

Electrical Technical Session

Safety Codes Council Webinar

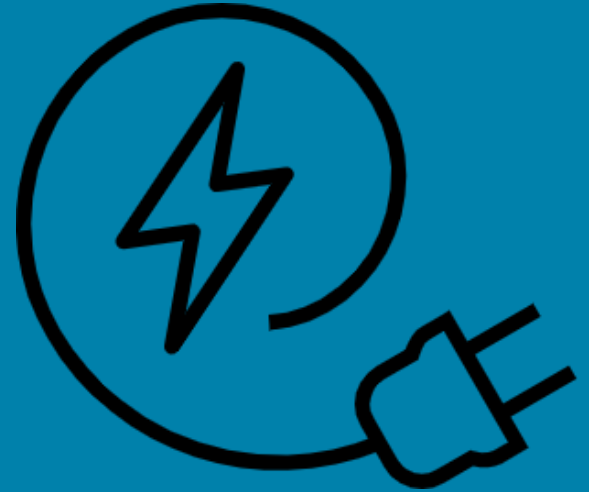
Clarence C. Cormier, P.Eng.

Provincial Electrical Administrator

SDS, CTS, TCS

Alberta Municipal Affairs

Friday, September 25, 2020



Alberta

Electrical Code Regulation

“This regulation adopts national and provincial electrical safety codes.”



Province of Alberta

SAFETY CODES ACT

ELECTRICAL CODE REGULATION

Alberta Regulation 209/2006

With amendments up to and including Alberta Regulation 186/2018

Current as of February 1, 2019

Office Consolidation

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Suite 700, Park Plaza
10611 - 98 Avenue
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Electrical Code Regulation

- Section 1 Definitions
- Section 2 Electrical systems equipment
- Section 3 Codes declared in force
- Section 4 Repeal
- Section 5 Coming into force

Electrical Code Regulation

Definitions

1(1) In this Regulation,

- (a) “Act” means the *Safety Codes Act*;
- (b) “certification body” means an organization accredited by the Standards Council of Canada as a certification body;
- (c) “inspection body” means an organization accredited by the Standards Council of Canada as an inspection body.

(2) The definitions in the Act and a code declared in force by this Regulation apply to the words used in this Regulation.

Electrical systems equipment

2(1) If a code, standard or body of rules declared in force under the Act with respect to electrical systems requires approved equipment, that equipment must meet the requirements of this section.

(2) No person shall manufacture, install, sell or offer for sale any equipment related to electrical systems for use in Alberta unless the equipment has been

- (a) certified by a certification body in accordance with the certification body’s terms of accreditation with the Standards Council of Canada, or

Electrical Code Regulation

(b) inspected by an inspection body in accordance with the inspection body's terms of accreditation with the Standards Council of Canada.

(3) Subsection (2) does not apply to electrical equipment of an electric distribution system or a transmission line as defined in the *Hydro and Electric Energy Act*.

Codes declared in force

3 The following codes, as amended or replaced from time to time, are declared in force in respect of electrical systems:

- (a) the CSA Standard C22.1-18 - 2018 Canadian Electrical Code, Part 1 (24th edition), Safety Standard for Electrical Installations, published by the CSA Group;
- (b) the Alberta Electrical Utility Code - 5th Edition, April 2016, published by the Safety Codes Council.

AR 209/2006 s3;14/2008;178/2009;176/2013;
126/2015;186/2018

Repeal

4 The *Electrical Code Regulation* (AR 145/2002) is repealed.

Coming into force

5 This Regulation comes into force on September 1, 2006.

Schedule Repealed AR 126/2015 s3.

Electrical Code Regulation - STANDATA

LEGISLATION Electrical Code Regulation

SUBJECT: Section 2 - Electrical Systems Equipment

Definition

Rule 2-024 of the Canadian Electrical Code (CE Code) requires that electrical equipment be approved. The CE Code defines "approved" in Section 0.

In Alberta, section 2 of the *Electrical Code Regulation* prescribes the conditions for the use of equipment related to electrical systems and applies these requirements to the term "approved" as referenced in the Code. Section 2 of the *Electrical Code Regulation* reads as follows:

- 2(1) If a code, standard or body of rules declared in force under the Act with respect to electrical systems requires approved equipment, that equipment must meet the requirements of this section.
- (2) No person shall manufacture, install, sell or offer for sale any equipment related to electrical systems for use in Alberta unless the equipment has been
 - (a) certified by a certification body in accordance with the certification body's terms of accreditation with Standards Council of Canada, or
 - (b) inspected by an inspection body in accordance with the inspection body's terms of accreditation with Standards Council of Canada
- (3) Subsection (2) does not apply to electrical equipment of an electric distribution system or transmission lines as defined in the *Hydro and Electric Energy Act*.

The regulation defines "certification body" and "inspection body" as follows:

"certification body" means an organization accredited by the Standards Council of Canada as a certification body.

"inspection body" means an organization accredited by the Standards Council of Canada as an inspection body.

Products certified by an accredited certification body are approved; also, products deemed acceptable by an inspection body through a field evaluation process, such as SPE-1000, or SPE-3000 for medical equipment, are also approved.

A directory of certification bodies and inspection bodies and their respective scope of accreditation can be found on the Standards Council of Canada's website at:

Certification:

www.scc.ca/en/accreditation/product-process-and-service-certification/directory-of-accredited-clients

Inspection:

www.scc.ca/en/accreditation/inspection-bodies/directory-of-accredited-clients



“No person shall **manufacture, install, sell or offer for sale** any equipment related to electrical systems for use in Alberta unless the equipment has been approved by a CB/IB.”

NOTICE

New Canadian Electrical Code, Part I

Codes in Force under the Regulation

The Canadian Electrical Code, Part I (Twenty-fourth edition) was published in January 2018 by the Canadian Standards Association (CSA) and automatically comes into effect on February 1, 2019 throughout the Province of Alberta.

The Electrical Code Regulation now adopts the following two codes:

- **CSA- C22.1-18 – Canadian Electrical Code, Part I (twenty-fourth edition)** – This code provides the minimum safety standards for the installation and maintenance of electrical equipment.
- **Alberta Electrical Utility Code – 5th Edition, 2016** – This code provides the minimum safety standard for the installation and maintenance of electrical utility systems in Alberta.

The *Code for Electrical Installations at Oil and Gas Facilities* is no longer adopted in Alberta as the Canadian Electrical Code, Part I (twenty-fourth edition) now regulates this work.

Persons who have received permission (or a permit) by the Authority Having Jurisdiction to undertake electrical installations regulated under the previous Canadian Electrical Code, Part I (twenty-third edition) prior to February 1, 2019 will be considered in compliance with the *Safety Codes Act*. Installations permitted on or after February 1, 2019 are required to conform to the new edition of the Canadian Electrical Code, Part I. Unless an unsafe condition exists or would exist in the opinion of the Authority Having Jurisdiction, electrical installations in progress should not be required to be updated to the new codes and result in undue hardship or cost. Questions regarding unusual situations should be directed to the Authority Having Jurisdiction.

For area classification requirements at oil and gas facilities permitted or constructed prior to February 1, 2019, the use of the "Code for Electrical Installations at Oil and Gas Facilities", published by the Safety Codes Council, is permitted. For oil and gas facilities permitted on or after February 1, 2019, the prescriptive requirements of Rule 18-004 of the 2018 Canadian Electrical Code, Part I shall apply.

Information on Purchasing the Codes and Code Update Training

The Canadian Electrical Code may be purchased directly from the Canadian Standards Association at <https://store.csagroup.org/>, or from applicable electrical wholesalers and post-secondary institutions.

For code update training information and timelines, please check the Safety Codes Council site at www.safetycodes.ab.ca/SCO/Training/Pages/Code-Update-Training.aspx

The Alberta Electrical Utility Code is available at Alberta Queen's Printer at www.qp.alberta.ca/570.cfm?fm_isbn=9780779792467&search_by=link

January 31, 2019

For more information, please call 1-866-421-6929, or visit www.municipalaffairs.alberta.ca

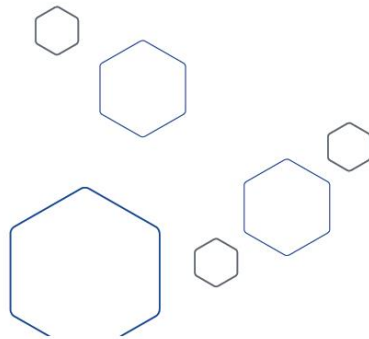


“In general, electrical installations on the supply authority side of the demarcation point are regulated by the AEUC whereas electrical installations on the consumer side of the demarcation point are regulated by the CE Code, Part 1.”



Two Exceptions:

- A corporation accredited by the SCC for both the AEUC and the CE Code, Part 1;
- A municipality under contract with a supply authority for care and control.



Fifth Edition
Spring 2016



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Overhead systems



Underground systems



2016 AEUC - STANDATA

2016 ALBERTA ELECTRICAL UTILITY CODE

SUBJECT: Section 2 – General Rules

Rule 2-024 Consumer's Service Connection

Purpose:

Industry has requested clarification regarding the demarcation point between Consumer installations and Utility/Supply Authority installations.

Code references:

Alberta Electrical Utility Code

2-024 Consumer's Service Connection

The operator of a utility system shall not connect, or allow to be connected, an electrical consumer's service to the electric utility system unless:

- (a) the attachment point for conductors used on overhead systems to supply the consumer's service is located so that the conductors maintain required clearances;
- (b) the metering equipment and location are acceptable;
- (c) the electric utility has assurance from the owner or the owner's agent that the installation is ready for connection and no obvious hazards should result;
- (d) the electric utility has received a copy of a valid permit or authorization issued by the authority having jurisdiction; and
- (e) for existing service re-connections, and at the discretion of the electric utility, a re-inspection of the consumer's service is performed.

Canadian Electrical Code, Part I

Section 0 — Object, scope, and definitions

Service, consumer's — all that portion of the consumer's installation from the service box or its equivalent up to and including the point at which the supply authority makes connection.

2016 AEUC - STANDATA

Supply authority — any person, firm, corporation, company, commission, or other organization responsible for an electrical power distribution network that connects to a consumer's service (see Appendix B).

Discussion:

There are differences in how the demarcation is determined in various jurisdictions, as well as differences between commercial and residential, underground and overhead, etc. It is important to prevent any gaps in oversight between the Utility SCO and the Consumer SCO.

Examples in the Canadian Electrical Code Handbook do not cover all situations and have led to confusion.

Also, the demarcation point has to meet the requirements of both the Canadian Electrical Code, Part I and the Alberta Electrical Utility Code, e.g. if the property line is deemed to be the demarcation point, then a splice/connection must exist at the property line.

Interpretation:

The purpose of the STANDATA is to provide guidance in situations where the demarcation point is not already identified.

The location of the demarcation point can be unique for each customer as determined by the supply authority; however, for the purposes of determining demarcation between the Canadian Electrical Code, Part I and the Alberta Electrical Utility Code, the typical point of demarcation:

- for an overhead service is the connection point at the service head;
- for a residential underground service is the line side terminal of the customer's meter base;
- for a commercial underground service is the secondary terminals of the transformer; and in the event that the commercial service cabling system is extended from the transformer to pedestals or underground enclosures, then the demarcation point is the terminals in the pedestals or the underground enclosures.

The demarcation point should be identified in all cases.

This INTERPRETATION is applicable throughout the province of Alberta.

2016 AEUC - STANDATA

2016 ALBERTA ELECTRICAL UTILITY CODE

ERRATA

SUBJECT: Re-Introduction of Missing Former Section 10 Code Clause in Section 2

DISCUSSION:

The Alberta Electric Utility Code (AEUC) 2016 was brought into force on May 1, 2017. A clause has been found to be missing from the 2016 AEUC that was previously located in Section 10 of the 2013 Edition. After investigation, it was determined that the clause in question was supposed to have been moved from Section 10 to Section 2 of the code during the AEUC 2016 code review process, however, the latter step of adding the clause to Section 2 of the code was accidentally missed.

CODE REFERENCES:

2013 AEUC (clause removed in 2016 code revision)

10-002 Standard to be Used

CSA Standard C22.3 No.1-15, Overhead Systems, shall be the standard for the construction and maintenance of overhead electrical utility and communication systems, with amendments to that standard as follows:

(5) Amend 4.3 by adding the following:

4.3.7 Operation and Maintenance

- (1) The operator of a utility system shall ensure that the equipment and lines are:
 - (a) not energized unless the equipment and lines meet the requirements of this Standard; and
 - (b) visually inspected at regular intervals, as required; and
 - (c) maintained in accordance with this Standard.
- (2) The operator of an electrical utility system shall ensure that equipment or lines not in use are maintained in accordance with this Standard.
- (3) The operator of communication systems shall ensure that equipment or lines not in use are maintained in accordance with this Standard.

2016 AEUC - STANDATA

ERRATA

Add:

Rule 2-032 Operation and Maintenance

- (1) The operator of a utility system shall ensure that the equipment and lines are:
 - (a) not energized unless the equipment and lines meet the requirements of this Code; and
 - (b) visually inspected at regular intervals, as required; and
 - (c) maintained in accordance with this Code.

- (2) The operator of an electrical utility system shall ensure that equipment or lines not in use are maintained in accordance with this Code.

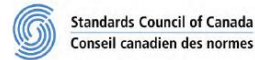
- (3) The operator of communication systems shall ensure that equipment or lines not in use are maintained in accordance with this Code.

These ERRATA are applicable throughout the province of Alberta.



CANADIAN ELECTRICAL CODE, PART I

SAFETY STANDARD FOR ELECTRICAL INSTALLATIONS



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-Single user license only. Storage, distribution or use on network prohibited. Permis d'utilisateur simple seulement.
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2018 CE Code, Part 1 – STANDATA

Section 0 — Object, scope, and definitions

Retroactive Application of Requirements

The following is intended as an explanation for code updates which contain more stringent requirements than those contained in a previous code edition, and the impacts of those changes on existing electrical installations.

Upon adoption of a new edition of a Code, an existing installation in compliance with the previous edition of the Code(s) in force at the time of the installation is generally not required to be upgraded to meet the requirements of the newly adopted Code.

There have been instances, however, where an existing installation is deemed to pose an unacceptable risk, despite having met the requirements in force at the time it was constructed. In those cases, new legislation is normally introduced to mandate that the installation be brought to current Code requirements. An example would be the mandating of smoke alarms in the late 1970s to be installed retroactively in all homes, old and new.

Modifications to an existing installation that introduce changes to the characteristics of the installation would require that part or all of the installation be made to comply with the requirements of the current Code in force at the time the modifications are made. This should be discussed with the Authority Having Jurisdiction (AHJ) prior to design / construction.

2018 CE Code, Part 1 - STANDATA



2018 CE Code, Part 1 - STANDATA

Section 0 — Object, scope, and definitions

Street Lighting and Primary Metered Installations

Supply authorities have traditionally installed, operated and maintained street-lighting and high voltage distribution facilities. Due to deregulation, some supply authorities have divested themselves of the street-lighting portion of their operations or allowed for the primary metering of high voltage distribution systems. Other organizations, such as municipal and/or provincial transportation departments, are taking over these installations. It is not clear as to which electrical code applies, the CE Code, Part I, or the AEUC.

In Alberta, two electrical codes are adopted and in force:

- The Canadian Electrical Code (CE Code), Part I for use by other than the Supply Authority in the exercise of its function as an electric utility;
- The Alberta Electrical Utility Code (AEUC), which indirectly adopts the CE Code, Part III, No. 1 and 7 with amendments, for use by the Supply Authority in the exercise of its function as an electric utility.

Ownership notwithstanding, if the street lighting installation or primary metered distribution system is under the care and control of the Supply Authority, it shall meet the requirements of the AEUC. If, however, these installations are under the care and control of an organization other than the Supply Authority, they shall meet the requirements of the CE Code, Part I.

Accredited corporations that are authorized to provide services under both the CE Code, Part I and the AEUC may do so according to the applicable scope.

2018 CE Code, Part 1 - STANDATA

Section 0 — Object, scope, and definitions

Street Lighting and Primary Metered Installations

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Accredited corporations that are authorized to provide services under both the CE Code, Part I and the AEUC may do so according to the applicable scope.

2018 CE Code, Part 1 - STANDATA



2018 CE Code, Part 1 - STANDATA

2018 Canadian Electrical Code

Rule 2-024 Use of approved equipment

PURPOSE

Industry has identified an issue with the approval requirements for Meter Mounted Transfer Equipment and the limitations in quantity of units permitted for Field Evaluation by SPE-1000.

CODE REFERENCES

Rule 2-024 Use of approved equipment

1) Electrical equipment used in electrical installations within the jurisdiction of the inspection department shall be approved and shall be of a kind or type and rating approved for the specific purpose for which it is to be employed.

2) Notwithstanding Subrule 1), equipment described in Rule 16-222 1) a) shall not be required to be approved.

Electrical Code Regulation - Electrical systems equipment

2(1) If a code, standard or body of rules declared in force under the Act with respect to electrical systems requires approved equipment, that equipment must meet the requirements of this section.

(2) No person shall manufacture, install, sell or offer for sale any equipment related to electrical systems for use in Alberta unless the equipment has been

- (a) certified by a certification body in accordance with the certification body's terms of accreditation with the Standards Council of Canada, or
- (b) inspected by an inspection body in accordance with the inspection body's terms of accreditation with the Standards Council of Canada.

(3) Subsection (2) does not apply to electrical equipment of an electric distribution system or a transmission line as defined in the *Hydro and Electric Energy Act*.

(Note: "certification body" is defined as "an organization accredited by the Standards Council of Canada as a certification body;" and "inspection body" is defined as "an organization accredited by the Standards Council of Canada as an inspection body.")

SPE-1000

1.2

The following are examples of where this Model Code applies:

- c) equipment sold in quantities of not more than 500 on a national basis, per model, per year, per inspection body;

2018 CE Code, Part 1 - STANDATA

DISCUSSION

Rule 2-024 requires that electrical equipment be approved. Section 2 of the *Electrical Code Regulation* mandates the approval requirements: <https://open.alberta.ca/dataset/4d953ad0-bc89-41f1-aae4-6b92782ac601/resource/807d582d-4e44-4557-a7aa-0b00004c7957/download/330-leg-ecr-2-rev25.pdf>

There is seldom occasion where we cannot meet this requirement. Situations do exist however, where the requirement may be onerous or impracticable.

In the specific situation of Meter Mounted Transfer Equipment, there is no Canadian standard for evaluation of this equipment. A US standard, UL 1008M, does exist and inspection bodies are able to use this standard, in conjunction with SPE-1000, to approve this equipment for Canada.

Efforts are underway to develop a Tri-National standard for Canada, the US, and Mexico based on the published version of UL 1008M. Unfortunately, this may not be completed until 2021.

In the meantime, demand for these units in Canada is steadily increasing which exceeds the 500 unit limitation of SPE-1000-1.2(c).

An interim solution would be to accept certification of these devices to UL-1008M and SPE-1000, while striking the 500 unit limitation.

VARIANCE

Rule 2-024 & SPE-1000

Item 1.2(c) of the SPE-1000, which establishes a 500 unit limitation, shall not apply to Meter Mounted Transfer Equipment in Alberta until an applicable Canadian Standard has been published. The equipment shall otherwise meet the requirements of the SPE-1000 as well as UL 1008M.

Persons contemplating the use of meter mounted transfer equipment are advised to check with their local Supply Authority to ensure the proposed installation is acceptable.

This variance provides approximately equivalent or greater safety performance with respect to persons and property as that provided for by the Safety Codes Act.

This VARIANCE is applicable throughout the province of Alberta and remains in force until a Canadian standard for meter mounted transfer equipment is published.

2018 CE Code, Part 1 - STANDATA



2018 CE Code, Part 1 - STANDATA

Rule 2-200 General

Protection of automobile heater receptacles and electric vehicle supply equipment (EVSE)

Electrical installations must have adequate protection from mechanical damage. You can reduce the risk of damage by installing the equipment in such a way that it is protected by location or by providing mechanical protection.

- Protection by location can be achieved by installing the equipment on structures of adequate strength (i.e., fences, walls, etc.). You should also ensure that the equipment is located in such a way that it is not subject to accidental damage from vehicles. (e.g., minimum 750mm above grade, on the side of a guard-rail not subject to damage by vehicles, etc.)
- Mechanical protection for freestanding equipment can be provided in a number of ways, the most common being wheel stops and reinforced concrete posts.
 - Wheel stops should be 150mm wide by 150mm high and located not less than 900mm from the equipment. They should be properly secured using 5/8" (15.875mm) rods driven 300mm into the parking surface or 5/8" (15.875mm) bolts set into a concrete slab.
 - Reinforced concrete posts should be no less than 300mm in diameter with the equipment:
 - (a) mounted on the face of the post opposite the vehicle, or
 - (b) cast into concrete posts with the equipment no less than 750mm above grade where facing the vehicles, or
 - (c) mounted on rigid conduit extending beyond the top of the concrete post allowing for the installation of the equipment.
- To ensure an acceptable installation, consult with the authority having jurisdiction before proceeding.

2018 CE Code, Part 1 - STANDATA

Rule 2-326 Electrical equipment near combustible gas equipment

Rule 2-326 instructs the Code user to refer to CSA B149 (Natural Gas and Propane Installation Codes) to determine the correct clearance distance between arc-producing electrical equipment and a combustible gas relief device or vent. The Appendix B note to this Rule provides distance requirements for commonly found gas equipment; however, the Appendix B note is not an exhaustive list of all equipment found in CSA B149, such as those devices certified to CSA 6.18 or CSA 6.22.

A Variance STANDATA (VAR-GAS-02-19) has been issued in the Gas Discipline which affects this rule in Alberta. In some instances, the recommended 1m clearance is varied to 300 mm:

<https://www.alberta.ca/gas-codes-and-standards.aspx>

2018 CE Code, Part 1 - STANDATA

Rule 4-022 Installation of identified conductor

Identified Conductor

An identified conductor is a conductor that has either a white or grey covering (or other effective means), or, in the case of certain flexible cords, a raised longitudinal ridge. In either case, the identified conductor is the grounded circuit conductor or a neutral.

Pigtailing of identified conductor

Where a device, such as a receptacle or lampholder, is fed from a 2-wire circuit employing an identified conductor, pigtailing the identified conductor is not required. Where a device is fed from a multi-wire branch circuit employing an identified conductor, pigtailing of the identified conductor is required as per Rule 4-030 4).

2018 CE Code, Part 1 - STANDATA

10-612 Bonding conductor connection to electrical equipment

Bonding and Pigtailing Requirements for General Use Switches

Clarification is requested by industry regarding Rule 10-612 (5) that states “In the case of metal-enclosed systems where bonding is provided by the metal enclosure, and a device attached to the enclosure has a bonding terminal, a bonding conductor shall be installed to bond the device to the enclosure.”

The question is in regard to the bonding screw that is provided with the switches that are universally sold in Canada. In the United States, the bonding screw is a requirement for jurisdictions that allow plastic boxes that do not have the bonding strap in their design. It is believed that those kind of boxes are not allowed anywhere in Canada. Manufacturers have indicated that the screw is left on the Canadian product only as an option. A rewording of this rule is in the works at the CSA level but will not appear until at least the next code cycle.

It was reported that some manufacturers include bonding screws and others don't include them when shipping them to Canada. It has been clarified that as long as the switches are screwed into a metal strap, providing continuous bonding, it should be acceptable to the AHJ.

2018 CE Code, Part 1 - STANDATA

Rule 18-050 Electrical Equipment

Gas Variance VAR-GAS-03-19

Industry is reminded that, where individual HAZLOC components are certified, but the entire assembly is not certified, CAN/CSA C22.2 No. 60079-46 (requirements for the design, construction, assembly, testing, inspection, marking, documenting and assessment of equipment assemblies for use in explosive atmospheres under the responsibility of the manufacturer of the equipment assembly) should be used.

2018 CE Code, Part 1 - STANDATA

Arc-Fault Protection Requirements for Ground-Mounted Solar Photovoltaic Systems

PURPOSE

To provide clarity and guidance to installers of ground mounted solar photovoltaic systems to industry and installers.

CODE REFERENCES

64-216 Photovoltaic dc arc-fault circuit protection

- 1) Solar photovoltaic systems with dc source circuits or output circuits, or both, and operating at a maximum system voltage of 80 V or greater, shall be protected by
 - a) a dc arc-fault circuit interrupter; or
 - b) other system equipment that provides equivalent protection.
- 2) The protection required in Subrule 1) shall
 - a) detect and interrupt arcing faults resulting from a failure in the intended continuity of a conductor, connection, photovoltaic module, or other system component in the dc photovoltaic source and output circuits;
 - b) not have the capability of being automatically restarted;
 - c) have annunciation, without an automatic reset, that provides a visual indication that the
circuit interrupter has operated; and
 - d) disable or disconnect
 - i) inverters or charge controllers connected to the faulted circuit when the fault is detected; or
 - ii) the photovoltaic dc source circuits or dc output circuits either within the combiner, at the module junction box, or at the module cable connectors.

DISCUSSION

Industry and solar photovoltaic system installers have questioned the validity of requiring dc arc-fault circuit protection on ground-mounted systems not installed on or above a building. The original intent of the arc-fault circuit protection requirement is to protect against structural fires when photovoltaic systems are installed on or above a building.

APPLICATION

This variance applies to ground-mounted solar photovoltaic renewable energy systems where risk of fire is limited to the solar photovoltaic system only.

2018 CE Code, Part 1 - STANDATA

VARIANCE

Ground-mounted solar photovoltaic systems, or those mounted on trackers, not installed on or above buildings, may omit the arc-fault requirements of Rule 64-216 providing the following requirements are satisfied and maintained:

1. Vegetation around the area the photovoltaic installation is controlled as to mitigate the possibility of fire spread.

This variance provides approximately equivalent or greater safety performance with respect to persons and property as that provided for by the Safety Codes Act.

This VARIANCE is applicable throughout the province of Alberta and remains in force until revoked by the Administrator.

2018 CE Code, Part 1 - STANDATA

VARIANCE

2018 Canadian Electrical Code

SUBJECT: Rule 64-218 Photovoltaic rapid shutdown

PURPOSE

Industry has identified an issue with current Canadian Electrical Code, Part I requirements concerning the installation of rapid shutdown systems for photovoltaic installations.

DISCUSSION

1. Photovoltaic (PV) rapid shutdown provides firefighter protection. Many Solar PV systems with rapid shutdown have the option of interconnecting with a fire alarm system. As a result, any fire alarm initiating device also initiates PV rapid shutdown.
2. Many roofs do not have permanent access and are considered inaccessible and most likely unreachable in an emergency. Many suitable and readily accessible locations within 9m of the array are not within sight of the array.

CODE REFERENCES

64-218 Photovoltaic rapid shutdown

- 4) A device used to initiate photovoltaic rapid shutdown shall be readily accessible and located
- a) for single dwelling units, at the supply authority meter location;
 - b) for other than single dwelling units, at the consumer's service equipment or supply authority meter location, and
 - i) at a permanent access to a building roof where an array(s) is installed; or
 - ii) within sight and within 9 m of the array(s); and
 - c) for a stand-alone system, in accordance with Items b) i) and ii).

VARIANCE

1. Rule 64-218(4)

In lieu of Rule 64-218(4), where a fire alarm system is interconnected with a Solar PV System, a fire alarm initiating device shall be acceptable as a device used to initiate photovoltaic rapid shutdown.

2018 CE Code, Part 1 - STANDATA

2. Rule 64-218(4)(b)(ii)

In lieu of “within sight” of the array, the PV rapid shutdown initiating device shall be marked to indicate the location of the array it operates. The “within 9m” requirement shall be maintained.

This variance provides approximately equivalent or greater safety performance with respect to persons and property as that provided for by the Safety Codes Act.

This VARIANCE is applicable throughout the province of Alberta and remains in force until revoked by the Administrator.

2018 CE Code, Part 1 - STANDATA

Section 86 - Electric vehicle charging systems

PURPOSE

This interpretation aims to address concerns related to branch circuit conductor and overcurrent device settings for vehicle charging systems supplied with adjustable ampacity settings.

DISCUSSION

Some electrical vehicle charging stations are equipped with a variable load option. For example, the maximum load may be 100A, 240V, 1 phase whereas a lower demand load may be set, e.g. 40A, 240V, 1 phase.

Concerns have been expressed that if the branch circuit, including the overcurrent device and circuit ampacity, feeding the electrical vehicle charging station is sized according to the lower demand load, the consumer may increase the demand load in the future to increase the charging rate, thereby overloading the branch circuit.

CODE REFERENCES

86-200 Warning sign

Permanent, legible signs shall be installed at the point of connection of the electric vehicle supply equipment to the branch circuit wiring, warning against operation of the equipment without sufficient ventilation as recommended by the manufacturer's installation instructions.

INTERPRETATION

Research indicates that manufacturer's instructions require that an electrician set the load. This may be acceptable provided that, in addition to any code required warning signs, a warning sign is provided to indicate the maximum demand load setting of the electrical vehicle charging station.

2018 CE Code, Part 1 - STANDATA

ELECTRICAL CODE BULLETIN

September 2020

STANDATA

LEG-ECR-3
Page 1 of 2

ELECTRIC RAILWAYS

PURPOSE

To clarify which electrical safety codes apply to an electric railway, and more specifically, the traction power system (circuits that supply the motive power).

DISCUSSION

In Alberta, electrical installation safety is regulated under the Safety Codes Act and applicable regulations, codes, and standards.

The Electrical Code Regulation adopts two electrical codes:

1. The Alberta Electrical Utility Code (AEUC), and
2. The Canadian Electrical Code (CE Code), Part 1.

In general, electrical installations on the supply authority side of the demarcation point are regulated by the AEUC whereas electrical installations on the consumer side of the demarcation point are regulated by the CE Code, Part 1. The intent is that there are no unregulated electrical installations.

Electric railways have been operating successfully in Alberta for decades. The LRT in Edmonton and the CTrain in Calgary are typical examples. Which electrical codes apply to these installations?

The AEUC, including C22.3 No. 1 & 7, makes no reference to electric railways. The CE Code, Part 1 excludes electric railways from its scope. Does this mean that electric railways are unregulated in Alberta?

Both the City of Edmonton and the City of Calgary, as accredited municipalities, have taken a proactive approach to LRT Electrical Installations, relying on engineering professionals to integrate the latest applicable codes & standards to maintain electrical safety in design, construction, maintenance, and operation.

Therefore, electric railway installations in Alberta are regulated through mandatory engineering involvement and the application of the latest electrical safety codes & standards applicable to electric railways in Canada, the US, or internationally. In the absence of a Canadian standard, a US standard may be utilized. In the absence of a Canadian or US standard, an international standard may be utilized.

Unless stated otherwise, all Code references in this STANDATA are to the Canadian Electrical Code, Part I, 2018.
Issue of this STANDATA is authorized by
the Provincial Electrical Administrator

Clarence C. Cormier, P. Eng.

Alberta Municipal Affairs – Community & Technical Support, 10th Floor, 10155 – 102nd Street, Edmonton, Alberta, Canada, T5J 4L4
Phone: 1-800-421-0629 Email: safety.services@gov.ab.ca Website: <https://www.alberta.ca/electrical-codes-and-standards.aspx>

Classification: Protected A



2018 CE Code, Part 1 - STANDATA

STANDATA

18-ECB-XXX

CODE REFERENCES

C22.1 Canadian Electrical Code (CE Code), Part 1

Scope

This Code applies to all electrical work and electrical equipment operating or intended to operate at all voltages in electrical installations for buildings, structures, and premises, including factory-built relocatable and non-relocatable structures, and self-propelled marine vessels stationary for periods exceeding five months and connected to a shore supply of electricity continuously or from time to time, with the following exceptions:

b) equipment and facilities that are used in the operation of an electric railway and are supplied exclusively from circuits that supply the motive power.

Disclaimer:

The information in this bulletin is not intended to provide professional design advice. If professional expertise is required with respect to a specific issue or circumstance, the services of a professional should be sought.

DRAFT

2018 CE Code, Part 1 - STANDATA

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- 3) Notwithstanding Subrule 2), bonding connectors intended for bonding photovoltaic modules and installed in accordance with the manufacturer's instructions shall be permitted to be used.
- 4) The connections to a photovoltaic module shall be arranged so that removal of a photovoltaic module from a photovoltaic source circuit does not interrupt a bonding conductor to other photovoltaic source equipment.

Appendix B

Rule 64-222

CAN/CSA-C22.2 No. 61730-1 requires all conductive parts of a module that are accessible during normal use to be bonded together and the method of bonding to be detailed in the installation manual. During the approval process, all components, such as bonding clips, brackets, hardware, lugs, etc., used for bonding are tested in accordance with CAN/CSA-C22.2 No. 61730-2.

Discussion:

PV racking products have appeared in Alberta that have no evidence of approval and without manufacturer's installation instructions.

The racking of a modern PV system is part of a bonding grid with the rail or rack itself utilized as a bonding path. Modules are attached with clamps c/w bonding clips that, when bolted down, simultaneously secure the equipment to the rail and electrically bond adjacent modules and the underlying rail. Module level power electronics such as micro-inverters and dc-dc optimizer bonding can also be accomplished utilizing this method. This system eliminates separate bonding conductors connected to each piece of equipment and minimizes running equipment bonding conductors throughout PV arrays. A single bonding conductor is run to the array and would be connected at one or more points of the rack or rail following the manufacturer's installation instructions.

Interpretation:

PV module racking systems are required to be approved. Any one of these approval processes are currently acceptable for PV racking systems.

- Certified by a Certification Body accredited by the Standards Council of Canada;
- Special Inspection by an Inspection Body accredited by the Standards Council of Canada under SPE 1000 to test for bonding/grounding with a separate structural engineering evaluation for the structural capabilities of the racking.

An array is an assembly of specific compatible components that have been tested as a system. All the parts of an array such as modules, racks and clamps are listed as "components" intended for use in end-product equipment. When an end-product evaluation is conducted by a Certification Organization, the suitability of these components is determined in that evaluation. Standards UL 2703 for racking, [UL C10RB-C1703](#) for modules and CSA-C22.2 No. 41 bonding & grounding equipment are all used together to investigate products as a system.

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In order for the terms of the equipment approval agreement to be met, the manufacturer must provide installation instructions, and those instructions must be followed. The instructions will address the structural and electrical installation along with information about compatibility of components for use with their racking system.

For example, the installation manual may have a list of specific manufacturer's modules that are compatible with the racking system. You also may be able to use any **ULC/ORD-C1703** module as long as they are within specific dimensional tolerances. Only those modules that meet the criteria laid out in the installation manual can be used with that racking system. Bonding must be completed using the methods and devices (such as lay-in lugs and washers) as specified in the manuals.

When applying for a PV system permit, applicants should provide the A-H with a complete list of all equipment. Installation manuals should be reviewed pre-construction and referenced during the installation to ensure that the system has been installed according to the manufacturer's instructions and all the equipment is compatible.

Ground Mount Systems and Carports

It is common for ground mount system manufacturers to utilize UL 2703 racking equipment and CSA-C22.2 No. 41 bonding & grounding equipment. The structural element requirements would be met with Professional involvement with a site specific stamped structural drawing. Large ground mount systems are custom designed for the site with local consideration for terrain, wind pressures, snow loads as well as racking layout for the most efficient design. For smaller low-risk ground mount systems such as those found on farms, Professional involvement is normally not required for the mounting structure.



CANADIAN ELECTRICAL CODE, PART I

Consolidated Memorandum of Revisions to the 2018 (24th) edition

Notes:

1. *This document contains the first, second, third, and fourth memorandum of revisions.*
2. *Revisions are identified by a corresponding subject number in the right hand margin.
First memorandum revisions are identified by a **black** number.
Second memorandum revisions are identified by a **blue** number.
Third memorandum revisions are identified by a **red** number.
Fourth memorandum revisions are identified by a **green** number.*
3. *Unless specified otherwise, revisions are indicated only by **strikeout and underline**.
Revisions in this memorandum are subject to editing, formatting and renumbering.
Revisions are also subject to modification or deletion by subsequent revisions.*
4. *The revisions in this memorandum were approved by the Committee on the Canadian Electrical Code, Part I, and by the Regulatory Authority Committee at or prior to their June 2020 meetings. The revisions are for information only and are not effective until adopted, with or without change, by the authority having jurisdiction, after the twenty-fifth edition is published.*

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Permission is granted to members of the committee that is responsible for the development of this draft to reproduce this draft strictly for purposes of CSA standards-development activity.

August 2020

2021 CE Code, Part 1 – MOR to the 2018 CE Code, Part 1

- MOR Overview Presentation
 - Thorough All Sections: Approximately 2 days or more,
 - Brief All Sections: Approximately 1 day,
 - General Sections (1-16, 26): Approximately 2 hours,
 - Here are some general section highlights!

Cable tray — a **raceway** supporting means consisting of troughing and fittings formed and constructed so that insulated conductors and cables may be readily installed or removed after the cable tray has been completely installed, without damage either to conductors or their covering.

2021 CE Code, Part 1 – MOR to the 2018 CE Code, Part 1

Identified —

- a) when applied to a conductor, signifies that the conductor has i) a white ~~or grey~~ covering; or ii) a raised longitudinal ridge(s) on the surface of the extruded covering on certain flexible cords, either of which indicates that the conductor is a grounded conductor or a neutral; and
- b) when applied to other electrical equipment, signifies that the terminals to which grounded or neutral conductors are to be connected have been distinguished for identification by being tinned, nickel-plated, or otherwise suitably marked.

2021 CE Code, Part 1 – MOR to the 2018 CE Code, Part 1

Voltage—

Extra-low voltage—any voltage not exceeding 30 V.

High voltage—any voltage exceeding 750 V.

Low voltage—any voltage exceeding 30 V but not exceeding 750 V.

Voltage –

Extra-low voltage —

- a) for ac circuits, any voltage not exceeding 30 V ac; or
- b) for dc circuits, any voltage not exceeding 42.4 V dc.

Low voltage —

- a) for ac circuits, any voltage exceeding 30 V ac but not exceeding 1000 V ac; or
- b) for dc circuits, any voltage exceeding 42.4 V dc but not exceeding 1060 V dc.

High voltage —

- a) for ac circuits, any voltage exceeding 1000 V ac; or
- b) for dc circuits, any voltage exceeding 1060 V dc.

Voltage of a circuit—the greatest root-mean-square (effective) voltage between any two conductors of the circuit.

2021 CE Code, Part 1 – MOR to the 2018 CE Code, Part 1

2-032 Damage and interference (see Appendix B)

- 1) No person shall damage any electrical installation or component thereof.
- 2) No person shall interfere with any electrical installation or component thereof except that when, in the course of alterations or repairs to non-electrical equipment or structures, it may be necessary to disconnect or move components of an electrical installation, it shall be the responsibility of the person carrying out the alterations or repairs to ensure that the electrical installation is restored to a safe operating condition as soon as the progress of the alterations or repairs permits.
- 3) Electrical equipment that has been exposed to ingress of water shall be subjected to evaluation, to ascertain whether the equipment may be placed back into service.

2021 CE Code, Part 1 – MOR to the 2018 CE Code, Part 1

~~22) Notwithstanding Rules 4-006 and 8-200 1) b), 3-wire 120/240 V and 120/208 V service conductors for single dwellings and feeder conductors supplying single dwelling units of row housing, apartment, or similar buildings and terminating on equipment having a conductor termination temperature of not less than 75 °C shall be permitted to be sized in accordance with Table 39, and a permanent, legible caution marking shall be field applied adjacent to the fused switch or circuit breaker nameplate on the equipment to indicate the maximum calculated load from Table 39.~~

8-106 Use of demand factors (see Appendix B)

3) ~~Where it is known that electric space-heating and air-conditioning loads are installed and will not be used simultaneously, whichever is the greater load shall be used in calculating the demand.~~ Where interlocks are installed to prevent simultaneous operation of electric space heating and air conditioning loads, whichever is the greater load shall be used in calculating the demand.

2021 CE Code, Part 1 – MOR to the 2018 CE Code, Part 1

8-108 Number of spaces for branch circuit overcurrent devices positions (See Appendix B)

1) For a single dwelling, the panelboard shall provide space for at least the equivalent of the following number of 120 V branch-circuit overcurrent devices;

including space for two 35-A double-pole overcurrent devices:

- a) 16 — of which at least half shall be double-pole, where the required ampacity of the service or feeder conductors does not exceed 60 A;
- b) 24 — of which at least half shall be double-pole
 - i) where the required ampacity of the service or feeder conductors exceeds 60 A but does not exceed 100 A; or
 - ii) where the required ampacity of the service or feeder conductors exceeds 100 A but does not exceed 125 A and provision is made for a central electric furnace;
- c) 30 — of which at least half shall be double-pole
 - i) where the required ampacity of the service or feeder conductors exceeds 100 A but does not exceed 125 A; or
 - ii) where the required ampacity of the service or feeder conductors exceeds 125 A but does not exceed 200 A and provision is made for a central electric furnace; and
- d) 40 — of which at least half shall be double-pole, where the required ampacity of the service or feeder conductors exceeds 125 A and the dwelling is not heated by a central electric furnace.

2) Notwithstanding Subrule 1), sufficient spaces for overcurrent devices shall be provided in the panelboard for the two 35-A double-pole overcurrent devices and for all other overcurrent devices, and at least two additional spaces shall be left for future overcurrent devices.

3) For a dwelling unit in an apartment or similar building, the panelboard shall provide space for at least the equivalent of the following number of 120 V branch-circuit overcurrent devices, including space for one 35-A double-pole overcurrent device:

- a) 8 — where the required ampacity of the feeder conductors supplying the dwelling unit does not exceed 60 A; and
- b) 12 — where the required ampacity of the feeder conductors supplying the dwelling unit exceeds 60 A.

2021 CE Code, Part 1 – MOR to the 2018 CE Code, Part 1

- 1) Panelboards installed in single dwellings shall have at least four additional spaces left for future overcurrent devices with provision for a two-pole device at the time of the original installation.
- 2) Panelboards installed in each dwelling unit in an apartment or similar building shall have at least two additional spaces left for future overcurrent devices with provision for a two-pole device at the time of the original installation.

2021 CE Code, Part 1 – MOR to the 2018 CE Code, Part 1

8-304 Maximum number of outlets per circuit

- 1) ~~There shall be not more than 12 outlets on any 2-wire branch circuit,~~ Except as permitted by other Rules of this Code, the maximum number of outlets on any 2-wire branch circuit shall not exceed
 - a) 12 - for a 15 A branch circuit where the fused switch or circuit breaker is marked for continuous operation at 80%;
 - b) 15 - for a 15 A branch circuit where the fused switch or circuit breaker is marked for continuous operation at 100%;
 - c) 16 - for a 20 A branch circuit where the fused switch or circuit breaker is marked for continuous operation at 80%;
 - d) 20 - for a 20 A branch circuit where the fused switch or circuit breaker is marked for continuous operation at 100%;

2021 CE Code, Part 1 – MOR to the 2018 CE Code, Part 1

- 2) ~~Such outlets shall be considered to be rated at not less than 1 A per outlet, e~~ Except as permitted by Subrule 3), when a receptacle is used as an outlet for the application of Subrule 1), it shall be considered as
- a) 1 outlet per duplex receptacle;
 - b) 1.5 outlets per triplex receptacle; and
 - c) 2 outlets per quad receptacle.
- 3) Where the connected load is known, the number of outlets shall be permitted to exceed ~~12~~ the maximum number permitted in Subrule 1), provided that the load current does not exceed ~~80% of the rating of~~ the continuous operation marking on the overcurrent device protecting the circuit.

2021 CE Code, Part 1 – MOR to the 2018 CE Code, Part 1

- 2) The integrity of an impedance grounded system shall be monitored and controlled, as required by Table 17., ~~and the system shall have an audible or visual alarm that corresponds to the occurrence of~~
- ~~a) a ground fault on current-carrying conductors, including the neutral conductor where line-to-neutral loads are served;~~
 - ~~b) a ground fault on the conductor connecting the impedance grounding device to the source; and~~
 - ~~c) a loss of continuity of the impedance grounding circuit from the system source through the impedance grounding device to the grounded non-current-carrying conductive parts of the electrical system.~~

2021 CE Code, Part 1 – MOR to the 2018 CE Code, Part 1

NEW Table 17
 Impedance grounded systems – Conditions for initiation of automatic alarm and de-energization of the system
 (See Rule 10-302)

Impedance grounded system configuration	Conditions for initiation of automatic alarm and de-energization of the system			
	Ground fault on current-carrying conductors	Ground fault on conductor from source to impedance grounding device	Loss of continuity between source through the impedance grounding device to grounded conductive parts of equipment	
Line-to-neutral loads are served (4-wire), all	Alarm and de-energize system immediately	Alarm and de-energize system immediately	Alarm and de-energize system immediately	
Line-to-neutral loads are not served (3-wire) System is: <ul style="list-style-type: none"> • 5kV or less; and • ground fault is limited to 10A or less 	Scenario 1 (see Note 1)	Alarm and de-energize within the time rating of the impedance grounding device	Alarm and de-energize the system within 48 hours.	Alarm
	Scenario 2 (see Note 2)	Alarm and de-energize within the time rating of the impedance grounding device	Alarm and de-energize system within 48 hours	Alarm and de-energize system within 48 hours
Line-to-neutral loads are not served (3-wire) System is: <ul style="list-style-type: none"> • greater than 5kV; or • ground fault is greater than 10A 	Scenario 1 (see Note 1)	Alarm and de-energize system in the lesser of 48 hours or the time rating of the impedance grounding device	Alarm and de-energize the system within 48 hours.	Alarm
	Scenario 2 (see Note 2)	Alarm and de-energize system in the lesser of 48 hours or the time rating of the impedance grounding device	Alarm and de-energize system within 48 hours.	Alarm and de-energize system within 48 hours.

Notes:

On the occurrence of a loss of continuity of the impedance grounding circuit from the system source through the impedance grounding device to the grounded non-current-carrying conductive parts of the electrical system, the device monitoring the system

- 1) **can** continue to detect a ground fault on an ungrounded system.
- 2) **cannot** continue to detect a ground fault on an ungrounded system.

2021 CE Code, Part 1 – MOR to the 2018 CE Code, Part 1

12-022 Cables or raceways installed in roof decking systems

1) Cables or raceways installed in accordance with this Section shall not be installed in locations concealed within a roof decking system, where the roof systems utilizes screws or other metal penetrating fasteners.

2) Notwithstanding Subrule 1) the following circuits shall be permitted for installations in locations concealed within a roof decking system:

- a) Class 2 circuits in which the open-circuit voltage does not exceed 30 V; and
- b) embedded trace heat.

3) Where wiring is concealed within the roof deck system in accordance with Subrule 2), a warning label shall be installed

- a) at all permanently installed roof access points where provided; and
- b) in a conspicuous location in the roof area where the cabling is installed

2021 CE Code, Part 1 – MOR to the 2018 CE Code, Part 1

12-320 Messenger cables

- 1) Messenger cables shall be securely attached at each end of the run and shall be bonded in accordance with Section 10.
- 2) Insulated conductors and cables shall be permanently lashed to the messenger cable.
- 3) Cable ties shall not be permitted as the sole means to lash insulated conductors and cables to a messenger cable
- 4) Messenger cables shall be
 - a) of galvanized steel having a coating of not less than 45 g/m², copper-coated steel, or stainless steel; and
 - b) of stranded construction with not less than seven strands.
- 5) The effective ultimate strength of a messenger cable shall be not less than three times the calculated maximum working load, including loading due to ice loads and wind loads, and the individual strands shall in no case be less than
 - a) 1.17 mm in diameter in the case of galvanized or copper-coated wire; or
 - b) 1.11 mm in diameter in the case of stainless steel wire.

2021 CE Code, Part 1 – MOR to the 2018 CE Code, Part 1

14-014 Series rated combinations (see Appendix B)

Notwithstanding Rule 14-012 a), a moulded case circuit breaker shall be permitted to be installed in a circuit having an available fault current higher than its rating, provided that

- a) the circuit breaker is a recognized component of a series rated combination;
- b) it is installed on the load side of an overcurrent device that has an interrupting rating at least equal to the available fault current;
- c) the overcurrent device on the line side of the lower rated circuit breaker is as specified on the equipment in which the lower rated circuit breaker is installed;
- d) the equipment in which the lower rated circuit breaker is installed is marked with a series combination interrupting rating at least equal to the available fault current; **and**
- e) the overcurrent devices installed in a series rated combination are marked at the time of installation in a conspicuous and legible manner to indicate that they must be replaced only with components of the same type and rating.; **and**
- f) the sum of the rated full load currents of any motors in the system connected directly to the point between the series connected devices does not exceed 1% of the interrupting rating of the lower rated circuit breaker.

16-202 Methods of installation on the supply side of overcurrent protection, transformers, or devices having Class 2 outputs

- 1) In Class 2 circuits, the **insulated** conductors and equipment on the supply side of overcurrent protection, transformers, or devices having Class 2 outputs shall be installed in accordance with the requirements of other appropriate Sections of this Code.
- 2) **Transformers or other devices having Class 2 outputs shall be protected on the supply side by an overcurrent device with a rating or setting not exceeding 20 A.**

~~26-008 Sprinklered equipment (see Appendix B)~~

~~Where electrical equipment vaults or electrical equipment rooms are sprinklered, the electrical equipment contained in such vaults or rooms shall be protected where needed by non-combustible hoods or shields arranged to minimize interference with the sprinkler protection.~~

2021 CE Code, Part 1 – MOR to the 2018 CE Code, Part 1

26-258 Transformer continuous load (see Appendix B)

- 1) For the purpose of transformer overcurrent protection and conductor sizes selected in accordance with Rules 26-250 to 26-256, the continuous load as determined from the calculated load connected to the transformer secondary shall not exceed the values specified in Rule 8-104 5) or 6).
- 2) Notwithstanding Subrule (1), where dry-type distribution transformers are controlled by a Distribution Transformer Energy Management System with Scheduled Power Dispatch described by Subrule 8-106(12), the continuous load of the distribution transformers shall be permitted to be based on the maximum load allowed by the Distribution Transformer Energy Management System with Scheduled Power Dispatch.

2021 CE Code, Part 1 – MOR to the 2018 CE Code, Part 1

~~26-500~~ **64-1000** Scope (storage batteries)

~~26-502~~ **64-1002** Special terminology

~~26-504~~ **64-1004** Location of storage batteries

~~26-506~~ **64-1006** Ventilation of battery rooms or areas (see Appendix B)

~~26-508~~ **64-1008** Battery vents

~~26-510~~ **64-1010** Battery installation

~~26-512~~ **64-1012** Wiring to batteries

~~26-514~~ **64-1014** Wiring methods and installation of equipment in battery rooms

26-651 Branch circuits below ground level in areas designated as flood hazard zones (see Appendix B)

Where branch circuits are located below ground level in areas designated as flood hazard zones, ground fault protection shall be provided to de-energize all normally ungrounded conductors with a ground fault setting sufficient to allow normal operation of connected loads under normal conditions.

2021 CE Code, Part 1 – MOR to the 2018 CE Code, Part 1

26-654 Branch circuits for dwelling units

Branch circuits for dwelling units (including single dwellings) shall meet the following requirements:

- a) **except as permitted by Item b),** branch circuits from a panelboard installed in accordance with Rule 26-602 shall not be connected to outlets or electrical equipment in any other dwelling unit;
- b) **where an additional dwelling unit is created by subdivision of a dwelling unit, the smoke alarms and carbon monoxide alarms installed in the additional dwelling unit shall be permitted to be connected to a branch circuit installed in the original dwelling unit, as required by Rule 32-200, provided that:**
 - i) **the panelboard supplying the branch circuit is labelled in a conspicuous, legible, and permanent manner, to indicate that it supplies smoke and carbon monoxide alarms in the additional dwelling unit; and**
 - ii) **the panelboard in the additional dwelling unit is labelled in a conspicuous, legible, and permanent manner, to indicate that the branch circuit disconnecting means for the respective smoke and carbon monoxide alarm circuit is in the original dwelling unit.**
- c) **Notwithstanding Item a), where a single panelboard is installed as permitted by Rule 26-602(1)(b), branch circuits from that panelboard shall be permitted to supply outlets or electrical equipment in the dwelling unit created by the subdivision of the single dwelling;**

2021 CE Code, Part 1 – MOR to the 2018 CE Code, Part 1

26-704 Protection of receptacles by a ground fault circuit interrupter of the Class A type (see Appendix B)

- 1) Receptacles having CSA configuration 5-15R or 5-20R installed within 1.5 m of sinks (wash basins complete with a drainpipe), bathtubs, or shower stalls shall be protected by a ground fault circuit interrupter of the Class A type, except where the receptacle is
 - a) intended for a stationary appliance designated for the location; and
 - b) located behind the stationary appliance such that it is inaccessible for use with general-purpose portable appliances.
- 2) All receptacles having CSA configuration 5-15R or 5-20R, installed outdoors and within 2.5 m of finished grade shall be protected with a ground fault circuit interrupter of the Class A type.

26-712 Sump pump receptacle (see Appendix B)

For buildings located in a flood hazard zone, sump pump receptacles referred to in Rule 26-656(1) (b) shall be,

- a) located above the flood elevation; or
- b) marked as suitable for submersion.

Questions?



Thank You!



Clarence C. Cormier, P.Eng.

Provincial Electrical Administrator

Standards Development & Support Unit

Community and Technical Support Branch

Technical & Corporate Services Division

Alberta Municipal Affairs Department

16th Floor, Commerce Place, 10155-102 Street NW, Edmonton, AB, T5J 4L4

Phone: 780-643-6840 | Fax: 780-427-8686 | Cell: 587-987-2937

clarence.cormier@gov.ab.ca | <https://www.alberta.ca/electrical-codes-and-standards.aspx>

