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Changes in the CSA Standard for Self-Retracting Devices

Effective August 1, 2019

The Canadian Standard Association (CSA Group International) implemented a new standard addressing the certification and use of self-retracting devices (SRDs). This new standard change supersedes previous editions implemented in 1998 and 2014.

The scope of the standard remains the same, with a change in the descriptor of SRDs from "…connecting components in personal fall arrester systems" to "… connecting components in fall protection systems." While not clearly defined, this change seems to indicate that the standard has been relaxed in the application of SRDs to different fall protection needs, such as leading edge.

Originally	**"…connecting components in personal fall arrester systems"**
Replaced with	**"…connecting components in fall-protection systems."**

Definitions

Key definitions in the standard were modified or added to better align with the new uses of SRDs and additional applications. This especially applies to any leading edge application of SRDs.

Modified definitions:

- Arrest distance (Xa)
- Lifeline

New definitions:

- Competent person
- Deployment factor (Dm)
- Fall arrest
- Fall arrest indicator
- Peak force
- Performance factor
- Product revalidation

Alongside new definitions laid out by the standard are new SRD classes. The new classes correspond with intended use instead of their manufacture or length.

These new classes include

1. **Self-retracting lifeline (Class SRL)**
   Suitable for applications where

   a. The SRL is anchored at an elevation that limits free fall to the activation distance of the device

   b. The extracted lifeline cannot bear against an edge or surface during fall arrest

2. **Self-retracting lifeline with integral rescue capability (Class SRL-R)**

   a. Any SRL device provided with an integral means for assisted rescue (e.g. raising/ lowering rescue subject)

3. **Self-retracting lifeline with leading edge capability (Class SRL-LE)**
   Suitable for applications where one or more of the following conditions are met:

   a. Anchored lower than the elevation of the dorsal d-ring on worker's full-body harness

   b. And/or the extracted lifeline can bear against an edge or surface during fall arrest

4. **Self-retracting lifeline with leading edge and integral rescue capabilities (Class SRL –LE-R)**

   a. Combination of 2 and 3

The key takeaway here is that the devices have remained the same but have been reclassified as to their use and point of connection. Leading edge work is a challenge in daily use, and testing and classification have been added to the standard to address these issues.

Design Requirements

Design requirements have also been updated with the following categories added or modified:

General requirements

- Integral connectors
- Class SRL-LE and class SRL-LE-R energy absorption
- Subsequent fall arrest

In addition to these changes:

- All SRLs will require a fall arrest indicator
- Rescue requirements for manual rescue capabilities have been upgraded
- An opening has been made for an SRL-R with powered rescue capability
- Addition of an average arresting force value for use in other FP systems

Design Requirements Materials

Changes in design requirements for materials have also been updated in the standard. The manufacturer must now develop a test method and acknowledge that they have met any testing requirements.

Another modification to design requirements is taking UV degradation into consideration. In situations where UV degradation is possible between validation points, a UV shield must be added in order to maintain a strength level of 80%.

In cases where items may be subject to corrosion testing, a two-part testing methodology should be followed. First, corrosion testing on the sample should take place. Second, the sample should be tested dynamically to ensure its strength and integrity.

One final design requirement for materials includes information regarding webbing, wire rope and synthetic rope. The standard now states that the lifeline should be free of knots, splices and other conditions that could reduce the breaking strength of the lifeline by more than 10%.

Testing Changes

The dynamic performance parameters have changed, altering the MAF number and the calculation of AAF. Other dynamic testing changes include static strength improvement, post-dynamic load creep test added, the retrieval test changed to immediately post dynamic test and some minor others.

Leading Edge Test Procedures and Designation

The testing in CSA is similar to ANSI. One test includes a 5-foot (1.5 m) drop over the leading edge at a 30% outward rigging. The second uses a 5-foot (1.5 m) drop at the same plane but with movement along the leading edge to simulate someone walking along the edge and falling. The lifeline must arrest the fall. The CSA requirement for the edge is 0.25 mm (0.009 in) radius, slightly rounder than ANSI.

Annual Revalidation

What was generally referred to as “recertification” in the previous standard has gone through a major redefinition for the new standard. The previous standard required that all Type 2 and Type 3 SRLs be returned to the manufacturer or authorized representative for maintenance and inspection on an annual basis. This has changed in the new standard in the following manner:

1. All SRDs are subject to revalidation based on the new schedule provided in the standard. There is no exemption for any length or category.
2. SRD inspection shall take place under the schedule included below in Table 2 from the standard. It assumes the “in service” date is the point of initiation for the dating process to begin.
3. Where an SRD is deemed not repairable or access to the mechanicals render the device unusable, the manufacturer shall provide other inspection requirements and a service life for the device in question. See item four in Table 2.

Each company will now have to employ a Competent Person to determine how to categorize the SRD and determine its revalidation schedule. These new categories include

Infrequent to light

- Assumes indoor proper storage conditions with infrequent outdoor use; room temperature and a clean environment
- Includes aircraft hangers, warehousing and rescue situations; Non-construction environments
- Annual Competent Person inspection; revalidation every 5 years

Moderate to heavy

- Assumes extended use both indoors and outdoors in all temperatures and clean-to-dusty environments
- Transportation and trucking, utilities and heavy manufacturing
- Inspection by Competent Person every 6 months; revalidation every 2 years

Severe to continuous

- Assumes poor-to-harsh storage conditions and continuous use in dirty outdoor conditions
- Commercial construction and concrete, oil and gas exploration, mining and foundry situations, Quarterly Competent Person inspection, annual revalidation

The Competent Person has to know the categories and how to apply them to the product for their company. Equally as important is record-keeping and inspection procedural knowledge, which becomes of paramount importance to companies using SRDs.

The CSA requires that the company comply to the schedule based on their interpretation for all SRDs in their use and possession.

Updated marking and specifications will be changed from **Z259.2.2 to Z259.2.2-17.** This new marking also includes changes made in Z259.2.2-14, which were not implemented at the time of Z259.2.2. For SRLs that were made to the previous standard, these devices won't require the updated inspection criteria for revalidation. These devices should be evaluated under the relevant standard requirements that were in place during their manufacture.

The addition of both the updated technical requirements and the Competent Person role all play pivotal parts in the revalidation process. With any new process or position, there might be a few growing pains, and we want you to know that 3M Canada is here to help get you home safely, by providing information and solutions to the challenges you encounter while at work.

Visit **3M.ca/FallProtection** to learn more about changes in the CSA Standard for fall arrest systems