Z259.16-15
(reaffirmed 2020)

Design of active fall-protection systems

REVISED FEBRUARY 2017

Legal Notice for Standards

Canadian Standards Association (operating as "CSA Group") develops standards through a consensus standards development process approved by the Standards Council of Canada. This process brings together volunteers representing varied viewpoints and interests to achieve consensus and develop a standard. Although CSA Group administers the process and establishes rules to promote fairness in achieving consensus, it does not independently test, evaluate, or verify the content of standards.

Disclaimer and exclusion of liability

This document is provided without any representations, warranties, or conditions of any kind, express or implied, including, without limitation, implied warranties or conditions concerning this document's fitness for a particular purpose or use, its merchantability, or its non-infringement of any third party's intellectual property rights. CSA Group does not warrant the accuracy, completeness, or currency of any of the information published in this document. CSA Group makes no representations or warranties regarding this document's compliance with any applicable statute, rule, or regulation.

IN NO EVENT SHALL CSA GROUP, ITS VOLUNTEERS, MEMBERS, SUBSIDIARIES, OR AFFILIATED COMPANIES, OR THEIR EMPLOYEES, DIRECTORS, OR OFFICERS, BE LIABLE FOR ANY DIRECT, INDIRECT, OR INCIDENTAL DAMAGES, INJURY, LOSS, COSTS, OR EXPENSES, HOWSOEVER CAUSED, INCLUDING BUT NOT LIMITED TO SPECIAL OR CONSEQUENTIAL DAMAGES, LOST REVENUE, BUSINESS INTERRUPTION, LOST OR DAMAGED DATA, OR ANY OTHER COMMERCIAL OR ECONOMIC LOSS, WHETHER BASED IN CONTRACT, TORT (INCLUDING NEGLIGENCE), OR ANY OTHER THEORY OF LIABILITY, ARISING OUT OF OR RESULTING FROM ACCESS TO OR POSSESSION OR USE OF THIS DOCUMENT, EVEN IF CSA GROUP HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, INJURY, LOSS, COSTS, OR EXPENSES.

In publishing and making this document available, CSA Group is not undertaking to render professional or other services for or on behalf of any person or entity or to perform any duty owed by any person or entity to another person or entity. The information in this document is directed to those who have the appropriate degree of experience to use and apply its contents, and CSA Group accepts no responsibility whatsoever arising in any way from any and all use of or reliance on the information contained in this document.

CSA Group is a private not-for-profit company that publishes voluntary standards and related documents. CSA Group has no power, nor does it undertake, to enforce compliance with the contents of the standards or other documents it publishes.

Intellectual property rights and ownership

As between CSA Group and the users of this document (whether it be in printed or electronic form), CSA Group is the owner, or the authorized licensee, of all works contained herein that are protected by copyright, all trade-marks (except as otherwise noted to the contrary), and all inventions and trade secrets that may be contained in this document, whether or not such inventions and trade secrets are protected by patents and applications for patents. Without limitation, the unauthorized use, modification, copying, or disclosure of this document may violate laws that protect CSA Group's and/or others' intellectual property and may give rise to a right in CSA Group and/or others to seek legal redress for such use, modification, copying, or disclosure. To the extent permitted by licence or by law, CSA Group reserves all intellectual property rights in this document.

Patent rights

Attention is drawn to the possibility that some of the elements of this standard may be the subject of patent rights. CSA Group shall not be held responsible for identifying any or all such patent rights. Users of this standard are expressly advised that determination of the validity of any such patent rights is entirely their own responsibility.

Authorized use of this document

This document is being provided by CSA Group for informational and non-commercial use only. The user of this document is authorized to do only the following:

If this document is in electronic form:

- load this document onto a computer for the sole purpose of reviewing it;
- search and browse this document; and
- print this document if it is in PDF format.

Limited copies of this document in printed or paper form may be distributed only to persons who are authorized by CSA Group to have such copies, and only if this Legal Notice appears on each such copy.

In addition, users may not and may not permit others to

- alter this document in any way or remove this Legal Notice from the attached standard;
- sell this document without authorization from CSA Group; or
- make an electronic copy of this document.

If you do not agree with any of the terms and conditions contained in this Legal Notice, you may not load or use this document or make any copies of the contents thereof, and if you do make such copies, you are required to destroy them immediately. Use of this document constitutes your acceptance of the terms and conditions of this Legal Notice.

Revision History

Z259.16-15, Design of active fall-protection systems

Errata — February 2017	Revision symbol (in margin)
Clauses 3, 6.4.2.3, 8.2.6.1, 8.2.6.2, 9.2, and Annex B Figures 1, 3, and 6	Δ

Standards Update Service

Z259.16-15
September 2015

Title: *Design of active fall-protection systems*

To register for e-mail notification about any updates to this publication
- go to **store.csagroup.org**
- click on **Product Updates**

The **List ID** that you will need to register for updates to this publication is **24229[illegible]**

If you require assistance, please e-mail **techsupport@csagroup.org** or call 4[illegible]-747-2233.

Visit CSA Group's policy on privacy at **www.csagroup.org/legal** to find out how we protect your personal information.

Z259.16-15
Design of active fall-protection systems

Published in September 2015 by CSA Group
A not-for-profit private sector organization
178 Rexdale Boulevard, Toronto, Ontario, Canada M9W 1R3

*To purchase standards and related publications, visit our Online Store at **store.csagroup.org***
or call toll-free 1-800-463-6727 or 416-747-4044.

ISBN 978-1-77139-550-2

Contents

Preface

This is the second edition of CSA Z259.16, *Design of active fall-protection systems*. It supersedes the previous edition published in 2004. It is part of the CSA Z259 series of Standards for components of personal fall-arrest systems.

Changes in this edition include the following:

a) Clarification of the scope;
b) Updating the reference publications;
c) Updating the definitions to reflect current usage and consistency in the CSA Z259 series of Standards;
d) Revision to the clause on ballasted anchors;
e) Design requirements have been clarified and harmonized with the ANSI/ASSE Z359 series; and
f) The commentary in Annex A has been updated.

CSA Group gratefully acknowledges the financial and in-kind support from the Canadian government departments responsible for occupational health and safety for the development of this edition.

This Standard was prepared by the Subcommittee on Design of Active Fall Protection Systems, under the jurisdiction of the Technical Committee on Fall Protection and the Strategic Steering Committee on Occupational Health and Safety, and has been formally approved by the Technical Committee.

Notes:

1) *Use of the singular does not exclude the plural (and vice versa) when the sense allows.*
2) *Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.*
3) *This Standard was developed by consensus, which is defined by* CSA Policy governing standardization — Code of good practice for standardization *as "substantial agreement. Consensus implies much more than a simple majority, but not necessarily unanimity". It is consistent with this definition that a member may be included in the Technical Committee list and yet not be in full agreement with all clauses of this Standard.*
4) *To submit a request for interpretation of this Standard, please send the following information to inquiries@csagroup.org and include "Request for interpretation" in the subject line:*
   a) *define the problem, making reference to the specific clause, and, where appropriate, include an illustrative sketch;*
   b) *provide an explanation of circumstances surrounding the actual field condition; and*
   c) *where possible, phrase the request in such a way that a specific "yes" or "no" answer will address the issue.*

   Committee interpretations are processed in accordance with the CSA Directives and guidelines governing standardization *and are available on the* Current Standards Activities *page at standardsactivities.csa.ca.*
5) *This Standard is subject to review within five years from the date of publication, and suggestions for its improvement will be referred to the appropriate committee. To submit a proposal for change, please send the following information to inquiries@csagroup.org and include "Proposal for change" in the subject line:*
   a) *Standard designation (number);*
   b) *Relevant clause, table, and/or figure number;*
   c) *Wording of the proposed change; and*
   d) *Rationale for the change.*

Z259.16-15
Design of active fall-protection systems

1 Scope

1.1
This Standard specifies requirements for the design and performance of complete active fall-protection systems, including travel-restraint and vertical and horizontal fall-arrest systems. This Standard is intended for engineers with expertise in designing fall-protection systems.

1.2
This Standard does not specify design or performance requirements for fall-arrest equipment or systems that have been manufactured in accordance with the requirements of an applicable CSA Z259 equipment standard.

1.3
This Standard is not to be used as a substitute for testing and certification of components of fall-protection equipment for which there is an applicable CSA Z259 equipment standard, unless the device is custom engineered for limited or site-specific applications.

1.4
This Standard does not cover the design of passive fall-protection systems such as guardrails and nets, except where such passive systems are also designed to serve as anchorage and/or anchorage connector subsystems for active fall-protection systems covered by this Standard.

1.5
This Standard does not cover the design of positioning systems.

1.6
This Standard does not cover the determination of structural strength and behaviour of components or anchorages of active fall-protection systems. It does, however, establish the safety criteria once the strengths and behaviours are known. Such strengths and behaviours are determined by analytical testing or engineering methods and by CSA Group or other design Standards for the materials and structural systems being used.

1.7
This Standard does not supersede the requirements of applicable occupational safety and health regulations.

1.8
The values given in SI units are the units of record for the purposes of this Standard. The values given in parentheses are for information and comparison only.

