

2017

MICHIGAN ELECTRICAL CODE

Part 8 Rules

INCORPORATING THE 2017 EDITION OF
THE NATIONAL ELECTRICAL CODE



(Effective January 4, 2019)

The IAEI has added Gray shading to reflect changes from the previous code edition

INTRODUCTION

The Bureau of Construction Codes has amended the Construction Code Rules, Part 8. All units of government that administer and enforce the electrical code shall enforce the amended state electrical code effective January 4, 2019.

The rules adopt by reference the National Electrical Code, 2017 edition, and include deletions, additions, and amendments to the national code. The deletions, additions, and amendments are set forth in this publication.

How to use this publication: The state electrical code rules are published in code section order for use with the National Electrical Code, 2017 edition.

The National Electrical Code, 2017 edition, is adopted by reference in R 408.30801 (page 1). The provisions set forth in this publication are either added to the national code or amend the national code.

Each section has been provided with a title for indexing purposes. These titles may not be identical to the titles used in the promulgated rule set.

The sections not deleted from Annex H have been included to benefit the user and are identified by an *, asterisk prior to the code section.

(Being Sections 80.3, 80.9, 80.11 and 80.17)

Department of Licensing and Regulatory Affairs

**2017
MICHIGAN ELECTRICAL CODE RULES
Part 8**

**INCORPORATING THE 2017 EDITION OF
THE NATIONAL ELECTRICAL CODE**



**BUREAU OF CONSTRUCTION CODES
P.O. Box 30254
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Providing for Michigan's Safety in the Built Environment

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DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS

DIRECTOR'S OFFICE

CONSTRUCTION CODE

(By authority conferred on the director of the department of licensing and regulatory affairs by section 4 of 1972 PA 230, MCL 125.1504, and Executive Reorganization Order Nos. 1996-2, 2003-1, 2008-4, 2011-4, and 2017-1, MCL 445.2001, 445.2011, 445.2025, 445.2030, and 339.3102)

Filed with the Secretary of State on January 4, 2019

These rules take effect January 4, 2019

PART 8. ELECTRICAL CODE

Rule 801. (1) The standards contained in the national electrical code 2017 edition, including Annex H, except sections 80.2, 80.5, 80.15, 80.21, 80.27, 80.29, 80.31, 80.33, 80.35, 90.6, and 547.1 to 547.10, as published by the national fire protection association (NFPA), shall govern the installation, replacement, alteration, relocation, and use of electrical systems or material. With the exceptions noted, the national electrical code is adopted in these rules by reference. (2) All references to the ANSI/ASME A17.1-2013, safety code for elevators and escalators mean the Michigan elevator code and all references to the national electrical code mean the Michigan electrical code.

(3) NFPA 110, standard for emergency and standby power systems, 2013 edition and NFPA 111, standard on stored electrical energy emergency and standby power systems, 2013 edition, are adopted by reference in these rules.

(4) The codes are available for inspection at the Lansing office of the Michigan department of licensing and regulatory affairs, bureau of construction codes.

(5) The National Electrical Code, NFPA 110 and NFPA 111 may be purchased from the National Fire Protection Association, Batterymarch Park, Quincy, Massachusetts 02269, or through the bureau's website at www.michigan.gov/bcc, at a cost as of the time of adoption of these rules of \$98.00, \$47.50, and \$47.50 each, respectively.

R408.30801 (Part 8 Amended)

80.1 Scope. The following are covered:

- (1) The inspection of electrical installations as covered by 90.2.
- (2) The review of construction plans, drawings, and specifications for electrical systems.
- (3) The design, alteration, modification, construction, maintenance, and testing of electrical systems and equipment.
- (4) The regulation and control of electrical installations at special events, including, but not limited to, exhibits, trade shows, amusement parks, and other similar special occupancies.

80.1.1 Severability. If a section, subsection, sentence, clause, or phrase of the code is, for any reason, held to be unconstitutional, this decision shall not affect the validity of the remaining portions of the code.

R408.30808 (Part 8 Amended)

***80.3 Purpose.** The purpose of this article shall be to provide requirements for administration and enforcement of the *National Electrical Code*.

R408.30801 (Annex H)

80.7 Title. These rules shall be known as the Michigan electrical code, hereinafter referred to as "the code."

R408.30807 (Annex H Amended)

***80.9 Application.**

(A) New Installations. This *Code* applies to new installations. Buildings with construction permits dated after adoption of this *Code* shall comply with its requirements.

(B) Existing Installations. Existing electrical installations that do not comply with the provisions of this *Code* shall be permitted to be continued in use unless the authority having jurisdiction determines that the lack of conformity with this *Code* presents an imminent danger to occupants. Where changes are required for correction of hazards, a reasonable amount of time shall be given for compliance, depending on the degree of the hazard.

(C) Additions, Alterations, or Repairs. Additions, alterations, or repairs to any building, structure, or premises shall conform to that required of a new building without requiring the existing building to comply with all the requirements of this *Code*. Additions, alterations, installations, or repairs shall not cause an existing building to become unsafe or to adversely affect the performance of the building as determined by the authority having jurisdiction. Electrical wiring added to an existing service, feeder, or branch circuit shall not result in an installation that violates the provisions of the *Code* in force at the time the additions are made.

R408.30801 (Annex H)

***80.11 Occupancy of Building or Structure.**

(A) New Construction. No newly constructed building shall be occupied in whole or in part in violation of the provisions of this *Code*.

(B) Existing Buildings. Existing buildings that are occupied at the time of adoption of this *Code* shall be permitted to remain in use provided the following conditions apply:

(1) The occupancy classification remains unchanged.

(2) There exists no condition deemed hazardous to life or property that would constitute an imminent danger.

R408.30801 (Annex H)

80.13 Authority. Where used in this article, the term authority having jurisdiction shall include the chief electrical inspector or other individuals designated by the governing body. This code shall be administered and enforced by the authority having jurisdiction designated by the governing authority as follows:

(1) When the use of any electrical equipment or its installations is found to be dangerous to human life or property, the authority having jurisdiction may have the premises disconnected from its source of electric supply, as established by the board. When this equipment or installation has been condemned or disconnected, a notice shall be placed on the equipment or installation listing the causes for the condemnation, or the disconnection, or both, and the penalty for the unlawful use of the equipment or installation. Written notice of this condemnation or disconnection and the causes of it shall be given within 24 hours to the owners, or the occupant, or both, of the building, structure, or premises. It is unlawful for any person to remove this notice, to reconnect the electrical equipment to its source of electric supply, or to use or permit to be used electric power in any electrical equipment until the causes for the condemnation or disconnection have been remedied to the satisfaction of the inspection authorities.

(2) The authority having jurisdiction may delegate to other qualified individuals the powers as necessary for the proper administration and enforcement of this code.

(3) Police, fire, and other enforcement agencies may render necessary assistance in the enforcement of this code when requested to do so by the authority having jurisdiction.

(4) The authority having jurisdiction may order any person or persons to remove or remedy the dangerous or hazardous condition or conditions or equipment. Any person or persons who fail to comply with this order are in violation of this code.

(5) Where the authority having jurisdiction deems that conditions hazardous to life and property exist, he or she may require that the hazardous conditions in violation of this code be corrected.

(6) Persons shall not use a badge, uniform, or other credentials to impersonate the authority having jurisdiction.

(7) The authority having jurisdiction may require plans and specifications to ensure compliance with this code.

(8) Whenever any installation is subject to inspection prior to use is covered or concealed without having first been inspected, the authority having jurisdiction may require that this work be exposed for inspection. Neither the code official nor the jurisdiction is liable for expense entailed in the removal or replacement of any material required to allow inspection. The authority having jurisdiction shall be notified when the installation is ready for inspections.

R408.30810 (Part 8 Amended)

80.14 Duties and Powers of the Code Official. The code official is authorized and directed to enforce the provisions of this code. The code official may render interpretations of this code and adopt policies and procedures in order to clarify the application of its provisions. These interpretations, policies, and procedures shall be in compliance with the intent and purpose of this code. These policies and procedures shall not have the effect of waiving requirements specifically provided for in this code.

R408.30811 (Part 8 Amended)

***80.17 Records and Reports.** The authority having jurisdiction shall retain records in accordance with (A) and (B).

(A) Retention. The authority having jurisdiction shall keep a record of all electrical inspections, including the date of such inspections and a summary of any violations found to exist, the date

of the services of notices, and a record of the final disposition of all violations. All required records shall be maintained until their usefulness has been served or as otherwise required by law.

(B) Availability. A record of examinations, approvals, and variances granted shall be maintained by the authority having jurisdiction and shall be available for public review as prescribed by law during normal business hours.

R408.30801 (Annex H)

80.18 Maintenance of existing wiring and equipment. Every building, structure, or part thereof shall be kept in good electrical repair by the owner

R408.30815 (Part 8)

80.19 Permits and approvals.

Permits and approvals shall conform to (a) to (e).

(a) Application. A copy of the permit shall be posted or otherwise readily accessible at each work site or carried by the permit holder as specified by the authority having jurisdiction.

(b) Issuance of permits. The authority having jurisdiction shall be authorized to establish and issue permits, certificates, notices, and approvals, or orders pertaining to electrical safety hazards, except that no permit shall last longer than 180 days, or be required to execute any of the classes of electrical work specified in the following:

- (1)** Installation or replacement of equipment such as lamps and of electric utilization equipment approved for connection to suitable permanently installed receptacles.
- (2)** Replacement of flush or snap switches, fuses, lamp sockets, and receptacles, and other minor maintenance and repair work, such as replacing worn cords and tightening connections on a wiring device and minor repair work as defined in skilled trades regulation act, 2016 PA 407, MCL 339.5101 to 339.6133.
- (3)** The process of manufacturing, testing, servicing, or repairing electrical equipment or apparatus.

(4) Installations that are referred to in section 737(3)(a), (b), (c), (d), (f), (h), (l), and (m) of the skilled trades regulations act, 2016 PA 407, MCM 339.5737.

(c) Annual permits. In lieu of an individual permit for each installation or alteration, an annual permit shall, upon application, be issued to any person, firm, or corporation regularly employing 1 or more employees for the installation, alteration, and maintenance of electrical equipment in or on buildings or premises owned or occupied by the applicant for the permit. Upon application, an electrical contractor as an agent for the owner or tenant shall be issued an annual permit. The applicant shall keep records of all work done, and the records shall be transmitted periodically to the electrical inspector.

(d) Inspection and approvals.

(1) Upon the completion of any installation of electrical equipment that has been made under a permit, the person, firm, or corporation making the installation shall notify the electrical inspector having jurisdiction.

(2) Where the inspector finds the installation to be in conformity with the code, state statutes, rules and, if applicable, local ordinances, the inspector shall issue to the person, firm, or

corporation making the installation a final approval, or certificate of approval provided payment has been made, which authorizes the connection into the supply of electricity.

(3) When any portion of the electrical installation within the jurisdiction of an electrical inspector is to be hidden from view by the permanent placement of parts of the building, the person, firm, or corporation installing the equipment shall notify the electrical inspector, and the equipment shall not be concealed until it has been approved by the electrical inspector. Neither the code official nor the jurisdiction shall be liable for expense entailed in the removal or replacement of any material required to allow inspection.

(e) **Applications and extensions.** The authority having jurisdiction may grant 1 180-day extension of the original permit time period of 180 days, upon presentation of the permittee of a satisfactory reason for failure to start or complete the work or activity authorized by the permit.

R40830818 (Part 8 Amended)

80.20 Representative on jobsite. The enforcing agency reserves the right to require a representative of the permit holder to be on the job when an inspection is made.

R408.30820 (Part 8 Amended)

80.21. Plans and specifications. An applicant shall submit a detailed set of plans and specifications with the application for an electrical permit for any wiring or alteration to an electrical system if the system requires installation of electrical equipment that has an ampacity of more than 400 amperes for the service or feeder and if the calculated floor area in a building is more than 3,500 square feet. The enforcing agency may request plans for projects that include an unusual design. The electrical drawings shall include all of the following details:

- (a) Lighting layout.
 - (b) Circuiting.
 - (c) Switching.
 - (d) Conductor and raceway sizes.
 - (e) Wattage schedule.
 - (f) Service location and riser diagram.
 - (g) Load calculations and available fault current calculations.
 - (h) A proposed method of construction that is drawn with symbols of a standard form.
- All conductors are assumed to be copper unless otherwise stated in the plan. Specifications, when provided, shall also include the information listed in this rule. The selection of suitable disconnect and overcurrent devices to provide proper coordination and interrupting capacity for a wiring system is the responsibility of the designer. The enforcing agency, when approving electrical plans, does not assume responsibility for the design or for any deviations from any electrical drawings. The permit holder shall ensure that the plans and specifications approved by the enforcing agency, or a certified copy of the plans and specifications, where required, are available on the jobsite for the use of the enforcing agency.

80.21.1. Application and permits. Work shall be installed pursuant to the code and approved construction documents, and any changes made during construction that are not in compliance with the approved construction documents shall be resubmitted for approval as an amended set of construction documents.

80.21.2 Previous approvals. This code shall not require changes in the construction documents, construction or designated occupancy of a structure for which a lawful permit has been previously issued or otherwise lawfully authorized, and the construction of which has been pursued in good faith within 180 days after the effective date of this code and has not been abandoned.

80.21.3. Information on construction documents. Construction documents shall be dimensioned and drawn upon suitable material. Electronic media documents may be submitted when approved by the enforcing agency. Construction documents shall be of sufficient clarity to indicate the location, nature, and extent of the work proposed and show in detail that it will conform to the provisions of this code and relevant laws, ordinances, rules, and regulations as determined by the enforcing agency.

R408.30819 (Part 8 Amended)

80.23. Violations. Whenever the authority having jurisdiction determines that there are violations of this code, a written notice shall be issued to the permit holder to confirm such findings. Notice of violation shall be sent to the permit holder in writing.

R408.30826 (Part 8 Amended)

80.25. Connection to electricity supply. Connections to the electric supply shall conform to (a) and (b).

(a) Except where work is done under an annual permit and except as otherwise provided in section 80.25, it is unlawful for any person, firm, or corporation to make connection to a supply of electricity or to supply electricity to any electrical equipment installation for which a permit is required or that has been disconnected or ordered to be disconnected.

(b) The governing utility may reconnect the electrical service, prior to approval by the enforcing agency, following emergency repairs performed by an electrical contractor licensed pursuant to the skilled trades regulation act, 2016 PA 407, MCL 339.5701 to 339.5739. The electrical contractor shall secure a permit by the next business day after the work is completed. This requirement is not applicable to new service connections, upgrades, structural fires, or other planned modifications.

R408.30823 (Part 8 Amended)

80.26. Service Equipment.

The enforcing agency shall approve service equipment installed, altered, or repaired before the load side of the meter is energized.

R408.30827 (Part 8 Amended)

90.6 Formal Interpretations. (Removed)

(Part 8 Amended)

Article 100.

The definition of "act" is added to article 100 of the code to read as follows: "Act" means 1972 PA 230, MCL 125.1501 to 125.1531 and known as the Stille-DeRossett-Hale single state construction code act.

R408.30828 (Part 8 Amended)

250.104(B). Bonding other metal piping.

(1) Other metal piping. If installed in or attached to a building or structure, a metal piping system, including gas piping, capable of becoming energized shall be bonded to any of the following:

- (a) Equipment grounding conductor for the circuit that is likely to energize the piping system.
- (b) Service equipment enclosure.
- (c) Grounded conductor at the service.
- (d) Grounding electrode conductor, if of sufficient size.
- (e) One or more grounding electrodes used, if the grounding electrode conductor or bonding jumper to the grounding electrode is of sufficient size.

The bonding conductor or conductors, or the jumper or jumpers shall be sized in accordance with table 250.122, and equipment grounding conductors shall be sized in accordance with table 250.122 using the rating of the circuit that is likely to energize the piping system or systems. The points of attachment of the bonding jumper or jumpers shall be accessible.

(2) Corrugated stainless steel tubing (CSST). Listed corrugated stainless steel tubing gas piping systems shall be bonded to the electrical service grounding electrode system. The bonding jumper shall connect to a metallic pipe or fitting between the point of delivery and the first downstream CSST fitting. The bonding jumper shall be not smaller than 6 AWG copper wire or equivalent. A gas piping system that is bonded pursuant to this section shall be considered effectively bonded regardless of the amount of CSST in the system.

Exception: Listed CSST piping systems approved for installation without additional bonding by the manufacturer.

R408.30871 (Part 8 Amended)

Article 334 Nonmetallic-Sheathed Cable

334.10. Uses Permitted. Type NM, type NMC, and type NMS cables may be used in the following, except as prohibited in section 334.12:

- (1) One- and 2-family dwellings and their attached or detached garages, and their storage buildings.
- (2) Multifamily dwellings.
- (3) In other structures exceeding 1 floor above grade, cables shall be concealed within walls, floors, or ceilings that provide a thermal barrier of material that has at least a 15-minute finish rating as identified in listings of fire rated assemblies pursuant to the Michigan building code.
- (4) Cable trays in structures permitted to be types III, IV, or V where the cables are identified for the use.

R408.30873 (Part 8)

334.12(A). Uses Not Permitted. Types NM, NMC, and NMS cable shall not be permitted as follows:

- (1) In any dwelling or structure not specifically permitted in section 334.10(1), (2) and (3).
- (2) Exposed in dropped or suspended ceilings in other than 1- and 2-family and multifamily dwellings.
- (3) As service-entrance cable.
- (4) In commercial garages having hazardous or classified locations as defined in section 511.3.
- (5) In theaters and similar locations, except where permitted in section 518.4(B).
- (6) In motion picture studios.
- (7) In storage battery rooms.
- (8) In hoistways or on elevators or escalators.
- (9) Embedded in poured cement, concrete, or aggregate.
- (10) In hazardous or classified locations, except where specifically permitted by other articles in this code.

R408.30873 (Part 8)

547.1 to 547.10. (Removed)

R408.30801 (Part 8)

Article 700 Emergency Systems.

700.9. Installation. Emergency systems shall be installed pursuant to NFPA 110 and NFPA 111, 2013 editions, which are adopted by reference in these rules.

R408.30838 (Part 8)

Article 701 Legally Required Systems

701.9. Installation. Legally required standby systems shall be installed pursuant to NFPA 110 and NFPA 111, 2013 editions, which are adopted by reference in these rules.

R408.30838 (Part 8)

**Table 310.15(B)(7) Conductor Types and Sizes for
120/240-Volt, 3-Wire, Single-Phase Dwelling Services and
Feeders. Conductor Types RHH, RHW, RHW-2, THHN,
THHW, THW, THW-2, THWN, THWN-2, XHHW,
XHHW-2, SE, USE, USE-2**

Service or Feeder Rating (Amperes)	Conductor (AWG or kcmil)	
	Copper	Aluminum or Copper-Clad Aluminum
100	4	2
110	3	1
125	2	1/0
150	1	2/0
175	1/0	3/0
200	2/0	4/0
225	3/0	250
250	4/0	300
300	250	350
350	350	500
400	400	600

This Table was added by the Michigan Chapter IAEI

This table is from the 2011 NEC and Not in the 2014 or 2017 Code

The 2020 NEC will bring the table back in Table 310.12

2017 Michigan Electrical Code

Part 8 Rules

Produced by the Michigan Chapter, IAEI

IAEI Mission Statement

IAEI, as the keystone of the electrical industry, is a membership driven, nonprofit association promoting electrical safety throughout the industry by providing premier education, certification of inspectors, advocacy, partnerships and expert leadership in Electrical Codes and Standards development.

What is the IAEI?

The IAEI, International Association of Electrical Inspectors, is an association for the education of all facets of the electrical industry.
It is an Association that is NOT limited to electrical inspector members.

Who should consider joining the IAEI?

Apprentices, Architects, Contractors, Distributors, Electrical Inspectors, Engineers, Home inspectors, Journey Electricians, Master Electricians, Testing Laboratories, Students and anyone involved in the electrical industry.

MEMBERSHIP BENEFITS

Discounts to IAEI Products, Discounts on Training Seminars, Receive FREE NEC Code Book (Member for 3-years), Networking with other IAEI Members, Access to NEC Code Panel Members and Testing Laboratories, IAEI Offers two types of Electrical Inspector Certifications, IAEI Magazine provides important topics of the industry, Ability to submit Code Proposals to obtain IAEI endorsements, your membership provides connection to an International Association that is focused towards the needs of the industry and Inspectors.

Michigan Chapter IAEI

Provides Three Educational Seminars Annually
March, June and December

2019 Spring Meeting	March 26-27, 2019	Crowne Plaza, Delta Township
2019 Summer Meeting	June 13-14, 2019	Park Place Hotel, Traverse City
2019 Annual Meeting	December 5-6, 2019	Auburn Hills Marriott

Chapter Website: IAEI-Michigan.org

The Michigan Chapter is looking forward to hosting the IAEI Western Section Meeting in 2021