

JSC Safety and Health Handbook	JPR No.	1700.1K
	Effective Date:	11/25/2013
	Expiration Date:	11/25/2018
	Page Number	Page 6.3-1 of 4

Chapter 6.3 Warehouse Safety and Health

This could be you . . .

Several warehouse workers have suffered back strain and pulled muscles because they didn't follow proper lifting techniques.

An employee suffered a broken toe while trying to steady an object on a forklift. The operator inadvertently lowered the fork on his foot.

A warehouse worker punctured his forearm on a nail while reaching through a wooden pallet.

6.3.1 Applicability of this chapter

You are required to follow this chapter if you work in a warehouse.

6.3.2 Fire prevention in warehouses

6.3.2.1 Fire is a major hazard in any warehouse or storage facility. Chapter 5.1, "Fire Safety," will give you more details. To prevent warehouse fires you shall:

- a. Put combustible wastes, rags, or other flammable materials in metal containers with self-closing lids. Label each container with its contents (e.g., clean rags, oily rags, dirty rags, etc.)
- b. Empty waste containers or move them to safe locations outside the building for pickup at the end of each shift.
- c. Smoke only in designated smoking areas.
- d. Don't use flammable liquids for cleaning purposes.
- e. Use only forced-air space heaters (never radiant-type heaters) with a "tip-over cutoff switch." To use a heater, you shall get approval from the Safety and Test Operations Division and concurrence from the Facility Manager.
- f. Follow the electrical safety practices in Chapter 8.1, "Electrical Safety," of this Handbook.
- g. Provide Class ABC fire extinguishers for each liquid-fuel or liquefied petroleum gas-powered industrial truck.
- h. Use the following table when stacking materials:

JSC Safety and Health Handbook	JPR No.	1700.1K
	Effective Date:	11/25/2013
	Expiration Date:	11/25/2018
	Page Number	Page 6.3-2 of 4

<i>Clearances between . . .</i>	<i>When a stack is . . . Shall be . . .</i>	
The top of any stack and sprinklers, ceiling joists, rafters, beams, or trusses	Less than 15 feet high	18 inches
The top of any stack and sprinklers, ceiling joists, rafters, beams, or trusses	15 feet high or higher	36 inches
Any stack and heating or lighting fixtures	Any height	18 inches
Any stack and building structural members or fixtures	Higher than the horizontal level of the roof truss	18 inches

6.3.3 Requirements to prevent stacked material from falling in a warehouse

6.3.3.1 You shall follow these requirements to help prevent injuries from falling objects:

- a. Follow these practices when you stack any materials:
 - (1) Store only properly packaged items.
 - (2) Place your material on firm foundations to prevent settling.
 - (3) Don't overload floors.
 - (4) Stack material so that it is stable.
 - (5) Secure all materials, whether palletized or non-palletized, in a safe manner.
 - (6) Square all pallet loads to achieve a four-point level top.
 - (7) Protect crushable containers so that they aren't supporting excessive weight of materials stored on top.
- b. Place the mouths of bags inward unless they are pre-palletized by the manufacturer.
- c. Follow these practices when you stack loaded boxes, crates, or cartons:
 - (1) Stack them on the side with the largest area unless the container states to lay them otherwise, such as with a "this side up" arrow.
 - (2) Cross-tie the stacks.
 - (3) Don't stack so high that the weight could collapse the lower cartons.
 - (4) Protect from moisture.

JSC Safety and Health Handbook	JPR No.	1700.1K
	Effective Date:	11/25/2013
	Expiration Date:	11/25/2018
	Page Number	Page 6.3-3 of 4

- d. Follow these practices when stacking pipe and bar stock:
- (1) Store the stock on stable storage racks so that you can safely remove items from the rack.
 - (2) Store the stock in layers on wood strips with stop blocks on the ends or on metal bars with upturned ends if storage racks are not available.
 - (3) Keep the ends of the stock out of aisles to prevent walking into or tripping over them or other mishaps.
- e. Follow these practices when you stack loaded barrels, drums, large pipes, rolls of paper, or other cylindrical items:

<i>If the items are stacked on their . . .</i>	<i>Then . . .</i>
Sides	<input type="checkbox"/> Stack them symmetrically and in a stable manner <input type="checkbox"/> Wedge every item on the bottom row
Ends and not palletized	<input type="checkbox"/> Lay two planks side by side on top of each row before starting another row <input type="checkbox"/> Limit each stack to a stable height

6.3.4 Safe housekeeping practices for warehouses

6.3.4.1 You shall follow these requirements for safe housekeeping:

- a. Store materials so that they won't interfere with:
 - (1) Lighting
 - (2) Passageways, traffic lanes, or doors
- b. Keep warehouse floors smooth, clean, clear, and free from slippery substances.
- c. Mark all aisles and passageways clearly, and keep them free and clean at all times.
- d. Don't block fire exits.
- e. Maintain enough clearances in aisles, at loading docks, and through doorways to safely operate handling equipment such as forklifts or palate jacks.
- f. Remove nails that stick out from crates, cases, packing boxes, or lumber.
- g. Use cleaning products only when there is enough ventilation to remove any vapors.
- h. Clean up spills immediately with approved cleaning materials. Use only approved, noncombustible absorbents to dry up spills of flammable liquids. See Chapter 9.1, "Hazardous Materials Safety and Health," of this Handbook for hazardous material spills.
- i. Never store materials so they block aisles and passageways or interfere with the use of firefighting equipment.
- j. Keep hallways open to allow large numbers of people to leave in emergency situations. See Chapter 5.1 of this Handbook for additional requirements.

JSC Safety and Health Handbook	JPR No.	1700.1K
	Effective Date:	11/25/2013
	Expiration Date:	11/25/2018
	Page Number	Page 6.3-4 of 4

6.3.5 Warehouses that store hazardous materials

If your warehouse stores hazardous materials, you shall mark hazardous storage areas and follow the requirements in Chapter 9.1 of this Handbook.

6.3.6 Other requirements for warehouses

6.3.6.1 You shall follow:

- a. Chapter 5.5, "Ergonomics," of this Handbook to evaluate hazards associated with manual lifting techniques and back safety.
- b. Chapter 8.5, "Lifting Operations and Equipment Safety," of this Handbook if you operate any lifting devices such as cranes or forklifts in the warehouse. See Attachment 8.5C in Appendix F for requirements for safely operating forklifts.
- c. Chapter 8.7, "Ladders, Scaffolds, and Elevated Platforms: How to Work with Them Safely," of this Handbook if you use ladders, scaffolds, or elevated platforms.