

# Warehouse Safety

## Meeting Objectives

To explain common potential warehouse hazards and the safety precautions and procedures that are important to warehouse safety. The result should be closer attention to equipment and tasks that could cause accidents, more effort to follow safety rules, and fewer accidents and near-misses in the warehouse.

## Suggested Materials to Have on Hand

**Note:** This safety meeting should be conducted in the warehouse, where examples are close at hand. These materials may be useful:

- Material handling equipment (forklifts, dollies, etc.)
- Personal protective clothing and equipment (work boots, hard hats, eye protection, gloves)
- Packing and strapping materials
- Ladders.

## Introduction/Overview

A safe, orderly, efficient warehouse is a key to a successful operation. The warehouse plays an essential role in the way goods are sent, received, stored, and circulated throughout the facility. With so much going on and so much to keep track of, a warehouse may also have more potential for accidents than areas with more limited functions. So it's especially important to pay close attention to safety in the warehouse.

Today, we're going to review some of the potential warehouse hazards and ways we reduce risks. There are so many areas to cover that we can't cover every single detail on each one. The purpose of this safety meeting is to get you to look at the warehouse with safety in mind—so that you'll always be alert to the hazards and always do what's necessary to prevent accidents.

## General Hazards

Let's consider some of the general types of hazards we may come up against in a warehouse.

One of the most common hazard groups is slips, trips, and falls. When you carry and move materials on different levels, and on different types of floor surfaces, it's all too easy to lose your balance or stumble over an out-of-place item.

You also have to worry about getting hit by falling objects in a warehouse. Items that aren't carefully stacked on floors, shelves, and other surfaces can fall on a head, a body, or a foot. There's an added risk when you place items in storage—or remove them. A slip or fumble can send those items flying—and you could go right along with them.

Warehouse equipment can also pose hazards. Conveyors, forklift trucks, and hand trucks can all cause accidents or injuries if you're not careful. Your own body can be a hazard if you lift and carry materials improperly, risking back injuries.

You also have to be cautious with the equipment we use to load, pack, and unpack—skids, pallets, strapping, and cutting tools, for instance.

Materials stored in a warehouse can also pose dangers. As you know, we have to protect ourselves from both physical and health hazards when we work in a warehouse that contains hazardous substances or flammable or combustible materials.

## **OSHA Regulations**

Almost everything we do and use in a warehouse is covered by at least one OSHA regulation. It would take all day to review the details of every OSHA rule that could apply to warehouse work. I do want to give a brief overview, however, to help you recognize that the warehouse safety practices we're discussing today are more than good sense; they're the law.

OSHA requires us to practice good housekeeping in two different regulations (29 CFR 1910.22(a) and 1910.141(a)). They focus on the importance of keeping the area clean and neat and the aisles clear. In addition, OSHA's material handling and storage regulations require us to store materials so they "don't create a hazard." The material handling and storage regulations (1910.176-181) also regulate forklift trucks and other equipment we use.

Other regulations that can apply to a warehouse include those that cover ladders and other walking and working surfaces (1910.21-30); fire protection (1910.155-165); personal protective clothing and equipment (1910.132-140); and all the regulations that apply to hazardous, flammable, combustible or explosive substances that may be stored in a warehouse.

## **Identifying Hazards**

With so many potential hazards to choose from, where do you start identifying actual warehouse hazards? That's not easy, because the hazards can change from day to day depending on the equipment you use, the tasks you perform, and the substances or materials you handle.

So you have to start every day fresh. Think of yourself as a hazard detective who has never been in this warehouse before. Look around and think about what you're going to do. Then start identifying potential hazards so you can start taking steps to prevent accidents.

## **Housekeeping Hazards**

Let's begin with a simple aspect of safety—so simple it's often ignored. That's housekeeping. Good housekeeping is an absolute must in a warehouse—not just for safety, but to be sure that everything is in its place.

If you were looking for warehouse housekeeping hazards, you might notice:

- Objects or materials in aisles or on the floor, which become tripping hazards
- Materials stacked or stored loosely or insecurely that might fall on someone
- Protruding nails, fasteners, and other sharp objects that can puncture or cut
- Large items left where people can bump against them
- Trash strewn about that can cause someone to trip or slip. Flammable trash can, of course, be a fire hazard
- Water, oil, or other liquid spills on the floor that can cause slips and falls.

## **Material Handling Hazards**

Housekeeping, then, is clearly an area that demands safety attention. You also have to be very alert to hazards when you're involved with material handling. Whether you're using equipment or lifting and carrying yourself, here are some things to watch out for:

- Forklift trucks have a high center of gravity and can tip over if not driven slowly and carefully by trained, authorized operators. In addition, materials placed improperly on the forks, or lifted or placed incorrectly, can easily slip. That's a hazard to the operator and to others in the area.

- Forklift operators must understand their machines and follow the rules of the road. "Pedestrians" must be on the lookout for forklifts and stay out of the way when they're in use.
- Hand trucks, dollies, and other material handling equipment can also pose hazards to the untrained. Unbalanced loads—or loads you can't see over—can be dangerous to operators and others nearby.
- Manual lifting is a major potential source of back injuries. If you don't lift properly, you can hurt your back and struggle with a load that's too high or unbalanced to move easily. Then you're at risk not just of back injuries but of tripping or bumping into things.

Forklifts and hand trucks aren't the only warehouse equipment that can prove hazardous. Contact with moving conveyor parts can cause serious injuries. That's why it's so important to keep their guards in place.

Cranes, hoists, and derricks can be operated only by trained operators who know enough to keep from swinging a load over people or to remove their hands or feet from controls while a load is suspended. In addition, anyone who works in the vicinity must pay attention to crane movements; if you work or stand under a crane, you're looking for trouble.

You may spot hazards in the way this equipment is loaded, too. Heavy or unbalanced loads could fall over and cause serious injuries—even fatal ones.

Anyone searching for hazards should also take a good look at ladders. If they're not rated for the task, not in good condition, or not used properly, someone could take a bad fall.

Even equipment as seemingly simple as skids, pallets, rope, and strapping can be dangerous. People who aren't wearing gloves can be hurt by splinters or loose nails on a skid or pallet. Carelessly placed empty skids or pallets can be hazardous, too—especially if you're the one who bumps into or trips over them.

Rope can be hazardous if it breaks while in use. Another potential hazard is an extended rope that's pulled tight. A break or sudden release can whip anyone in the vicinity quite painfully.

You also don't want to get whacked by steel or plastic strapping, which is why everyone working with or around it has to wear PPE and be very very careful.

Even a loading dock can become hazardous, especially if it gets wet or icy. Other potential hazards include falling off an unguarded dock edge or jumping off a loading dock.

Other dock hazards occur during loading or unloading. People, goods, or vehicles can get into trouble if movable dock plates aren't secured or if trucks aren't blocked to keep them from moving. There's also the possibility of injury if overhead doors start to open or close when people aren't expecting it.

Of course, we have to be conscious of potential hazards in the materials we handle, move, store, etc. There's always a risk of chemical releases, fires, explosions, and other hazards if you don't know what materials you have and take the proper precautions.

We've established that a lot of warehouse materials and equipment can be hazardous. But you may have noticed as I went through this list that these things become hazardous if people don't operate or handle them properly or aren't aware of the risks. Equipment can actually improve safety if we use it correctly and take the attitude that identifying hazards—and protecting ourselves and others from them—is a central part of our jobs.

## **Protection Against Hazards**

Now that we've talked about hazards, we'll discuss some of the ways we protect ourselves from harm around them. Protection comes both from equipment safety features and the ways we use the equipment and perform our jobs.

## Material Handling Protections

Let's begin by talking about material handling. Whether you use equipment or your own body to move materials, you prevent hazards by making preparation the first step in each job. That way, you make sure you can get where you want to—and unload there—without trouble.

Check the load first to decide how best to move it—forklift, hand truck, by hand, etc. Then check the route. If there are obstacles, remove them. If they can't be moved, figure out a different route. Make sure there's space for the load at its destination. If you plan to use material handling equipment, be sure there's room to get the equipment in and turn it around.

You can't use material handling equipment casually. You need skill and practice to drive a forklift, for example; that's why OSHA only permits trained, authorized operators to use them. Forklift safety is complex enough to require its own safety meeting. But there are a few key points that both operators and people in the area should remember:

- No one but the operator should ever ride on a forklift.
- Never stand or walk under the raised part of a forklift, even if it's empty.
- Place forklift loads carefully so they're stable and won't fall off or tip the truck over.
- Drive a forklift slowly, obeying traffic rules.
- Keep forks—and loads—low and tilted back while moving.
- Park a forklift with forks lowered and tilted flat, brake set, and key removed.

Dollies and hand trucks are much simpler. But they, too, can be hazardous if they're not loaded and used properly. Here are some reminders:

- Load heavy objects on the bottom and secure any bulky or awkward items.
- Don't pile items so high that you can't see over them.
- Push, rather than pull, when possible.
- Lean in the direction you're going and keep the load ahead of you when walking downhill.

Let's not forget conveyors. They're great for getting things—but not people—from place to place. Never ride on a conveyor or crawl across or under it.

You also have to be very careful to avoid injury from contact with a conveyor belt's gears, shafts, and other moving parts. Conveyors have guards to protect you from their moving parts and pinch points. Be sure to leave those guards in place. It's also wise not to wear loose clothes or jewelry when you work around a conveyor.

If you're working under or next to a moving conveyor, stay alert. There's always a chance of materials coming off the belt, and you don't want them to hit you.

Sometimes materials are moved with cranes, hoists, or derricks. These are serious pieces of machinery, and OSHA requires operators to be trained and authorized. Like forklifts, these machines are subject to a great many OSHA rules, including careful inspection and maintenance to assure that the equipment is in top—and safe—condition.

Here are a few other precautions for cranes, hoists, and derricks:

- Use the equipment only for its intended purpose.
- Check the maximum load capacity and stay within it.
- Clear the work area of items that could be hit or knocked over during operation.
- Stay out of the way of a functioning crane, hoist, or derrick unless you're directly involved with the job at hand.

## **Safe Lifting**

Sometimes we handle materials with our own bodies. The best way to prevent injury is to lift and carry properly.

First, know your own limitations. Don't test your strength by seeing how big a load you can lift. If it's too heavy or awkward, get help.

As you know, back injuries are the biggest hazard in lifting and carrying. To save your back, let your legs do the work. When you lift:

- Stand close to the load and squat down to it; don't bend over.
- Grip the load firmly with your hands and bring it close to your body, with your weight centered.
- Lift your head and shoulders first, then let your legs push your body up.
- Be sure you can see over the load.
- As you move, take small steps and don't twist. Move your feet to change direction.
- To unload, face the spot and lower the load slowly, bending your knees.
- Place the load on the edge of the surface, with your fingers away from the bottom. Then slide the load back.

## **Ladder Safety**

Material handling is not, of course, the only potential source of hazards in the warehouse. To make effective use of warehouse space, materials are often stacked. That means we may have to climb ladders to get to the top shelves or racks in these high places. To prevent falls, we use our knowledge of ladder design and ladder safety.

You know that ladders come in different types and lengths, designed for different uses and rated to hold different weights. When you select a ladder for a job, be sure it's taller than the point you want to reach and rated to hold you and anything you might carry. Inspect a ladder carefully before use; don't use one that has any missing or broken parts. In addition, keep these ladder safety rules in mind:

- Never use a metal ladder around live electricity.
- Set a ladder on a firm level surface, with its feet parallel to the firm surface it leans against.
- Angle the ladder so its feet are a distance from the wall that equals one-fourth its length. In other words, set the bottom of a 12-foot ladder 3 feet from the wall.
- Don't place a ladder against a window, window sash, unlocked door, or anything unstable like loose boxes.
- Secure the bottom of the ladder—or have someone hold it.
- Never allow more than one person on a ladder.
- Face the ladder and hold the side rails as you climb up or down.
- Carry tools and materials with a rope or belt—not your hand.
- Stand centered on the ladder; don't stretch or lean to the side.
- Stand no higher than four steps or rungs from the ladder top—two for a stepladder.

## **Loading Dock Safety**

Yet another area where you use a combination of built-in protections and good sense is the loading dock. Check dock plate load capacity before piling up materials or starting to unload. Slide the dock plate into place, rather than dropping it.

Pay attention to weather conditions on the loading dock. To prevent slips and falls, keep the area dry and don't let ice form on it.

Another way to prevent loading dock falls is a simple one: don't jump off the loading dock. You can also protect yourself and others by making sure that trucks or trailers can't move once they've come up to the dock. Check that the wheels are blocked or chocked.

Loading docks aren't the only surfaces that demand your attention. Any floor or wall openings are potential hazards. To keep us from falling in, OSHA requires such openings to have guardrails, toe boards, floor covers, barricades etc. But we have to pay attention to these protections and keep them in place.

## **Safety Procedures**

Many procedures we follow on the job are designed for safety as well as efficiency. Housekeeping falls into that category.

Good housekeeping allows us to function much more effectively and productively in a warehouse. It also helps us to identify and remove hazards that can lead to slips, trips, falls, fires, and a variety of other accidents. Let's not forget that good housekeeping is also required by OSHA (29 CFR 1910.22(a)), which says that we must keep the area "clean and orderly and in a sanitary condition." OSHA says that the floor has to be clean and, "so far as possible," dry and "free from protruding nails, splinters, holes, loose boards," etc. OSHA even states that we have to provide clear aisles and safe clearances in areas that use mechanical handling equipment like forklifts.

Good warehouse housekeeping begins with a simple rule: Keep it neat and make sure everything is in its place. For example:

- Don't leave items in aisles, on the floor, or perched insecurely on a surface.
- Clean up all spills immediately.
- Don't block sprinklers, fire exits, or fire extinguishers.
- Put items in their assigned places immediately, rather than moving them from one stopping point to another.
- Don't leave cutters or other sharp tools or materials sticking out.
- Keep cords and wires off the floor.
- Report loose flooring or other tripping hazards.
- Dispose of all trash immediately in proper containers.

Closely tied to both good housekeeping and safe material handling is the way you stack and place materials. OSHA says (29 CFR 1910.176(b)-(c)) that "Storage of material shall not create a hazard." The agency requires us to stack containers and materials so they're "stable and secure against sliding or collapse." We have to have signs to warn of clearance limits. In addition, we have to keep the storage areas "free from accumulation of materials that constitute hazards from tripping, fire, explosion, or pest harborage."

Safety and the law also demand awareness of rules that apply to materials we store. High on the list of concerns are hazardous chemicals and materials that have the potential to burn or explode. Such materials are covered by their own OSHA regulations. In all cases, check labels and material safety data sheets very carefully before handling or storing these substance. That's the only way to know about handling precautions as well as whether the storage area has to be fireproof, ventilated, etc. In addition, we have to be sure we know what to keep the substances away from—ignition sources, other chemicals, even water or air—to prevent accidents.

## **Safe Storage Practices**

So safe storage is more than keeping everything in its proper place. It includes checking what you're storing to determine if it needs certain conditions—dry, dark, ventilated, etc. It also means placing items safely and sensibly so people won't bump into them and so they won't come tumbling down to cause injuries. We also, of course, have to be able to remove stored items easily when we need them.

Here are some general guidelines to keep in mind when you're placing any materials in storage.

- Check that shelves and racks are sturdy and in good condition.
- Stack all materials on a flat base.
- Place heavier objects close to the floor, lighter/smaller objects higher.
- Don't stack items so high that they could block sprinklers or come in contact with overhead lights or pipes.
- Use material handling equipment or stand on a ladder to place or remove items above your head. Never stand on a shelf or rack or on boxes or a chair.

Certain items need special storage precautions. If, for instance, you have to stack empty skids or pallets, use equipment or get a helper. Don't drop or walk on empty skids or pallets; it could weaken them. In addition:

- Stack empties flat, not on end.
- Don't let them jut out into aisles.
- Stack them no more than four feet high.
- Watch out for splinters or nails.

## **Packing and Unpacking**

You also have to be aware of hazards and safety procedures when you pack and unpack containers. Any cutting tool demands caution. Hold and use it in a manner that won't cut you or someone else. Don't leave an open blade on the floor or any surface where it creates a hazard.

Take care with metal and plastic strapping, too. If it whacks you in the face or eyes—or anywhere else, for that matter—you'll regret it. Always wear heavy gloves and goggles when you attach or remove strapping. Use cutting tools that don't leave sharp edges.

If you're doing packing, be sure to put the straps on with just the right tension—not too loose or too tight. Don't lift by the strap unless it's designed for that purpose. When you remove the straps, use one hand to hold down the strapping and one to cut. Make sure that the sharp strapping end will go away from you when you cut.

Once the straps are cut, place them immediately in a trash container so they don't hurt someone while lying on the floor.

## **Preventing Falling Objects**

One of the biggest hazards in a high-ceilinged warehouse is getting hit by falling objects. An object doesn't have to fall far to pack a powerful punch. To avoid such accidents, keep these safety procedures in mind:

- When working on a height, use signs and barricades to alert people on the ground level.
- When working on the ground, pay attention to warning signs and don't stand under people or materials.
- Don't keep tools and materials on the edge of a platform, ladder, railing, etc.
- Don't let tools stick out of your pocket when you're above ground; they could fall out when you bend or lean over.
- Don't stand or walk under a crane, forklift, etc.

## **Personal Protective Clothing**

One of the best ways to protect yourself from injury in the warehouse is to wear the proper clothing and equipment. OSHA requires employers to provide—and employees to use—PPE wherever we identify hazards that could cause "injury or impairment" (29 CFR 1910.132(a)).

As we've noted, a lot can go on over your head in a warehouse. So hard hats are an important form of protection, which OSHA requires "where there is a potential for injury to the head from falling objects" (29 CFR 1910.135(a)).

Protecting your feet is important, too. OSHA requires protective footwear "where there is a danger of foot injuries due to falling or rolling objects, or objects piercing the sole...." Your shoes should also have nonskid soles to prevent slips when you work on loading docks, ladders, etc.

Some warehouse situations may require other forms of PPE. For instance, you need gloves to protect your hands when you're handling materials that are rough or sharp or have splinters. Some such tasks may also require safety glasses. You'll also need gloves and safety glasses—and perhaps protective clothing—if you handle chemicals. In high-noise areas, you also may need hearing protection.

## **Safety Attitude**

We've talked about many different safety procedures that can prevent injury and accidents in a warehouse. There's one more, which is all-important. That's your attitude. No matter how good the protective equipment and how strict the rules, you can't be safe unless you make safety a priority. You have to take it seriously and use the equipment and procedures we've discussed.

You also have to use your common sense. For example:

- Pay attention to warning signs and signals—and obey them.
- Watch where you're going; work is no place for daydreaming.
- Walk, don't run. You'll get there almost as quickly—and more importantly, you'll get there.
- Hand tools and materials to other people; don't throw them.
- Don't fool around; there are too many potential hazards here to allow horseplay.

## **Suggested Discussion Questions**

1. What are some of the hazards you might come across in this warehouse?
2. What are some of the ways we avoid accidents with forklifts and other powered equipment?
3. What precautions do you take to avoid injuries when lifting?
4. What are some of the rules of ladder safety?
5. What are some ways we practice good housekeeping—and why are they important?
6. What kinds of personal protective clothing and equipment might you need to use in a warehouse?
7. What are some safety considerations when you stack and store materials?
8. How do you prevent objects from falling from heights—or getting hit by them?
9. What are some precautions we follow with skids and pallets?
10. Are there any other questions?

## **Wrap-Up**

Our warehouse is not a dangerous place, but it does contain many potential hazards. We don't want to get so caught up in getting materials moved in and out that we forget to do it safely. Fortunately, the safe way to run a warehouse is also the most efficient way. So following safety rules and guidelines isn't just a legal requirement—it's good sense.

Good housekeeping is one of the best ways to assure warehouse safety. We have to keep the entire warehouse clean and neat, with everything in its place. Don't block aisles or leave materials around for someone to trip or fall over. Don't place items on shelves or racks or ladders so unsteadily that they might fall on someone below.

Wear necessary protective gear and pay attention to warning signs and to the work that's going on around you. Give the right of way to forklift trucks and even hand trucks. Operate material handling equipment carefully; watch where you're going and keep your loads stable and secure. When you lift and carry, do it properly so your legs do the work—not your back.

Preview every job before you start to make sure your equipment is in good condition and that you are properly protected. Don't forget to alert others around you to tasks that could put them in danger.

In other words, every day, all day, pay attention to what's going on around you and take precautions that will keep you—and others—safe.