FALL HAZARDS: Complying with the Hierarchy of Fall Protection Equipment

Each year, many workers are injured or killed in falls from heights. That’s why the OHS regulations require employers to ensure that workers use fall protection when at risk of falling. But there are many kinds of fall protection, including guardrails, fall arrest systems and safety nets. So how do you know which kind of fall protection equipment is appropriate’ In many cases, the OHS laws include a hierarchy of fall protection equipment, requiring you to use the top preference unless it’s impractical to do so. We’ll explain this hierarchy and tell you how to decide which fall protection equipment is appropriate for your workers.

Defining Our Terms

This article focuses on the general fall protection requirements under the OHS regulations. It doesn’t address specific fall protection requirements that apply only in certain circumstances, such as when using ladders, or for certain hazards, such as falls through ice or into water.

FALL PROTECTION INSPECTION CHECKLIST: Download a checklist to use when inspecting fall protection equipment.

UNDERSTANDING THE FALL PROTECTION REQUIREMENTS

The OHS law in every jurisdiction requires employers to protect workers from hazardous falls, such as those over certain heights (generally three metres) or onto certain surfaces, such as water. Several jurisdictions specify which type of fall protection should be used in which circumstances; others just require the use of fall protection and leave it up to the employer to decide which specific type is appropriate. (See this chart for the fall protection equipment requirements in each jurisdiction.) But even in jurisdictions without a hierarchy in their OHS laws, guides to the regulations will often suggest an order of preference for fall protection equipment.

For example, the OHS law in Prince Edward Island doesn't include a hierarchy of fall protection equipment. But although its Guide to the Fall Protection Regulations explains that the selection of the particular fall protection system is dependent upon the circumstances and the job, the guide notes that, ideally, the preference is for fall protection that eliminates the risk of falling. Thus, it's preferable to provide a fixed barrier such as a guardrail to prevent a worker from falling than to provide PPE such as a safety harness and lifeline that only protects workers *after* they've already fallen, explains the guide.

Bottom line: The OHS laws, government guides and best practice indicate that all types of fall protection aren't created equal. So regardless of where in Canada your workplace is located, consider the generally accepted hierarchy of fall protection equipment when deciding which to implement in your circumstances.

***Insider* Says:** Many jurisdictions require employers to develop fall protection plans when workers are at risk of falling. For more information on such plans, see "Fall Hazards: Does Your Workplace Need a Fall Protection Plan'" Nov. 2009, p. 1.

THE HIERARCHY OF FALL PROTECTION EQUIPMENT

The basic hierarchy of fall protection equipment is as follows:

Top Preference: Guardrails & Similar Barriers

The general preference is to remove the risk of falls completely. Thus, the first choice in fall protection is the use of engineering controls such as fixed barriers. The most common—and preferred—fixed barrier is a guardrail. Other examples include handrails, ladder cages and fences.

So if you can install a guardrail to protect workers from a fall hazard, you should do so. Make sure that your guardrail complies with the detailed requirements that the OHS regulations usually have for guardrails. In general, those requirements cover:

- The basic components of a guardrail system, including top rails, intermediate rails and toe boards, which keep tools, materials and other items from falling and endangering workers below;

[box]**When Is the Use of a Type of Fall Protection "Impracticable"'**

The OHS laws in several jurisdictions require employers to use a certain type of fall protection such as guardrails unless such use is "impractical" or "impracticable" or isn't "reasonably practicable." But what exactly do those terms mean' In some cases, the law defines the term. For example, Nova Scotia and Saskatchewan define "practicable" in their OHS acts as possible, given current knowledge, technology and invention and

- The height of the top rail and sometimes of any intermediate rails; and
- The spacing between posts.

***Insider* Says:** Guardrails are a key protection from falls through openings in floors and other surfaces. For more information on this particular fall hazard, see "Fall Protection: How to Prevent Falls Through Openings," Aug. 2011, p. 1.

Next Preference: Fall or Travel Restraint Systems

You may not be able to eliminate a fall hazard or it may be impracticable to use a guardrail or similar barrier. For example, on a small roof repair job in which only a few workers would be working for a short period of time, installing guardrails may not be practicable. (See the box on page X for more on what "impracticable" and similar terms mean under the OHS laws.) In that case, the next preference is to keep workers from accessing areas where such hazards exist. Fall restraint—also called travel restraint—systems are designed to prevent workers from moving to an area from which they could fall and/or from falling lower than the surface on which they're standing. For example, a fall restraint system would allow workers to go up to—but not over—the edge of an unguarded elevated platform. So if they slipped or fell, they'll fall onto the platform but not off of it. The general rule of thumb is that a fall restraint system should be used only

"reasonably practicable" as practicable unless the person on whom a duty is placed, such as the employer, can show that there's a gross disproportion between the benefit of the duty and the cost—in time, trouble and money—of the measures to secure the duty.

In other cases, government guidelines spell out the factors to be considered when determining if a safety measure if impracticable, which often mirror the factors in the Nova Scoria and Saskatchewan definitions. For more information on what you should do when a required safety measure, such as a type of

where a worker is likely to be able tofall protection, regain his footing or otherwise rescueis impracticable, himself immediately after a slip or fall. see "Compliance Options: When Are Safety Measures Not Required Because They're 'Impracticable'" Dec. 2008, p. 1.[/box]

The components of a fall or travel restraint system may include a safety belt or full body harness, lanyards, carabiners, shock absorbers and secure anchors. The OHS regulations often include requirements that these components must meet. For example, many regulations require these components to comply with certain standards, such as the following CSA standards:

- Z259.1-05, *Body belts and saddles for work positioning and travel restraint*;
- Z259.10-06, *Full Body Harnesses*;
- Z259.11-05, *Energy absorbers and lanyards*;
- Z259.12-01 (R2006), *Connecting Components for Personal Fall Arrest Systems (PFAS)*; and
- Z259.2.1-98 (R2004), *Fall Arresters, Vertical Lifelines, and Rail*.

Next Preference: Fall Arrest Systems

If it's impracticable to use a fall or travel restraint system, the next preference is a fall *arrest* system. Such systems are designed not to prevent a worker from falling but to stop their descent before they hit a surface below. Personal fall arrest systems generally include full-body harnesses connected by lanyards or lifelines to anchors. But a safety net is also a type of fall arrest system. As with the components of fall restraint systems, the components of a fall arrest system must comply with any requirements in the OHS laws, including any incorporated standards.

FALL PROTECTION INSPECTION CHECKLIST: All fall protection equipment should be inspected by a competent person before

it's used by workers. Download a checklist for use in inspecting fall protection equipment.

Last Preference: Safe Work Procedures

In most jurisdictions, the use of fall arrest equipment is the last resort. But in BC, if none of the above options are practicable or if the use of a fall arrest system would result in a hazard greater than if the system wasn't used, the employer must implement safe work procedures that are approved by the Board and minimize the risk of injury to a worker from a fall. For example, BC guidelines explain that an acceptable safe work procedure could be the use of control zones with safety monitors. A control zone is an area between an unguarded edge of a building or structure and a line that's set back a safe distance of at least two meters. A safety monitor is a trained worker who's designated to monitor work activities in the control zone to ensure that the work's done in a manner that minimizes the potential for a worker to fall.

BOTTOM LINE

How common are workplace falls' According to CCOHS, about sixty thousand Canadian workers get injured every year in falls, accounting for about 15% of the time-loss injuries accepted by workers' comp boards. In addition, violations of the fall protection requirements are also a common source of fines for employers. So if your workplace contains fall hazards, make sure you follow the hierarchy of fall protection equipment to ensure that workers are adequately protected from such hazards.

Chart: KNOW THE LAWS OF YOUR PROVINCE – The hierarchy of fall protection equipment under the OHS law.

[box]**Fall Protection Resources**

Some jurisdictions publish guides on fall protection that address which types of equipment are appropriate in which

circumstances. Here are links to some of them:

AB: Explanation Guide to Part 9, Fall Protection

BC: An Introduction to Personal Fall Protection Equipment

MB: Fall Protection Guide

NL: Guide to Part X, Fall Protection

PE: Guide to Fall Protection Regulations[/box]