

AMERICAN NATIONAL STANDARD

ANSI/ASSE Z359.18-2017 Safety Requirements for Anchorage Connectors for Active Fall Protection Systems

Part of the Fall Protection Code



AMERICAN SOCIETY OF
SAFETY ENGINEERS



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American National Standard

**Safety Requirements for Anchorage Connectors
for Active Fall Protection Systems**

Secretariat

American Society of Safety Engineers

520 N. Northwest Highway
Park Ridge, Illinois 60068

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Foreword (This Foreword is not a part of American National Standard Z359.18-2017.)

This is the first edition of ANSI/ASSE Z359.18. It establishes requirements for performance, design, marking, qualification, instruction, training, inspection, use, maintenance and removal from service of anchorage connectors that were formerly part of the ANSI/ASSE Z359.1-2007 standard.

This standard represents a significant step forward in the realm of anchorage connectors.

The ANSI Z359.18 subcommittee focused on two aspects of anchorage connectors when developing this standard – anchorage connectors of questionable strength and clearer instructions to users. As we took these two aspects, we organized them into three specific facets in which the industry could measure our success.

1. Testing requirements
2. Integrity of substrate attachment
3. Instructions for use

The previous standard for anchorage connectors, ANSI/ASSE Z359.1-2007 is considered overly simplistic for these facets. In addition to weakness in these three facets, there was no clear direction with regard to the anchorage in the previous standard. A critical aspect for the performance of anchorage connectors is the interaction between the anchorage connector and the anchorage where it is used. This standard now includes dynamic testing of the anchorage connector installed on substrates that represent the intended installation and use. There is also a requirement related to the ANSI/ASSE Z359.7 standard and the need for a ISO 17025 accredited laboratory. For background, these were not required for anchorage connectors in ANSI/ASSE Z359.1-2007.

For the first facet, this standard tests in a manner that more closely represents actual use of the anchorage connectors. In addition to static and dynamic strength and performance testing, this standard also includes residual strength testing to verify strength after a fall has occurred, and in some cases, serviceability testing to verify that deformable anchorage connectors will not deform under the working loads permitted by the manufacturers. Corrosion testing requirements are included and increased for anchorage connectors that are expected to serve for many years in outdoor settings, such as a Type T anchorage connector for tiebacks.

For the second facet, this standard requires testing of anchorage connectors in a substrate that represents real world applications. This is an area of great concern to the technical committee because even the strongest anchorage connector can fail if it is improperly installed, or installed on structures that have inadequate strength. For this reason, purchasers of equipment certified to this standard should also refer to the ANSI/ASSE Z359.2 and ANSI/ASSE Z359.6 standards for certification of INSTALLED anchorage connectors. The Z359 accredited standards committee expects future revisions of this standard will improve testing of installed anchorage connectors. We anticipate developing more specific fixturing requirements in the future that will further increase assurance to users that Z359 anchorage connectors are fit for service.

The third facet builds on the second requiring clear instructions to reduce the misuse of anchorage connectors. We anticipate future markings and the continuing universal use of smart devices will allow authorized persons, competent persons and other involved parties to have access to instructions and other pertinent information from manufacturers on the proper and improper installations, uses and inspection of their anchorage connectors.

As with any fall protection standard, the ultimate goal is to improve the level of safety experienced by the user. This standard accomplishes this by requiring testing to more accurately represent the intended use of anchorage connectors, and providing clearer user instructions.

Moving forward it is the committee's hope that this standard will stay abreast of changes and additions to the current suite of anchorage connectors it has been written to address. We believe it provides a framework that will allow changes to validate and qualify anchorage connectors in an ever evolving market. One of the committee's primary objectives to facilitate this goal was to provide manufacturers a structure that will allow inclusion of new products in a timely fashion and quickly addresses concerns from potential product misuse, the purpose of which is to product that safely meets user needs.

The standards in the Fall Protection Code are constantly evolving, and are revised on a regular schedule in conformity to ANSI requirements.

The Z359 Committee solicits public input that may suggest the need for revisions to this standard. Such input should be sent to the Secretariat, ASC Z359, American Society of Safety Engineers, 520 N. Northwest Highway, Park Ridge, Illinois 60068.

This standard was developed and approved for submittal to ANSI by the American National Standards Committee on Standards for Fall Protection, ANSI/ASSE Z359. Committee approval of the standard does not necessarily imply that all committee members voted for its approval. At the time it approved this standard, the ANSI/ASSE Z359 Committee had the following members:

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This is a preview of "ANSI/ASSE Z359.18-20...". [Click here to purchase the full version from the ANSI store.](#)

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STANDARD REQUIREMENTS

1. SCOPE, PURPOSE, APPLICATION, EXCEPTIONS AND INTERPRETATIONS

1.1 Scope. This standard establishes requirements for the performance, design, testing, marking and instructions for use of anchorage connectors in travel restraint, fall arrest, rescue, work position, rope access and suspended component/tie-back line systems only.

1.2 Purpose and Application.

1.2.1 The purpose of this standard is to protect workers in occupations requiring personal protection from falls from heights, by providing verifiable requirements for the design and performance of anchorage connectors, along with test methods to assess conformity to these requirements.

1.2.2 This standard applies to manufacturers, distributors, testing organizations, regulators, purchasers and authorized users of personal fall protection equipment, as well as personnel responsible for the design and implementation of fall protection systems.

1.2.3 This standard partially addresses the quality and abilities of the substrate structure (anchorage) to which the anchorage connector is attached. Therefore, the anchorage connector also relies on users properly following users instructions provided by the manufacturer to create a safe anchorage system to which anchorage connectors are affixed. See Figure 1.

1.2.4 This standard does not differentiate between temporary, portable and permanent anchorage connectors.

1.2.5 Before any anchorage connector shall bear the marking ANSI Z359.18 or be represented in any way as being in compliance with this standard, it shall meet all applicable requirements of this standard. Establish such compliance in accordance with the requirements specified in ANSI/ASSE Z359.7.

EXPLANATORY INFORMATION

(Not part of American National Standard Z359.18)