

ANSI/ASSP Z359.9-2021

Personal Equipment for Protection Against Falls -
Descent Controllers

Part of the Fall Protection Code



AMERICAN SOCIETY OF
SAFETY PROFESSIONALS



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ANSI/ASSP Z359.9 – 2021

American National Standard

**Personal Equipment for Protection Against Falls –
Descent Controllers**

Secretariat

American Society of Safety Professionals
520 N. Northwest Highway
Park Ridge, IL 60068

Approved August 11, 2021

Effective September 15, 2022

American National Standards Institute

American National Standard

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Published September 2021 by

American Society of Safety Professionals
520 N. Northwest Highway
Park Ridge, Illinois 60068
(847) 699-2929 • www.assp.org

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Printed in the United States of America

Foreword

(This Foreword is not a part of American National Standard Z359.9-2021.)

This standard, national in scope, was developed by the Z359 Standards Committee functioning under the procedures of the American National Standards Institute, with the American Society of Safety Professionals (ASSP) 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 standard's 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.

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 rope descent devices. To that end, this series of standards also provides guidance for design considerations for new buildings and facilities.

Standard Perspective: Descent controllers conforming to this Standard are intended to be used in conjunction with an appropriate descent rope and other equipment, e.g. an appropriate harness or rescue loop and a robust anchor, to enable a person to descend from one position to another, either on their own or assisted by another person. Typical uses for these devices are rope descent and evacuation.

Descent controllers in this Standard have been divided into five Types. The Type 2 device commonly found in international standards is not represented here. In order to minimize confusion, the designation of Type 2 is not used in this Standard.

Type 1 descent controllers are automatic and do not require interaction by the user to function.

Types 3 and 4 descent controllers are equipped with a hands-free stopping element which will automatically stop the descent when a user is not touching the device. In addition, Type 3 descent controller will stop if the descent control element is moved beyond its descent control parameters e.g., in a panic situation when the user pulls or squeezes the descent control element too much and activates the manual override element.

Types 5 and 6 descent controllers do not have a hands-free stopping function and do not have a manual override element. These descent controllers rely on the user to stop the descent manually and to lock the device off manually, typically by wrapping the descent rope around the

descent controller to create enough friction to stop movement.

Type 1 descent controllers, which are typically intended for rescue, have been classified further by performance. Descent energy is calculated based on the product of the mass of the user, the maximum descent height for the descent controller and the number of descents for which the descent controller is designed. The descent energy provides an indication of the appropriateness of a descent controller for a given application. The descent energy may be used to calculate the maximum allowable combination of mass, descent height and number of descents for a particular use.

Descent ropes are a necessary component in a descent system and need to meet some basic requirements to ensure that they are suitable for use with relevant descent controllers. This Standard therefore includes basic requirements for descent ropes.

This Standard recognizes that some descent controllers can not only travel with the user (normal in Industrial Rope Access and Rope Descent Systems, for example) but can also be designed to operate from a fixed position (e.g., at the top of the descent).

Users of all types of descent controllers should be trained by a competent trainer and assessed as competent prior to use.

This Standard presents minimum requirements and does not encompass all foreseeable uses of descent controllers or requirements for all possible descent controllers. Manufacturers, specifiers and end users can identify uses for descent controllers that are outside the scope of this Standard.

Normative Requirements: This standard uses the single column format. The normative requirements appear aligned to the left margin. To meet the requirements of this standard, users must conform to these normative requirements. These requirements typically use the verb “shall”.

NOTE: The informative or explanatory note in this standard appears indented, in italics, in a reduced font, in an effort to provide a visual signal to the reader that this is an informative note, not normative text, and is not to be considered part of the requirements of this standard; this text is advisory in nature only. The suppliers and users are not required to conform to the informative note. The informative note is presented in this manner in an attempt to enhance readability and to provide explanation or guidance to the sections they follow.

Figures: Figures provided in the standard are used to show basic concepts of testing, Types of products, examples of labels or other information from the standard. These figures are not to scale. They are for educational and informational purposes to explain content within a standard.

Suggestions for Improvements: Suggestions for improvements to this standard are welcome. They should be sent to: American Society of Safety Professionals (ASSP), 520 N. Northwest Highway, Park Ridge, IL 60068 Attention: Z359 Secretariat.

Revisions: The Z359 Committee welcomes proposals for revisions to this standard. Revisions are made to the standard periodically (usually five years from the date of the standard) to incorporate changes that appear necessary or desirable, as demonstrated by experience gained from the application of the standard. Proposals should be as specific as possible, citing the relevant paragraph number(s), the proposed wording and the reason for the proposal. Pertinent documentation would enable the Z359 Committee to process the changes in a timely manner.

Interpretations: Upon a request in writing to the Secretariat, the Z359 Committee will render an interpretation of any requirement of the standard. The request for interpretation should be clear, citing the relevant paragraph number(s) and phrased as a request for a clarification of a specific

requirement. Oral interpretations are not provided.

No one but the Z359 Committee (through the Z359 Secretariat) is authorized to provide any interpretation of this standard.

Approval: Neither the Z359 Committee nor the American National Standards Institute (ANSI) approves, certifies, rates or endorses any item, construction, proprietary device or activity.

Committee Meetings: Persons wishing to attend a meeting or join the Committee should contact the Secretariat for information.

Standard Approval: This standard was processed and approved for submittal to ANSI by the Z359 Secretariat. Approval of the standard does not necessarily imply (nor is it required) that all Committee members voted for its approval. At the time this standard was approved, the Z359 Committee had the following members:

Thomas Kramer, P.E., CSP, Chair
Dan Henn, Vice Chair
Lauren Bauerschmidt, MS Engr, CSP, STS, Secretary
Jennie Dalesandro, Administrative Technical Support

Organization Represented	Name of Representative(s)
3M	Raymond Mann Heidi Lopez-Hidalgo, P.E.
AES Indiana	Nick Hutchinson Michael Wright
American Contractors Insurance Group American Society of Safety Professionals	Michael Overholt, CSP, ARM, CET, CRIS Jubal Hamernik, Ph.D., P.E., DPE John Stephen Frost, CSP
Bashlin Industries, Inc.	Caleb Williams Bradley McGill
Battelle Energy Alliance, LLC Bayer AG	Lawrence McManamon Adam Chapin Chad McDanel
Boeing	Joey Junio, P.E. Segis Wright, CSP, SMS
Buckingham Manufacturing Company	DeForest Canfield Justin Drake Troy Lake
Cajun Industries, LLC CB&I Storage Solutions	Jeff Eggert, P.E. David Freeman
Certified Access Elevated Insight & Engineering Ltd. Elk River, Inc.	Dave Pasco Greg Small, P.Eng., M.Eng. Mark Conover Delisa Calhoun
Ellis Fall Safety Solutions, LLC	J. Nigel Ellis, Ph.D., P.E., CSP, CPE John Whitty, P.E.
ExxonMobil	Freddie Johnson Zachary Shanklin
FallTech	Zachary Winters Bradley Rohlf
Formetco	James Poage Chris Adams
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GME Supply Company	Daniel Pobst Chris Heitkamp
Gorbel Inc.	Allen Baughman Kevin Duhamel
Gravitec Systems, Inc.	David Lough

Guardian Fall	Warren Faber
Harken, Inc.	Andre Pelland
Honeywell	Heather Robertson
INSPEC International Ltd.	Matt Luedtke
International Safety Equipment Association	Giovany Gil
Jelco	Jesus Velasco Garcia
Kee Safety, Inc.	Paul Clarke, CEng, MIMechE
Kiewit Power Constructors Co.	Steven Sum
KMI Construction	Cristine Fargo, CAE
Lawrence Berkeley National Laboratory	Justin Patton
Lawrence Livermore National Security, LLC	Philip Clemmons
Liberty Mutual	William Parsons, P.Eng.
LJB Inc.	Graham Willmott
Malta Dynamics, LLC	Rusty Brown, CSP
Martin/Martin Consulting Engineers	Andrew Cowart
MSA	Jim Kinateder
Murdock Webbing Company, Inc.	Kevin Goodwin, MS, CSP, SMS
National Association of Tower Erectors	Samuel Harreschou, CIH, CSP, PMP, CHMM
National Institute for Occupational Safety & Health	Samuel Pogers, CSP
Pensafe Inc.	Scott Cooper, CSP, CHST
Petzl	Glenn "Cal" Sparks
Pigeon Mountain Industries	Matthew Zaffini
Reliance Industries	Thomas Kramer, P.E., CSP
Rigid Lifelines	Rupert Noton, CEng, MIMechE
Rooftop Anchor, Inc.	David Ivey
	Jenna Pitcher
	Andrew Emmons, P.E.
	Al Jording, P.E.
	Rob Willis
	Tim Bissett
	Peter Cook
	Stephan Gelinias
	John "JP" Jones
	Justin Miller
	Hongwei Hsiao, Ph.D.
	Keith Smith
	Jeremiah Wangsgard
	Keith Luscinski
	Jeff Bowles
	Loui McCurley
	Dan Henn
	W. Joe Shaw
	Arnie Galpin, P.E.
	Kynan Wynne
	Joshua Adam, P.E.

Schreiber Foods	Mark Winchester
Shell Oil Company	George Jerome
SKYLOTEC North America LP	Eileen Hoff, Ph.D., CHFP
SPRAT	Kevin Lord
STE	Douglas Mercier
Sturges Manufacturing, Inc.	Ross Balquist
SureWerx/PeakWorks	Charley Rankin, MS
Surface Solutions	Cedric Smith
TEiC Construction Services, Inc.	Michael Wright, P.E., CPE, CSP
Terracon	Mark Williams
Travelers	Tyler Griffith
Tritech Fall Protection Systems, Inc.	Tim Accursi
U.S. Air Force	Juan Rangel
U.S. Army Corps of Engineers	Samuel Terry
U.S. Bureau of Reclamation	Art Schneider
U.S. Department of Energy	Shayne Powers
U.S. Department of Interior - BSEE	Nick Szkotak
U.S. Department of Labor - OSHA	Matt McElvogue, P.E., RWC, RRO
U.S. Navy	Adam Maier
UAW	Scott Richert, CSP, ARM, ALCM
UL	Craig Siciliani
Vertical Access LLC	Meridith Conser, P.E.
Wagman, Inc.	Robert Baker
Walt Disney Parks & Resorts	Robert Foster
Werner Co.	David Kloewer, P.E.
	William Eggleston
	Allison Cryns
	Corey Dickson
	Scott Wenzholz, CIH, CSP
	Thomas Rizzi, D.C, CSP
	John Cushing, Jr.
	David Nedorostek
	William Zettler
	Mark Hagemann
	Charles Gum, CSP, ASP
	Shawn Smith, MA, MEng, CSP, SMS
	Matthew Uptmor, OHST
	Beverly Stutts
	Andrew White
	Kelly Streeter, P.E.
	Cory Gaye, CSP
	Chris Daniels, P.E.
	Ian Bevan
	Michael Cameron
	Cody Rappoport

Western Area Power Administration
WJE

Zachry Group

Edward Crowson
Daniel Gach
Kurt Holloway, P.E., SE
Adam Rubin, MS, CSP

Independent Experts & Observers:

Flexible Lifeline Systems

High Engineering Corporation
Lighthouse Safety, LLC

Michael Bailey, P.E.
John Seto, P.E.
Brendon Kerber
John Corriveau
Kaylie Lenz

Subgroup Z359.11 had the following members:

Kelly Streeter, P.E., Chair
Ian Bevan
Jeff Bowles
Kenny Brodin
Brian Cruikshank
Kevin Denis
J. Nigel Ellis, Ph.D., P.E., CSP, CPE
Daniel Gach
Ed Grosse
Keith Luscinski
Loui McCurley
Douglas Mercier
Dave Pasco
Daniel Pobst
William Putnam
Heather Robertson
Cedric Smith
Glenn Speight, CIT, CSP, ASP, STS
Samuel Terry
Jeremiah Wangsgard

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AMERICAN NATIONAL STANDARD Z359.9 PERSONAL EQUIPMENT FOR PROTECTION AGAINST FALLS – DESCENT CONTROLLERS

1. Scope, Purpose and Application, Exceptions and Interpretations

1.1 Scope

This standard establishes requirements for the design, performance, testing, test methods, marking, instruction, maintenance and removal from service of descent controllers for users within the capacity range of 130 to 310 pounds (59 to 140 kg).

1.2 Purpose and Application

The purpose of this standard is to establish minimum requirements for automatic and manual descent controllers intended for use in the workplace in rope access, rope descent, and evacuation. Descent controller types are defined according to function and performance.

NOTE: Type 2 devices are not within the scope of this standard.

1.2.1 Before any descent controller shall bear the marking ANSI/ASSP Z359.9 or be represented in any way as being in compliance with this standard, all applicable requirements of this standard shall be met. Such compliance shall be established in accordance with the requirements specified in ANSI/ASSP Z359.7.

1.2.2 Users of active fall protection systems require proper training and instruction, including detailed procedures for the safe use of such equipment in their work application. Refer to ANSI/ASSP Z359.2, *Minimum Requirements for a Comprehensive Managed Fall Protection Program* for training requirements.

1.2.3 This standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed in Section 7. For dated references, subsequent amendments to or revisions of any of these publications apply to this American National Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

1.3 Exceptions

1.3.1 This standard does not apply to sports activities such as mountaineering.

1.3.2 Type 2 devices are not covered in this standard. The designation “Type 2” has been intentionally not assigned to avoid confusion with international standards (e.g., ISO 22159, EN 341).

1.4 Interpretations

Requests for interpretations of this standard shall be in writing in accordance with procedures and addressed to the Secretariat of this standard.

2. Definitions

Definitions applicable to this standard are listed below in alphabetical order. Definitions from other Z359 standards that are used in this document, but not defined herein, can be found in ASSP Z359.0, *Definitions and Nomenclature Used in Z359 Fall Protection and Fall Restraint Standards*. This document is available for download at this link from the [Secretariat](#).