MSA
The Safety Company

Leading Edge Hazards

And What to Do About Them

WE KNOW WHAT'S AT STAKE.

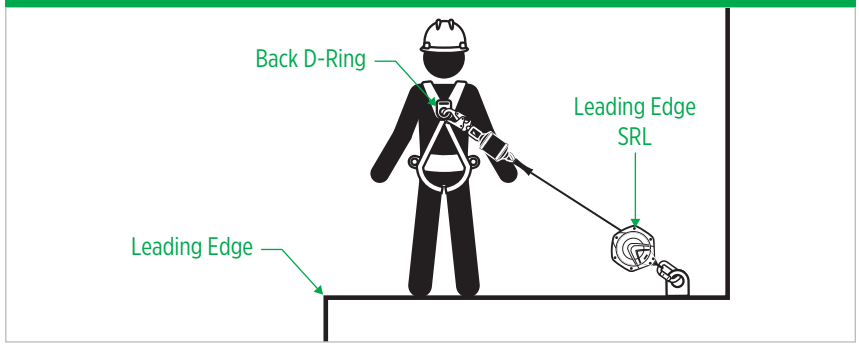
What is Leading Edge?

Leading edge is an application where in a fall event, the lifeline of the self-retracting lanyard may come in contact with an exposed edge, or edge of the working surface. In many scenarios, leading edge applications occur when the harness wearer is tied off or anchored below their back D-ring, however it is possible when anchor points are overhead as well.

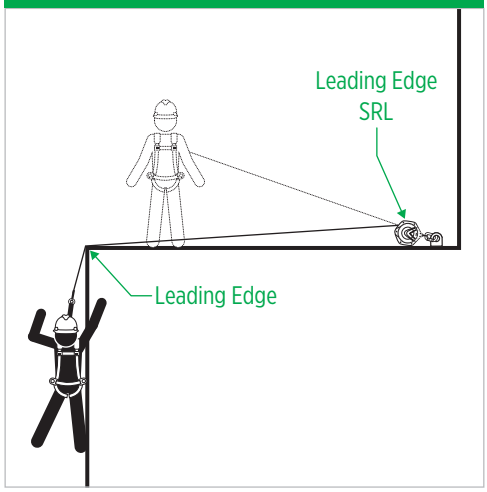
Some examples of leading edge applications include:

- Concrete decking
- Glass installation
- Pre-cast bridge assembly
- Roof decking
- Steel erection

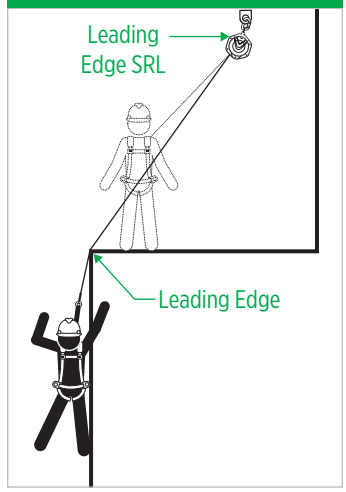
Leading Edge Application



Foot-level Anchorage



Overhead Anchorage



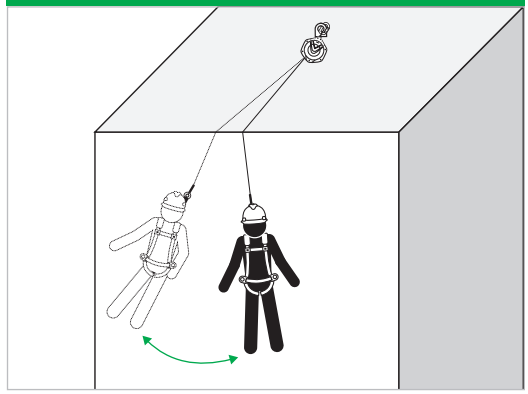
The Unique Safety Challenge of Leading Edge

In leading edge applications, the potential for a fall is complicated by the edge. And that means greater risk for the lifeline to be frayed, cut, or severed in the event of a fall.

Swing fall is another hazard associated with leading edge applications. Swing fall is a pendulum-like motion that occurs during and/or after a vertical fall. A swing fall results when an authorized person begins a fall from a position that is located horizontally away from a fixed anchorage point. *(See figure at right.)* The friction of a lifeline against an edge when this occurs increases the risk of the lifeline being cut or severed.

Overhead, or traditional SRLs are not designed or rated to arrest a fall over an edge, and can pose a risk to the worker when they are used improperly. Therefore, these challenges present the need for SRLs that are better equipped to handle the risk that accompanies leading edge work.

Swing Fall Hazard



ANSI Z359.14 Class 2 (Leading Edge)

Currently, To be labeled Class 2 for use in leading edge applications, the lifeline must meet specific ANSI Z359.14 standard requirements for dynamic performance, dynamic strength, and static strength. It must also meet these requirements:

- Leading edge dynamic performance tests must be carried out with the retractable lanyard perpendicular and laterally offset to the edge using a 310 lb. (141 kg) rigid steel test mass falling through 5 ft. (1.5 m).
- Dynamic strength tests must be performed with the retractable lanyard perpendicular and laterally offset to the edge using a 310 lb. (141 kg) rigid steel test mass.
- Tests must be carried out on a ⅜ x 3 in. (9.5 x 76 mm) steel bar in accordance with ASTM A108 with a steel edge radius of 0.005 in. (0.13 mm).
- Test must be done in a horizontal manner and fall over a steel edge without burrs.
- The material used for the edge test must be ⅜ x 3 in. (9.5 x 76 mm) or larger sized 1018 cold finished steel bar.

Currently an ANSI test criteria does not cover all of the various types of leading edge applications. Users should contact their Fall Protection equipment manufacturers for applications other than steel edges, as prescribed in the current standard.

So, how do you know if your SRL is designed and tested to the current leading edge standard? It will be marked as ANSI Z359.14 Class 2.

ANSI Z359.14 now clearly defines a leading edge application. As defined, anchoring above OR below dorsal D-ring shall use a Class 2 leading edge-rated product. The marking shown at right is required by ANSI for all leading edge products.

Class
2
Anchor above or below dorsal D-ring

Four Rules for Keeping the Leading Edge Worker Safe

Like most PPE, it is important to first go through the hierarchy of controls prior to choosing a personal fall arrest system. Eliminating the hazard all together, passive fall protection and fall restraint systems should all be evaluated first, before choosing SRLs. Here are four additional tips for keeping the leading edge worker safe.

1. Create an "Off Limits" Zone

If feasible, prohibit workers from walking along an edge. Getting too close to the edge and relying solely on fall protection PPE is a dangerous, if not deadly practice, so put a stop to it. *Today.*

2. Guard & Protect

Put control measures like barriers in place to help prevent accidental contact with a sharp edge.

3. Use the Correct Lifeline

Not all fall protection equipment is created equal. There's a great deal of research, design, development, and testing involved in engineering ANSI-certified Class 2. Make sure yours is truly certified to the current ANSI Z359.14 standard.

4. Train, Train, Train

Make sure workers know how to use, care, and maintain their SRLs. OSHA requires it. And so should you.

Conclusion

Because leading edge products can be used in both overhead and foot level tie-off, using these SRLs can make product selection simpler—especially when you are unsure if an exposed edge may be a concern at some point during the job.

Not sure if your SRLs are meant for Leading Edge? Contact MSA.

Isn't it time to rethink your safety program?

Inadequate or incorrect protection can cost someone their life. Their risk, is your risk.
Make sure there are no gaps in your leading edge fall protection program.

Request your free safety gap analysis now.
Visit *www.msasafety.com* or contact us at 800-MSA-2222.

Our Mission

MSA's mission is to see to it that men and women may work in safety and that they, their families, and their communities may live in health throughout the world.

MSA: WE KNOW WHAT'S AT STAKE.

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