How to Stack and Store Materials Safely

Safety Talk

What’s at Stake?

There’s hardly a workplace that doesn’t handle or store materials. Whether your company has a large warehouse or a small storage room, whether you have loading docks and forklifts or just garages and pallet jacks, there’s material that needs to be moved around. And you need to make sure you approach this common task with safety in mind.

What’s the Danger?

Manually handling objects—that is, carrying, unpacking, stacking or storing materials by hand—has its risks. Lifting objects can cause injuries from strains and sprains. Improper storing and handling of material and equipment can result in materials striking or crushing workers.

Here’s an example:

A 26-year-old Yale student who was working on his master’s degree in technical design and production, had his dreams and his life cut short while unloading materials from a truck in advance of a theater production.

The 32 sheets of particleboard should have been placed on the floor of the truck. But instead they were loaded upright and strapped to one side. When the straps were loosened, the load toppled and the student was fatally crushed. He’d been wearing a hardhat, but it was knocked off when he was struck by the wood, which weighed at least 1,000 pounds (454 kilograms).

How to Protect Yourself

Personal Protective Equipment

Protecting yourself starts with the basics. Wear the right PPE. Find out what you're moving, what the hazards are and what PPE is required. This may range from head, foot and hand protection to special PPE if hazardous chemicals are involved.

Use Correct Lifting and Carrying Methods

Follow these four steps:

1. Study the shape and size of the load.
    - Get help if it's too much to handle yourself.
    - For large or awkward loads, use a team lift or a mechanical device.
2. Plan your route and rest stops ahead of time.
    - Before you pick it up, know where you'll put it down and if there are workers, materials, or surface hazards along your path.
    - Make sure you can see over the top of the item.
    - To change direction, turn your feet. Do not twist your body.
3. Stand with your feet about shoulder width apart to lift the object. Bend your knees, keep your back straight, grasp the item and raise it slowly.
4. Set the load down by keeping your back straight and the load close to your body. Bend your knees and move slowly and smoothly.

Stack Materials Safely

There are three simple steps for stacking materials safely:

1. Start with a level, solid base for a stack.
2. Observe the maximum load limits for floors, shelving, elevators and other surfaces.
3. Materials should be stacked with weight, size and shape taken into consideration so they do not fall over. For example,
    - Heavy materials should never be stacked too high.
    - While bags or boxes may be stacked in layers,

cylindrical objects must be racked on solid supports to prevent them from shifting and rolling.

Store Materials Correctly

1. Pay attention to what materials and other substances are stored together. Some examples:
    - A fire might occur if flammable materials and fuels or solvents are placed close to each other.
    - Incompatible chemicals might explode.
    - Do not store liquid chemicals above dry ones.
2. Know how to properly store chemicals and other potentially hazardous materials. Read the safety data sheet (SDS).
3. Make sure there is adequate space in storage areas for an emergency escape route, emergency equipment and personnel.

Final Word

To stack and store materials safely you must use your body, engage your mind, and use equipment the right way.