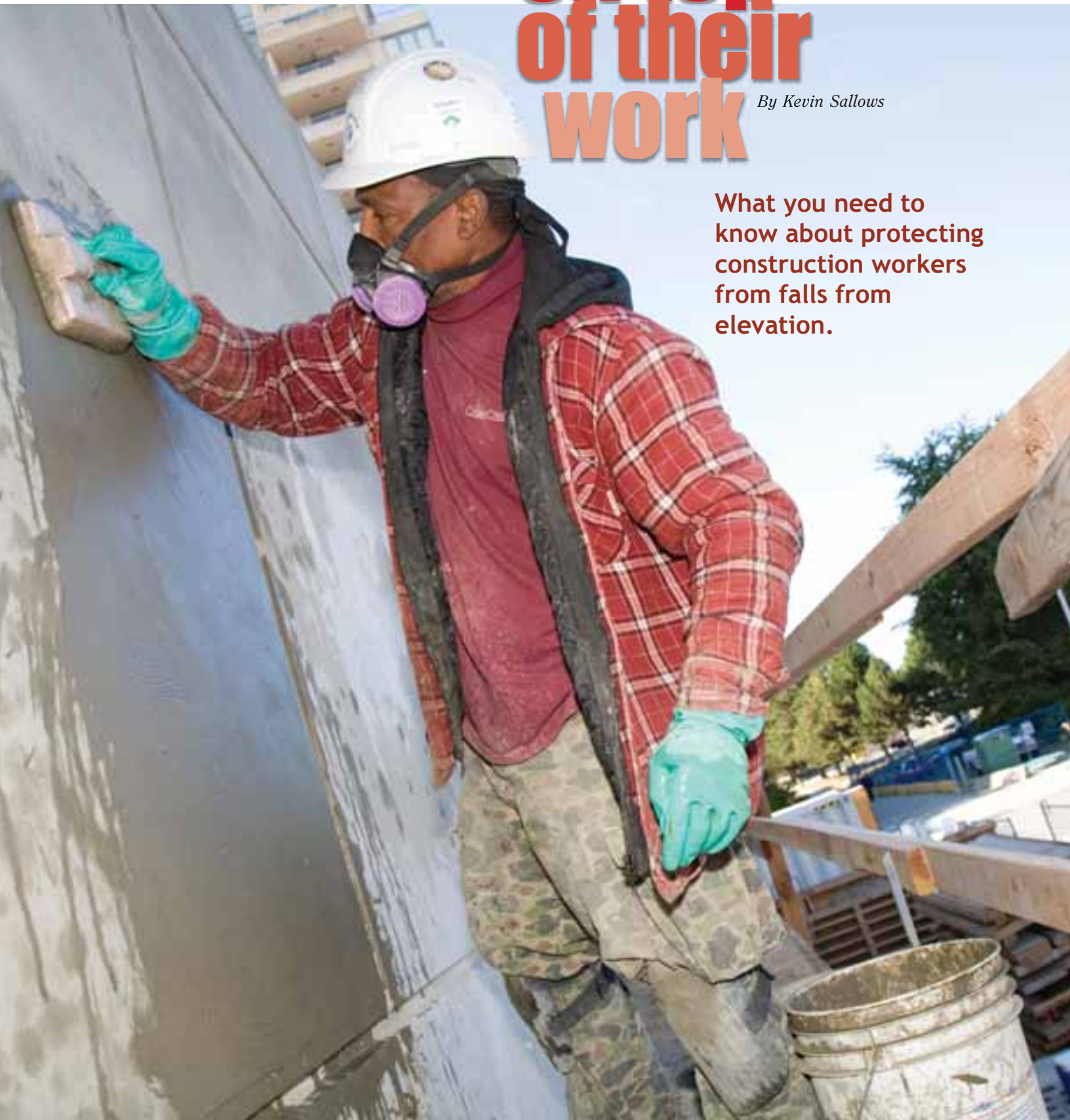


# On top of their work

*By Kevin Sallows*

What you need to know about protecting construction workers from falls from elevation.



Falls from elevation are bringing workers down and driving costs up in the construction industry in B.C. The industry accounts for 40 percent of all claims for falls from elevation, at a cost of about \$45 million each year.

“Construction has the dubious honour of being the number-one industry for costs from falls,” says Don Nelson, Industry and Labour Services manager at WorkSafeBC. Unless prevention efforts improve on job sites, more workers could get hurt.

Construction is booming in B.C. – during the three years from 2001 to 2004, construction employment increased by 28 percent, growing from 110,800 workers to 141,700 workers. The first half of 2005 showed an increase to 167,200 workers.

Add to this the fact that many older workers will be retiring in the next few years, and it becomes clear that there will be a lot of new workers entering the industry. Many of them will be young and inexperienced, which puts them at a higher risk of injury. More than half of all work-related accidents happen during a young worker’s first six months on the job. Construction is on the rise in B.C., but that doesn’t mean that falls from elevation need to be as well.

### New study, new findings

Until now, not a lot has been known about the specific causes of falls – what are called *causal factors*. A recent WorkSafeBC study looks at the causal factors that lead to falls from elevation in which workers are seriously injured or killed. It examines serious falls in the construction industry during the five-year period from 2000 to 2004 – and some of the results are surprising.

Residential wood frame construction accounted for 37 percent of all falls from elevation in construction in the period. From 2000 to 2004, there were six fatali-

ties and 16 traumatic brain injuries in residential construction, renovation, framing, and forming. Serious injuries and fatalities in these areas have cost the industry nearly \$12 million.

The leading causal factor was lack of guarding (14.5 percent of accidents). These accidents typically involved open stairwell and skylight holes, or missing guardrails on balconies and floor edges. Workers might dislike covering skylights and stairwell holes because they often provide natural lighting and airflow to the levels below.

Slipping off roofs was the second most common causal factor (14.3 percent of accidents). Roofers are particularly susceptible to this risk, especially in residential wood frame construction. Residential sites accounted for 77 percent of serious steep-slope roofing accidents.


Going up or down ladders was the third most common causal factor (11.1 percent of accidents), with workers being more at risk in wet weather conditions.

### Fall protection and planning are key

“One thing that was a real shock,” says Nelson, “was that 27 percent of the falls involved workers who were wearing fall protection.” The problem in most of these cases is that workers weren’t tied off to a suitable anchor – or weren’t tied off at all. It may seem obvious, but a safety harness will only work if it’s connected to a line and a suitable anchor. Workers need to know how to use fall protection equipment and employers need to make sure they’re using it.

Education and supervision are important elements. Rob Zygmunski, safety consultant for Action Safety, recalls a too-common sight on the job: “Today I saw a

*Continued on next page*





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worker who had his harness on inside-out so the D-ring was actually poking him in the back.” To prevent safety equipment from being misused, employers need to ensure that workers are trained to use the equipment properly and that supervisors are checking to make they do.

Unfortunately, what’s happening on a lot of construction sites is that contractors aren’t using the level of fall protection that they should be. The Occupational Health and Safety Regulation specifies a hierarchy for fall protection: first try to use guardrails or some other form of fall restraint; if that isn’t feasible, provide workers with fall arrest systems; and if that isn’t feasible, use work procedures such as a safety monitor and control zone system – but only as a last resort.

Many contractors are defaulting to a monitor system when they should be using a better form of protection for their workers. In the safety monitor system, a worker is assigned to monitor workers in a specific area, or control zone, to verify that they’re following written work procedures which they’ve been trained on. These written safe work procedures are

determined by a manager or supervisor after a site-specific hazard assessment has taken place, and are located in the fall protection plan under section 11.2 of the Regulation.

“It’s a huge issue,” Zygmanski says of the misuse of the monitor system. “It’s one of the most frustrating things that we come across.” Some contractors think that they don’t have any options for guarding, but that’s simply not the case these days.

“If there’s a parapet wall, you can guard it,” says Zygmanski. “There are devices out there that you can put on those walls that take literally seconds to connect.” There are even guardrail systems available for sloped roofing. Bottom line? “If you’re going to be using a monitor system, you better have a legitimate reason,” says Zygmanski.

Pre-planning in the early stages of a project is a good way to prevent contractors from relying on the monitor system when a project is in the end stages and time is tight. “Pre-planning has got to come from the prime contractor,” says Zygmanski. Coordinating work activities with subcontractors at pre-site meetings

helps ensure that guardrails and anchors will be used until the last stages of roofing occur.

## Low falls can be deadly

Perhaps the most unexpected finding of the WorkSafeBC study was that the most common height for falls is 2.5 m (8 ft.), which is below the 3 m (10 ft.) height requirement for fall protection specified in the Regulation. In 1999, a worker suffered a serious head injury when he fell 1.8 m (6 ft.) off a ladder and struck his head on a steel brace. He was using the top section of a disassembled extension ladder that didn’t have proper safety feet and wasn’t tied off. Many incidents occur when a ladder base slips out, the top slips sideways, or the top falls backwards.

A lot of things can lead to a fall, so it’s important to consider all the things that can be done to prevent workers from becoming another statistic (see “Tips for preventing falls” on page 13). Better training and supervision, diligent pre-planning, and proper use of safety equipment – focusing on all these areas will help ensure that workers stay up where they belong, on their feet and on top of their work. **W**



## Tips for preventing falls

- Hold pre-planning meetings. Make sure there will be enough anchors in place and organize workflow so anchors and guardrails remain in place for as long as possible.
- Don't cut openings for skylights or other units until it's time to install them.
- Cover openings with a wire mesh guard, or guard them with rebar that can be cut out later.
- Wear fall protection harnesses and clip in to safe anchors.
- Tie off ladders at the top in addition to using slip-resistant feet.
- When building wooden ladders, leave the rungs out of the top 1 m (3 ft.) to make roof-to-ladder transfers easier.
- Maintain three-point contact at all times on ladders – one hand and both feet, or both hands and one foot. Keep your belt buckle centred between the ladder rails to maintain your balance.
- Use ladder hoists or ropes instead of carrying loads up and down ladders.
- Use scaffolds and ladders according to manufacturers' specifications. Don't raise platforms or extend ladders above recommended maximum heights.



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