Changes in CSA Z259.10-18: Full Body Harnesses

In addition to recent changes to the CSA Z259 series of standards related to fall protection equipment (including standards related to self-retracting devices and personal energy absorbers and lanyards), CSA Z259.10 has also been updated with important changes.

This fourth edition of CSA Z259.10, Full body harnesses, supersedes the previous editions published in 2012, 2006, and 1990. The effective date of CSA Z259.10-18 is April 1, 2020. At this time, the revised standard mainly affects manufacturers of full body harnesses.

What does this mean for workers?

For most workers this standard update doesn't change too much as this newer version of the standard may not appear in their local legislation for some time. However, for those working at height in the federal jurisdiction or the province of Quebec, CSA standard updates like this will mean adapting more quickly to the new requirements.

This standard change has two major components:

1. The standard now formally recognizes ASTM F887-16, Standard Specifications for Personal Climbing Equipment, regarding electric arc performance testing of harnesses. This has resulted in the addition of a new class of full body harnesses called "Class R: Arc-resistant". See CSA pictogram for Class R. This pictogram will appear on harness labels for Class R.

2. The standard now includes a requirement for a means of controlling shoulder strap separation on the back of a full body harness. The intent is to keep workers in their harnesses regardless of the manner in which they may experience a fall. Harnesses will now typically include either a permanent waist belt or back strap to ensure users remain secure in their harnesses in the event of a fall.

Class R Full Body Harnesses

Class R harnesses are resistant to arc flash. They are “designed to provide protection for workers who could be exposed to thermal hazards of momentary electric arc or flame.” Class R can be included with any other class configurations (A, D, E, L, P) allowed by the standard.

Arc Flash

A dangerous condition associated with the release of energy caused by an electric arc. If a worker must work on energized equipment or apparatus while exposed to a fall hazard, an arc-resistant or Class R harness should be used. It is also important to emphasize the need for arc-resistant connectors (lanyards or self-retracting lifelines) when working in these situations. Note: ASTM F887 is not referred to anywhere in the most recently published CSA standards for lanyards and self-retracting lifelines respectively. Regardless, arc-resistant versions of this equipment are available in the marketplace for those who require it.

Controlling Shoulder Strap Separation

This change to the standard requires either a waist belt or back strap (or other means that satisfies Clause 4.5 in the standard) in order to control shoulder strap separation. In testing, the back strap and/or waist belt of the full body harness must be situated in specific positions on the test torso, once properly fitted. These positions are detailed within the standard and are in proximity to the centre of gravity of the test torso used in dynamic drop tests. For example, consider if a worker were to fall either head- or feet-first. Assuming the harness is properly donned, fitted and connected appropriately to suitable anchorage, regardless of their initial orientation/angle as the fall occurs, the wearer should remain secure in their harness because the shoulder strap should not separate excessively and therefore, not allow the body to pass through.

Updated Definitions

The standard change brings a few additional and modified definitions for common fall protection terms. A notable modification was made to the definition of “work-positioning system (WPS)”. It makes clear that a work-positioning system is not intended for use as a fall-arrest system. Simply put, the definition states a WPS is, “a collection of components that function as a primary system to support or suspend a worker, with hands free, at a working point.” A question that often comes up from users is: “If I’m tied off with a WPS, do I still need a separate connection for fall arrest?” The answer is, “Yes”. A WPS does not necessarily protect the user at heights – a Personal Fall Arrest System (PFAS) is also required in this scenario.

Note on testing:

Greater flexibility in testing requirements now provide manufacturers more opportunity for innovation in design. In particular, materials and constructions of greater rigidity can be used given that the dynamic drop test procedure for Classes A, D, E, L and P have been changed. The free-fall distance had been limited at 1.0 m. Now, the requirement is “1.0 m or a height which will impact a maximum arrest force of at least 16 kN, whichever height is lower”.

Regarding the new Class R, testing requirements are new in this standard, however, testing is in accordance with the electric arc performance tests and the subsequent dynamic performance test that had already been stipulated in ASTM F887. In other words, this class of harness undergoes specific testing with electric arc exposure and is then subjected to dynamic drop testing.

For more information on this standard change and how 3M products can help you keep your workers safe at heights, please reach out to our safety specialists.