

Lanyards and Lifelines can be Severed on Exposed Edges during Falls

Lifelines, when properly anchored, can prevent a fall from occurring or stop a fallen worker from contacting a lower level. However, workers wearing a personal fall arrest system (PFAS) still can face a significant hazard if they fall and their lanyard is severed by an exposed edge.

Background

OSHA recently investigated a preventable incident where a worker using a PFAS was killed after the lanyard was severed by an exposed edge during the fall. Evidence indicated the lifeline was damaged during the fall, not before. In this case, the lanyard was not approved for working on or around sharp edges. Lifeline manufacturers warn about the use of lifelines around edges that could damage the line or prevent it from effectively arresting the fall. Some manufacturers have even developed Self-Retracting Lanyards (SRL) designed for use around exposed edges (SRL-LE). Even when SRL-LE are used, employers must still conduct a safety evaluation and identify where additional protection against sharp or abrasive edges may be needed.

Any open side or edge of a floor, roof, deck, platform, or formwork creates a condition in which a lifeline or lanyard could be severed if it contacts that edge during a fall.

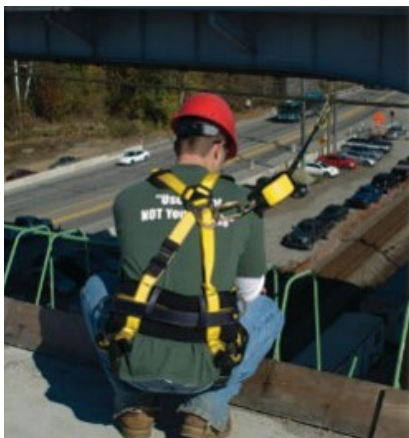


Image 1. A horizontal lifeline could prevent lanyards from making contact with exposed edges.

Safe Work Practices for Employers to Follow:

PLAN ahead to get the job done safely:

- Identify and document all potentially hazardous edges during the safety evaluation and walk-arounds at the jobsite.
- When possible, avoid working in areas where lifelines could contact potentially hazardous edges should a fall occur.
- Identify possible solutions to prevent establishing anchors at feet level (see image 1)
- Protect lifelines and lanyards against being severed or damaged by covering exposed edges in the fall zone (the area where a worker could fall) with protective material.

PROVIDE the right equipment:

- Select and provide a lifeline or lanyard specifically designed to resist cuts and abrasions and follow the manufacturer's instructions for use.
 - Some manufacturers have lifelines and lanyards with the "LE" (leading edge) or similar designation which are designed specifically for bearing against an edge during an arrest. Follow the manufacturer's instructions for use.

TRAIN everyone to use the equipment safely:

- Train workers on the hazard of exposed edges damaging or cutting lifelines and inform workers where such edges are on the worksite (see images 2 and 3).
- Follow the manufacturer's instructions when anchoring SRL at feet level.
- Train workers to anchor a self-retracting lifeline (SRL) vertically overhead, when possible, to

prevent contact with an edge and minimize swing falls (i.e., the pendulum effect) that can damage and cut lifelines.

- Ensure workers keep a safe distance from the overhead anchor point to minimize a swing fall.
- Spread out multiple lifelines, when possible, so employees can use the closest lifeline to minimize the swing radius and prevent contact with exposed edges.



Image 2. Metal edges can cut lifelines and lanyards.



Image 3. Concrete edges can cut lifelines and lanyards.

Inspect Fall Protection Equipment Prior to Use, and Cover Exposed Edges

- Cover any exposed edge that a lifeline or lanyard could contact if a fall occurred, regardless of the edge's composition.
- Ensure the protective material will not be moved by a lifeline or lanyard sliding across it.
- Limit fall distance or use another control method to avoid lanyard or lifeline contact with the edge, if covering is not feasible.

Employers are required to assess work hazards, including the risk of lifeline damage by following the requirements in [29 CFR 1926.502\(d\)\(11\)](#) and [29 CFR 1910.140\(c\)\(20\)](#) – *Lifelines shall be protected against*

*being cut or abraded (even those designated as SRL-LE). Lanyards shall be inspected for serviceable condition in accordance with [29 CFR 1926.502\(d\)\(21\)](#) and [29 CFR 1910.140\(c\)\(18\)](#) – *Personal fall arrest equipment must be inspected before use, and defective equipment shall be removed from service.**

Employers must also ensure these requirements are being met:

[29 CFR 1926 Subpart R, App G\(d\)\(11\)](#), Lifelines shall be protected against being cut or abraded.

[29 CFR 1926 Subpart R, App G\(d\)\(21\)](#), Personal fall arrest systems shall be inspected prior to each use for wear, damage and other deterioration, and defective components shall be removed from service.

Other Consensus Standards:

ANSI Z359.14 – 2021, Safety Requirements for Self-Retracting Devices for Personal Fall Arrest and Rescue Systems.

How OSHA Can Help

We have compliance assistance specialists throughout the nation who can provide information to employers and workers about OSHA standards, short educational programs on specific hazards or OSHA rights and responsibilities, and information on additional compliance assistance resources. Contact your local OSHA office for more information www.osha.gov/contactus/bystate.

OSHA's On-Site Consultation Program offers no-cost and confidential services to help small and medium-sized businesses find and fix workplace hazards. On-Site consultation services are separate from enforcement and do not result in penalties or citations. To locate the nearest Consultation office, visit: www.osha.gov/consultation or call 1-800-321-OSHA (6742).

Workers' Rights

Workers have the right to:

- Working conditions that do not pose a risk of serious harm.
- Receive information and training (in a language and vocabulary the worker understands) about workplace hazards, methods to prevent them, and the OSHA standards that apply to their workplace.

- Review records of work-related injuries and illnesses.
- File a complaint asking OSHA to inspect their workplace if they believe there is a serious hazard or that their employer is not following OSHA's rules. OSHA will keep all identities confidential.
- Exercise their rights under the law without retaliation, including reporting an injury or raising health and safety concerns with their employer or OSHA. If a worker has been retaliated against for using their rights, they must file a complaint with OSHA as soon as possible, but no later than 30 days.

For additional information on workers' rights, OSHA's Whistleblower Protection Program, and other services, see www.osha.gov/workers or www.whistleblowers.gov.

How to Contact OSHA

Under the Occupational Safety and Health Act of 1970, employers are responsible for providing safe and healthful workplaces for their employees. OSHA's role is to help ensure these conditions for America's workers by setting and enforcing standards, and providing training, education and assistance. For more information, visit www.osha.gov or call OSHA at 1-800-321-OSHA (6742), TTY 1-877-889-5627.

This Hazard Alert is not a standard or regulation, and it creates no new legal obligations. It contains recommendations as well as descriptions of mandatory safety and health standards [and other regulatory requirements]. The recommendations are advisory in nature, informational in content, and are intended to assist employers in providing a safe and healthful workplace. The Occupational Safety and Health Act requires employers to comply with safety and health standards and regulations promulgated by OSHA or by a state with an OSHA-approved state plan. In addition, the Act's General Duty Clause, Section 5(a)(1), requires employers to provide their employees with a workplace free from recognized hazards likely to cause death or serious physical harm. The mention of any non-governmental organization or link to its website in this Hazard Alert does not constitute an endorsement by OSHA or NIOSH of that organization or its products, services, or website.

