. Falls of people and objects are a concern in these elevated work areas with the risk of harm extending to people on the floor underneath. Fixed guardrails often are installed around mezzanine perimeters, but guardrail openings are commonly required so employees can load and unload palletized material via lift truck, said Aaron Conway of MHI member Mezzanine Safeti-Gates, Inc. That involves repetitive motions like lifting heavy, cumbersome items, so unguarded edges can lead to falls.

"With a safety device in place, especially one that is permanent and does not require an often-tired employee to think about taking an additional step to make an area safe, the mezzanine edge is protected," Conway said.

Mezzanine edge protection started with latch chains that workers unhooked to load pallets but often forgot to reattach. Later, removable, sliding and swinging gates were used. People again forgot to close them. A barrier that is always in place is recommended by current ANSI standards. "This is best accomplished with a dual-gate system, which essentially creates a box, or controlled-access area, around the pallet drop location," Conway said. "This solution consists of interconnected gates, one at the ledge and a second gate behind the pallet. When one gate is open, the opposite gate is closed so the area always remains safe."

Built-in "kick plates" or "toe boards" creating a raised edge along the outer perimeter of the floor also protect mezzanine edges, said Chad Draxler of MHI member Steel King Industries. "These

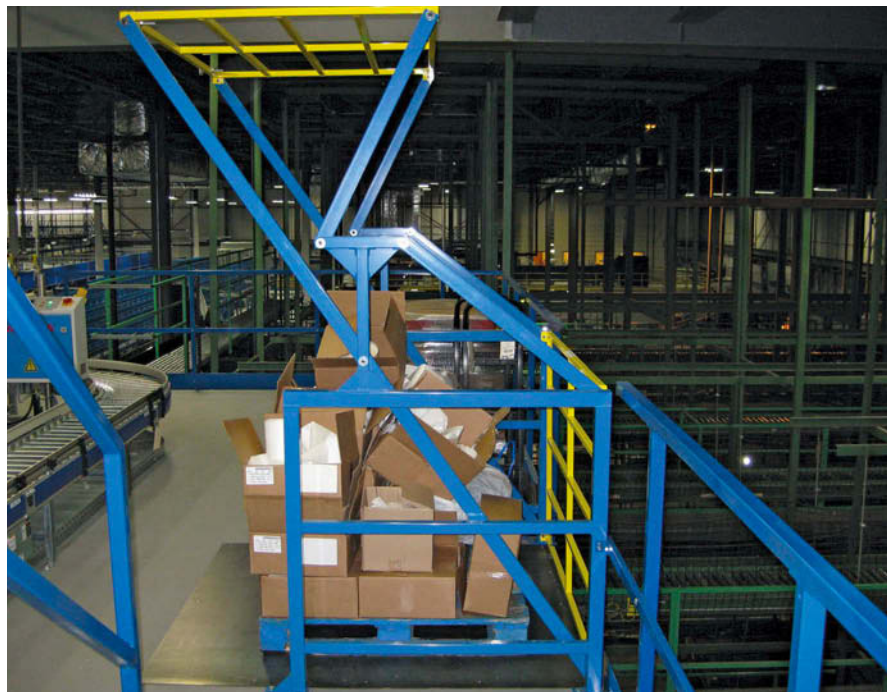
help prevent objects on the floor from getting kicked off and harming something below."

Facility safety managers can determine the right barrier model by examining the space on the mezzanine, how material is loaded and unloaded, and the facility's environmental conditions. Working with a consultant, system integrator, distributor, manufacturer or an industry association like MHI is recommended.

Items stored in racks are best protected using either wire mesh safety panels or netting. "Each type has its own benefits," said Raymond Niemeyer of MHI member SpaceGuard Products and vice chair of MHI's ProGMA Industry Group. "Wire mesh panels designed in an angle frame provide twice the strength of unframed wire solutions for minimizing and preventing boxes, inventory items, pallets and small and large items from falling off.



The original dual-gate safety system, the Roly(R) Safeti-Gate was designed to secure guardrail openings on mezzanines, and is ideal for protecting pallet drop areas in doorways. Created by Mezzanine Safeti-Gates, the Roly gate's counterbalanced system provides a secure environment at all times.



The High Pallet Pivot Safety Gate from Mezzanine Safeti-Gates, Inc. uses dual, counterbalanced gates interconnected with multiple pivot points to maintain a safe environment at all times. The High Pallet Pivot gate is ideal for securing areas handling tall pallet loads while taking up minimum space on the mezzanine.

Netting addresses smaller lightweight items since it captures lighter items.” The products being stored will dictate the best choice.

While standard handrails prevent people from falling from staircases, mezzanine landings, storage rack mezzanine systems and floors with open edges, they are not intended to prevent parts, boxes and other items from getting pushed off between rails. “Most people do not realize handrails will not do the job here,” Niemeyer said. “Wire mesh rail guard and netting are most effective to protect the area below.”

Pallet drop areas on multi-level rack-supported picking systems have received less attention than mezzanines. “It’s common to see rack systems with heights of floor plus three levels.” Conway said. “These areas create the same pallet protection concern, and often there are more picking positions in these systems with workers picking from pallets staged in pallet racks on the third level.” Many facilities feature elevated bays where empty pallets and empty totes are returned and there are ledges on multi-deep pallet flow lanes.

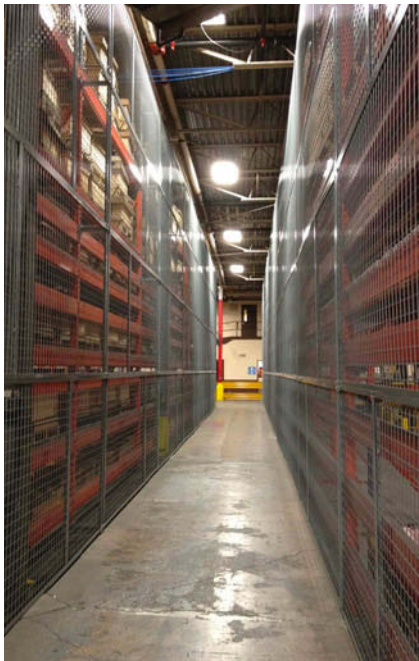
Falls are a common preventable cause of workplace injury. The fall risk



Full height rack safety panels are used to protect a pedestrian traffic aisle.

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– Chad Draxler, Steel King Industries



This multi-level mezzanine shelving system has rack safety panels to protect order pickers and inventory from fork truck traffic.

from elevated work platforms could be increasing as material handling systems get bigger, platforms get taller and the operation’s speed increases. “A fall-related incident will have a massive negative effect on a company,” Conway said. “It will cost significant money. OSHA has recently increased its fines. The entire plant can be closed down during the investigation. Negative publicity, income loss and injury or loss of a team member will greatly damage a company.” Companies can prevent injuries and deaths by proactively correcting problems through installing appropriate edge protection.

“Most edge hazards are fairly easy to see and, if not, there are many safety checklists online,” Draxler said. “Useful information on identifying fall risks can be found at www.osha.gov/OshDoc/data_Hurricane_Facts/

[fall_protection_qc.pdf](#). I’d also recommend developing a safety-oriented culture. Encourage workers to point out potential fall hazards. Sometimes it’s easy to become numb to a hazard when we walk past it daily. When you give a plant tour, ask your guests, ‘Did you see anything unsafe?’”

Conway agrees. “It is important to have everyone who works in the facility discuss their day-to-day concerns with management teams so they can be addressed,” he said. “Management must take time to assess every step in the facility’s operations and determine how to make these steps safer.”

Niemeyer said, “Ask what products are being moved, stored, handled and placed close to the edge. Product weight, size, sharp edges and other descriptors should dictate the necessary edge protection solution.” ●