

When it comes to fall protection, using the right kind for the job matters.

Can your fall-arrest system withstand edge and swing?

By Jesse Marchand

Fall protection is essential, but are you using it correctly?

Fall-arrest systems are the last line of defence for workers at heights, but the equipment needs to be used correctly. When fall protection is used incorrectly, it can have devastating results.

Back in 2013, WorkSafeBC released a bulletin after the improper use of a self-retracting lifeline resulted in the death of a worker. The investigation into that incident found that instead of being anchored above the worker in a vertical application, the lifeline was anchored on a low-slope roof at the same level. The result was that the mechanism could not work properly when it caught on a sharp edge and severed the line.

Sadly, stories like this are not isolated, nor are they in the past. In B.C., falls from elevation accounted for 15 percent of all traumatic injuries between 2014 and 2018. In that same period, there were 26 fatalities relating to lack of fall protection or improper use of guardrails, fall arrest, or fall restraint in the construction sector.

“With the equipment available out there, there shouldn’t be any falls,” says Marcelle Hiebert,

occupational safety officer, Prevention Field Services, at WorkSafeBC. “We’re starting to see change, but it’s not improved enough to drop from one of the number-one causes of injuries and deaths.”

Understanding the different types

For Tanya Steele, regional safety advisor for the British Columbia Construction Safety Association, fall protection awareness extends way beyond the message of “put it on.”

“Many workers know that they need to wear it, even when to wear it, and in many cases how to wear it. Unfortunately, we still see workers falling on a regular basis, and in some cases with their gear on,” says Steele. So what’s going wrong? For Steele, it all comes down to the employer providing the correct protection in addition to adequate training.

“Employers need to get the system that works best for their type of work. Although workers will attend a fall protection class, it’s important for employers to attend too. Most reputable schools will demo many different systems in class,” says Steele.

Employers also need to be aware about the compatibility between different equipment types.

“In many cases, they have equipment that is not even compatible with other equipment. Different systems also have an impact on what the worker can and can’t do at work, so it’s necessary for employers to assess this with the workers to find out what equipment will work and not impede the work or slow down the worker.”

Tips for choosing the right fall arrest system

Not all fall-arrest systems are designed for work against a sharp edge. Take, for example, the popular nylon twill tail retractable lifelines, which are designed for overhead anchorage points. They are light and easy to wear, but they aren’t designed to withstand being rubbed against a leading edge or being tied off at your feet.

Lanyards that are rated for leading-edge work offer higher weight ratings, can withstand being rubbed on a sharp edge, and are rated for anchoring at a worker’s feet when there is no anchor point above the head.


Though leading-edge lanyards cost more than traditional nylon versions, they are necessary for work where the lanyard may come in contact with a sharp edge.

Hiebert has these tips to help employers and workers know when to use what equipment:

- 1 Make sure you understand fall protection requirements.
- 2 Always follow the manufacturer’s instructions.
- 3 Provide workers with as much information as possible to work safely.
- 4 Provide supervision, so that workers can demonstrate that they understand how the equipment works and show that they are using it.

And, he adds, “Talk to the fall protection providers. They’re happy to explain what each piece of equipment is used for.”

For more information

WorkSafeBC has a number of resources on fall protection. Find them by searching for “fall protection” on [worksafebc.com](https://www.worksafebc.com). 

The fall protection hierarchy

No matter how quick the job, or how experienced the worker, following the fall protection hierarchy is an essential part of preventing falls from heights:

- 1 **Guardrails.** Where fall hazards cannot be eliminated, permanent or temporary guardrails or handrails form a protective barrier around an opening or edge to prevent a fall.
- 2 **Fall restraint.** After eliminating fall hazards and installing guardrails, a fall-restraint system is the next level in the fall protection hierarchy.

Fall-restraint systems prevent you from falling through either travel restriction or work positioning. With travel restriction, workers are attached to a fixed-length line that prevents them from travelling too close to an opening or edge.

- 3 **Fall arrest.** When it’s not possible or practical to use a fall-restraint system, the next line of protection is fall arrest. A fall-arrest system (including a lanyard or lifeline, a harness, and, most importantly, an anchor) protects you after a fall by stopping you from hitting the surface below.

If the situation requires fall arrest, it’s crucial that you use something rated for the work at hand. Strapping on a harness may look safe, but if it’s not designed and rated for the type of work you are doing, you’re putting your workers or yourself at risk, says Hiebert.

“You need to read the manufacturer’s instructions to ensure the equipment is suitable for the type of work. Read the instructions to know the limitations and compatibility. Employers need to ensure their workers have the manufacturer’s instructions,” Hiebert says. “If you don’t follow the instructions, then your fall-arrest system could fail.”