C22.1HB-15

# CANADIAN ELECTRICAL CODE HANDBOOK

AN EXPLANATION OF THE RULES OF THE CANADIAN ELECTRICAL CODE, PART I

2015

CSA Group

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# *CE Code Handbook*

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# Contents

Introduction to the *CE Code Handbook* *ix*
About the development of the *CE Code Handbook* *ix*
Excerpt from the Preface to the *CE Code, Part I* *x*
Metric units *xiii*
Symbols and conversion factors for SI units *xiii*
Conduit sizes *xiv*
Conduit trade sizes *xiv*
Reference publications *xv*

**Section 0 — Object, scope, and definitions** *1*
Object *1*
Scope *1*
Definitions *2*

**Section 2 — General rule** *6*
Administrative *6*
Technical *9*
General *9*
Protection of persons and property *15*
Maintenance and operation *16*
Enclosures *24*

**Section 4 — Conductors** *26*

**Section 6 — Services and service equipment** *53*
Scope *53*
General *53*
Control and protective equipment *59*
Wiring methods *64*
Metering equipment *66*

**Section 8 — Circuit loading and demand factors** *71*
Scope *71*
General *72*
Services and feeders *84*
Branch circuits *121*
Automobile heater receptacles *122*

**Section 10 — Grounding and bonding** *124*
Scope and object *124*
System and circuit grounding *125*
Grounding connections for systems and circuits *129*
Conductor enclosure bonding *138*
Equipment bonding *139*
Methods of grounding *144*
Grounding electrodes *150*
Grounding and bonding conductors *156*
Grounding and bonding conductor connections *163*
Lightning arresters *166*
Installation of neutral grounding devices *167*
Overview *167*

**Section 12 — Wiring methods** *174*
Scope *174*
General requirements *174*
Conductors *179*
General *179*
Open wiring *187*

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Exposed wiring on exteriors of buildings and between buildings on the same premises *190*
Non-metallic-sheathed cable *191*
Armoured cable *195*
Mineral-insulated and aluminum-sheathed cable *199*
Flat conductor cable Type FCC *201*
Raceways *202*
General *202*
Rigid and flexible metal conduit *209*
Rigid PVC conduit *211*
Rigid Types EB1 and DB2/ES2 PVC conduit *215*
Rigid RTRC conduit *216*
Liquid-tight flexible conduit *217*
Electrical metallic tubing *218*
Electrical non-metallic tubing *220*
Surface raceways *220*
Underfloor raceways *221*
Cellular floors *222*
Auxiliary gutters *223*
Busways and splitters *223*
Wireways *226*
Cable trays *227*
Cablebus *231*
Manufactured wiring systems *241*
Installations of boxes, cabinets, outlets, and terminal fittings *241*

**Section 14 — Protection and control** *250*
Scope *250*
General requirements *250*
Protective devices *254*
General *254*
Fuses *261*
Circuit breakers *263*
Control devices *264*
General *264*
Switches *265*
Protection and control of miscellaneous apparatus *267*
Solid-state devices *271*

**Section 16 — Class 1 and Class 2 circuits** *272*
General *272*
Class 1 circuits *273*
Class 2 circuits *276*

**Section 18 — Hazardous locations** *279*
Scope and introduction *279*
General *283*
Explosive gas atmospheres *295*
Installations in Zone 0 locations *295*
Installations in Zone 1 locations *296*
Installations in Zone 2 locations *311*
Explosive dust atmospheres *315*
Installations in Zone 20 locations *315*
Installations in Zone 21 locations *316*
Installations in Zone 22 locations *316*


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**Section 20 — Flammable liquid and gasoline dispensing, service stations, garages, bulk storage plants, finishing processes, and aircraft hangars** *319*
Gasoline dispensing and service stations *319*
Propane dispensing, container filling, and storage *324*
Compressed natural gas refuelling stations, compressors, and storage facilities *324*
Commercial repair garages *325*
Bulk storage plants *327*
Finishing processes *331*
Aircraft hangars *333*

**Section 22 — Locations in which corrosive liquids, vapours, or excessive moisture are likely to be present** *335*
General *335*
Equipment *335*
Wiring *337*
Drainage, sealing, and exclusion of moisture and corrosive vapour *340*
Circuit control *343*
Materials *343*
Bonding *343*
Sewage lift and treatment plants *343*

**Section 24 — Patient care areas** *346*
Patient care areas *346*
Isolated systems *352*
Essential electrical systems *355*

**Section 26 — Installation of electrical equipment** *356*
General *356*
Isolating switches *358*
Circuit breakers *358*
Fuses and fusible equipment *358*
Capacitors *359*
Transformers *364*
Fences *385*
Electrical equipment vaults *386*
Cellulose nitrate film storage *386*
Panelboards *387*
Lightning arresters *388*
Low-voltage surge protective devices *389*
Storage batteries *390*
Arc lamps *392*
Resistance devices *392*
Receptacles *393*
Receptacles for residential occupancies *396*
Branch circuits for residential occupancies *413*
Electric heating and cooking appliances *416*
Heating equipment *418*
Pipe organs *419*
Submersible pumps *419*
Data processing *420*

**Section 28 — Motors and generators** *421*
Scope *421*
General *422*
Wiring methods and conductors *425*
Overcurrent protection *437*
Overload and overheating protection *451*
Undervoltage protection *454*

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Control *456*
Disconnecting means *457*
Hermetic refrigerant motor-compressors *461*
Multi-winding and part-winding-start motors *465*
Protection and control of generators *466*

**Section 30 — Installation of lighting equipment** *467*
General *467*
Location of lighting equipment *468*
Installation of lighting equipment *469*
Wiring of lighting equipment *472*
Luminaires in buildings of residential occupancy *475*
Lampholders *477*
Electric-discharge lighting systems operating at 1000 V or less *478*
Electric-discharge lighting systems operating at more than 1000 V *479*
Recessed luminaires *479*
Permanent outdoor floodlighting installations *481*
Exposed wiring for permanent outdoor lighting *484*
Extra-low-voltage lighting systems *485*

**Section 32 — Fire alarm systems, fire pumps, and carbon monoxide alarms** *487*
Fire alarm systems *487*
Fire pumps *493*

**Section 34 — Signs and outline lighting** *498*
General requirements *498*
Enclosures *499*
Neon supplies *499*
Wiring methods *501*

**Section 36 — High-voltage installations** *504*
General *504*
Wiring methods *506*
Control and protective equipment *509*
Grounding and bonding *512*

**Section 38 — Elevators, dumbwaiters, material lifts, escalators, moving walks, lifts for persons with physical disabilities, and similar equipment** *524*

**Section 40 — Electric cranes and hoists** *533*

**Section 42 — Electric welders** *540*
General *540*
Transformer arc welders *540*
Motor-generator arc welders *541*
Resistance welders *548*

**Section 44 — Theatre installations** *555*
Scope *555*
General *555*
Fixed stage switchboards *555*
Portable switchboards on stage *557*
Fixed stage equipment *557*
Portable stage equipment *559*

**Section 46 — Emergency power supply, unit equipment, exit signs, and life safety systems** *560*
General *560*
Unit equipment *564*
Exit signs *568*

**Section 48** *Deleted*

**Section 50** *Deleted*



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**Section 52 — Diagnostic imaging installations** *569*

**Section 54 — Community antenna distribution and radio and television installations** *575*
Community antenna distribution *576*
Protection *578*
Grounding *579*
Conductors within buildings *580*
Equipment *581*
Conductors outside of buildings *582*
Underground circuits *583*
Receiving equipment and amateur transmitting equipment *585*
Grounding for receiving equipment and amateur transmitting equipment *586*
Transmitting stations *587*

**Section 56 — Optical fiber cables** *588*
Scope *588*
General *588*
Installation methods *590*

**Section 58 — Passenger ropeways and similar equipment** *592*
General requirements *592*
Conductors *592*
Wiring methods *592*
Protection and control *593*
Branch circuits *594*

**Section 60 — Electrical communication systems** *595*
Scope *595*
General *595*
Protection *596*
Inside conductors *598*
Equipment *601*
Outside conductors *603*
Underground circuits *605*
Grounding *606*

**Section 62 — Fixed electric heating systems** *610*
Scope *610*
General *610*
Electric space-heating systems *621*
Electric surface heating systems *631*
Other heating systems *634*

**Section 64 — Renewable energy systems** *637*
General *637*

**Section 66 — Amusement parks, midways, carnivals, film and TV sets, TV remote broadcasting locations, and travelling shows** *645*
Scope and application *645*
General *645*
Grounding *646*
Services and distribution *647*
Wiring methods and equipment *648*
Single-conductor cables *650*
Motors *654*

**Section 68 — Pools, tubs, and spas** *656*
Scope *656*
General *656*
Permanently installed swimming pools *665*

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Storable swimming pools *665*
Hydromassage bathtubs *666*
Spas and hot tubs *666*

**Section 70 — Electrical requirements for factory-built relocatable structures and non-relocatable structures** *671*
Scope *671*
Relocatable structures *671*
Non-relocatable structures (factory-built) *675*

**Section 72 — Mobile home and recreational vehicle parks** *676*
Scope and application *676*
General *676*

**Section 74 — Airport installations** *682*

**Section 76 — Temporary wiring** *687*

**Section 78 — Marinas, yacht clubs, marine wharves, structures, and fishing harbours** *691*
Marinas and yacht clubs *691*
Marine wharves, structures, and fishing harbours *697*

**Section 80 — Cathodic protection** *699*

**Section 82 — Closed-loop and pre-closed-loop power distribution** *704*

**Section 84 — Interconnection of electric power production sources** *707*

**Section 86 — Electric vehicle charging systems** *711*
Scope *711*
General *711*
Equipment *712*
Control and protection *712*
Electric vehicle supply equipment locations *713*

**Annex J18 — Hazardous locations classified using the Division system** *715*

**Annex J20 — Flammable liquid and gasoline dispensing, service stations, garages, bulk storage plants, finishing processes, and aircraft hangars** *717*

**Index** *718*



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# Introduction to the *CE Code Handbook*

This Handbook provides background information on the reasons behind the requirements in the *Canadian Electrical Code, Part I*, and gives an explanation of the Rules in plain, easy-to-understand language. The Handbook is intended to provide a clearer understanding of the safety requirements of the Code.

The content of this Handbook is not meant to form a code of mandatory requirements. The mandatory language ("shall") that is used in the *CE Code, Part I*, has not been used here. Care has been taken to ensure that the intent of the Code Rules is clear to the users of the Handbook. However, users of the Handbook must not under any circumstances rely on it to determine the current requirements of the Code. As always, reference must be made to the Code itself and any local amendments. CSA does not assume responsibility for any errors or omissions resulting from the information contained in this Handbook.

The Rules in the *CE Code, Part I*, are divided into two groups. Sections 0 to 16 and 26 are considered General Sections, and the other Sections supplement or amend those General Sections. Therefore a requirement in the supplementary Sections takes precedence over a general requirement. For example,

- Rule 12-1008 requires three threads to be engaged when making a threaded connection, whereas Rule 18-102 requires five threads to be engaged when making a threaded connection in a Zone 1 area.
- Section 4 permits the use of aluminum conductors, but Rule 32-100 does not allow aluminum conductors to be used in fire alarm systems.

# About the development of the *CE Code Handbook*

The Rationale and Intent for the first edition of this Handbook (1990) were researched and written by technical experts selected for their experience and knowledge of the subject. Their contributions were reviewed by a panel consisting of experienced inspection authorities, manufacturers, and educators responsible for teaching the *CE Code, Part I*. Technical experts developed the figures and schematics for each Section.

In the second edition of the Handbook (1994), changes were made to the Rationale and Intent, based on the deliberations of technical experts, members of the Subcommittees, and the members of the Committee on *Canadian Electrical Code, Part I*. In that edition, additional information was added in some areas under the heading "Field Considerations". Field considerations consisted of nonmandatory information to consider in the field, to ensure safe installation.

In the third edition of the Handbook (1998), changes were made to the Rationale and Intent, based on the deliberations of technical experts, members of the Subcommittees, and the members of the Committee on *Canadian Electrical Code, Part I*. Supplementary information was added in some areas under the heading "Field Considerations".

In the fourth edition of the Handbook (2002), similar changes were made to the Rationale and Intent, based on the deliberations of technical experts, members of the Subcommittees, and the members of the Committee on *Canadian Electrical Code, Part I*. Many detailed figures were added; the General Sections were rewritten in a simpler format; and other information was added under the heading "Field Considerations".

In the fifth edition of the Handbook (2006), the Rationale, Intent, and Field Considerations were consolidated to provide a more user-friendly explanation of the Code Rules. Additional figures were provided, as well as more examples and calculations to help the user put the Code into practice.

In the sixth edition of the Handbook (2009), the content was reviewed to ensure that it was both useful and accessible to the reader. Where the Handbook commentary on a specific Code Rule in previous editions provided little or no information beyond what was given in the Code itself, the Handbook commentary was deleted. Therefore, the sixth edition of the Handbook, unlike its predecessors, did not contain commentary on every Code Rule.

In the seventh edition of the Handbook (2012), significant revisions were made to address the extensive changes introduced in the 2012 edition of the Code. These changes affected most areas of the electrical industry. The changes included major updates to Section 50 on solar photovoltaic systems; a new Section 64 on

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renewable energy systems; several new conductor types and wiring methods; changes in ampacity calculations; revised and clarified grounding and bonding requirements; new requirements for receptacles; and new and revised requirements for electric vehicle charging infrastructure, hazardous locations, and electric heating.

In this, the eighth edition of the Handbook (2015), significant revisions have been made to address the extensive changes and the rewrite of Sections 18, 62, and 64 in the 2015 edition of the Code. These include changes in

- calculating conductor ampacity;
- voltage drop calculations;
- the sizing of bonding conductors;
- the selection of material for grounding conductors;
- the use of arc-fault circuit interrupters in dwelling units;
- the use of demonstrated loads in calculating the minimum ampere rating of services and feeders in occupancies other than dwelling units and apartment buildings;
- the use of ground fault circuit interrupters in marinas;
- the use of 320 A meter bases;
- determining the maximum number of conductors in conduit and tubing; and
- the disconnecting requirements for generators.

*January 2015*

**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 Special Publication is stated in its Introduction, it is important to note that it remains the responsibility of the users of this Special Publication to judge its suitability for their particular purpose.*

**(3)** *All enquiries regarding this Special Publication should be addressed to CSA Group, 178 Rexdale Blvd., Toronto, Ontario, Canada M9W 1R3.*

# Excerpt from the Preface to the *CE Code, Part I*

This twenty-third 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 2014 meetings in Charlottetown, Prince Edward Island. This twenty-third edition supersedes the previous editions, published in 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 features important revisions to many Sections. Section 4 now contains requirements for high-voltage cable ampacities and clarified Rules for conductor termination temperature. In addition, a new table (Table 39) simplifies residential service and feeder conductor selection. More options are provided for load and voltage drop calculations.

Bonding conductor selection has been clarified through the addition of the new Tables 16A and 16B. In addition, Section 12 contains many new and revised requirements for wiring methods, and the conduit fill tables have been expanded.

Section 18 has undergone major revisions. Requirements for Class II and Class III locations have been relocated to Appendix J, and requirements for explosive dust atmospheres based on IEC Zone 20, Zone 21, and Zone 22 have been added to Section 18. The requirements are now located as follows:


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| | |
|---|---|
| Zones 0, 1, 2, 20, 21, and 22 | Section 18 |
| Classes I, II, and III and associated Divisions | Appendix J |

**Note:** *References to Class I alone are intended as general references to all classifications of explosive gas atmospheres, Zone 0, Zone 1, and Zone 2.*

*References to Class II alone or to Class III alone are intended as general references to all classifications of explosive dust atmospheres, Zone 20, Zone 21, and Zone 22.*

*Specific references to a Zone of a Class I location are references to that Zone.*

*There are currently no references to Zones or Divisions of Class II or Class III locations in the body of the Rules of this Code (i.e., Sections 0 to 86).*

Other revisions in this edition include the following:

- requirements for arc-fault protection have been expanded and clarified;
- Section 50 has been merged with Section 64;
- Section 62 has been completely rewritten; and
- the term "injury" has been replaced with "damage" throughout the Code.

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

## 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.

(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 10-200(3)" and not "Subrule (3) of Rule 10-200").

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## 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 41 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.


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# Metric units

## Symbols and conversion factors for SI units

Recognized symbols for SI units are 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 |
| 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) |
| V | volt(s) | 1 | volt(s) |
| W | watt(s) | 1 | watt(s) |
| μF | microfarad(s) | 1 | microfarad(s) |

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# Conduit sizes

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

## Conduit 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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# Section 0 — Object, scope, and definitions

## Object

The object of the Code is to specify requirements for the installation and maintenance of electrical equipment to help ensure electrical safety. Electrical safety is also ensured through compliance with the objective-based fundamental safety principles of IEC 60364-1 and through the implementation of a quality management or equivalent program acceptable to the authorities having jurisdiction over the adoption and enforcement of the Code.

In the preparation of the Code, consideration has been given to the following four major areas:

- the prevention of fire hazards by
  - using overcurrent protection for
    - short-circuits; and
    - excessive current (overload);
  - providing clearances from combustible materials; and
  - preventing ignition of hazardous and combustible materials;
- the prevention of shock hazards by
  - grounding and bonding to
    - establish an equipotential plane so that the possibility of a potential difference between metal parts is minimized;
    - connect to earth the equipotential plane, thereby minimizing any potential difference to earth; and
    - provide a low impedance path for fault current to flow back to the source; or
  - using insulation to separate conducting surfaces. Insulation can consist of a dielectric material or an air space that has high enough resistance to prevent the flow of current and/or the discharge of disruptive voltage spikes (e.g., from lightning or transients) from causing damage to the installation and/or endangering personnel (electric shock);
- the installation and maintenance requirements for electrical equipment to ensure essentially safe installation and operation; and
- the proper operation of electrical installations and electrical equipment by ensuring that they are
  - installed to meet the conditions of use/applications; and
  - certified/approved to
    - a CSA Group Standard
    - other recognized documents, where such CSA Group Standards do not exist or are not applicable; or
    - the requirements of the authority having jurisdiction.

Safe installations may also be achieved by alternatives to the Code provided that such alternatives meet the fundamental safety principles of IEC 60364-1 (see Appendix K).

The Code recommends that, when considering new installations, designers and field personnel make provision for wiring changes that might be required as a result of future load growth. If future growth is not taken into consideration, electrical installations can become overloaded, resulting in hazardous conditions.

## Scope

The Code covers all electrical installations for buildings, structures, and premises and is intended to apply to all voltages. Although low voltages might not pose a shock hazard, various conditions can lead to physical injury and damage to equipment, even at seemingly harmless voltage levels.

The Scope specifies the subjects that the Code covers. In addition, it lists subjects not covered so that the reader can determine what other requirements apply, as determined by the authority having jurisdiction. For example, the requirements for electrical systems on aircraft and ships are not covered in the Code but are regulated by Transport Canada. If an application is excluded from the Scope of the Code, the authority having jurisdiction should be contacted to determine the requirements that do apply.

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# Definitions

The definitions in the Code help to clarify the intent of the requirements and should be consulted regularly. Terms defined in Section 0 apply equally throughout the Code, while terms defined in an individual Section apply only to that Section. Where a defined term is used, the Code definition and not the dictionary definition should be used. For terms not specifically defined in the Code, the conventional (trade) meaning or dictionary definition should be used.

Although not defined within the Code, the following terms are commonly used in the electrical trade and are provided here for information purposes.

**Across-the-line motor controller** — a full voltage motor controller.

**Alu-sheath** — cable that is aluminum-sheathed.

**Antishort** — the insulated bushing required where armoured cable is terminated.

**Appliance** — a portable unit or a group of units assembled to form a complete unit.

**Backfeeding** — electric power flowing in the opposite direction from its usual flow. For cost reasons, many of the circuit (overcurrent) protection and power quality control (voltage regulation) devices used by electric utility companies are designed based on the assumption that power always flows in one direction. For additional information, see Rule 84-004 as well as other Rules in Section 84.

**Burndy® connector** — a split-bolt-type connector for splicing conductors.

**Bus duct** (or **busway**) — a prefabricated electrical distribution system consisting of busbars (high current conductors used to make a common connection between several circuits in a system) in a protective enclosure, including straight lengths, fittings, devices, and accessories.

**BX** — a type of armoured cable.

**Cab tire** — flexible cord with a CSA Group letter designation beginning with the letter "S".
**Note:** *Cab tire is usually hard usage or extra-hard usage.*

**Chico** — a sealing compound used in explosion-proof seals.
**Note:** *See Sections 18 and 20.*

**Code fuse** — a standard certified fuse.

**Condulet®** — an electrical box used to provide access to wires placed within conduit. It differs from a junction box, which is larger, providing space for pulling wires and making splices.

**Coreflex (RA90 and RC90)** — single or multiple copper or aluminum conductors with cross-linked polyethylene insulation (RW90 XLPE) enclosed in a continuously welded and corrugated solid aluminum or copper sheath.

**Corona** — ionization that occurs in an insulating system when the potential gradient exceeds a certain value and that may lead to insulation failure. Visible corona effects may appear as a luminous discharge on the surface of a conductor due to ionization of air.

**Corona effect** — the effect produced when two wires or other conductors having a difference of voltage are placed in close proximity to one another.

**Problems caused by corona discharges** — Coronas can generate audible and radio-frequency noise, particularly near electric power transmission lines. They also represent a power loss, and their action on atmospheric particulates, along with associated ozone and nitrogen oxide (NOx) production, can be disadvantageous to human health where power lines run through built-up areas. Therefore, power transmission equipment is designed to minimize the formation of corona discharge.

Corona discharge is generally undesirable in

- electric power transmission, where it causes
  - power loss;


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  - audible noise;
  - electromagnetic interference;
  - purple glow;
  - ozone production; and
  - insulation damage;
- electrical components such as transformers, capacitors, electric motors, and generators. Corona discharge progressively damages the insulation inside these devices, leading to premature equipment failure. An example of this type of damage is ozone cracking of elastomer items such as O-rings; and
- situations where high voltages are in use, but ozone production is to be minimized.

Coronas can be suppressed by corona rings, toroidal devices that serve to spread the electric field over larger areas and decrease the field gradient below the corona threshold.

**Corrosion** — a process in which a solid, most commonly a metal, is changed by a chemical reaction.

**Device box** — a box that holds a device (e.g., a switch, receptacle, or cover) by means of No. 6-32 machine screws. The following are types of device boxes:
- No. 1100 — 3 × 2 × 1-1/2 inch device box
- No. 1102 — 3 × 2 × 2 inch device box
- No. 1104 — 3 × 2 × 2-1/2 inch device box
- No. 1004 — 3 × 2 × 3 inch device box

**Electro-strip®** — a multi-outlet assembly.

**Enclosure** — an enclosed space that provides mechanical, electrical, and/or environmental protection for a control device.

**Equipotential surface/plane** — a surface having all areas/parts at a single potential to ground.

**EYS** — an explosion-proof, Y-shaped sealing fitting used to prevent passage of gases, vapour, or flames from one portion of a conduit system to another.
**Note:** *See Sections 18 and 20.*

**Functionally associated** — the direct relation of the optical fiber cables to the control or signalling of the electrical circuit involved.

**Grounded conductor** — a conductor that is bonded to ground.
**Note:** *A grounded conductor is often confused with a neutral.*

**Harmonics** — integer multiples of the fundamental frequency (50 or 60 Hz) caused by non-linear loads.

**Heater** (in a thermal overload device) — a field-replaceable component of a thermal overload device that provides the heat that is necessary for the thermal overload device to function.

**Hickey** —
- a manual bending device used to bend rigid metal conduit; or
- a coupling used to connect a luminaire to its supporting device.

**Loomex** — cable that is non-metallic-sheathed.

**Neutral conductor** — the conductor connected to the neutral point of a system and intended to carry current under normal conditions.

**Neutral point** — the common point on a wye-connection in a polyphase system; the midpoint on a single-phase, 3-wire system; the midpoint of a single-phase portion of a 3-phase delta system; or the midpoint of a 3-wire, direct-current system.
**Notes:**
**(1)** *At the neutral point of the system, the vectorial sum of the nominal voltages from all other phases within the system that utilize the neutral, with respect to the neutral point, is zero potential.*
**(2)** *A 3-phase, 4-wire, wye-connected power system used to supply power to nonlinear loads may necessitate that the power system design allow for the possibility of high harmonic currents on the neutral conductor.*

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**Neutral supported cable (Type NS)** — an assembly of one, two, or three insulated phase conductors and an optional insulated control/supply conductor factory-cabled around a neutral conductor. The neutral conductor is the supporting member.

**Nipple** — a short section of conduit between fittings, between fittings and enclosures, or between enclosures.

**Nolox®** — a joint compound that is used to prevent oxide film from forming or reforming on the termination or splice of stranded aluminum conductors.

**Open-circuit voltage** — the voltage when no appreciable current is flowing.

**Open wiring** — where single conductors with no protective covering are run exposed (i.e., not concealed) and supported on insulators.

**Outlet box** — a box that uses No. 8-32 machine screws for the attachment of fixtures (e.g., luminaires, ceiling fans, covers, plaster rings, extension rings). The following are types of outlet boxes:
- Pancake — 1/2 inch deep round box
- Octagonal — 4 × 4 × 1-1/2 inch deep
- Square — 4 × 4 × 1-1/2 inch deep
- Square — 4-11/16 × 4-11/16 × 2-1/8 inch deep

**Plugmold®** — a surface raceway system.

**Pot light** — a recessed luminaire.

**Pyrotenax cable®** — a type of mineral-insulated cable.

**Quadruplex** — neutral supported cable that has three insulated conductors.
**Note:** *A quadruplex is also known as a phaseplex.*

**Romex** — cable that is non-metallic-sheathed.

**Rosette** — a device that is used for supporting and connecting the circuit, cord, and sockets of flexible drop cords.

**Running board** — a piece of material at least 19 mm thick that is used to protect conductors or cables from mechanical damage.

**Running thread** — the length of external thread on a rigid conduit that exceeds the maximum length stated in Table 40 of the Code. A characteristic of running threads is that they are not tapered. As the conduit runs through the die, the smallest diameter is met and more threads are added. The loss of taper at one end reduces the wedge that would make the coupling or hub tight to the raceway and loss of bonding and structural integrity can result. In hazardous locations, the flame path required by the threaded connection could be compromised, creating a potential for atmospheric explosion.

**Seal-tight flex** — liquid-tight flexible conduit.

**Shielding** — a grounded conductive medium that prevents undesirable influence of electromagnetic fields, pick-up of signals, induction, stray currents, ac hum, radiation of an electrical signal, etc. Shielding confines the magnetic field of an electric cable to the inside of the cable installation or insulated conductor assembly by surrounding the insulation or assembly with a grounded conductive medium called a shield.

**Standard fuse** — a certified code fuse.

**Strain-relief device** — a device that is designed to prevent tension or twisting forces from being transmitted to conductors and conductor terminations.

**Stud** (with respect to a luminaire) — a conduit that is run between a luminaire and the fixture hickey (coupling) or between the fixture hickey (coupling) and the outlet box supporting the luminaire.

**Tap conductor** — a conductor that has an ampacity rating less than the ampacity of the conductor or busbar that is feeding it.


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**Tracking (surface tracking/leakage)** — the formation of a conducting path, usually caused by solid materials (e.g., carbon) or moisture being deposited on the surface of an insulating material between two parts of different polarity. The tracking/creepage distance is the shortest distance measured along the surface of an electrically insulating material between two conductive parts of different polarity. The length of tracking or creepage distance depends on the working voltage between the two conductive parts and the electrical insulating material's resistance to the buildup of foreign conductive materials or moisture.

**Transient voltage** — a momentary abnormally high voltage on a signal or power line.
**Note:** *Transient voltage can produce false signals or triggering impulses and can cause insulation or component breakdowns and failures.*

**Triplex** — neutral supported cable that has two insulated conductors.

**Wiremould®** — a surface raceway.

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# Section 2 — General rule

Section 2 is a general Section of the Code that incorporates certain administrative provisions (intended to assist regulators in adopting the Code for regulatory purposes) and general, all-encompassing technical requirements. These general requirements apply to all Sections, unless amended within a specific Section.

## Administrative

Rules 2-000 to 2-032 are administrative requirements that may vary from one administrative authority (city, province, or territory) to another. They have been included in the Code as a guide to help the jurisdictions standardize the administrative requirements related to enforcing the Code.

### Rule 2-024 Use of approved equipment

Rule 2-024 has two requirements: equipment must be "approved" and be "approved for the specific purpose". "Approved" equipment is

- electrical equipment that has been certified by a certification organization accredited by the Standards Council of Canada to be in accordance with the requirements (i.e., having passed the required construction requirements and testing) outlined in
  - CSA Standards;
  - standards that have been developed by the Standards Council of Canada (SCC) accredited Standards Development Organization; or
  - other recognized documents (ORDs) where CSA Standards do not exist or are not applicable, provided they
    - are correlated with provisions of the Code, Part I, and
    - do not create duplication with existing CSA Part II Standards listed in Appendix A; or
- equipment that conforms to the requirements of the regulatory authority (see Appendix B).

When equipment has met the requirements of the certification process, CSA or another accreditation certification body grants a licence to apply the CSA mark (sometimes called a monogram or logo) or the certification mark of the other body to a product, indicating that it complies with applicable requirements.

The certification process is based on written requirements (in applicable Standards) and a documented certification program. Certification addresses a product's safety and its compliance with applicable written requirements.

A typical certification process is as follows:

- A manufacturer/organization submits a Request for Quotation to CSA.
- After the quotation is accepted and agreed to, CSA determines the location for testing.
- CSA evaluates the product according to program criteria.
- CSA prepares a summary report.
- If a product complies with the Standards, the CSA mark is issued.

The certification organization's certification mark (usually located on the equipment's nameplate) indicates that the equipment/product is certified. Note that the authority having jurisdiction (AHJ) has the final say on which certification organization approvals it will accept. Therefore, although a certification organization is accredited by the SCC, a certified product might not be approved by the authority having jurisdiction.

Figure 2-1 shows the CSA certification marks for products certified for Canada only, Canada and the US, and the US only.


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