



NEW PRODUCT PERFORMANCE STANDARD ANSI/ASSE Z359.16

Safety Requirements for Climbing Ladder Fall Arrest Systems (CLFAS)

March 2017:

New ANSI/ASSE Z359.16 standard and scope:

This new standard establishes requirements for the performance, design, marking, qualification testing, instructions for use, inspection, maintenance and storage, and removal from service of vertically oriented climbing ladder fall arrest systems consisting of flexible and rigid carriers with multiple attachment points and associated carrier sleeves for users within the capacity range of 130 to 310 pounds (59 to 141kg).

Definition of CLFAS:

Climbing Ladder Fall Arrest System. An assembly of components whose function is to arrest a fall of a user, including the carrier and its associated mounting means, carrier sleeve, energy absorbing elements, full body harness and connectors, wherein the carrier is permanently attached to the climbing ladder or to the immediately adjacent structure.

Application:

This standard applies only to installations that are vertical (90 ± 1 degrees) when viewed from the front elevation and within 15 degrees of vertical when viewed from the side elevation and that do not slope towards the climber.

Who is affected by this new standard?

This standard applies to occupational safety and health professionals, stakeholders, manufacturers, distributors, purchasers, and authorized persons that design, install and or use climbing ladder fall arrest systems in occupations requiring personal protection against falls from heights.

ANSI Z359.1-2007 standard:

The ANSI Z359.1-2007 standard does not address CLFAS. Z359.1-2007 did address vertical lifeline systems stating that a vertical lifeline shall suspend freely from its anchorage connection without contact along its length with structures or other objects, which would adversely affect its integrity or its function in conjunction with other components of the personal fall arrest system (PFAS).

Overview and Highlights of new ANSI Z359.16 standard:

- New standard is intended to specifically address CLFAS systems.
- The CLFAS shall allow at least two persons, but not more than four persons, to climb simultaneously.
- Design and installation of mountings shall not reduce the strength of the climbing ladder.
- Full body harness used with the CLFAS shall meet the requirements of ANSI/ASSE Z359.11.
- A competent person shall determine the appropriate full body harness for use with the CLFAS and in accordance with the manufacturers' instructions.

- The carrier sleeve shall be supplied with a linkage to couple the sleeve to the harness connection element(s).
- The connection linkage length as measured from the carrier to the bearing point of the harness connector shall not exceed 12 inches (305mm).
- If the carrier sleeve is designed to be removable from the carrier, it shall be removable only by at least two deliberate manual action(s) by the user.
- The sleeve shall include an anti-inversion device to prevent inadvertently installing the carrier sleeve upside down on the carrier.
- Carrier sleeve movement shall be automatic and shall not require continuous manual intervention during climbing or descending.
- Carrier sleeves must be automatic in their locking (fall arrest) function, and shall include a second independent locking mechanism which cannot be disengaged or interfered with during a fall.
- The maximum movement of the carrier sleeve along the carrier shall be no more than 20 inches (500mm) when locking on the carrier in a fall event.
- The average arrest for shall not exceed 1,350 pounds (6kN) and the maximum arrest force shall not exceed 1,800 pounds (8kN).

Summary:

ANSI/ASSE Z359.16 addresses two significant product performance and design enhancements from previous requirements identified within ANSI/ASSE Z359.1-2007:

1. Second Independent Locking Mechanism

The first key element is the requirement for manufacturers to include a second independent locking mechanism within the carrier sleeve design. If a carrier sleeve has an external lever or actuating feature, then it must also have a second independent locking means to initiate locking which cannot be disengaged or interfered with during a fall event. The purpose of this requirement is to provide redundancy, and to reduce the possibility of overriding the locking feature of the carrier sleeve during use, and to reduce the possibility that the device may be deactivated if reflexively grabbed or held during onset of a fall.

2. Anti-Inversion Feature

The second key element is the requirement for manufacturers to include an “anti-inversion” feature to prevent the user from inadvertently installing the carrier sleeve upside down.

ANSI/ASSE Z359.16 standard received approval by the ASSE Board of Standards Review on November 02, 2016. Standard was published February 2017 with an effectivity date established 180 days from publication. For full details on the ANSI/ASSE Z359.16 standard, visit the ASSE website at www.ASSE.org

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