

# Dickinson County Construction Code Commission

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## Minimum Electrical Requirements

Consult the serving agency for meter location and mounting height.

Reference 2014 National Electrical Code

Michigan Residential Code (MRC) 2009

NEC 230.70 (A) (1) & MRC E3601.6.2 The service disconnecting means shall be installed at a readily accessible location nearest the point of entry of the service conductors.

NEC 230.43 (1 thru 19) & MRC E3605.2 Wiring methods for raceways and service entrance conductors.

NEC 230.24 (A) (B) (C) (D) & MRC E3604.2.2 Clearances for service entrance conductors. Minimum is ten (10) feet to the lowest point of the drip loop. Twelve (12) feet over residential driveways. Eighteen (18) feet over public streets, etc.

NEC 230.9 (A) (B) (C) & MRC E3604.1 Clearances from doors and windows that open, porches, balconies, ladders, stairs, etc. Clearances of not less than three (3) feet.

NEC 230.28 & MRC E3604.5 Service masts as supports. Only power service-drop conductors shall be permitted to be attached to a service mast.

NEC 240.24 (A) through (F) & MRC E3705.7 Panel locations (not in bathrooms or closets).

NEC 240.24 & MRC E3705.7 Accessibility & Grouping. Maximum height of circuit breaker not to be more than six (6) feet seven (7) inches.

NEC 110.26 (A) (B) (C) (D) (E) (F) & MRC E3405.1 thru .7 Working space about electrical equipment (panels): Minimum Width thirty (30) inches, Depth thirty-six (36) inches, and Height six (6) feet seven (7) inches.

NEC Table 300.5 (A) thru (5) & MRC E3803.1, Table Protection of underground service conductors.

NEC 310.10 (D) (1) (2) & MRC E3802.3.3 Overhead service conductors must be listed for 'SUNLIGHT RESISTANT'

NEC 230.50 (A) (B) (1) & MRC E3605.5 Protection of above ground service conductors.

NEC 230.79 (C) & MRC E3602.2.1 The rating of the service disconnecting means.  
Minimum service, 100 ampere for a residential dwelling unit.

NEC Table 310.15 (B) (7) Table 250.66, & MRC E3603.1; Table E3603.1 Wire size for residential service only

NEC 250.94, & MRC E3609.3 Bonding of service to other systems present.

NEC 250.50 & MRC E3608.1 & E3608.1.1 & E3608.1.2 thru E3608.6 Grounding electrode system & grounding electrode conductor.

NEC Table 310.15 (B) (6) Table 250.66 & MRC E3603.1, Table Grounding electrode conductors.

NEC 250.24 (B) & MRC E3607.5 Bonding the neutral to the frame of the main disconnecting means.

NEC 250.104 (A) & MRC E3609.6 Metal water lines used as the ground must be supplemented by two (2) electrodes (ground rod, etc.). No city metal water lines, you must have two (2) ground rods with six (6) feet apart.

NEC 250.104 (B) & MRC E3609.7 Interior metal water lines must always be bonded to the service equipment.

MRC 3609.7 Corrugated stainless steel tubing shall be bonded to service ground.

NEC 250.53 & MRC E3608.3 Size of grounding electrode conductors to rod or plat. (No. 6 Copper).

NEC 110.8; 300.5 & MRC Table 3801.2 "Direct buried conductors" (type USE cable).

NEC 210.11 (A) (B) & MRC E3703.5 Computation of branch circuits (#of circuit breakers to install)

NEC 220.5 (A) (B) (APPENDIX D example D1 (a) & MRC E3702 A 15 ampere lighting circuit shall be provided for each 600 square feet of floor area. A 20 ampere lighting circuit shall be provided for each 800 square feet of floor area for dwelling units, including basements, but not including open porches and garages.



NEC 220.14 (J) Table 220.12 & MRC E3704.4 Lighting and general use receptacle load.

NEC 210.70 (A) (1) (2) & MRC E3903.2 thru E3903.4 At least one (1) wall switch-controlled lighting outlet shall be installed in every habitable room; in bathrooms, hallways, (10 feet or longer), stairways, attached garages with electric power; and at the exterior side of the outdoor entrance or exits. At least one (1) wall switch at the point of entry to the attic, under-floor space, utility room, and basement where these spaces are used for storage or have equipment requiring servicing. There shall be a light switch installed at each floor for interior stairs when the difference is 6 (six) steps or more (three-way switching) and other kitchen or bathrooms, a switch controlled receptacle shall be okay.

NEC 410.2 410.16 (B) (C) & MRC E4003.12 & Figure 4003.12 Light fixtures located in clothes closets. Fluorescent or incandescent with enclosed bulb. Fluorescent must be six inches away from stored articles and incandescent must be twelve (12) inches from articles.

NEC 314.27 (A) through (D) MRC E3905.9 Ceiling fans; boxes used for support.

NEC 210.50; 210.52 (A) thru (I) & MRC E3901.1 thru 3902.11 Receptacles must be installed in every habitable room for the dwelling so that no point on any wall is over six (6) feet from a receptacle in the unbroken wall space of the room. In other words, you need a receptacle every twelve (12) feet of entrance to that room. You pick the entrance most likely to be used. Receptacles installed in the ends of electric baseboard heaters shall meet this requirement. They cannot be connected to the heater circuit. Receptacles shall not be installed above electric baseboard heaters. A receptacle over five (5) foot six (6) inches above the floor does not count as meeting the requirements of Section 210-52 (a). Receptacles located within eighteen (18) inches of the wall can be counted as meeting the Requirements of Section 210-52 (a).

NEC 210.52 (D) & MRC E3901.6 You must install a receptacle within thirty-six (36) inches of the outside edge of each basin in a bathroom. Shall be adjacent to the basin location.

NEC 210.11 (C) (3) & MRC E3703.4 Bathroom receptacle circuit shall have no other receptacles on them. Shall be a 20 amp. Circuit.

Exception: Where the 20 ampere circuit supplies a single bathroom, outlets for other equipment within the same bathroom shall be permitted to be supplied in accordance with Section 210-23 (a).

NEC 210.52 (E) (1) & MRC E3901.7 GFCI outdoor receptacles. One (1) in front and one (1) in back of dwellings.

NEC 210.8 (A) (1)-(8) & MRC E3902.1 thru 3902.10 GFCI required receptacles. Bathrooms, garages, outdoors, unfinished basements, crawl spaces, all kitchen countertop receptacles, a 11 wet bar receptacles within six (6) feet of sink.

NEC 210.63 & MRC E3901.11 GFCI receptacles required within twenty-five (25) feet of equipment requiring servicing, such as AC units & heating units. Exception: Rooftop equipment on one and two-family dwellings.

NEC 210.52 (F) MRC E3901.8 Laundry outlets must be installed within six (6) feet of the appliance.

NEC 210.11 (C) (2); 210.23(A) Ex. & MRC E3703.3 Laundry circuit shall be 20 ampere and have no other receptacles on it.

NEC 210.52 (B)(1) & MRC E3703.2 Small appliance branch circuits in kitchen shall be 20 amperes (A minimum of two (2) small appliance branch circuits).

MRC E3902.11 All bedroom 15A & 20A outlets shall be protected by an Arc-Fault Circuit Interrupter. (Receptacles, lights, and smoke detectors)

MRC 4002.14 Tamper resistant receptacles shall be installed as per Section 3901.1

NEC 210.11 (A) & MRC E3703.5 Number of branch circuits.

#### Rule 80.19.3 of Michigan Part 8. Electrical Code Rules

Each permit issued by the Code Official under the provisions of the Code shall expire by limitation and become null and void if the work authorized by the permit has not begun within 180 days from the date of the permit or if not inspected after the work is begun for a period of 180 days. Before the work may be restarted, the permit shall be reinstated if the Code has not changed. If the Code has changed and the work has not started, a new permit is required based on current requirements.

#### 2009 MRC Section R-314.1 thru R-315.3

R314.3 Location. Smoke alarms shall be installed in the following locations:

1. In each sleeping room.
2. Outside each separate sleeping area in the immediate vicinity of the bedrooms.
3. On each additional story of the dwelling, including basements and habitable attics but not including crawl spaces and uninhabitable attics. In dwellings or dwelling units with split levels and without an intervening door between the

adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.

When more than one smoke alarm is required to be installed within an individual dwelling unit the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual unit.

R314.4 Power source. Smoke alarms shall receive their primary power from the building wiring when such wiring is served from a commercial source, and when primary power is interrupted, shall receive power from a battery. Wiring shall be permanent and without a disconnecting switch other than those required for overcurrent protection. Smoke alarms shall be interconnected.

R315.1 Carbon monoxide alarms. For new construction, an approved carbon monoxide alarm shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms in dwelling units within which fuel-fired appliances are installed and in dwelling units that have attached garages.

R315.2 Where required in existing dwellings. Where work requiring a building permit occurs in existing dwellings that have attached garages or in existing dwellings within which fuel-fired appliances exist, carbon monoxide alarms shall be provided in accordance with section R315.1.

R 408.30520

R315.3 Alarm requirements. Single station carbon monoxide alarms shall be listed as complying with UL 2034 and shall be installed in accordance with this code and the manufacturer's installation instructions.