

MATERIAL HANDLING AND STORAGE

1. Task

To prevent injuries due to the improper handling and storage of materials on a construction site.

2. Hazards

Struck by, cut by, pinched by, crushed by injuries, sprain/strain injury, fire hazard, chemical hazard, electrocution.

3. Controls

Pre-Job Safety Assessment (PSA). CSA/ANSI approved PPE, Regulatory requirements, competent supervision, worker training, manufacturer's specifications, WHMIS 2015, Environmental planning.

Lifting:

- ❖ Plan your move – size up the load and make sure pathway is clear, get help when needed, use a dolly or other device if necessary.
- ❖ Use a wide – balanced stance with one foot slightly ahead of the other.
- ❖ Get as close to the load as possible.
- ❖ Tighten your stomach muscles as the lift begins.
- ❖ When lifting keep your back in its normal arched position, use your legs to lift.
- ❖ Pick up your feet and pivot to turn (with your whole body) do not twist your back.
- ❖ Lower the load slowly, maintain the curve in your back.
- ❖ Avoid lifting above shoulder height.
- ❖ Never attempt to catch a falling object.
- ❖ Push rather than pull objects.
- ❖ When passing material from one worker to another make sure that the worker receiving the object is in a secure, balanced, position and that he has a firm grip on the object before you let go of it.
- ❖ Warm – up exercises are a good way to avoid strain and sprain injuries and should be done at the beginning of each shift.

Weight Transfer:

- ❖ Pull object toward you while transferring your weight to the lift side.
- ❖ Lift only to the level required.
- ❖ Shift your weight to the other leg while pushing the object into position.

Two Person Lift:

- ❖ Lifters should be of similar height.
- ❖ Decide on lifting strategy before starting – who is in charge?
- ❖ The person in charge must see that the load is carried on the same side for a long lift.
- ❖ Begin by lifting load from ground to waist height. Then lift the load from waist to shoulder height.

Carrying on Stairs:

- ❖ Tallest and strongest person should be at bottom of load.
- ❖ Use your stomach muscles to help support and protect your back.
- ❖ Stairs must be free of debris, adequately lit, have smooth treads, and be equipped with a guardrail that meets Regulatory requirements.

Balance:

- ❖ Avoid one handed carrying.
- ❖ Try to distribute weight evenly on each side of your body.
- ❖ Hold free arm straight out or on your hip to provide counter balance when carrying loads with one hand such as with a single pail.

Mechanical Help:

- ❖ Use a cart or dolly for transporting tools and equipment wherever possible.
- ❖ Stack materials on pallets wherever possible.
- ❖ Wheelbarrows with dual wheels help create better balance and easier going over soft ground.
- ❖ Adjustable lift tables, rolling frame scaffolds, pulleys, gin wheels, genie lifts, winches, chain falls, cable pulls, and simple levers all can help immensely to relieve the strain on workers when lifting and positioning equipment and materials.
- ❖ Never exceed the maximum weight capacity of any mechanical device.

Material Storage/Handling:

- ❖ Materials must be stored on site in a manner that does not endanger workers.
- ❖ Do not pile, stack or otherwise store materials so that they can tip or collapse.
- ❖ Materials must be stored away from overhead powerlines.
- ❖ Material storage must not block emergency exits, stairways and passageways.
- ❖ Material storage areas must be well lit, and signage posted warning workers of hazardous areas.
- ❖ Pick up any materials or equipment that may create a tripping hazard.
- ❖ Loose material must be prevented from blowing off buildings in high wind conditions.
- ❖ No material must be allowed to fall from one level of the project to another.
- ❖ Use a chute or garbage skiff to lower rubbish from one level to another.
- ❖ Do not throw material or tools from one level to another.
- ❖ If guardrails must be removed to land materials, workers must be protected by an approved fall arrest or travel restraint system and securely replace guardrails before leaving the area.
- ❖ Materials must be stored at least 6 feet from the edge of roofs, floors, open stairways, excavations or any other area where they might fall from one level to another.
- ❖ Bundled material i.e. pipe should be arranged so that it can't roll out and create hazards.
- ❖ Flammable liquid dispensing and receiving containers should be grounded to prevent the buildup of static electricity.
- ❖ All flammable liquids must be stored in CSA/ANSI approved containers.
- ❖ Keep flammable liquids separate from compressed gas cylinders and store both outside in well ventilated containment areas.
- ❖ Compressed gas cylinders must be stored upright, always secured in place.
- ❖ Keep flammable liquid and compressed gas storage away from public access, vehicular traffic, and combustible material.
- ❖ Fire extinguishers must be provided at flammable liquid and compressed gas storage areas, and wherever these materials are used on the project.
- ❖ Hazardous material must be stored according to instructions on Material Safety Data Sheets – this includes Flammables and Compressed Gases.
- ❖ No material containing hazardous ingredients will be off loaded on site unless it has proper WHMIS 2015 labels on containers/packaging and is accompanied by a Material Safety Data Sheet.
- ❖ Traffic control procedures must be implemented for the offloading of trucks on site.
- ❖ Specific lay-down areas should be designated prior to materials arriving on site and shipment arrival information forwarded to supervisory personnel for coordination purposes.



Best Personnel Safe Work Practices & Procedures Manual

- ❖ If materials are off loaded with a crane proper hoisting and rigging procedures must be adhered to. Do not set up hoisting activities too close to energized powerlines.
- ❖ Mobile material handling equipment must be kept in good working order and proof of training for the operation of such equipment available for inspection.
- ❖ Materials such as concrete blocks must be securely palletized and stacked so that they do not endanger workers.
- ❖ Stacking of bags and sacks in open areas should be limited to 10 units high and cross – piled for stability.
- ❖ Damaged bags or other containers of material must be cleaned up immediately and not allowed to entrain into the work area.
- ❖ A spill kit must be available for the cleaning up of hazardous materials.
- ❖ On site fuel tanks must be equipped with a spill containment pan.
- ❖ Hazardous waste or containment materials containing hazardous waste must be removed from site according to Regulatory requirements and all appropriate documentation (i.e. bills of lading), kept on site available for inspection.