

# Self-retracting lifelines at the leading edge



The only thing that is constant is change. All around us, change continues, in culture and technology, in the way we interact, and the way we work. So it's not unexpected that safety gear changes to meet new construction and industrial work methods and challenges.

## The evolution of fall protection equipment

In the past, workers at heights relied on energy-absorbing lanyards attached to anchor points to help protect themselves from falling. As equipment evolved, self-retracting lifelines (SRLs) were added to the fall protection package. SRLs have distinct advantages over lanyards, but are more expensive. With time, they have become shorter for personal use. Compared to their predecessors, these newer personal SRLs are shorter and lighter, and some are designed to be attached directly to a user's harness.

This of course raises the question of why you would need a lanyard if these shorter SRLs can be attached to a harness, and the answer is that you don't. These shorter SRLs, which range from 1.83 to 4.57 m (6 to 15 ft) long, are lightweight, compact, and most importantly, arrest a fall just like their larger counterparts. Some are equipped with web lifelines or wire rope. Many lead multiple lives when it comes to application and deployment in the field.



# The advantages of SRLs over lanyards

Although you may pay more for SRLs, they have some distinct advantages over lanyards:

- ① Lanyards are a fixed-length product while SRLs retract and deploy based on the user's position. This keeps the lifeline off the ground and out of the way, making work easier, and reducing the tripping hazard.
- ② Because the lifeline pays in and out of the housing, it does not get dragged along the ground, so it stays cleaner and gets less wear.
- ③ SRLs do not wear out as quickly as lanyards – they will normally outlast a lanyard significantly. This means that their higher cost is offset by their longevity.





Some lanyards can be used in a tie-back scenario, where they act as both a connector and an anchorage connector; for factor-2 falls, for arc-flash applications and for 100% tie-off applications. SRLs have followed suit, and are now available in single or dual harness mount configurations, overhead mounting configurations, hot works applications and leading edge versions.

## Applications for leading edges

The leading edge application is the newest one, and provides an important level of performance not previously available in SRLs. It enables users to tie off at their feet in many situations where there is no anchor available above the user's head.

There is a second crucial element to the leading edge story. In many cases, users expose the lifeline of the SRL to edges when they are used in this configuration. Some edges are inherently sharp and can cause extreme damage to the lifeline in a fall arrest over the edge. **Not only are they designed to help protect the user, these leading edge SRLs also help protect the lifeline.** The addition of energy absorbers enables the SRL to arrest the fall without damage or failure. This is so significant that the main standards organizations in North America — ANSI and CSA — have developed a category for leading edge SRLs with a specific testing protocol to ensure their performance. This testing includes a fall over a sharpened steel edge from 1.5 m (4.9 ft), replicating a factor-2 fall, where the SRL must arrest the fall without damage to the lifeline.

Leading edge SRLs are available in lengths of up to 20 m (65.6 ft). **While designed for foot-level applications, they can also be used in the traditional overhead position.** Smaller versions can be found in the 100% tie-off configuration. Some have specific anchorage connectors for use in flat and standing seam roof applications. Others can be anchored at foot level using conventional anchorage connectors.







The 3M™ Nano-Lok™ Edge Self-retracting Lifeline was the first personal-style SRL designed for foot-level tie-off. It is ideal for many applications but is especially well suited for use in the construction industry where sharp edges and lack of overhead anchorage are common. Extremely lightweight, it is available in single- or twin-legged configurations. This SRL can be connected directly to the harness where the tension on the lifeline eliminates the threat of tripping.

Nano-Lok™ Edge SRL is the leading SRL for leading edge and foot-level tie-off applications. As technology and needs continue to change, 3M Fall Protection Equipment will also evolve to help protect workers, no matter their methods or challenges.

Visit [3M.ca/FallProtection](https://3M.ca/FallProtection) to learn more about SRLs.