

# UNDERSTANDING ANCHOR SELECTION

AND WHY IT MATTERS



**SAYFA**<sup>®</sup>  
GROUP

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## GUIDELINES AND TERMINOLOGY

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When designing, installing or using height safety equipment it is important that you have a basic understanding of the terminology that is often referred to within the industry. Guidelines for the application of fall protection systems are based on the Hierarchy of Control for Working at Heights<sup>1</sup> which is explored in more depth later within this paper.

### **Fall Prevention**

According to the hierarchy of control for working at height, this is the highest form of protection. This removes the risk of the worker falling by providing a barrier between them and the fall hazard. Guardrails and skylight protectors are examples of the types of equipment that fall into this category. This method requires the least amount of operator competence for working at heights.

### **Fall Restraint**

This type of system restricts the movement of the worker in reaching the fall edge. The lanyard is typically a fixed length that does not extend past the fall edge and it effectively acts like a leash preventing a fall arrest situation from occurring. This method is dependent on correct operator use, especially if an adjustable length lanyard is being used. User competency and system training are essential when using this type of equipment. It is important that anchorages and support structures are fall arrest rated (15kN), even if the system is used as a restraint system.

### **Fall Arrest**

As its name suggests, this type of protection arrests the fall of a worker once it has occurred. It does not prevent the worker from falling and has the highest potential for injury. In the hierarchy of control this form of protection is the least favourable, however is still a useful option when other means are not practicable.

### **Rope Access**

This method enables work to be carried out on atriums, facades or exterior areas at height using a rope abseil system. A high degree of operator competency is required and this type of work should only be conducted by personnel who are qualified and trained in the correct use of the equipment.



# THE DIFFERENCES BETWEEN ANCHORS

## Load Rating

Fall arrest anchors and rope access anchors are subjected to different types of loads so therefore require different ratings.

Fall arrest anchors need to be able to withstand the force that will be placed on them in the event of a fall occurring. When this happens the operator will come to a sudden stop. This is called dynamic load. Rope access/abseil anchors are designed to sustain a constant load which is known as a static load.

Some anchors are not designed to be under constant static load so should never be used for abseil work. The specified load rating for rope access/abseil anchors is 12kN (approximately equivalent to 1200kg). The dynamic load rating required for fall arrest anchors for a single person is 15kN (approximately equivalent to 1500kg).

Both these ratings are specified by Australian Standards<sup>2</sup> and you should ensure that the anchors you select or use are manufactured to these specifications.

Always check the manufacturer's support documentation to be sure that their anchors meet these requirements.

## Energy Absorber

To ensure the effectiveness of a fall arrest system there must be a personal energy absorber fitted. Some fall arrest anchors have built-in energy absorbing properties however any lanyard or adjustable rope line must have a personal energy absorber attached, in-line, to the operator's harness.

Anchors, rope lines and lanyards fitted with shock absorbers will deploy when activated, thereby absorbing the impact of the fall. Energy absorption is not necessary in the case of rope access/abseil anchors because the system is operating under constant load.

All of SAYFA's rope access anchors have been tested to withstand 15kN dynamic load in the event of having to arrest a fall.

There are several anchors on the market that can be used for both fall arrest and rope access applications. These types of anchors can withstand constant static load and are constructed to handle the dynamic load should it be required in the event of a sudden fall.

For product by product information to determine which anchor to use for what application read our document "Selecting The Correct Anchor"<sup>3</sup>.



**Some anchors are not designed to be under constant static load so should never be used for abseil work**

## ANCHOR SELECTION - GETTING IT RIGHT

Clarifying the type of work that is going to be performed is a vital ingredient in ensuring compliant system design and installation. As an example, if the task involves facade access or window cleaning then rope access/abseil anchors would need to be fitted. In the case of general access to the roof or elevated areas when protection from the fall edge is required then fall arrest anchors should be used. If you are the designer, builder or the person in control of a business or undertaking you must ensure that the anchors specified, installed or used are suitable. (Refer to WHS Act 2011<sup>4</sup> and Code of Practice - Safe Design of Structures<sup>5</sup> for your specific obligations.) Anchors should be clearly marked to indicate their purpose, whether it be rope access or fall arrest, and they must only ever be used by operators as per their intended application.

### The danger of incorrect selection

Many times systems are designed and installed without due consideration to the task at hand. Failure to specify and install the correct anchors can make a system inadequate and ineffective, which is frustrating for builders, owners and operators as these systems cannot be used and they may require a complete redesign. It is most important to realise that if not accurately selected, anchors may not provide the protection required and additionally could fail to meet standard and regulatory guidelines.

Costs to rectify incorrectly designed and installed systems can be high which is why ensuring the right selection from the outset is paramount to guarantee peace of mind for everyone involved.

**Check the application first, then select the anchor that will enable the task to be performed safely and securely.**

# WHAT IS THE HIERARCHY OF CONTROL FOR WORKING AT HEIGHT?

It is of utmost priority to eliminate the risk of a fall. The ultimate goal is to ensure a fall from height cannot occur. This can be achieved either by eliminating the need to work above the ground or to provide a solid elevated construction from which the work can be performed. If it is not possible to achieve this, the risk of a fall must be minimised through the application of control measures further down on the Hierarchy of Control. The Hierarchy of Control is as follows:

## Elimination

Eliminate the hazard. Undertake the work from ground level or from a solid construction. Redesign should be considered to eliminate the need for working at height.

## Substitution

Change the control measure to undertake the work from a safe zone. Relocation of equipment requiring maintenance should be considered to eliminate the requirement for the operator to enter the danger zone.

## Isolation

Separate the operator from the hazard by means of passive fall protection. A plant screen, barrier or guardrail will effectively prevent a fall whilst maintenance is being undertaken.

## Engineering

Manage the risk using an engineered control. Work undertaken using fall arrest systems requires operator training but it will prevent a fall from occurring when used correctly.

## Administration

Control the risk using procedure. Control the environment using signage, demarcation line marking and operational instructions.

It is important to note that the level of Hierarchy of Control is equivalent to the risk of injury, as a result of operator incompetence. A lesser control measure requires greater skill of the operator and is therefore the least preferred.



**Falls from height is the second highest cause of workplace death in Australia<sup>6</sup>**



## SAFETY MADE EASY WITH SAYFA

SAYFA is Australia and New Zealand's leading roof access and fall protection specialist, providing tailored solutions that encompass all aspects of roof safety across commercial, industrial and domestic markets. Since 2002, SAYFA has designed and manufactured roof access and fall protection systems throughout Australia and New Zealand.

The success of SAYFA lies in its ability to proactively respond to the evolving needs of the industries to which it provides products and services. SAYFA offers a complete technical service from initial consultation through to design, installation, training and certification. From highly trained accredited installers to friendly technical specialists, the SAYFA team provides ongoing support and ensures that every job is completed to the highest standard. Partnering with building designers to ensure the right systems are designed the correct way from beginning to end guarantees smooth processes and ultimate peace of mind.

With a diverse range of clients such as the Australian Rail Industry, Australian Defence Force, commercial property managers, retail

shopping centres and residential and aged care facilities, SAYFA's designs and products continue to meet the ever changing standards and regulations of the height safety industry. Our innovative, modular height safety and fall protection solutions are not only easy to customise to suit individual specifications but easy to assemble and install on site. Leveraging advanced fabrication techniques and facilities, SAYFA has the capability to ensure all safety systems are designed and engineered to meet the individual requirements of the particular job. In the event that 'off the shelf' products cannot be used, SAYFA's manufacturing facility can produce bespoke fabricated components to fit even the most intricate design whilst ensuring the aesthetics of the building are given due consideration.

Committed to continuous product research and development, SAYFA is proud of its constant growth and high standing in the industry. A collaboration with SAYFA will provide the right product for the job and ensures a safe and successful project.

**Join us in our mission of saving lives and together let's bring every worker home safely.**



## REFERENCES

- <sup>1</sup> <https://education.qld.gov.au/initiativesstrategies/Documents/working-at-heights-guideline.pdf#search=hierarchy>
- <sup>2</sup> <https://www.standards.org.au/>
- <sup>3</sup> [https://sayfa.com.au/wp-content/uploads/2017/07/DesignTip-TheRightAnchor\\_01.05.2017.pdf](https://sayfa.com.au/wp-content/uploads/2017/07/DesignTip-TheRightAnchor_01.05.2017.pdf)
- <sup>4</sup> <https://www.legislation.gov.au/Details/C2016C00887>
- <sup>5</sup> [https://www.safeworkaustralia.gov.au/system/files/documents/1702/safe\\_design\\_of\\_structures2.pdf](https://www.safeworkaustralia.gov.au/system/files/documents/1702/safe_design_of_structures2.pdf)
- <sup>6</sup> <http://www.safeworkaustralia.gov.au/sites/swa/about/publications/pages/work-related-injuries-fatalities-involving-fall-from-height-australia>

