

SIMPLIFIED
SAFETY



Fall Protection Comparison

Comparing solutions for roof top fall protection.

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Scope of this Document

The scope of this document is to give our customers a general outline of the different pros and cons of the fall protection systems that we offer. There are two principal forms of fall protection covered in this document: Passive and Active. **Passive fall protection** is mostly closely aligned with guardrail. Guardrail requires minimal inspection and virtually no training. Simply put, passive fall protection requires no action from the rooftop worker once the system is installed. **Active fall protection** is typically aligned with horizontal lifelines and anchor points. It requires training, maintenance, inspection, and management on an on-going basis. Most importantly, it requires action from the user each time it is used.

For a complete list of the different methods of fall protection see this page on our web site: [What is the difference between different types of fall protection?](#)

For additional reading on the difference in short-term and long-term costs between these two solutions, please see this series of posts on our web site:

[Seven Ways to Save on Safety \(Part 1\)](#)

[Seven Ways to Save on Safety \(Part 2\)](#)

[Seven Ways to Save on Safety \(Part 3\)](#)

Pricing information is based upon estimated pricing of typical systems as of September 2011, our assumption is that price changes affect all systems equally.



Non-Penetrating Rooftop Guardrails



The best example of non-penetrating rooftop guardrail is the [KeeGuard Rooftop Guardrail system](#). It is a counter-balanced system that is easy to install and can be adapted to just about any rooftop obstacle. Easily assembled by a two-man crew, it can protect large sections of roof perimeter or provide smaller sections of spot protection.

Costs

Installation Costs	Starts at \$50.00 / linear foot + 16 man hours for ever 600' linear feet
Training Costs	No training required

Pros and Cons

Pros	Cons
Easy to install, no specialized training is required Can easily be modified on site – no welding required No ongoing maintenance or training is required Versatile - Can be built around existing rooftop obstacles such as HVAC units and roofs of varying heights Durable – 100% galvanized system Tested for OSHA compliance Architectural “look and feel”	Initial product cost is higher than other systems

Parapet Guardrail



[Parapet guardrails](#) are permanent guardrails that are attached directly to the side or top of a roof parapet. Parapet guardrails are less expensive than non-penetrating guardrail but will require more labor costs and a suitable parapet to install.

Costs

Installation Costs	\$28.00 / linear foot + 32 man hours for every 600 linear feet
Training Costs	No training required

Pros and Cons

Pros	Cons
<p>Lower linear foot cost than a counter-balanced solution.</p> <p>Easy to install, attaches directly to the parapet, avoiding penetration of the roof membrane.</p> <p>No ongoing training is required</p> <p>Can be built around existing rooftop obstacles such as HVAC units and roofs of varying heights</p>	<p>Suitable parapet is required</p> <p>Railing has to be placed on parapet, making it more visible from below.</p> <p>Higher installation costs</p> <p>Special labor is required in most cases for proper sealing of penetrations</p> <p>Penetrations may need to be maintained</p>

Horizontal Lifeline



[Horizontal lifeline systems](#) are built along a particular path of the rooftop. The rooftop worker ties off to the system through the use of a harness and lanyard. Horizontal lifelines must be installed and maintained by specialized personnel. OSHA also requires all employees using the system to undergo competent person training for each system. Rescue plans and other safety management overheads are involved in all active fall protection systems.

Costs

Installation Costs	\$40.00 / linear foot (varies greatly by location and configuration) \$100-200 equipment cost per person
Training Costs	Competent person training, system training

Pros and Cons

Pros	Cons
Lower cost of product than most guardrail solutions	Must be installed by certified installers
Not visible from the ground	Ongoing maintenance
Can be used in some circumstance where passive solutions will not work	OHSA competent person training required by all employees using the system
Allows for more mobility around a roof than standard	Inspection required before every use

Roof Fall Protection Comparison

anchor points	<p>Requires the employee to wear fall protection equipment and properly tie off to the system.</p> <p>Ongoing purchase of PPE (harnesses, lanyards, etc.)</p> <p>Requires valid rescue plan</p> <p>Requires attention from management to document and all of the above and validate that the safety plan is being followed.</p> <p>Limits productivity to workers</p>
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Non-Penetrating Tie Off Points



Solutions such as the [Kee Safety Weightanka](#) and the Guardian Hammer fit into this category of portable, non-penetrating tie off points. These products allow workers to tie off in a particular location, but gives them the freedom to move the system when it is needed elsewhere.

1. Costs

Installation Costs	\$3-4,000 for unit and one persons equipment \$100/linear foot (assuming a unit can protect 30 feet)
Training Costs	Competent person training, system training

2. Pros and Cons

Pros	Cons
<ul style="list-style-type: none"> Systems are portable and can be moved Relatively low cost of entry Not visible from the ground Does not penetrate the roof 	<ul style="list-style-type: none"> OHSA competent person training required by all employees using the system Inspection required before every use Requires the employee to wear fall protection equipment and properly tie off to the system. Ongoing purchase of PPE (harnesses, lanyards, etc.) Requires valid rescue plan Higher risk of incorrect use. Requires attention from management to document and

Roof Fall Protection Comparison

	<p>all of the above and validate that the safety plan is being followed.</p> <p>Limits productivity to workers</p> <p>Adds additional work time to each job for setting up and tearing down the anchor point.</p> <p>Allows limited access before needing to be repositioned.</p>
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