Fall Protection: Are You Doing Enough to Protect Workers from Vertical Fall Hazards?



WHAT'S AT STAKE

- Falls are the number 2 cause of lost time injuries;
- Over 40,000 Canada workers suffer fall injuries each year, nearly 110 per day;
- The average fall injury costs employers $3,500 in direct costs
- Losses balloon to $21,000 when you add indirect costs like replacing injured workers, equipment repairs, etc.

(**Source:** *Canadian Centre of Occupational Health and Safety*).

HOW THIS STORY WILL HELP YOU

While fall protection is a year-round challenge for all of you, the new working-at-heights training rules (or, for some employers, October 1 extended deadline) gives it immediate urgency in Ontario. No matter where you're located, you can use this outline to ensure you're doing enough to comply with the vertical fall protection rules of your jurisdiction.

Special Help for Ontario Employers

If you're in Ontario, you should also check out the related story on the new OHS rules for working at heights training. Employer with Several Fall Protection Convictions Sentenced to Jail & $10,000 Fine

[ ] PHASE 1: ASSESSING VERTICAL FALL HAZARDS

OHS regulations specify when fall protection to workers working at heights is required based on:

- How high up they are (typically 3 metres or higher);
- The surface or platform they work on (e.g., vehicles, scaffolds, sloped rooves); and
- What they're at risk of falling through, on or into (e.g., machinery, hard surfaces, water).

But while the approach is the same, specific criteria vary by location. Click here to find when fall protection is mandatory in your jurisdiction.

[ ] PHASE 2: SELECTING FALL PROTECTION MEASURES

As with any other hazard, total elimination is the preferred method of dealing with vertical fall hazards. Where elimination isn't 'reasonably practicable,' OHS regulations list the measures required to manage fall hazards in rough order of preference based on the standard hierarchy of engineering controls, work controls and PPE.

A. PHYSICAL BARRIERS

Engineering controls are an absolute must for fall hazards. In most jurisdictions, the starting point is to physical barriers to prevent falls. There are two basic types of barriers you're supposed to use when reasonably practicable:

Guardrails consist of a top rail, intermediate rail and

toeboard installed around or in front of an opening to prevent somebody from falling into it. Requirements for guardrail design, construction, installation and use vary. So you need to check your jurisdiction's OHS laws to find out things like:

- How close to the edge the guardrail must be installed;
- The minimum height of the top rail;
- The maximum amount of space between rails/toeboard;
- How tall the posts must be and how far apart they can be spaced;
- What materials the rails must be made of; and
- How much force the guardrail must be capable of resisting.

Protective Coverings are used to seal openings that workers may step, slip or fall into. OHS regulations require that coverings:

- Completely cover the opening;
- Be securely fastened or held in place;
- Be made of material strong enough to support the expected load without collapsing; and
- Be clearly identified as covering an opening.

B. OTHER PASSIVE CONTROLS

Supplement physical barriers with passive fall protection systems including warning signs and safety nets that cushion any falls that do occur. Safety nets must meet the specific design and use criteria set out in OHS regulations with regard to materials, strength, elasticity and how high above the surface they're installed.

C. ACTIVE FALL PROTECTION SYSTEMS

The next line of engineering controls to look at are so called active fall protection systems that prevent or stop falls by securing workers to an anchorage point attached to their bodies via a lifeline or lanyard connected to a harness or

safety belt. There are two basic types of fall protection systems you can use (in rough order of preference):

Compliance Pointer

Active fall protection systems may be required as either a substitute for or supplement to required physical barriers and passive controls, depending on the jurisdiction and circumstances involved.

Travel Restraint Systems that prevent falls by limiting workers' mobility so they can't get to the edge or opening.

Fall Arrest Systems that stop falls before the worker hits the ground or dangerous thing below.

Before implementing an active fall protection system, you need to check your jurisdiction's OHS rules to find out:

- When that particular system can or must be used;
- The equipment the system must consist of;
- The standards each system component must meet (typically a CSA or other voluntary standard);
- How securely the lifeline must be anchored;
- How strong the ropes and connections must be; and
- How the system must be inspected and maintained.

Because they don't prevent falls the way travel restraint systems do, fall arrest systems are lower on the preference list. Another concern with fall arrest systems is that arresting a fall can put a lot of stress on the body creating physical shock that can injure or even kill the worker. Accordingly, fall arrest systems are subject to stricter design, use and installation requirements including with regard to:

- How far they can let a worker fall before arresting it; and
- How much force they can exert on the worker's body in

arresting the fall.

Click here for a summary of each jurisdiction's requirements.

[ ] PHASE 3: IMPLEMENTING ADMINISTRATIVE & WORK CONTROLS

Controls affecting how the work is done are the next level in the hierarchy after engineering controls. Key work controls for vertical fall hazards include:

Fall Protection Programs setting out a complete plan for hazard assessment, system installation, inspection and maintenance, rescue and safety training. Such programs are mandatory under the OHS regulations of many jurisdictions (AB, BC, NB, NL, NS, PE, SK, YK). Click here for the 9 jurisdictions that require a written fall protection program.

Safe Work Procedures for working at heights, assembling and disassembling fall protection systems and rescuing workers swiftly and safely after their fall is arrested.

Equipment Inspection and Maintenance including daily field inspection before each use to check for dangerous defects like:

- Cuts, tears, abrasions, burns, mould, stretching, corrosion and other damage;
- Water damage or corrosion in ropes;
- Distorted hooks and faulty hook springs;
- Cracked, broken or deformed D- and O-rings or snaphooks;
- Loose, damaged or nonfunctioning parts and mountings; and
- Unauthorized repairs or alterations that harm equipment effectiveness.

You also need a mechanism for workers to report damages and defects and ensure that defective equipment is taken out of service immediately. Fall arrest systems and their components also need to be re-inspected after each incident in which a

fall is arrested.

[ ] PHASE 4: USE OF PPE

PPE is the last line of defence used as a supplement rather than a substitute for fall protection systems. PPE for vertical fall hazards would include:

- Full body harnesses attached by a lanyard or lifeline to an independent and secure anchor system;
- Shock absorbers on lanyards or lifelines to cushion the force of arresting the fall;
- Life jackets or flotation devices where work is performed above water or other liquids in which workers could drown;
- Hardhats, knee, elbow and other pads to cushion any falls that do occur;
- Shoes with slip-resistant soles to prevent slips; and
- Rescue equipment like a speed boat or heaving line for work above water.

[ ] PHASE 5: DELIVERING FALL PROTECTION TRAINING

Workers aren’t allowed to use a fall protection system (or, in some jurisdictions like Alberta and New Brunswick, even be present at a site where such a system is used) unless and until they successfully complete training in its safe use. At a minimum, such training must cover:

- The fall hazards to which the workers are exposed;
- The fall protection measures and systems used;
- Assessment and selection of anchors;
- Proper use of connecting hardware;
- How to inspect and care for the equipment;
- The impact of falls and fall arrest on the human body; and
- The safe work and rescue procedures to follow.

Training must be provided by a competent person and be

documented in a record listing the name of the worker and trainer, date of training, topics covered and when training must be renewed. On Oct. 1, Ontario will become the second province to require workers working at heights to take a government-approved fall protection course. Newfoundland is the other.

[ ] PHASE 6: COORDINATING WITH CONTRACTORS

Fall protection also has to account for the contractors who work at your site. At a minimum, you must notify contractors of the fall hazards to which their workers will be exposed. Then it becomes a matter of coordinating safety measures with the contractor. How you do that will depend on which of you is legally responsible for carrying out the work safely and in compliance with OHS laws.

Employer: If you, as the employer, are in charge:

- Give the contractor your fall protection plan and/or safe work procedures;
- Require the contractor to communicate the plan and/or procedures to its workers and ensure that they'll comply; and
- Have the contractor verify that its workers are properly trained to use the fall protection required.

Prime Contractor: If the contractor is in charge as a prime contractor or constructor, require it to either:

- Follow your fall protection plan and/or safe work procedures, if you have them in place; or
- Furnish fall protection that meets the requirements of your jurisdiction's OHS regulations.