
THE MANITOBA HYDRO ACT
(C.C.S.M. c. H190)

Manitoba Electrical Code

Regulation 124/2015
Registered July 28, 2015

Adoption of *Canadian Electrical Code, Part I, 23rd edition*

1 Subject to section 3 and the amendments set out in the Schedule, the *Canadian Electrical Code, Part I, 23rd edition*, CSA Standard C22.1-15, is incorporated by reference as part of this regulation and is adopted as the electrical code for Manitoba.

Interpretation

2 In this regulation, a reference to "the code" or "this code" (whether capitalized or not) is a reference to the *Canadian Electrical Code, Part I, 23rd edition*, CSA Standard C22.1-15, as amended by the Schedule.

Application of code

3 This code governs the construction, installation, maintenance, repair, extension, alteration and use of electric wiring and related facilities using or intended to use power supplied by Manitoba Hydro, except within the City of Winnipeg and in mines and quarries as defined in *The Mines and Minerals Act*.

Referring to code

4 This code may be referred to as the *Manitoba Electrical Code, 12th Edition*.

Repeal

5 The *Manitoba Electrical Code*, Manitoba Regulation 96/2012, is repealed.

Coming into force

6 This regulation comes into force on August 1, 2015 or on the day it is registered under *The Statutes and Regulations Act*, whichever is later.

May 28, 2015

The Manitoba Hydro-Electric Board:

W.C. Fraser
Chair

**SCHEDULE
(Section 1)**

AMENDMENTS TO THE CANADIAN ELECTRICAL CODE, PART I

1 For the purpose of this regulation, the *Canadian Electrical Code, Part I*, 23rd edition, CSA Standard C22.1-15, is amended as set out in this Schedule.

Amendments to Section 0 — Object, Scope, and Definitions

2 Section 0 is amended

(a) by replacing the definition "Approved" and "Inspection department" with the following:

Approved (as applied to electrical equipment) —

- (1) equipment that has been certified by a certification organization accredited by the Standards Council of Canada in accordance with the requirements of
 - (a) CSA Group Standards; or
 - (b) other standards that have been developed by a standards development organization accredited by the Standards Council of Canada, or other recognized documents, where CSA Group Standards do not exist or are not applicable, provided that such other standards or other recognized documents
 - (i) are correlated with provisions of the *CE Code, Part I*; and
 - (ii) do not create duplication with standards already listed in Appendix A;
- (2) equipment that conforms to the requirements of the regulatory authority (see Appendix B);
- (3) equipment that has been given special acceptance by Manitoba Hydro; or
- (4) equipment that has been given special acceptance by the Minister of Labour and Immigration for Manitoba.

Inspection department means Manitoba Hydro.

(b) by adding the following definitions:

Chief electrical inspector — the person designated by Manitoba Hydro as the chief electrical inspector.

Manitoba Building Code — the regulation entitled "*Manitoba Building Code*", made under *The Buildings and Mobile Homes Act*.

Amendments to Section 2 — General Rules

Rule 2-004

3 Rule 2-004 (Permit) is replaced with the following:

2-004 Electrical permits and requirements respecting work under a permit

- (1) No electrical work with respect to installation, alteration, repair or extension of any electrical equipment shall commence until an electrical permit is issued by the inspection department.
- (2) Notwithstanding Subrule (1), a person licensed under *The Electricians' Licence Act* (Manitoba) is not required to have an electrical permit for the following electrical work:
 - (a) the replacement or repair of wiring devices with an electrical rating no greater than 30 amperes, 150 volts to ground and not associated with a location as described by section 18 or 20 of this Code;
 - (b) the replacement or repair of electrical equipment with an electrical rating no greater than 30 amperes, 150 volts to ground and associated with a dwelling unit;
 - (c) the installation of voice, data or video equipment within a dwelling unit;
or
 - (d) electrical installations
 - (i) when the cost of labour and materials (excluding the cost of utilization equipment supplied by the circuitry) does not exceed two hundred dollars (\$200) as determined by the inspection department in accordance with the current schedule of electrical permit fees;
 - (ii) that are not associated with a hazardous location as described by sections 18 or 20 of this Code;
 - (iii) that are not part of a consumers' service; and
 - (iv) that do not involve the replacement or addition of distribution panels, fusible switches, motor controllers and similar equipment.

- (3) An electrical permit may be issued to
- (a) a person licensed under *The Electricians' Licence Act* (Manitoba) to perform any work that is permitted by the person's licence;
 - (b) an allied trades person licensed by the Province of Manitoba to perform any electrical work that is permitted by the person's licence;
 - (c) a qualified person as defined in the *Canada Occupational Safety and Health Regulations* under the *Canada Labour Code* for the purposes of work on premises regulated by those regulations; or
 - (d) an owner of residential premises if
 - (i) the applicant occupies or will occupy the premises as a dwelling;
 - (ii) the applicant provides electrical plans that have been examined and accepted by the inspection department;
 - (iii) the premises, if it is a building, stands alone or is separated from any other occupancy or other part of the building by a fire wall or fire separation;
 - (iv) the work to be performed is not in a hazardous location as defined in this Code;
 - (v) the work to be performed does not include generators or renewable energy systems as defined in this Code; and
 - (vi) the electrical rating of the installation in or on any land, building or premises does not exceed 150 volts to ground, single phase and 200 amperes.
- (4) An annual electrical permit may be issued for electrical work of a routine nature in connection with the maintenance or operation of a building or plant that is required to be performed at frequent intervals if the owner or occupant of the building or plant employs their own electricians for that purpose and agrees to
- (a) keep a record of the work that is performed;
 - (b) produce this record to the inspection department upon request;
 - (c) pay to the inspection department the fees that the inspection department charges for an annual permit; and
 - (d) pay in full any outstanding fees due to a change in status of the building or plant before the permit is renewed.
- (5) An application for an electrical permit must be made to the inspection department giving the location and ownership of the premises in, on or about which electrical work is to be done, the purpose of the work, details of the installation as required by Rule 2-014 and any other particulars required by the inspection department.

- (6) If an application is approved by the inspection department an electrical permit will be issued.
- (7) The inspection department may refuse to issue an electrical permit if
 - (a) electrical work done previously by the applicant has not been completed to the satisfaction of the inspection department; or
 - (b) there are outstanding fees on previous work done by the applicant.
- (8) A permittee must notify the inspection department as soon as the electrical work authorized by the electrical permit is completed or when an inspection is required.
- (9) At the request of the permittee, or in other circumstances determined by the chief electrical inspector, the inspection department may inspect the electrical installation pursuant to the electrical permit. If the installation conforms to this Code and the appropriate fees have been paid in full in accordance with the current schedule of electrical permit fees, the inspection department will, on request, issue a certificate of approval.
- (10) The chief electrical inspector may establish terms and conditions for the registration of electricians and electrical contractors for the purposes of this Code, based on criteria including but not limited to safety and compliance with this Code. The inspection department may elect to forgo inspections if the permittee or an electrician employed by the permittee has been registered by the inspection department. An electrician must
 - (a) notify the inspection department when an installation has been completed; and
 - (b) supply the inspection department with a signed declaration that the installation complies with this Code.

The inspection department reserves the right to audit and inspect installations by registered electricians for compliance with this Code and the schedule of electrical permit fees.

- (11) The inspection department may direct the alteration or repair of an existing electrical installation that does not conform with the requirements of this Code.
- (12) If an application for an electrical permit is refused or a permittee does not agree with an electrical inspection report, defect notice or interpretation of Code rules issued on any particular installation, an appeal may be made in writing to the office of the chief electrical inspector. The appeal must specify what is being appealed, the reasons for the appeal and the decision requested.
- (13) The inspection department may do any or all of the following:
 - (a) prohibit the use of an installation until it is inspected, tested and approved;

- (b) direct the permittee to carry out and produce results of tests on equipment as considered necessary to ensure that the installation is properly installed.
- (14) An electrical permit expires 90 days after the date it is issued unless the installation authorized by the electrical permit is commenced or the inspection department, in its discretion, grants an extension.
- (15) An electrical permit expires 12 calendar months after the date it is issued unless the installation authorized by the electrical permit is not completed and the inspection department, in its discretion, grants an extension.
- (16) The issuance of an electrical permit does not obligate the owner of the premises to have the work done by the permittee.

Rule 2-006

4 Rule 2-006 (Application for inspection) is struck out.

Rule 2-008

5 Rule 2-008 (Fees) is replaced with the following:

2-008 Fees

- (1) The amount and manner of payment of any fee payable for electrical permits or inspection of electrical installations are as specified by the inspection department in the schedule of electrical permit fees.
- (2) Unless an electrical permit fee is payable in accordance with the terms and conditions established under Subrule (3) for pre-authorized monthly billing accounts, an electrical permit fee must be paid in full before an electrical permit is issued.
- (3) Manitoba Hydro may establish terms and conditions for pre-authorized monthly billing accounts for the payment of electrical permit fees.
- (4) A cheque or money order in payment of electrical permit or inspection fees must be made payable to Manitoba Hydro.
- (5) The inspection department has the right at any time to make adjustments in the electrical permit fee payable as a result of additions or deletions to the work specified in the electrical permit or to correct errors in the calculation of fees made at the time the electrical permit was issued.
- (6) The inspection department will refund any fee paid for an unused electrical permit if application is made within one year of the date of the issuance of the electrical permit, but reserves the right to deduct an amount equal to any costs and expenses that it incurs in connection with the permit and refund and will in any case deduct an amount equal to the current minimum fee.

Rule 2-010

6 Rule 2-010 (Posting of permit) is struck out.

Rule 2-014

7 Rule 2-014 (Plans and specifications) is replaced with the following:

2-014 Plans and specifications

- (1) Plans and specifications are required for
 - (a) electrical installations when
 - (i) the installation is carried out by an owner of residential premises;
 - (ii) the ampacity of the service entrance equipment exceeds 200 amperes single phase or the supply service is multi-phase; or
 - (iii) the installation operates at voltages in excess of 750 volts;
 - (b) installations covered by Section 18, 20, 22, 24 or 36 of this Code; and
 - (c) other installations as the inspection department may require.
- (2) Plans and specifications required by Subrule (1) must be submitted to the inspection department for acceptance before an electrical permit may be issued.
- (3) Plans and specifications must be prepared and signed by, and bear the seal of, a professional engineer registered to practice in Manitoba and fully qualified in the application of this Code
 - (a) for an installation covered by Section 18, 20, 24 or 36 of this Code, unless the inspection department considers it unnecessary that the plans and specifications be prepared, signed or sealed by an engineer; or
 - (b) if the inspection department considers them necessary for any other installation.
- (4) The responsible professional engineer for a large or complex installation, as determined by the chief electrical inspector, must submit a letter to the inspection department stating his or her responsibility for the inspection of construction for the installation to ensure conformity with the approved plans and specifications. Note: Subrule (1) still applies.
- (5) On completion of an installation under Subrule (4), the responsible professional engineer must submit a certificate stating:

"I hereby certify that I have inspected the installation for compliance to the approved plans and specifications and find the installation in compliance with the requirements of the *Manitoba Electrical Code*."

- (6) When current transformer revenue metering is required for an installation, plans and a list of loads, as required by Manitoba Hydro's *Customer Metering Standards*, are required to be submitted before the revenue metering will be ordered by the inspection department.

Rule 2-025

8 The following is added to the Code after Rule 2-024 (Use of approved equipment):

2-025 Special acceptance inspection

A special acceptance inspection may be made of electrical equipment that is not approved by or does not bear the approval mark of an accredited certification organization. In general, this applies to electrical equipment

- (a) of other than a regular line of manufacture;
- (b) manufactured or produced singly or in small quantities; or
- (c) built to a customer's order.

Rule 2-030

9 Rule 2-030 (Deviation or Postponement) is replaced with the following:

2-030 Deviation or postponement

Notwithstanding Subrule 2-004(9), the inspection department may by special permission approve an installation that does not conform to the standards established by this Code when, in the inspection department's opinion, the installation provides a standard of safety equivalent to the standard provided by this Code. The request for special permission must specify the aspects of the installation that do not conform to the Code and the equivalent electrical requirements and must be submitted prior to proceeding with the work.

Amendments to Section 4 — Conductors

Rule 4-004(23)

10 Subrule (23) of Rule 4-004 (Ampacity of wires and cables) and Table 39 are struck out.

Rule 4-006(2)

11 Sub rule (2) Rule 4-006 (Temperature limitations) is replaced with the following:

- (2) For the purpose of Subrule (1) and except as provided for by other Rules of this Code, when the maximum conductor termination temperature for equipment is not marked, the maximum conductor termination temperature is deemed to be 75°C.

Amendment to Section 6 — Services and Service Equipment

Rule 6-400

12 Rule 6-400 (Metering equipment) is amended by renumbering it as Rule 6-400(1) and adding the following as Subrule (2):

- (2) For determining the type of metering equipment required by the supply authority, reference shall be made to supply authority metering standards, which shall be amendatory or additional to Rules 6-402 to 6-412.

Amendments to Section 8 — Circuit Loading and Demand Factors

Rule 8-102(1)

13 Subrule (1) of Rule 8-102 (Voltage drop) is replaced with the following:

Rule 8-102 (Voltage drop) (see Appendices A and B)

- (1) The voltage drop in an installation shall be based on the connected load of the branch circuit if known. Otherwise, the voltage drop shall be based on 80% of the rating of the overload or overcurrent device protecting the branch circuit or feeder and shall not exceed
- (a) 3% in a feeder or branch circuit; and
 - (b) 5% from the supply side of the consumer's service (or equivalent) to the point of utilization.

Rules 8-106(6) and (10)

14 Subrules (6) and (10) of Rule 8-106 (Use of demand factors) are struck out.

Rule 8-400(2)

15 Subrule (2) of Rule 8-400 (Branch circuits and feeders supplying automobile heater receptacles) is replaced with the following:

- (2) At least one branch circuit protected by an overcurrent device rated or set at not more than 20 A shall be provided for each duplex receptacle or for every two single receptacles.

Amendments to Section 10 — Grounding and bonding

Rule 10-208(2)

16 Subrule (2) of Rule 10-208 (Grounding connections for two or more buildings or structures supplied from a single service) is struck out.

Rule 10-700(2)(a)

17 Subrule (2)(a) of Rule 10-700 (Grounding electrodes) is replaced with the following:

- (a) in the case of a rod grounding electrode, consist of 2 rod electrodes (except for a chemically charged electrode where only one need be installed) that are
 - (i) copper clad;
 - (ii) not less than 15.8 mm in diameter;
 - (iii) spaced no less than 3 m apart;;
 - (iv) driven to the full length of the rod; and
 - (v) bonded together with a grounding conductor sized in accordance with Rule 10-812; or

Rule 10-904(3)

18 Subrule (3) of Rule 10-904 (Bonding conductor connection to circuits and equipment) is replaced with the following:

- (3) The bonding conductor shall be secured to every metal box by means of a bonding screw that shall be used for no other purpose.

Rule 10-1108(5)

19 Subrule (5) of Rule 10-1108 (Conductors used with neutral grounding devices) is struck out.

Amendments to Section 12 — Wiring Methods

Rule 12-904(2)

20 Subrule (2) of Rule 12-904 (Conductors in raceways) is amended by striking out "Except for cable tray, no" and substituting "No".

Rule 12-2200(7)

21 Subrule (7) of Rule 12-2200 (Method of installation) is struck out.

Rule 12-2208

22 Rule 12-2208 (Provisions for bonding) is replaced with the following:

12-2208 Provisions for bonding

Metal cable trays shall be adequately bonded at intervals not exceeding 15 m and the size of bonding conductors shall be based on the size of the largest ungrounded conductor or equivalent for multiple conductors carried by the cable tray in accordance with Rule 10-814.

Amendment to Section 14 — Protection and Control

Rule 14-402

23 Rule 14-402 (Disconnecting means required for fused circuits) is replaced with the following:

14-402 Disconnecting means required for fused circuits (see Appendix B)

Circuits protected by fuses shall be equipped with disconnecting means, integral with or adjacent to the fuseholders, by which all live parts for mounting fuses can be readily and safely made dead. However, such disconnecting means may be omitted in the following cases:

- (a) instrument and control circuits on switchboards when the voltage does not exceed 250 V;
- (b) primary circuits of voltage transformers having a primary voltage of 750 V or less on switchboards; or
- (c) a circuit having only one ungrounded conductor when a plug fuse is used.

Amendments to Section 26 — Installation of Electrical Equipment

Rule 26-008

24 Rule 26-008 (Sprinklered equipment) is replaced with the following:

26-008 Sprinklered equipment

Electrical service and distribution equipment with ventilation openings located in sprinklered buildings or spaces shall be protected when needed by non-combustible hoods or shields so arranged as to minimize interference with the sprinkler equipment.

Rule 26-014(4)(c)

25 Subrule (4)(c) of Rule 26-014 (Dielectric liquid-filled equipment — Outdoors) is replaced with the following:

- (c) if installed at ground level, be located on a concrete or fibreglass pad draining away from structures or be in a curbed area filled with coarse crushed stone; and

Rule 26-700(14)

26 The following is added to the Code after Subrule (13) of Rule 26-700 (General):

- (14) When a sump is required by *The Winnipeg Building By-law* or the *Manitoba Building Code* for the control of water from a subsurface drainage (weeping tile) system

- (a) a single receptacle shall be installed for the connection of the sump pump; and
- (b) the receptacle for the sump pump shall be supplied from a branch circuit that supplies no other outlets or equipment.

Rule 26-702

27 Rule 26-702 (Receptacles exposed to the weather) is replaced with the following:

Rule 26-702 Receptacles exposed to the weather

- (1) Receptacles exposed to the weather shall be provided with weatherproof or wet location cover plates, except that, when these receptacles are installed facing downward, at an angle of 45° or less from the horizontal, standard cover plates may be used.
- (2) When receptacles exposed to the weather are installed in surface-mounted outlet boxes, the cover plates shall be held in place by four screws or some other equivalent means.
- (3) When receptacles exposed to the weather are installed in flush-mounted outlet boxes, the boxes shall be installed in accordance with Rule 12-3016 and the cover plates shall be fitted to make a proper weather proof seal.

Rule 26-714(d)

28 Rule 26-714 (Receptacles for single dwellings) is amended by striking out "and" at the end of paragraph (b), adding "and" at the end of paragraph (c) and adding the following after paragraph (c):

- (d) at least one duplex receptacle shall be provided for each driveway.

Rule 26-726(c)

29 Rule 26-726 (Branch circuits for single dwellings) is amended by striking out "and" at the end of paragraph (a), adding "and" at the end of paragraph (b) and adding the following after paragraph (b):

- (c) at least one branch circuit shall be provided solely for the receptacles provided for each driveway as required by Rule 26-714(d).

Amendment to Section 28 — Motors and Generators

Rule 28-602

30 Subrule (5) of Rule 28-602 (Types and ratings of disconnecting means) is struck out.

Amendment to Section 30 — Installation of Lighting Equipment

Rule 30-504

31 The following is added to the Code after Subrule (3) of Rule 30-504 (Stairways):

- (4) Notwithstanding Subrule (3) and Appendix G, provisions for 3-way switches must be installed for stairway lighting to basements.

Amendment to Section 36 — High-voltage Installations

Rule 36-302(1)(a)

32 Subrule (1)(a) of Rule 36-302 (Station ground electrode) is replaced with the following:

- (a) consist of a minimum of four driven copper-clad ground rods not less than 3 m long and 17.09 mm in diameter spaced at least the rod length apart and, when practicable, located adjacent to the equipment to be grounded;

Amendment to Section 46 — Emergency Power Supply, Unit Equipment, Exit Signs, and Life Safety Systems

Rule 46-108(3)

33 Subrule (3) of Rule 46-108 (Wiring method) is replaced with the following:

- (3) Conductors installed in buildings of combustible construction in accordance with Section 12 of this Code may be:
 - (a) non-metallic-sheathed cable; or
 - (b) installed in totally enclosed non-metallic raceway.

Amendment to Section 64 — Solar Photovoltaic Systems

Rule 64-218

34 Rule 64-218 (Photovoltaic system rapid shutdown) is struck out.

Amendment to Section 76 — Temporary Wiring

Rule 76-006

35 Paragraph (d) of Rule 76-006 (Service entrance equipment) is amended by replacing with the following:

- (d) be installed in one of the following ways:
 - (i) for services not exceeding 200 A, on a pole, or on a solid wood post that measures at least 89 mm x 150 mm nominal and is adequately braced;
 - (ii) for services exceeding 200 A, on a substantial pole structure; or
 - (iii) for services supplied from underground distribution, on an adequately braced post.

Amendment to Tables and Appendices

Table 67

36 Table 67 (Clearance Requirements of Installed Heating Systems) is amended in the row respecting "All systems" in the column entitled "Obstructions and protrusions" by striking out "From receptacles, switches, and other wiring" and substituting "From receptacles and switches".

Appendix A

37 Appendix A (Safety Standards for Electrical Equipment, *Canadian Electrical Code, Part II*) is amended in Note (4) by striking out "may be used" and substituting "shall be used".

Appendix B

38 Appendix B (Notes on Rules) is amended by striking out

- (a) the note on rule 26-702 and the note on Rules 26-702(2) and (3), including Figure B26-1; and
- (b) the notes on Rule 64-218 and Rule 64-218(2).