CSA C22.1:24

Canadian Electrical Code, Part I

Safety Standard for Electrical Installations

2024
26th Edition



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CSA C22.1:24
March 2024

Title: *Canadian Electrical Code, Part I*

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Canadian Electrical Code, Part I

Safety Standard for Electrical Installations

(Twenty-sixth edition)

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- The *Canadian Electrical Code, Part I*, meets the fundamental safety principles of International Standard IEC 60364-1, *Low-voltage electrical installations*.
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Published in March 2024 by CSA Group
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ICS 29.020
ISBN 978-1-4883-4250-9

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Appendix J — Annex J18

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Appendix J — Annex J20

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Preface

This twenty-sixth edition of the *Canadian Electrical Code, Part I*, was approved by the Committee on the *Canadian Electrical Code, Part I*, and by the Regulatory Authority Committee at their June 2023 meetings. This twenty-sixth edition supersedes the previous editions published in 2021, 2018, 2015, 2012, 2009, 2006, 2002, 1998, 1994, 1990, 1986, 1982, 1978, 1975, 1972, 1969, 1966, 1962, 1958, 1953, 1947, 1939, 1935, 1930, and 1927.

This edition contains important revisions to many Sections. Section 64 contains major revisions for energy storage and renewable energy systems, including a new Subsection for residential occupancies and updates to photovoltaic system requirements. Several important changes appear in Section 68, including new requirements for disconnecting means and bonding conductive pool infrastructure.

Section 66 now requires ground fault circuit interrupter protection for cords connected to receptacles placed in temporary installations such as tents for outdoor functions.

Other significant revisions in this edition include the following:

- voltage definitions for dc circuit voltages have been revised in Section 0;
- Section 2 sees the addition of new requirements for reduction of arcing fault clearing times and clarification on use of ingress protection designations;
- in addition to traditional AWG and kcmil sizes, use of conductors sized in mm^2 is now recognized through revisions to Section 4 and a new table;
- load calculations for installations with electric vehicle supply equipment have been revised in Section 8 and simplified through the deletion of Table 38;
- many new products and updates to wiring methods are recognized in Section 12, including sag and span requirements for overhead installations and new Rules for non-metallic jacketed cable;
- sealing requirements have been substantially revised in Section 18 and Annex J18;
- Section 36 now features Rules for installation of high-voltage couplers (i.e., devices that provide a means to repeatedly join and separate portable power cables);
- Table 11 has been reformatted into two new tables (11A and 11B) and made easier to use through a layout similar to Table 19;
- Annexes A.1 and A.2 of Appendix A and the Index have been reinstated;
- Appendix K has been deleted; and
- the word “allowable” has been removed from “allowable ampacities” throughout most of the Code.

Many of the changes in this edition were developed by cross-functional working groups. Their work is gratefully acknowledged.

This edition of the *Canadian Electrical Code, Part I*, is dedicated to the life and memory of our friend and colleague, Pierre Desilets, whose dedication and contributions helped make the publication of this document possible.

General arrangement

The Code is divided into numbered Sections, each covering some main division of the work. Sections 0 to 16 and 26 are considered general Sections, and the other Sections supplement or amend the general Sections. The Sections are divided into numbered Rules, with captions for easy reference, as follows:

a) **Numbering system** — With the exception of Section 38, even numbers have been used throughout to identify Sections and Rules. Rule numbers consist of the Section number separated by a hyphen from the 3- or 4-digit figure. The intention in general is that odd numbers may be used for new Rules required by interim revisions. Due to the introduction of some new Rules and the deletion of some existing Rules during the revision of each edition, the Rule numbers for any particular requirement are not always the same in successive editions.

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b) **Subdivision of Rules** — Rules are subdivided in the manner illustrated by Rules 8-204 and 8-206, and the subdivisions are identified as follows:

00-000	Rule
1)	Subrule
a)	Item
i)	Item
A)	Item

c) **Reference to other Rules, etc.** — Where reference is made to two or more Rules (e.g., Rules 10-200 to 10-206), the first and last Rules mentioned are included in the reference. Where reference is made to a Subrule or Item in the same Rule, only the Subrule number and/or Item letter and the word "Subrule" or "Item" need be mentioned. If the reference is to another Rule or Section, then the Rule number and the word "Rule" shall be stated [e.g., "Rule 10-206 3)" and not "Subrule 3) of Rule 10-206"].

The principal changes that have been made between the 2021 edition of the *Canadian Electrical Code, Part I*, and this new edition, published in 2024, are marked in the text of the Code by the symbol delta (Δ) in the margin. Users of the Code are advised that the change markers in the text are not intended to be all-inclusive and are provided as a convenience only; such markers cannot constitute a comprehensive guide to the reorganization or revision of the Code. Global revisions that improve the overall consistency and precision of Code language without affecting the interpretation of any specific Rule are not identified. Care must therefore be taken not to rely on the change markers to determine the current requirements of the Code. As always, users of the Code must consider the entire Code and any local amendments or interpretations.

This Code 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.

Acknowledgement

The use of material contained in the *National Electrical Code* is acknowledged.

The history and operation of the *Canadian Electrical Code, Part I*

The preliminary work in preparing the Canadian Electrical Code began in 1920 when a special committee, appointed by the main Committee of the Canadian Engineering Standards Association, recommended its development. A third meeting of this Committee was held in June 1927 with representatives from Nova Scotia, Québec, Ontario, Manitoba, Saskatchewan, and British Columbia in attendance. At this meeting, the revised draft, which had been discussed at the previous two meetings, was formally approved and it was resolved that it be printed as Part I of the *Canadian Electrical Code*.

The Committee on the *CE Code, Part I*, is composed of 43 members, with representation from inspection authorities, industry, utilities, and allied interests. The main Committee meets once a year and deals with reports that have been submitted by the Section Subcommittees, which work under the jurisdiction of the main Committee. Suggestions for changes to the Code may be made by any member of the Committee or anyone outside the Committee as outlined in Clause C6.

Notes:

1) *Although the intended primary application of this Code is stated in its Scope, it is important to note that it remains the responsibility of the users of the Code to judge its suitability for their particular purpose.*
2) *This Code is subject to review within five years from the date of publication, and suggestions for its improvement will be referred to the appropriate committee.*
3) *All enquiries regarding this Code should be addressed to CSA Group, 178 Rexdale Blvd., Toronto, Ontario, Canada M9W 1R3. Requests for interpretation should be worded in such a manner as to permit a specific "yes" or "no" answer based on the literal text of the requirement concerned. See Clause C9. Interpretations are available on the* Current Standards Activities *page at standardsactivities.csagroup.org.*

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SDG Foreword

CSA Group develops and maintains standards across a broad range of topics, most of which support the United Nations Sustainable Development Goals (UN SDGs) towards shaping a sustainable and resilient future.

Through a robust mapping process, connections between CSA C22.1:24 and the following SDGs have been identified:

SDG			
Targets	7.1 7.2 7.3	9.1	13.1

CSA C22.1:24 has notable linkages with the following SDGs:

- SDG 7: *Affordable and Clean Energy*
- SDG 9: *Industry, Innovation, and Infrastructure*
- SDG 13: *Climate Action*

For further information on CSA Group's SDG Mapping initiative, please visit www.csagroup.org/sdg.

Disclaimer: It is important to note that although some standards explicitly support SDG targets, not all standards link to the SDGs. Standards users should always take care and be specific when claiming their support of SDGs through the use of standards. The SDG mapping outcomes made available by CSA Group are intended to assist users in their evaluation of how the application of a standard can support their work towards SDG achievement.

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Metric units

Symbols and conversion factors for SI units

Recognized symbols for SI units have been used in the *Canadian Electrical Code, Part I*. For the convenience of the user, these symbols and the units they represent have been listed in the following table; the table also gives a multiplying factor that may be used to convert the SI unit to the previously used unit.

Symbol	SI unit	Multiplying factor for conversion to previously used unit	Previously used unit
A	ampere(s)	1	ampere(s)
cm^3	cubic centimetre(s)	0.061	cubic inch(es)
°(s)	degree(s) (angle)	1	degree(s) (angle)
°C rise	degree(s) Celsius	1.8	degree(s) Fahrenheit
°C temperature	degree(s) Celsius	1.8 plus 32	degree(s) Fahrenheit
h	hour(s)	1	hour(s) (time)
Hz	hertz	1	cycles per second
J	joule(s)	0.7376	foot-pound(s)
kg	kilogram(s)	2.205	pound(s)
kJ	kilojoule(s)	737.6	foot-pound(s)
km	kilometre	0.621	mile(s)
kPa	kilopascal(s)	0.295	inch(es) of mercury
		0.334	feet of water
		0.145	pound(s) per square inch (psi)
kW	kilowatt	3415.179	BTU/h
lx	lux	0.093	foot-candle(s)
L	litre	0.220	gallon(s)
m	metre(s)	3.281	feet
m^2	square metre(s)	10.764	square feet
m^3	cubic metre(s)	35.315	cubic feet
MHz	megahertz	1	megacycles per second
min	minute(s)	1	minute(s)
mL	millilitre(s)	0.061	cubic inch(es)
mm	millimetre(s)	0.03937	inch(es)
mm^2	square millimetre(s)	0.00155	square inch(es)
N•m	newton•metre	8.85	pound-force inches

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(Concluded)

Symbol	SI unit	Multiplying factor for conversion to previously used unit	Previously used unit
Ω	ohm(s)	1	ohm(s)
Pa	pascal(s)	0.000295	inch(es) of mercury
		0.000334	feet of water
		0.000145	pounds per square inch (psi)
s	second(s)	1	second(s)
V	volt(s)	1	volt(s)
W	watt(s)	1	watt(s)
µF	microfarad(s)	1	microfarad(s)

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Conduit, tubing, and fitting sizes

Starting in the 2006 edition of the Code, the metric trade designator has been used exclusively to identify conduit, tubing, and fitting sizes. The following table is provided for convenience only.

Conduit, tubing, and fitting trade sizes

Inches	Metric designator
3/8	12
1/2	16
3/4	21
1	27
1-1/4	35
1-1/2	41
2	53
2-1/2	63
3	78
3-1/2	91
4	103
5	129
6	155
8	200

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Reference publications

This Code refers to the following publications, and the year dates shown indicate the latest editions available at the time the Code was approved:

CSA Group

6.19-17 (R2022)
Residential carbon monoxide alarming devices

A123.21:20
Standard test method for the dynamic wind uplift resistance of membrane-roofing systems

ASME A17.1-2022/CSA B44:22
Safety code for elevators and escalators

CSA B44.1:19/ASME A17.5-2019
Elevator and escalator electrical equipment

B52:18
Mechanical refrigeration code

B72:20
Installation code for lightning protection systems

B108.1:21
Compressed natural gas refuelling stations installation code

B149.1:20
Natural gas and propane installation code

B149.2:20
Propane storage and handling code

B355:19
Platform lifts and stair lifts for barrier-free access

CAN/CSA-B613-00 (withdrawn)
Private residence lifts for persons with physical disabilities

C22.1-98
Canadian Electrical Code, Part I

C22.1:18
Canadian Electrical Code, Part I

C22.2 No. 0:20
General requirements — Canadian Electrical Code, Part II

C22.2 No. 0.19-10 (R2020)
Requirements for service entrance equipment

C22.2 No. 1-04 (withdrawn)
Audio, video, and similar electronic equipment

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C22.2 No. 3-M1988 (withdrawn)
Electrical features of fuel-burning equipment

C22.2 No. 4:16 (R2020)
Enclosed and dead-front switches

C22.2 No. 5:16 (R2021)
Molded-case circuit breakers, molded-case switches, and circuit-breaker enclosures

C22.2 No. 14-18 (R2022)
Industrial control equipment

C22.2 No. 18.1-13 (R2022)
Metallic outlet boxes

C22.2 No. 18.2:06 (R2021)
Nonmetallic outlet boxes

C22.2 No. 18.3:12 (R2022)
Conduit, tubing, and cable fittings

C22.2 No. 18.4:15 (R2019)
Hardware for the support of conduit, tubing, and cable

C22.2 No. 29-15 (R2019)
Panelboards and enclosed panelboards

C22.2 No. 30:20
Explosion-proof equipment

C22.2 No. 35:20
Extra-low-voltage control circuit cable, low-energy control cable, and extra-low-voltage control cable

C22.2 No. 38-18 (R2022)
Thermoset-insulated wires and cables

C22.2 No. 41:22
Grounding and bonding equipment

C22.2 No. 42:10 (R2020)
General use receptacles, attachment plugs, and similar wiring devices

C22.2 No. 42.1:13 (R2022)
Cover plates for flush-mounted wiring devices

C22.2 No. 45.1:22
Electrical rigid metal conduit — Steel

C22.2 No. 46-13 (R2022)
Electric air-heaters

C22.2 No. 48:15 (R2020)
Nonmetallic sheathed cable

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C22.2 No. 49:18 (R2022)
Flexible cords and cables

C22.2 No. 51:20
Armoured cables

C22.2 No. 52:17 (R2022)
Underground secondary and service-entrance cables

C22.2 No. 56:17 (R2022)
Flexible metal conduit and liquid-tight flexible metal conduit

C22.2 No. 64:19
Household cooking and liquid-heating appliances

CAN/CSA-C22.2 No. 65-18 (R2022)
Wire connectors

C22.2 No. 66.3-06 (R2020)
Low voltage transformers — Part 3: Class 2 and Class 3 transformers

C22.2 No. 75:17 (R2022)
Thermoplastic insulated wires and cables

C22.2 No. 77:14 (R2019)
Motors with inherent overheating protection

C22.2 No. 82-1969 (R2023)
Tubular support members and associated fittings for domestic and commercial service masts

C22.2 No. 83:M85 (R2022)
Electrical metallic tubing

C22.2 No. 83.1:07 (R2022)
Electrical metallic tubing — Steel

C22.2 No. 85:14 (R2023)
Rigid PVC boxes and fittings

C22.2 No. 94.1:15 (R2020)
Enclosures for electrical equipment, non-environmental considerations

C22.2 No. 94.2:20
Enclosures for electrical equipment, environmental considerations

C22.2 No. 96-17 (R2021)
Portable power cables

C22.2 No. 100-14 (R2019)
Motors and generators

C22.2 No. 106:05 (R2019)
HRC-Miscellaneous fuses

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C22.2 No. 107.1:16 (R2021)
Power conversion equipment

C22.2 No. 107.3:14 (R2019)
Uninterruptible power systems

C22.2 No. 108:14 (R2019)
Liquid pumps

CAN/CSA-C22.2 No. 111-18 (R2023)
General-use snap switches

C22.2 No. 113-18 (R2023)
Fans and ventilators

C22.2 No. 115:20
Meter-mounting devices

C22.2 No. 123:16 (R2021)
Metal sheathed cables

C22.2 No. 124:16 (R2021)
Mineral-insulated cable

C22.2 No. 126.1:17 (R2022)
Metal cable tray systems

CAN/CSA-C22.2 No. 126.2-02 (R2022)
Nonmetallic cable tray systems

C22.2 No. 127-18 (R2022)
Equipment and lead wires

C22.2 No. 129:10 (R2019)
Neutral-supported cables

C22.2 No. 130:16 (R2021)
Requirements for electrical resistance trace heating and heating device sets

C22.2 No. 131:17 (R2022)
Type TECK 90 cable

C22.2 No. 141:15 (R2020)
Emergency lighting equipment

CAN/CSA-C22.2 No. 157-92 (R2021)
Intrinsically safe and non-incendive equipment for use in hazardous locations

C22.2 No. 174-18 (R2022)
Cables and cable glands for use in hazardous locations

C22.2 No. 178.1:22
Transfer switch equipment

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C22.2 No. 178.3:17 (R2022)
Transfer switch equipment, over 1000 volts

C22.2 No. 179:09 (R2019)
Airport series lighting cables

C22.2 No. 191:M89 (R2019)
Engine Heaters and Battery Warmers

C22.2 No. 197:M83 (R2023)
PVC insulating tape

C22.2 No. 198.1:21
Extruded insulating tubing

C22.2 No. 208:18 (R2023)
Fire alarm and signal cable

C22.2 No. 211.0-03 (R2022)
General requirements and methods of testing for nonmetallic conduit

C22.2 No. 211.1:06 (R2021)
Rigid types EB1 and DB2/ES2 PVC conduit

C22.2 No. 211.2:06 (R2021)
Rigid PVC (unplasticized) conduit

C22.2 No. 211.3-96 (withdrawn)
Reinforced thermosetting resin conduit (RTRC) and fittings

C22.2 No. 213-17 (R2022)
Nonincendive electrical equipment for use in Class I and II, Division 2 and Class III, Divisions 1 and 2 hazardous (classified) locations

C22.2 No. 214:17 (R2021)
Communications cables

C22.2 No. 218.1:13 (R2022)
Spas, hot tubs, and associated equipment

C22.2 No. 223:15 (R2020)
Power supplies with extra-low-voltage Class 2 outputs

C22.2 No. 227.1:19
Electrical nonmetallic tubing

C22.2 No. 227.2.1:19
Liquid-tight flexible non-metallic conduit

C22.2 No. 239:21
Control and instrumentation cables

C22.2 No. 248 series
Low-voltage fuses

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C22.2 No. 250.0:21
Luminaires

C22.2 No. 250.13:22
Light emitting diode (LED) equipment for lighting applications

CAN/CSA-C22.2 No. 257-06 (withdrawn)
Interconnecting inverter-based micro-distributed resources to distribution systems

C22.2 No. 269.1:17 (R2022)
Surge protective devices — Type 1 — Permanently connected

C22.2 No. 269.2:17 (R2022)
Surge protective devices — Type 2 — Permanently connected

C22.2 No. 269.3:17 (R2022)
Surge protective devices — Type 3 — Cord connected, direct plug-in, and receptacle type

C22.2 No. 269.4:17 (R2022)
Surge protective devices — Type 4 — Component assemblies

C22.2 No. 269.5:17 (R2022)
Surge protective devices — Type 5 — Components

C22.2 No. 271:11 (R2020)
Photovoltaic cables

C22.2 No. 272:20
Wind turbine electrical systems

CSA/ANSI C22.2 No. 273:19
Cablebus

C22.2 No. 291:19
Bare and covered ferrules

C22.2 No. 320:19
Controlled outlets

C22.2 No. 327-18 (R2023)
HDPE conduit, conductors-in-conduit, and fittings

C22.2 No. 330:23
Photovoltaic rapid shutdown systems

C22.2 No. 335:21
Pullout switches

C22.2 No. 342:22
Large ferrules

C22.2 No. 60079-0:19
Explosive atmospheres — Part 0: Equipment — General requirements

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C22.2 No. 60079-1:16 (R2021)
Explosive atmospheres — Part 1: Equipment protection by flameproof enclosures "d"

C22.2 No. 60079-2:16 (R2021)
Explosive atmospheres — Part 2: Equipment protection by pressurized enclosure "p"

C22.2 No. 60079-5:16 (R2021)
Explosive atmospheres — Part 5: Equipment protection by powder filling "q"

C22.2 No. 60079-6:17 (R2022)
Explosive atmospheres — Part 6: Equipment protection by liquid immersion "o"

CAN/CSA-C22.2 No. 60079-7:16 (R2021)
Explosive atmospheres — Part 7: Equipment protection by increased safety "e"

CAN/CSA-C22.2 No. 60079-11:14 (R2023)
Explosive atmospheres — Part 11: Equipment protection by intrinsic safety "i"

CAN/CSA-C22.2 No. 60079-15:18 (R2023)
Explosive atmospheres — Part 15: Equipment protection by type of protection "n"

CAN/CSA-C22.2 No. 60079-18:16 (R2021)
Explosive atmospheres — Part 18: Equipment protection by encapsulation "m"

C22.2 No. 60079-25:22
Explosive atmospheres — Part 25: Intrinsically safe electrical systems

C22.2 No. 60079-26:22
Explosive atmospheres — Part 26: Equipment with separation elements or combined levels of protection

C22.2 No. 60079-28:16 (R2021)
Explosive atmospheres — Part 28: Protection of equipment and transmission systems using optical radiation

C22.2 No. 60079-29-1:17 (R2022)
Explosive atmospheres — Part 29-1: Gas detectors — Performance requirements of detectors for flammable gases

C22.2 No. 60079-30-1:17 (R2022)
Explosive atmospheres — Part 30-1: Electrical resistance trace heating — General and testing requirements

C22.2 No. 60079-40:20
Explosive atmospheres — Part 40: Requirements for process sealing between flammable process fluids and electrical systems

C22.2 No. 60529:16 (R2021)
Degrees of protection provided by enclosures

C22.2 No. 60601 series
Medical electrical equipment

CAN/CSA-C22.2 No. 60950-1-07 (R2021)
Information technology equipment — Safety — Part 1: General requirements

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CAN/CSA-C22.2 No. 61010-1-12 (R2022)
Safety requirements for electrical equipment for measurement, control, and laboratory use — Part 1: General requirements

C22.2 No. 61730-1:19
Photovoltaic (PV) module safety qualification — Part 1: Requirements for construction

C22.2 No. 61730-2:19
Photovoltaic (PV) module safety qualification — Part 2: Requirements for testing

C22.2 No. 62275:21
Cable management systems — Cable ties for electrical installations

C22.2 No. 62368-1:19
Audio/video, information and communication technology equipment — Part 1: Safety requirements

C22.3 No. 1:20
Overhead systems

C22.3 No. 7:20
Underground systems

C22.3 No. 9:20
Interconnection of distributed energy resources and electricity supply systems

C68.5:20
Primary shielded and concentric neutral cable for distribution utilities

C68.10:20
Shielded power cable for commercial and industrial applications, 5–46 kV

C83:22
Communication and power line hardware

C235:19
Preferred voltage levels for AC systems up to 50 000 V

C282:19
Emergency electrical power supply for buildings

C50052:99 (R2021)
Cast aluminium alloy enclosures for gas-filled high-voltage switchgear and controlgear

C50064:99 (R2021)
Wrought aluminium and aluminium alloy enclosures for gas-filled high-voltage switchgear and controlgear

C50068:99 (R2021)
Wrought steel enclosures for gas-filled high-voltage switchgear and controlgear

C50069:99 (R2021)
Welded composite enclosures of cast and wrought aluminium alloys for gas-filled high-voltage switchgear and controlgear

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C50089:99 (R2021)
Cast resin partitions for metal-enclosed gas-filled high-voltage switchgear and controlgear

C60079-13:19
Explosive atmospheres — Part 13: Equipment protection by pressurized room "p" and artificially ventilated room "v"

C60079-30-2:17 (R2022)
Explosive atmospheres — Part 30-2: Electrical resistance trace heating — Application guide for design, installation and maintenance

CAN/CSA-C62155:06 (R2020)
Hollow pressurized and unpressurized ceramic and glass insulators for use in electrical equipment with rated voltages greater than 1 000 V

C80079-36:22
Explosive atmospheres — Part 36: Non-electrical equipment for explosive atmospheres — Basic method and requirements

C80079-37:22
Explosive atmospheres — Part 37: Non-electrical equipment for explosive atmospheres — Non electrical type of protection constructional safety "c", control of ignition source "b", liquid immersion "k"

CAN/CSA-IEC 61400-24:12 (R2022)
Wind turbines — Part 24: Lightning protection

IEEE 844.1-2017/CSA C22.2 No. 293.1:17 (R2022)
Skin effect trace heating of pipelines, vessels, equipment, and structures — General, testing, marking, and documentation requirements

IEEE 844.2-2017/CSA C293.2:17 (R2022)
Skin effect trace heating of pipelines, vessels, equipment, and structures — Application guide for design, installation, testing, commissioning, and maintenance

IEEE 844.3-2019/CSA C22.2 No. 293.3:19
IEEE/CSA Standard for Impedance Heating of Pipelines and Equipment — General, Testing, Marking, and Documentation Requirements

IEEE 844.4-2019/CSA C293.4:19
IEEE/CSA Standard for Impedance Heating of Pipelines and Equipment — Application Guide for Design, Installation, Testing, Commissioning, and Maintenance

M421:23
Use of electricity in mines

PLUS 2203 (withdrawn)
Guide for the Design, Testing, Construction, and Installation of Equipment in Explosive Atmospheres by John A. Bossert, 3rd edition, 2001

S413:21
Parking structures

SPE-1000:21
Model Code for the field evaluation of electrical equipment

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SPE-3000:19
Model Code for the field evaluation of medical electrical equipment (MEE) and medical electrical systems (MES)

CSA/ANSI Z21.80:19/CSA 6.22:19
Line pressure regulators

Z32:21
Electrical safety and essential electrical systems in health care facilities

Z98:19
Passenger ropeways and passenger conveyors

CAN/CSA-Z240 MH Series-92 (withdrawn)
Mobile homes

CAN/CSA-Z240 RV Series-08 (withdrawn)
Recreational vehicles

Z240 RV Series-14 (R2020)
Recreational vehicles

CAN/CSA-Z241 Series-18 (R2023)
Park model trailers

CAN/CSA-Z267-00 (withdrawn)
Safety code for amusement rides and devices

Z462:21
Workplace electrical safety

Z662:23
Oil and gas pipeline systems

ANSI (American National Standards Institute)

B77.1-2022
Passenger Ropeways — Aerial Tramways, Aerial Lifts, Surface Lifts, Tows and Conveyors — Safety Requirements

ANSI/ASME (American National Standards Institute/American Society of Mechanical Engineers)

B1.20.1-2013 (R2018)
Pipe Threads, General Purpose (Inch)

ANSI/IEEE (American National Standards Institute/Institute of Electrical and Electronics Engineers)

487-2015
IEEE Standard for the Electrical Protection of Communications Facilities Serving Electric Supply Locations — General Considerations

ANSI/ISA (American National Standards Institute/International Society of Automation)

12.01.01-2013
Definitions and Information Pertaining to Electrical Equipment in Hazardous (Classified) Locations

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