

# 15 Ways Material Handling Can Make Your Operation Safer

*Material handling is not just about efficiency. It makes things safer through organization enhancement and ergonomic optimization. Inside are safety tips that can be applied in most plants or warehouses...*



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# Material handling delivers passive safety

*Safety and material handling are synonymous: Besides the value it brings in terms of productivity, efficient material handling makes operations safer. When heavy loads are handled properly, workers are safer. When tasks are segmented, made easier, more organized, and workers are less fatigued, operations become safer. And the best thing is that it's all passive. When you handle materials correctly, you're handling them safely, and it's all part of a normal day's work.*

## 1: Use rack safety netting to prevent injuries, accidents

When pallets fall off a rack, even partially, they come down *hard*. It's especially risky if you often have case pickers and warehouse workers in your forklift aisles. You risk not only your inventory but your people. Is there significant foot traffic in the aisles? How are things stored? Do you control



the shrinkwrapping and packaging of every pallet in your warehouse, so that you know they will not break? Even a small item dislodged from a pallet can become a dangerous projectile.

Imagine a ten pound bowling ball falling twenty feet and you get the picture. Consider heavy wire mesh backing for applications where rigidity is necessary. You can elect to use either, depending on what you're storing, the operation you run, and other factors.

## 2: Inspect & replace damaged pallet rack upright frames

You should have a qualified manufacturing engineer inspect your racks on a regular basis to ensure safety. When a forklift hits a pallet rack, it should raise a red flag because this is the kind of damage that can cause a collapse. Pallet rack isn't designed to withstand heavy hits. If a column is



dented, inspect and replace it. Err on the side of caution; if the rack didn't collapse on impact, that doesn't mean it won't later, either in day-to-day use or when being loaded or unloaded. Typically, scrapes and paint issues,



which mostly result from non-powered trucks or pallet jacks, aren't significant, but can be indicators of structural problems. If an upright is scratched, have it inspected. A good rule of thumb is to replace all rack uprights if they are dented, gouged or twisted. Rack uprights are inexpensive and easy to refit, especially compared to the high costs of a rack failure. Another good option is to install economical steel rack column guards that shield the upright from a collision.



## 3: Create traffic aisles to separate people & industrial traffic

Forklifts are required in most operations, but are arguably the most dangerous single piece of equipment in any given warehouse. They produce thousands of accidents and injuries every year. One of the easiest ways to make your operation safer is to create areas where forklifts are supposed to be—and where people aren't. Floor striping is easy, quick and inexpensive. But it isn't obtrusive and it's easy to ignore. A forklift driver or pedestrian can easily miss or ignore floor lines. Steel rails are inexpensive, easy to install, and impossible to ignore.

## 4: Quiet conveyors & other machinery

Noise is distracting, and distracted workers aren't as focused on the task or their personal safety as they should be. Besides the ergonomic issues, a noisy facility increases other kinds of danger since workers have less of a chance to hear a warning

beep or a forklift's engine. Not all noise can be lowered, but a surprising amount is possible to affect. Machinery can be muffled. Controls that intelligently shut off unused conveyor zones save energy and wear on the conveyor while reducing noise. You can also utilize specialized roller bearings that cut down on noise.

## 5: Protect work areas with steel barriers

Your plant is safer when you control where forklifts operate, and erecting barriers is an excellent way to ensure that you can. Guard railing that surrounds workstations, assembly points, in-plant offices, and other "people" areas is easy to set up. Install it around a packing station, computer terminal, assembly station, or pick-point to instantly reduce the potential for a lift truck or powered jack accident. If you need occasional forklift access to the protected area, use rails with lift-out options.

## 6: Reduce forklift use

Much of what we have discussed has to do with forklifts, but most warehouses and factories need them to operate. Since forklifts cause a disproportionate number of accidents, it makes sense to minimize their presence. Fewer forklifts means that you can more intensively train a smaller group of drivers and limit opportunities for a variety of unsafe situations. Look at other means to handle, receive, and store pallets to reduce the number of forklifts in your operation. Everything from conveyerizing to lean manufacturing changes can have an impact.



## 7: Utilize ergonomic workstations

People make mistakes when they're tired. Besides increasing productivity, you'll also see accident and injury rates decline when you take "steps" and "strains" out of an operation. Consider your workstations. Do workers frequently replenish supplies? Is everything they need within hand's reach? Is the flow or work natural and easy? Are they worn out by the time the shift ends? There are workstations that maximize storage density and minimize reaching, bending and stretching to be sure people can stay at their stations and don't have to bend or reach for needed supplies.



## 8: Minimize straining, stretching, bending, and kneeling

Scissor lifts, balancers and other devices are ideal for keeping workers in the "golden zone" where most of their time is spent standing erect and working between waist and chin height. Lift tables, balancers and manipulators increase efficiency, reduce errors and prevent injuries. Workers who routinely lift heavy items are less effective and more likely to get hurt. Even without an injury, workers who are lifting and working on things all day get tired, get more repetitive motion injuries, file more worker compensation claims, and make more mistakes.



## 9: Load & unload pallets the easy way

Consider pallet positioners that automatically raise, rotate, and lower during the pallet loading or unloading process. By maintaining the load at a comfortable and consistent working height, the operator does not have to reach and strain. When one layer of boxes is dealt with, the positioner adjusts its height, making it easier on the worker. He can rotate the positioner instead of walking around it. He'll deal with pallets faster and be less likely to sustain an injury.



## 10: Reduce fatigue and discomfort with antifatigue matting

Standing for long periods of time on hard floor surfaces is very uncomfortable and causes physical fatigue. Leg muscles become totally static and constricted as they work overtime to keep that person in an upright position. Blood flow is greatly reduced, causing pain and discomfort. Physical fatigue occurs when muscles are constricted and blood flow is reduced. Because the heart is forced to work harder to pump blood through these constricted areas, the body runs out of energy. The result is pain, discomfort and fatigue. Anti-



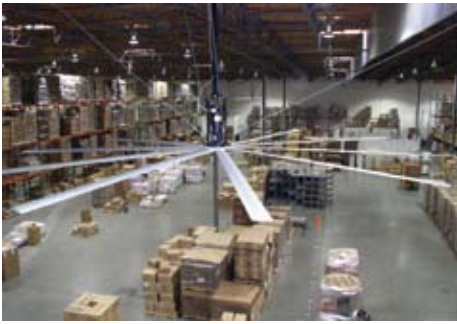
fatigue mats encourage subtle movement of leg and calf muscles, which promotes an easier flow of blood back to

the heart. This is called "Dynamic Ergonomics" - the study of ensuring standing worker comfort by means of muscle activity. Besides reducing fatigue, anti-slip mats are excellent for preventing falls in wet or oily areas.

## 11: Handle flammable liquids, solvents, & chemicals properly

One of the leading causes of industrial fires is the improper storage and handling of flammable liquids. To avoid generating toxic gases and prevent fires or explosions, it is important to segregate incompatible chemicals. You have to identify, then store them correctly. A fire can race through your facility in minutes, so any prevention point is very important. Protect workers, reduce fire risks, and improve productivity by storing hazardous liquids in code compliant safety cabinets and cans. Any operation where flammable, corrosive, or combustible liquids are used can increase safety by implementing code-approved liquid handling.





## 12: Cool the plant floor with high volume fan systems

With high ceilings and vast, frequently-changing storage areas, warehouses & factories face ongoing temperature control battles. Besides being more prone to heat-related problems, people working in stifling hot conditions are less productive and more likely to make safety errors. Ceiling-mounted, high volume, low speed industrial fans reduce costs and create a remarkably comfortable working environment that can't be replicated by noisy, space-restrictive floor fans. Workers barely notice the ceiling mounted fans, but they will definitely feel the difference in floor temperature.

## 13: Utilize conveyor to reduce manual lifting & transport



Reduce the amount of materials you handle manually, and you increase safety. You'll cut down on back and hand injuries, which are two of the most common kind. Conveyors reduce manual handling and lifting, but can present their own safety challenges. Make sure conveyor operators are trained, that preventative maintenance is being done, and that everyone knows the conveyor emergency procedures such as how to use emergency stops.

## 14: Don't modify conveyor guards or controls



Conveyor is a safe way to transport materials as long as it's correctly used. Problems arise when conveyor is modified. Operating conveyor

without the guards is one of the least safe, and sadly, most common occurrences in the industry. Guards are sometimes removed by plant employees for maintenance or because they obstruct someone's access doing work. This exposes machinery, gears, chains, and moving parts that are extremely dangerous when left unguarded. Inspect your conveyor often and make sure it's not being modified. Conveyor controls, another all too frequently modified area, are not just on/off switches. They are any kind of electronic or mechanical devices used during conveyor operation. These controls should never be modified for any reason by unqualified personnel. Monitor your controls to be sure no one has misused, modified, or disconnected them.



## 15: Keep aisles & passageways clear

Clutter is an accident waiting to happen. Keep your passageways and aisles visibly marked and enforced. Allow sufficient clearance at loading docks, through doorways, between rack or shelving rows, and wherever turns must be made. Monitor areas where "pinch points" might develop and design work flow so that there is always room. Designing storage areas this way helps to prevent workers from getting pinned between forklifts and walls, racks, posts, or machinery. It also reduces the chances that a swerving, maneuvering forklift will brush an obstruction and cause the load to fall. Additionally, clear aisles help prevent tripping accidents. Install adequate storage media so that overflow is minimized and pallets or boxes aren't routinely stashed on the floor—and in the way. In an atmosphere of organized storage, potentially dangerous clutter does not accumulate.

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