COMPLIANCE 101: Take 5 Steps to Protect Workers Handling Materials

Handling various types of materials in the workplace is a basic component of many workers' jobs. When workers manually handle materials, such as by carrying bags or boxes by hand, they're at risk of suffering musculoskeletal injuries (MSIs), such as strained backs. And even if workers use machines, such as forklifts or cranes, to handle materials, they can be endangered if such equipment tips over or hits workers. As a result, the OHS regulations across Canada impose materials handling requirements on employers. Here are five steps you can take to ensure that your company complies with these requirements and that workers are adequately protected when handling materials.

MATERIALS HANDLING TOOLS: Download several materials handling tools, including a manual handling checklist, a checklist for evaluating your ergonomics program, and forms for investigating injuries to the neck, shoulder and upper back; hips, knees and feet; and elbows, forearms and hands.

TAKE 5 STEPS

All jurisdiction's OHS laws require employers to take steps to protect workers from the hazards posed by materials handling. For example, all OHS regulations include requirements for the manual handling of materials, which typically address the need

to protect workers from developing MSIs, such as by restricting the weight workers may carry manually and requiring risk assessments before workers manually move loads. In addition, the OHS regulations also have requirements that apply to the mechanical handling of materials using equipment such as hoists, cranes and forklifts. These requirements are usually contained in sections on powered mobile equipment and lifting devices.

To comply with manual and mechanical materials handling requirements, take these five basic steps:

Step #1: Assess the Hazards

First, assess all of the hazards associated with materials handling, including the hazards associated with:

Manual handling. Whenever workers manually lift, lower, push, pull, carry, handle or transport materials, they're at risk of getting injured. For example, if workers must lift and carry heavy objects by hand, they risk hurting their backs. To determine the specific kinds of risks posed by manual materials handling and the types of injuries workers are exposed to, assess the manual handling activities in your workplace.

To conduct this assessment, review injury records, including first aid reports, workers' comp claims, incident reports, workers' complaints and JHSC meeting minutes, to identify patterns of injuries (or potential injuries), which will help you spot the materials handling activities that may expose workers to MSIs. You can also watch workers performing their duties to determine if there are any risk factors present. (The box at the end lists some of the risk factors to look for in the assessment.) Lastly, give workers a symptoms survey to measure the extent of symptoms of MSIs in each area of the workplace and determine if manual materials handling is causing workers pain and/or discomfort.

Mechanical handling. Although the use of equipment to handle materials can eliminate MSIs, it also exposes workers to other risks. For example, forklifts, cranes, pallet jacks and the like can injure the workers operating them as well as co-workers if they're not used and maintained properly. So assess the hazards posed by such equipment, such as the risk of rollovers and existence of any pinchpoints. Your assessment should address the hazards posed to both the operators of the equipment as well as others in the workplace, such as the risk of the equipment striking workers or of loads being dropped on workers.

***Insider* Says:** You should also assess any special hazards posed by the nature of the materials handled in your workplace. For example, if workers regularly handle boxes of hazardous substances, consider the dangers workers would be exposed to if a box of chemicals was dropped while being moved.

Step #2: Require Mechanical Materials Handling When Possible

One way to eliminate the identified hazards associated with the *manual* handling of materials is to move those materials *mechanically* instead. In fact, because moving materials with a forklift, hoist, dolly, conveyor or hand truck is generally safer for workers, the preference under the OHS laws is generally to move materials mechanically unless it's not 'reasonably practicable' to do so. For example, Sec. 56(1) of Newfoundland's *OHS Regulations 2012* requires an employer or contractor to ensure, where reasonably practicable, that suitable equipment is provided and used for the handling of heavy or awkward loads.

So if it's reasonably practicable, replace manual materials handling methods with mechanical ones, such as requiring workers to use hand trucks to move boxes instead of carrying them. If it's *not* reasonably practicable to use mechanical means, such as because the materials are located in a tight area that equipment can't access, you'll have to take

appropriate steps to protect workers from the hazards of manually handling these materials. One way to do so is to make physical changes to the workplace or to the materials themselves. For example, raise or lower the shelves workers must retrieve the materials from so they don’t have to bend down awkwardly or reach overhead to get the items. Other changes you can make include:

- Reducing the weight of the materials by dividing it into several smaller loads;
- Placing the materials into smaller, more numerous containers; and
- Reducing the distance the materials must be moved

Step #3: Implement Safe Work Practices

It’s unlikely that you’ll be able to reduce or eliminate all materials handling hazards by re-engineering the workplace or relying on mechanical handling. So you’ll also need to set safe work practices to protect workers from these hazards, such as by:

- Establishing weight restrictions on what one worker can lift or carry alone;
- Requiring two workers to lift any materials weighing more than this designated weight;
- Implementing safe lifting techniques;
- Letting workers who manually handle materials take more frequent breaks;
- Requiring workers operating equipment such as forklifts to use seatbelts and to follow posted speed limits;
- Establishing a code to be used by all signallers who direct the movement of powered materials handling equipment;
- Inspecting rigging used to move materials before every use and require more comprehensive inspections once a week; and
- Barring workers from walking underneath loads being

moved by cranes and the like.

Step #4: Require Use of PPE

You may also need to ensure that workers use appropriate PPE to protect themselves from certain materials handling hazards. For example, require workers to wear gloves or other hand and forearm protection when moving loads with sharp or rough edges. And require them to wear appropriate safety shoes to prevent them from slipping while carrying materials and to protect their feet in case they drop a load of materials.

***Insider* Says:** Should you let or require workers to wear back belts when lifting or carrying materials' Probably not. It's unclear whether weightlifting or lumbar support belts prevent back injuries or reduce the stress on the back. For example, in the US, NIOSH evaluated the existing data related to back belts and concluded that such belts shouldn't be considered PPE or used in occupational situations. Among NIOSH's concerns were that the use of back belts limits mobility and may reduce the suppleness and elasticity of muscles and tendons, potentially contributing to back injury. In addition, the use of back belts may create a false sense of security in workers and thus increase their risk of lifting excessive loads.

Step #5: Train Workers

You must always train workers on the hazards in the workplace. But the OHS laws often require specific training on various aspects of materials handling. For example, Sec. 211.1(1) of Alberta's *OHS Code 2009* requires employers to ensure that a worker who may be exposed to the possibility of MSIs is trained in specific measures to eliminate or reduce that possibility. And Sec. 14.23(1) of the federal *OHS Regulations* spells out the training requirements for workers who operate motorized materials handling equipment.

In general, your materials handling training should cover, at a minimum:

- Materials handling hazards, including any hazards posed by the nature of the material, such as hazardous substances;
- MSIs, including what they are, early signs and symptoms of them, and how to avoid them;
- Safe work procedures, including the safe use of any mechanical materials handling equipment;
- Selection, inspection, maintenance and use of such equipment; and
- Use and maintenance of PPE.

As with any safety training, document the materials handling training provided to workers and take steps to verify that this training was effective, such as by quizzing workers or making them demonstrate the techniques they've been taught. And retrain workers on a regular basis and whenever there are changes in the types of materials, the workplace, equipment, operations or other conditions not adequately addressed in their prior training.[/learn_more]

BOTTOM LINE

Handling materials in the workplace may not pose the same safety risks as, say, work in confined spaces or at heights. But materials handling can still endanger workers. For example, WorkSafeBC said that between 2002 and 2012, back strain injury affected 12,000-15,000 workers a year, resulting in more than 140,000 claims. And over the last 30 years, back injuries accounted for 22-26% of all time-loss injuries. The most common cause of these back injuries: overexertion. In addition, equipment used to move materials can put both the operators and others in the workplace at risk. For example, a forklift operator reversed the forklift and struck a young worker, causing bone fractures and nerve damage. The forklift operator was convicted of a safety offence and fined $2,000. The employer had previously pleaded guilty and was fined $65,000 [*Patrick Murphy*, Govt. News Release, June 11, 2013].

So it’s critical that you take the necessary steps to ensure that workers are safe when they manually and mechanically handle materials on the job.

Manual Materials Handling Risk Factors

When observing workers to determine if they’re exposed to the risk of MSIs when manually handling materials, look for the following risk factors:

1. Physical demands of work activities, including:

- Force required;
- Repetition;
- Duration;
- Vibration;
- Work postures; and
- Local contact stresses.

2. Aspects of the layout and condition of the workplace or workstation, including:

- Working reaches and heights;
- Seating; and
- Floor surfaces.

3. Characteristics of the materials being handled, including:

- Size and shape;
- Load condition and weight distribution; and
- Container, tool and equipment handles.

4. Environmental conditions, including temperature.

5. Characteristics of the work’s organization, such as:

- Work-recovery cycles;
- Task variability; and
- Work rate.