



Kazed Industrial Solutions
Keeping it Simple...

Protect Your People = Protect Yourself!!

The big debate in 'fall prevention' is always

'guard rails vs. roof anchors'.

But before you can make that decision you need to be able to answer these questions...

1) What constitutes a hazard?

2) What are your obligations as a building owner and/or tenant?

1.	THE case for the guard rail over the roof anchor
2.	Skills Required
3.	Guard rails provide better legal protection
4.	Maximising safety
5.	Less maintenance and less training = savings
6.	Safe Work Methods Statements
7.	The five steps to develop an SWMS
8.	Limiting your liability

1) The case for the guard rail over the roof anchor begins with the law.

Both WorkCover NSW's *Safe Working at Heights Guide 2004* and Victoria's *Code of Practice (No 28) – Prevention of Falls in General Construction* detail a rigorous selection process for fall prevention measures.

The familiar hierarchy of controls that sets out the order of control measures, running from elimination to personal protective equipment, goes one step further in the case of fall prevention. Authorities also specify what the controls should be.

Not surprisingly, the first step is to eliminate the hazard altogether by reorganising the job so that work is undertaken from ground level or on a solid construction. If neither is practicable, the next best alternative is to use a passive fall protection device. In fact, the Victorian OHS (Prevention of Falls) Regulations provide an exemption from many of its onerous duties if the equipment installed complies with AS1657 – 1992 *Fixed Platforms, Walkways, Stairways and Ladders*.

Controls listed in both AS1657 and in Level 2 of the hierarchy of controls include guard rails and fixed platforms. Guard rails are also the most viable permanent solution for safe maintenance access of all the Level 2 controls, which also encompass cherry pickers and scissor lifts. Strong, durable and low maintenance, the guard rail has a life span of perhaps 20 years and is always in place when needed.

It is only if these "passive fall protection devices" are not practicable that "work positioning systems" can be used. These systems prevent workers falling over an unprotected edge and are harnesses attached by lanyards to roof anchors or static lines, or harnesses with ropes and friction devices. If work positioning systems are not practicable, fall arrest systems that minimise the distance of the fall can also make use of anchors.

Whether the anchors form part of a work positioning system or a fall arrest system, their effectiveness cannot be taken for granted. Put simply, while work positioning systems can be used very safely, the human element integral to their use brings risks not seen with guard rails.

2) Skills Required

High skill levels are demanded from users and both of these anchor-based systems rely on equipment being suitable, compatible, carefully maintained and regularly tested. Users require ongoing training and administrative procedures need to be developed and constantly reviewed. AS/NZS 1891 provides information on the selection, use and maintenance of fall arrest system components.

The consequences of the misuse of work positioning or fall arrest systems can be catastrophic. WorkCover NSW has issued a safety guide warning of hazards associated with fall arrest latches yet fatalities continue to occur. Examples include the failure to lock due to a weakened spring, catching on clothing, corrosion or

contamination and bending. Dynamic roll out, where the latch opens unexpectedly, adds to the risk.

System misuse or the incorrect placement of roof anchors can also mean that fall restraint systems, which are Level 3 controls, effectively become Level 4 fall arrest systems. As a result, the site's safety standards are lowered, generally without the knowledge of the user or facility manager.

Because fall arrest systems only aim to minimise injury once a fall has occurred rather than avoiding it in the first place, they also carry the risk of the pendulum effect and suspension trauma.

The cost of maintaining roof anchors and the fall arrest or prevention systems to match, means that a guard rail quickly pays for itself. According to AS1891, roof anchor systems must be labelled with their rating and commissioning date. They must be recertified and inspected every six to 12 months depending on the state's requirements. In contrast, guard rails do not need to be regularly inspected.

Of course, roof anchors do have their place – as one of the last resorts for height safety when guard rails are not practicable.

When the need for access to the roof is very rare, they can be an attractive option. In fact, aesthetics is the most common objection that Workplace Access & Safety's auditors hear when recommending the installation of guard rails. Solutions include powder coating the railings to match existing roof structures but, at the end of the day, aesthetic concerns mean little in the face of a prosecutor or, worse, the family of a worker.

Mention "height safety" or "fall prevention" and most people immediately think of the 'glamour' of harnesses and ropes. The result is that Australia's roof tops bristle with roof anchors but, experts say that roof anchors deserve only to be considered after two other levels of superior protection have been exhausted.

The answer lies in the hierarchy of controls, which favours guard rails over roof anchors.

3) Guard rails provide better legal protection

The case for the guard rail over the roof anchor begins with the law. Both WorkCover NSW's Safe Working at Heights Guide 2004 and Victoria's Code of Practice (No 28) – Prevention of Falls in General Construction detail a rigorous selection process for fall prevention measures.

The familiar hierarchy of controls that sets out the order of control measures, running from elimination to personal protective equipment, goes one step further in the case of fall prevention - authorities also specify what the controls should be.

Not surprisingly, the first step is to eliminate the hazard altogether by reorganising the job so that work is undertaken from ground level or on a solid construction. If neither is practicable, the next best alternative is to use a passive fall protection device. In fact, the Victorian OHS (Prevention of Falls) Regulations

provide an exemption from many of its onerous duties if the equipment installed complies with AS1657 – 1992 Fixed Platforms, Walkways, Stairways and Ladders.

Controls listed in both AS1657 and in Level 2 of the hierarchy of controls include guard rails and fixed platforms. Guard rails are also the most viable permanent solution for safe maintenance access of all the level 2 controls, which also encompass cherry pickers and scissor lifts. Strong, durable and low maintenance, the guard rail has a life span of perhaps 20 years and is always in place when needed.

It is only if these "passive fall protection devices" are not practicable that "work positioning systems" can be used. These systems prevent workers falling over an unprotected edge and are harnesses attached by lanyards to roof anchors or static lines, or harnesses with ropes and friction devices. If work positioning systems are not practicable, fall arrest systems that minimise the distance of the fall can also make use of anchors.

4) Maximising safety

Whether the anchors form part of a work positioning system or a fall arrest system, their effectiveness cannot be taken for granted. Put simply, while work positioning systems can be used very safely, the human element integral to their use brings risks not seen with guard rails.

High skill levels are demanded from users and both of these anchor-based systems rely on equipment being suitable, compatible, carefully maintained and regularly tested. Users require ongoing training and administrative procedures need to be developed and constantly reviewed. Australian Standard AS/NZS 1891 provides information on the selection, use and maintenance of fall arrest system components.

The consequences of the misuse of work positioning or fall arrest systems can be catastrophic. WorkCover NSW has issued a safety guide warning of hazards associated with fall arrest latches yet fatalities continue to occur. Examples include the failure to lock due to a weakened spring, catching on clothing, corrosion or contamination and bending. Dynamic roll out, where the latch opens unexpectedly, adds to the risk.

System misuse or the incorrect placement of roof anchors can also mean that fall restraint systems, which are level 3 controls, effectively become level 4 fall arrest systems. As a result, the site's safety standards are lowered, generally without the knowledge of the user or facility manager.

Because fall arrest systems only aim to minimise injury once a fall has occurred rather than avoiding it in the first place, they also carry the risk of the pendulum effect and suspension trauma. The pendulum effect occurs when a line is extended to reach a point a long way from the anchor but close to the edge of the roof.

If a person falls at this point, the line slides back towards the anchor and, if that distance is greater than the drop to the ground, the person will hit the ground.

Large fall distances and or hitting something on the side of the building can also cause serious injuries.

5) Less maintenance and less training = savings

The cost of maintaining roof anchors and the fall arrest or prevention systems to match, means that a guard rail quickly pays for itself .

According to AS1891, roof anchor systems must be labelled with their rating and commissioning date. They must be recertified and inspected every six to 12 months depending on the state's requirements.

Aside from the cost and administration involved in maintaining the equipment, labour sourcing also becomes more complex with roof anchors. Using work positioning and fall arrest systems safely requires high skill levels and anyone accessing the roof, from plumbers to air conditioning mechanics, needs to have completed specialised competency-based training.

The legal responsibility for this ultimately lies with the controller of the workplace, whether that is the employer or the owner of the building. Since fall arrest systems at best leave a worker hanging in the event of an accident, they must also be watched over by a trained supervisor who has a rescue plan in place.

In contrast, guard rails do not need to be regularly inspected, saving facility managers considerable time, administration and money – not to mention avoiding any risk that the statutory inspections may have been overlooked.

The case for roof anchors

Of course, roof anchors do have their place – as one of the last resorts for height safety when guard rails are not practicable. Anchors are ideal, for example, when cleaning windows or painting a building facade where there are no other options available.

When the need for access to the roof is very rare, they can be an attractive option, particularly on heritage buildings where guard rails might look out of place. In fact, aesthetics is the most common objection that Workplace Access & Safety's auditors hear when recommending the installation of guard rails. Solutions include powder coating the railings to match existing roof structures but, at the end of the day, aesthetic concerns mean little in the face of a prosecutor or, worse, the family of a worker.

6) Safe Work Methods Statements

What is the purpose of an SWMS?

In a nutshell, the purpose of any SWMS is to identify the hazards associated with carrying out a task and, in consultation with team members, to document steps that should be taken and the equipment used to minimise the risks.

The hierarchy of controls laid out in the Prevention of Falls Regulations should always be the basis of the SWMS.

A secondary, yet important, consideration, is that proper preparation and execution of an SWMS can significantly reduce the liability of the principal contractor or controller.

How to prepare an SWMS

Fortunately, an SWMS does not involve huge volumes of paperwork and a simple generic form can be used to record the issues. On the other hand, remember that an SWMS is site-specific, must have enough detail to cover all of the tasks and break down the tasks into steps team members can easily understand. Those team members should also be consulted during the development of the SWMS.

7) The five steps to develop an SWMS are:

1. Record the activity. Get the team together and, using a pro-forma document, write down the tasks that need to be taken to carry out the activity. Make sure each task is detailed step-by-step.

2. Identify the hazards. Next to each task, identify anything that could cause injury.

3. Document the control measures. For each hazard, determine the level of risk (high, medium or low) and list the control measures required to eliminate or reduce those risks.

4. Identify and record the name of the person who is responsible for implementing the control measure.

5. Monitor and review. Make sure the work is supervised to ensure that everyone involved adheres to the process. Update the SWMS if the activity changes or new team members become involved in the work.

All the team members must sign on to the SWMS but management processes must still be in place so that workers have the necessary skills to complete each task. For example, it is not good enough to send plumbers to clean gutters without first checking that they are appropriately trained to work at heights, that they have the right equipment and have been properly inducted.

Documentation also needs to be kept on site proving the plumbers are qualified to use a site specific roof anchor system and harness. It is also the responsibility of the principal workplace controller to ensure the roof anchor system has had its annual inspection, the proper rescue procedures are in place in case of a fall and that appropriate controls are used. Appropriate controls are determined by the hierarchy of control.

Many of these processes would be incorporated into a separate roof permit system and need to be carefully considered.

The importance of communication: A solicitor's view

Once the SWMS is complete, it is vital that it is communicated to all workers. Quoted in WorkSafe Victoria's guidance material, Peter Barber, a partner in the Melbourne office of Deacons, Graham & Jones Solicitors points to the need for well documented communication of the SWMS:

"I have often had to listen to arguments in court to the effect that my client had instituted safety procedures but had failed to ensure they were carried out. This sort of failure can provide grounds for charges of recklessness, because there can be no argument that the employer did not appreciate the risk."

"In recent months we have had to defend managers against charges of manslaughter and criminal negligence, and...companies accused of possibility for or contribution to workplace fatalities.

"These days most employers are aware of the need for safety induction for subcontractors and get them to sign an acknowledgement at the back of a safety booklet."

If an SWMS clearly articulates the requirements for a particular task and the requirements are communicated to a contractor, it could be argued that if the contractor fails to follow procedure, the principal contractor has fulfilled the legal obligation. In this case, the contractor would have failed to observe the clearly communicated site rules.

8) Limiting your liability

Of course, the ideal way to limit your liability is to avoid falls altogether. While documentation alone can never achieve that goal, an SWMS is integral to any well-managed fall prevention plan that includes a thorough risk assessment, consultation with those who work at height, and professionally implemented controls. Used well, the SWMS is much more than a document to satisfy inspectors and fills its role as an invaluable guide to safety at your site.

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