



**CSA C22.2 No. 61914:23**  
(IEC 61914:2021, MOD)  
National Standard of Canada



**CSA C22.2 No. 61914:23**  
**Cable cleats for electrical installations**  
(IEC 61914:2021, MOD)



# 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 treaty 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 print 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 hereof, 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.



# ***Standards Update Service***

***CSA C22.2 No. 61914:23***  
***September 2023***

**Title:** *Cable cleats for electrical installations*

To register for e-mail notification about any updates to this publication

- go to [www.csagroup.org/store/](http://www.csagroup.org/store/)
- click on **Product Updates**

The **List ID** that you will need to register for updates to this publication is **2730032**.

If you require assistance, please e-mail [techsupport@csagroup.org](mailto:techsupport@csagroup.org) or call 416-747-2233.

Visit CSA Group's policy on privacy at [www.csagroup.org/legal](http://www.csagroup.org/legal) to find out how we protect your personal information.

**Canadian Standards Association (operating as “CSA Group”)**, under whose auspices this National Standard has been produced, was chartered in 1919 and accredited by the Standards Council of Canada to the National Standards system in 1973. It is a not-for-profit, nonstatutory, voluntary membership association engaged in standards development and certification activities.

CSA Group standards reflect a national consensus of producers and users — including manufacturers, consumers, retailers, unions and professional organizations, and governmental agencies. The standards are used widely by industry and commerce and often adopted by municipal, provincial, and federal governments in their regulations, particularly in the fields of health, safety, building and construction, and the environment.

More than 10 000 members indicate their support for CSA Group’s standards development by volunteering their time and skills to Committee work.

CSA Group offers certification and testing services in support of and as an extension to its standards development activities. To ensure the integrity of its certification process, CSA Group regularly and continually audits and inspects products that bear the CSA Group Mark.

In addition to its head office and laboratory complex in Toronto, CSA Group has regional branch offices in major centres across Canada and inspection and testing agencies in fourteen countries. Since 1919, CSA Group has developed the necessary expertise to meet its corporate mission: CSA Group is an independent service organization whose mission is to provide an open and effective forum for activities facilitating the exchange of goods and services through the use of standards, certification and related services to meet national and international needs.

For further information on CSA Group services, write to  
CSA Group  
178 Rexdale Boulevard  
Toronto, Ontario, M9W 1R3  
Canada

A National Standard of Canada is a standard developed by a Standards Council of Canada (SCC) accredited Standards Development Organization, in compliance with requirements and guidance set out by SCC. More information on National Standards of Canada can be found at [www.scc.ca](http://www.scc.ca).

SCC is a Crown corporation within the portfolio of Innovation, Science and Economic Development (ISED) Canada. With the goal of enhancing Canada’s economic competitiveness and social wellbeing, SCC leads and facilitates the development and use of national and international standards. SCC also coordinates Canadian participation in standards development, and identifies strategies to advance Canadian standardization efforts.

Accreditation services are provided by SCC to various customers, including product certifiers, testing laboratories, and standards development organizations. A list of SCC programs and accredited bodies is publicly available at [www.scc.ca](http://www.scc.ca).

Standards Council of Canada  
600-55 Metcalfe Street  
Ottawa, Ontario, K1P 6L5  
Canada



La Norme Nationale du Canada est disponible en versions française et anglaise.

*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 to judge its suitability for their particular purpose.*

®A trademark of the Canadian Standards Association, operating as “CSA Group”

# National Standard of Canada

## CSA C22.2 No. 61914:23 Cable cleats for electrical installations (IEC 61914:2021, MOD)

Prepared by  
International Electrotechnical Commission



Reviewed by



®A trademark of the Canadian Standards Association,  
operating as "CSA Group"



Published in September 2023 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  
[www.csagroup.org/store/](http://www.csagroup.org/store/) or call toll-free 1-800-463-6727 or 416-747-4044.

CS C22.2 No. 61914:23  
ISBN 978-1-4883-4853-2

© 2023 Canadian Standards Association  
All rights reserved. No part of this publication may be reproduced in any form whatsoever  
without the prior permission of the publisher.

# **Contents**

CSA Preface CSA/7

Foreword CSA/14

1 Scope CSA/16

2 Normative references CSA/17

3 Terms, definitions and abbreviations CSA/18

4 General requirements CSA/20

5 General notes on tests CSA/20

6 Classification CSA/21

7 Marking and documentation CSA/27

8 Construction CSA/29

9 Mechanical properties CSA/29

10 Fire hazards CSA/46

11 Environmental influences CSA/48

12 Electromagnetic compatibility CSA/51

Annex A (informative) Examples of cable cleats and intermediate restraints CSA/52

Annex B (informative) Calculation of forces caused by short-circuit currents CSA/59

Annex C (normative) Identification of MV or HV cable used in short-circuit test CSA/64

Bibliography CSA/65

# CSA C22.2 No. 61914:23

## **Cable cleats for electrical installations**

### *(IEC 61914:2021, MOD)*

## **CSA Preface**

This is the first edition of CSA C22.2 No. 61914, *Cable cleats for electrical installations*, which is an adoption, with Canadian deviations, of the identically titled IEC (International Electrotechnical Commission) Standard 61914 (third edition, 2021-10). It is one in a series of Standards issued by CSA Group under Part II of the *Canadian Electrical Code*.

For brevity, this Standard will be referred to as “CSA C22.2 No. 61914” throughout.

This Standard is considered suitable for use for conformity assessment within the stated scope of the Standard.

This Standard was reviewed for Canadian adoption by the CSA Integrated Committee on Wiring Devices, under the jurisdiction of the CSA Technical Committee on Wiring Products and the CSA Strategic Steering Committee on Requirements for Electrical Safety, and has been formally approved by the Technical Committee.

This Standard has been developed in compliance with Standards Council of Canada requirements for National Standards of Canada. It has been published as a National Standard of Canada by CSA Group.

**Interpretations:** The Strategic Steering Committee on Requirements for Electrical Safety has provided the following direction for the interpretation of standards under its jurisdiction: “The literal text shall be used in judging compliance of products with the safety requirements of this Standard. When the literal text cannot be applied to the product, such as for new materials or construction, and when a relevant CSA committee interpretation has not already been published, CSA Group’s procedures for interpretation shall be followed to determine the intended safety principle.”

© 2023 Canadian Standards Association

All rights reserved. No part of this publication may be reproduced in any form whatsoever without the prior permission of the publisher. IEC material is reprinted with permission. Where the words “this International Standard” appear in the text, they should be interpreted as “this National Standard of Canada”.

Inquiries regarding this National Standard of Canada should be addressed to

CSA Group  
178 Rexdale Boulevard, Toronto, Ontario, Canada M9W 1R3  
1-800-463-6727 • 416-747-4000  
[www.csagroup.org](http://www.csagroup.org)

To purchase standards and related publications, visit our Online Store at [www.csagroup.org/store/](http://www.csagroup.org/store/) or call toll-free 1-800-463-6727 or 416-747-4044.

*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. The technical content of IEC and ISO publications is kept under constant review by IEC and ISO. To submit a proposal for change, please send the following information to [inquiries@csagroup.org](mailto:inquiries@csagroup.org) and include "Proposal for change" in the subject line:*

- i) Standard designation (number);*
- ii) relevant clause, table, and/or figure number;*
- iii) wording of the proposed change; and*
- iv) rationale for the change.*

# CSA Technical Committee on Wiring Products

<b>P. Desilets</b>	Leviton Canada, Pointe-Claire, Québec, Canada <i>Category: Producer Interest</i>	<i>Chair</i>
<b>T. Simmons</b>	British Columbia Institute of Technology, Burnaby, British Columbia, Canada <i>Category: General Interest</i>	<i>Vice-Chair</i>
<b>Z. Bekele</b>	CSA Group, Independence, Ohio, USA <i>Category: General Interest</i>	
<b>W. J. Burr</b>	Burr and Associates, Campbell River, British Columbia, Canada <i>Category: User Interest</i>	
<b>C. Davis</b>	Electro Cables Incorporated Trenton, Ontario, Canada <i>Category: Producer Interest</i>	
<b>S. W. Douglas</b>	QPS Evaluation Services Inc., Toronto, Ontario, Canada <i>Category: General Interest</i>	
<b>D. Drysdale</b>	Nexan Canada Inc., Fergus, Ontario, Canada <i>Category: Producer Interest</i>	
<b>T. Hamden</b>	Hubbell Canada, Pickering, Ontario, Canada <i>Category: Producer Interest</i>	
<b>R. W. Horner</b>	Atkore International (Allied Tube & Conduit Corporation), Harvey, Illinois, USA <i>Category: Producer Interest</i>	
<b>M. Imlah</b>	Imlah Electrical Consulting, Aloha, Oregon, USA <i>Category: User Interest</i>	

**S. H. Mallikarachchi**

City of Winnipeg Planning, Property &  
Development,  
Winnipeg, Manitoba, Canada  
*Category: Regulatory Authority*

**S. Mercier**

Régie du bâtiment du Québec,  
Montréal, Québec, Canada  
*Category: Regulatory Authority*

**T. Tremblay**

Electrical Safety Authority,  
Sudbury, Ontario, Canada  
*Category: Regulatory Authority*

**A. Z. Tsisserev**

AES Engineering Ltd.,  
Vancouver, British Columbia, Canada  
*Category: General Interest*

**J. Turner**

Swansea Consulting,  
Toronto, Ontario, Canada  
*Category: User Interest*

**L. Letea**

CSA Group,  
Toronto, Ontario, Canada

*Project Manager*

Currently in preview, click buy full version

# ***CSA Integrated Committee on Wiring Devices***

<b>P. Desilets</b>	Leviton Canada, Pointe-Claire, Québec, Canada	<i>Chair</i>
<b>A. F. Aljabri</b>	Siemens Canada Limited, Brampton, Ontario, Canada	
<b>R. Baldwin</b>	Legrand/Pass and Seymour, Syracuse, New York, USA	
<b>G. Benjamin</b>	ABB Électrification Canada SRI, Dorval, Québec, Canada	
<b>D. M. Berlin</b>	Intermatic Incorporated, Spring Grove, Illinois, USA	
<b>D. Carson</b>	All Fired Up! Ltd., Milton, Ontario, Canada	
<b>G. Chopra</b>	Electro-Federation Canada, Toronto, Ontario, Canada	
<b>J. S. Frederic</b>	UL LLC, Melville, New York, USA	
<b>T. George</b>	Omron Management Center of America, Hoffman Estates, Illinois, USA	
<b>J. A. Gibson</b>	TriVar Inc., Brampton, Ontario, Canada	
<b>K. Glassford</b>	Legrand, Syracuse, New York, USA	
<b>T. Hamden</b>	Hubbell Canada, Pickering, Ontario, Canada	
<b>R. Haring</b>	Philips Lighting North America Corporation, Rosemont, Illinois, USA	

<b>W. Hartill</b>	2D2C, Inc., Kitchener, Ontario, Canada
<b>T. Hum</b>	Leviton Canada, Pointe-Claire, Québec, Canada
<b>T. Jackson</b>	CSA Group, Independence, Ohio, USA
<b>T. J. Jackson</b>	Idexx Laboratories, Westbrook, Maine, USA
<b>B. Keane</b>	INNIO Waukesha, Aurora, Ontario, Canada
<b>D. H. Kendall</b>	ABB Installation Products Ltd., Memphis, Tennessee, USA
<b>C. S. Kurten</b>	Underwriters Laboratories Inc., Melville, New York, USA
<b>A. Lopez</b>	Intermatic Inc., Libertyville, Illinois, USA
<b>J. Louie</b>	General Electric Company, Cleveland, Ohio, USA
<b>D. L. Lutz</b>	Hubbell Incorporated Wiring Device Division, Shelton, Connecticut, USA
<b>F. Magisano</b>	Hubbell Canada, Pickering, Ontario, Canada
<b>A. Marrero</b>	Euroloft Inc., Woodbridge, Ontario, Canada
<b>R. McDiarmid</b>	Burnaby, British Columbia, Canada
<b>E. Mendoza</b>	Signify, Rosemont, Illinois, USA
<b>S. Mermillod</b>	IPEX Management Inc., Verdun, Québec, Canada

<b>A. Mokrytsky</b>	Southwire Co., Carrollton, Georgia, USA	
<b>W. Molto</b>	MM Plastic (Mfg.) Company Inc., Mississauga, Ontario, Canada	
<b>D. Patel</b>	Leviton Canada, Pointe-Claire, Québec, Canada	
<b>J. Perry</b>	Brampton, Ontario, Canada	
<b>S. Rasaratnam</b>	Schneider Electric, Edmonton, Alberta, Canada	
<b>C. Robinson</b>	SnapPower, Vineyard, Utah, USA	
<b>S. Rood</b>	Legrand North America, Syracuse, New York, USA	
<b>S. Scott</b>	NAPCO Royal Pipe & Fittings, a Westlake Chemical Company, Woodbridge, Ontario, Canada	
<b>R. Spehalski</b>	Lutron Electronics Company Inc., Coopersburg, Pennsylvania, USA	
<b>J. Wylie</b>	Infrastructure Health and Safety Association, Pickering, Ontario, Canada	
<b>L. Letea</b>	CSA Group, Toronto, Ontario, Canada	<i>Project Manager</i>

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

### CABLE CLEATS FOR ELECTRICAL INSTALLATIONS

#### FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

IEC 61914 has been prepared by subcommittee 23A: Cable management systems, of IEC technical committee 23: Electrical accessories. It is an International Standard.

This third edition cancels and replaces the second edition published in 2015. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) requirements for mandrels used in testing rationalised and detailed in the general test requirements ([Clause 5](#));
- b) definition of liner added and test requirements where liners and other optional parts are used;
- c) definitions for LV, MV and HV cables added and test requirements where MV & HV cable are used;
- d) new corrosion resistance classes for plated products added;
- e) new requirements and test for durability and legibility of markings added;
- f) new test requirements for axial load testing of cleats for more than one cable added;
- g) lateral load test requirements for intermediate restraints added.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
23A/976/FDIS	23A/982/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/standardsdev/publications](http://www.iec.ch/standardsdev/publications).

In this standard, the following print types are used:

- requirements proper: in roman type;
- *test specifications: in italic type;*
- notes: in smaller roman type.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under [webstore.iec.ch](http://webstore.iec.ch) in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

**IMPORTANT — The “colour inside” logo on the cover page of this document indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.**



**DV.1** Modification by adding the following text at the end of the IEC Foreword:

*The numbering system in this Standard uses a space instead of a comma to indicate thousands and uses a comma instead of a period to indicate a decimal point. For example, 1 000 means 1,000 and 1,01 means 1.01.*

# CSA C22.2 No. 61914:23

## Cable cleats for electrical installations


### 1 Scope


This International Standard specifies requirements and tests for cable cleats used for securing cables in electrical installations and for intermediate restraints used for holding cables together in formation in electrical installations. Cable cleats provide resistance to electromechanical forces where declared. This document includes cable cleats that rely on a mounting surface specified by the manufacturer for axial and/or lateral retention of cables.

Various types of cable cleats and intermediate restraints are shown in [Annex A](#).

**NOTE** Requirements for manufacturers in this document also apply to importers and responsible vendors where appropriate.


This document does not apply to cable ties.

 **1DV** Replace Clause 1 with the following:


 **1.1DV**

*This Standard specifies requirements and tests for*


- a) *cable cleats that provide resistance to electromechanical forces;*
- b) *cable cleats that are used for securing cables in electrical installations;*
- c) *intermediate restraints that are used for holding cables together in formation in electrical installations; and*
- d) *cable cleats and intermediate restraints that are installed in accordance with CSA C22.1 (CE Code, Part I).*

 **1.2DV**


*This Standard includes cable cleats that rely on a mounting surface specified by the manufacturer for axial and lateral retention of cables.*

 **1.3DV**


*This Standard does not apply to cablebus (which are covered in CSA C22.2 No. 273).*

 **1.4DV**

*This Standard does not apply to metallic or nonmetallic cable ties (which are covered in CSA C22.2 No. 62275).*

 **1.5DV**

*This Standard does not apply to devices without a short-circuit current rating such as wire or cable management clamps, clips, hangers, mounts, positioning devices, staples, straps, or similar devices (which are covered in CSA C22.2 No. 18.4 and CSA C22.2 No. 18.5).*

 **1.6DV**

*Various types of cable cleats and intermediate restraints are shown in [Annex A](#).*

**Note:** Requirements for manufacturers in this Standard also apply to importers and responsible vendors, where appropriate.