

ANSI/ASSP Z359.0-2012

Definitions and Nomenclature Used for Fall Protection and Fall Arrest Part of the Fall Protection Code

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American National Standard

**Definitions and Nomenclature Used
for Fall Protection and Fall Arrest**

Secretariat

American Society of Safety Engineers
1800 East Oakton Street
Des Plaines, Illinois 60018-2187

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American National Standards Institute, Inc.

American National Standard

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Foreword (This Foreword is not a part of American National Standard Z359.0-2012.)

This standard, national in scope, was developed by an Accredited Standards Committee functioning under the procedures of the American National Standards Institute, with the American Society of Safety Engineers (ASSE) as secretariat.

It is intended that every employer whose operations fall within the scope and purpose of the standard will adopt the guidelines and requirements detailed in this standard.

The need for this standards activity grew out of the continuing development of a series of fall protection-related standards. The focus is to tie the elements of those standards together and provide the tools with which employers may develop the programs that incorporate those elements. This standard also brings together the administrative requirements of those fall protection standards. It should be noted, as in all Z359-series standards, that this standard applies to occupational activities. It does not apply to sports activities such as mountaineering.

Neither the standards committee, nor the secretariat, states that this standard is perfect or in its ultimate form. It is recognized that new developments are to be expected, and that revisions of the standard will be necessary as the state-of-the-art progresses and further experience is gained. It is felt, however, that uniform guidelines for fall protection programs are very much needed and that the standard in its present form provides for the minimum criteria necessary to develop and implement a comprehensive managed fall protection program.

The Z359 Committee acknowledges the critical role of design in influencing the use of proper fall protection equipment. Designs which eliminate fall hazards through the proper application of the hierarchy of safety controls are the preferred method for fall protection. Design deficiencies often increase the risk for employees who may be exposed to fall hazards: examples are (1) lack of rail systems to prevent falls from machines, equipment and structures; (2) failure to provide engineered anchorages where use of personal fall arrest systems are anticipated; (3) no provision for safe access to elevated work areas; (4) installation of machines or equipment at heights, rather than floor/ground level to preclude access to elevated areas; (5) failure to plan for the use of travel restriction or work positioning devices. To that end, this series of standards also provides guidance for design considerations for new buildings and facilities.

Basic fall safety principles have been incorporated into these standards, including hazard survey, hazard elimination and control, and education and training. The primary intent is to ensure a proactive approach to fall protection. However, the reactive process of accident investigation is also addressed to ensure that adequate attention is given to causation of falls.

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, 1800 E. Oakton Street, Des Plaines, IL 60018-2187.

This standard was developed and approved for submittal to ANSI by the American National Standards Committee on Standards for Fall Protection, 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 Z359 Committee had the following members:

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STANDARD REQUIREMENTS**1. SCOPE, PURPOSE, APPLICATION, EXCEPTIONS AND INTERPRETATIONS**

1.1 Scope. This standard establishes the definitions and nomenclature used for the Z359 Fall Protection Code.

1.2 Purpose and Application.

1.2.1 This standard addresses definitions and nomenclature for the Z359 Fall Protection Code.

1.3 Exceptions.

1.3.1 The scope of these standards does not include window cleaner belts or sports-related activities.

1.3.2 Body belts, window cleaner belts, chest-waist harnesses and chest harnesses, even when referred to as body supports, are not addressed by the provisions of these standards.

1.3.3 Systems that incorporate horizontal lifelines and personal protective systems for activities such as climbing, man riding, work positioning, rescue and evacuation may suitably incorporate components or subsystems specified herein. When incorporated into such systems, however, those systems, subsystems and components are not within the scope of these standards.

1.3.4 Variance from the requirements of these standards are permissible in isolated instances of practical difficulties when applying it at the user level, but only when it is clearly evident that an equivalent degree of protection is implemented.

1.4 Interpretations. Requests for interpretations of this standard shall be in writing and addressed to the Secretariat of this standard.

2. DEFINITIONS

2.1 Activation Distance. The distance traveled by a fall arrester or the amount of line laid out by a self-retracting lanyard (SRL) from the point of onset of a fall to the point where the fall arrester or

EXPLANATORY INFORMATION

(Not part of American National Standard Z359.0)

E1.3.2 Chest-waist harnesses refer to harnesses consisting of separate waist and chest components that are not integral as defined by these standards and that form a full body harness when combined.

E1.3.3 This section recognizes that some fall protection equipment meeting the requirements of these standards may have multiple uses, making the equipment suitable for other uses. In such cases, the equipment must be evaluated according to its use, and the requirements of these standards are not applicable.

E2.1 Activation distance is part of the free fall distance. The activation point is the point where the fall arrester engages the lifeline or, in the case of an SRL, where an internal brake begins to engage.

self-retracting lifeline begins to apply a braking or stopping force.

2.2 Active Fall Protection Systems. A fall protection system that requires authorized persons to wear or use fall protection equipment and that requires fall protection training.

2.3 Adjuster. A component that provides a means to vary the length of a strap, webbing or rope.

2.4 Administrative Controls. Employer mandated safe work practices or procedures that are designed to prevent exposure to a fall by signaling or warning an authorized person to avoid approaching a fall hazard.

2.5 Anchorage. A secure connecting point or a terminating component of a fall protection system or rescue system capable of safely supporting the impact forces applied by a fall protection system or anchorage subsystem.

2.6 Anchorage Connector. A component or subsystem that functions as an interface between the

E2.2 Active fall protection systems include any fall restraint, fall arrest, travel restriction or administrative controls used to protect authorized persons at height.

E2.3 Adjusters may be used in lanyards made of rope and strap to provide means of varying the length to suit the user's needs. Webbing adjusters may be used in lieu of buckles in harnesses to adjust the harness fit if the webbing adjuster meets the requirements for buckles set forth in these standards.

E2.4 Administrative controls can include training, warning signs, lights, audible alarms or other methods that warn an authorized person to avoid approaching a fall hazard. Administrative controls are distinguished from work procedures implemented for the purpose of protecting a person who is already located near the fall hazard. Work procedures implemented to protect a person who is near the fall hazard are not covered by these standards.

E2.5 An anchorage meeting the requirements of these standards can safely withstand the foreseeable forces that might be exerted on the fall protection or rescue system. Care must be taken to distinguish between an anchorage and an anchorage connector as those terms are used in these standards. An anchorage is typically a fixed structural member such as a post, stanchion, beam, girder, column, floor or wall required for the stability and other purposes of the structure itself. Examples include a beam, girder, column or floor. An anchorage connector, on the other hand, is a component that provides an interface to which the fall protection or rescue subsystem may be attached when the anchorage itself does not have a compatible connection point. Window cleaner anchors are outside the scope of the Z359 standards. A fall arrest or restraint anchorage has a separate attachment location of any anchorage used to support or suspend workers or work platforms.

E2.6 Anchorage connectors are typically installed temporarily or permanently on anchorages such

anchorage and a fall protection, work positioning, rope access or rescue system for the purpose of coupling the system to the anchorage.

2.7 Anchorage Subsystem. A subsystem of a complete active fall protection system to which workers connect their personal equipment.

2.8 Arrest Distance. The total vertical distance required to arrest a fall. The arrest distance includes the deceleration distance and activation distance.

2.9 Assisted Rescue. A rescue requiring the assistance of others.

2.10 Attachment Element. A connector integral to the body support that provides a point on the body harness to which other components or connecting subsystems may be attached.

2.11 Authorized Person. For purposes of the Z359 standards, a person assigned by the employer to perform duties at a location where the person will be exposed to a fall hazard.

2.12 Authorized Rescuer. A person assigned by the employer to perform rescue from fall protection.

2.13 Automatic Descent Control Device. A load lowering device or mechanism that automatically

as a beam, girder, column or floor. An anchorage connector may be moveable or portable, such as a tripod or davit arm. An anchorage connector meeting the requirements of these standards can safely withstand the foreseeable forces that might be exerted on the fall protection or rescue system.

E2.7 Examples of anchorage subsystems include fixed anchorages, VLLs, HLLs, rigid rails and ladder-climbing systems. An anchorage subsystem may allow one or more workers to be attached to it, depending on its design. Anchorage subsystems are separated into two classes in these standards: flexible and rigid.

E2.10 The D-Ring is the most common attachment element. Attachment elements are typically incorporated into the body support for purposes such as fall arrest, work positioning travel restriction, lifting, lowering and controlled descent.

E2.11 A person is authorized under these standards, if granted the authority by the employer, to perform duties at a location where the person is exposed to a fall hazard. Any employee with proper authority to be at a location where they are exposed to one or more fall hazards is considered an authorized person. To comply with Z359 standards, an authorized person is required to receive training and to periodically demonstrate the ability to safely use the appropriate fall protection equipment. An authorized person may also be qualified for other positions such as a competent person, qualified person or authorized rescuer.

E2.12 To comply with these standards, an authorized rescuer is required to receive training and to periodically demonstrate the ability to perform rescue from fall protection.

controls pay-out speed of line or descent speed under load once it has been engaged.

2.14 Available Clearance. The distance from a reference point, such as the working platform, to the nearest obstruction that an authorized person might contact during a fall which, if struck, could cause injury.

2.15 Ballasted Anchor. An anchorage that rests on, but is not mechanically connected to, an underlying structure.

2.16 Belt, Body. A body support comprised of a strap with means for securing it about the waist.

2.17 Body Support. An assembly of webbing arranged to support the human body for fall protection purposes, including during and after fall arrest.

2.18 Buckle. A connector for attaching a strap or webbing segment to either another strap or webbing segment or back to itself.

2.19 Capacity. The maximum weight that a component, system or subsystem is designed to hold.

2.20 Carabiner. A connector generally comprised of a trapezoidal or oval shaped body with a closed gate or similar arrangement that may be opened to attach another object and, when released, automatically closes to retain the object.

E2.15 A ballasted anchor uses its own weight and/or the lateral friction it develops with the underlying structure to resist the imposed forces.

E2.16 A body belt is sometimes referred to as a waist belt or safety belt. Body belts are not suitable for fall arrest and are not intended for use as a body support in the arrest of a worker's fall. Body belts are not addressed by ANSI/ASSE Z359.3 standard for work positioning or travel restraint, unless incorporated into a work positioning harness or full body harness. Window cleaner belts are addressed in IWCA I14.1 standard.

E2.17 The term "body support" is generally used to refer to a full body harness, chest harness, chest-waist harness or a body belt. It generally includes adjustable means for fastening it about the body and attachment points suitable for fall protection applications.

E2.19 The combined weight of the user and all clothing, tools and other objects borne or carried by the user is considered in determining whether the capacity has been exceeded.

E2.20 In addition, carabiner may also be spelled karabiner. There are generally three types of carabiners: (i) the automatic or self-locking type (required by these standards) with a self-closing, self-locking gate that remains closed and locked until intentionally unlocked and opened for connection or disconnection; (ii) the manual locking type (not permitted by these standards) with a self-closing gate that must be manually locked by the user, and that remains closed and locked until intentionally

unlocked and opened by the user for connection or disconnection; or (iii) the non-locking type (not permitted by these standards) with a self-closing gate that cannot be locked.

2.21 Certification. The act of attesting in writing that the criteria established by these standards or some other designated standard have been met.

2.22 Certified. An act or process resulting in documentation that determines and attests to criteria that meet the requirement of an American National Standard. Such act or process may be carried out by testing or applying proven analytical methods, or both, under the supervision of a qualified person or entity.

2.23 Certified Anchorage. An anchorage for fall arrest, positioning, restraint or rescue systems that a qualified person certifies to be capable of supporting the potential fall forces that could be encountered during a fall or that meet the criteria for a certified anchorage prescribed in these standards.

2.24 Chest Harness. See "Harness, Chest".

2.25 Chest-Waist Harness. See "Harness, Chest-Waist".

2.26 Clearance. The distance from a specified reference point, such as the working platform or anchorage of a fall arrest system, to the lower level that a worker might encounter during a fall

2.27 Clearance Requirement. The distance below an authorized person that must remain clear of obstructions in order to ensure that the authorized person does not make contact with any objects that would cause injury in the event of a fall.

2.28 Compatibility. The quality or power of being compatible.

E2.27 The clearance requirement includes total fall distance; the deflection of anchorage and anchorage connectors, the length and elongation of the full body harness and the body; the vertical component of any swing fall and a clearance safety factor. The clearance requirement accounts for performance of the system, the number of authorized persons allowed on the system and their body position (kneeling or standing).

E2.28 See "Compatible". It is possible to have compatibility between or among components or elements when used in a prescribed manner, but for those same elements or components to be incompatible when configured and/or used in a different manner.