

20011 CHANGES TO THE NATIONAL ELECTRIC CODE

NOTE: The changes listed here are for informational purposes only, regarding their interpretation and enforcement by Baltimore County. It is the responsibility of the licensed contractor to be aware of all changes made to the National Electric Code. All wording in italics indicates commentary, instructional or informational matter.

THE ENFORCEMENT OF THE 2011 EDITION OF THE NATIONAL ELECTRIC CODE (NEC) WILL TAKE EFFECT ON SEPTEMBER 1, 2011. ELECTRICAL PERMITS ISSUED ON OR AFTER THIS DATE ARE REQUIRED TO BE IN COMPLIANCE.

NOTE: *All signs, markings, labels, etc. required by the NEC must be made in a permanent manner that is, at a minimum, equal in nature to those provided with the equipment or wiring method for which the sign, marking, or label is required, and must be suitable for the environment encountered.*

ARTICLE 100

- **BATHROOM.** An area including a basin with one or more of the following; a toilet, a urinal, a tub, a shower, a bidet, or similar plumbing fixtures.
 - **INTERSYSTEM BONDING TERMINATION.** A device that provides a means for connecting bonding conductors for communications systems to the grounding electrode system.
 - **110.24 AVAILABLE FAULT CURRENT**
 - (A) **Field Marking.** Service equipment in other than dwelling units shall be legibly marked in the field with the maximum available fault current. The field marking(s) shall include the date the fault current calculation was performed and be of sufficient durability to withstand the environment involved.
 - (B) **Modifications.** When modification to the electrical installation occur that affect the maximum available fault current shall be verified or recalculated as necessary to ensure the service equipment ratings are sufficient for the maximum available fault current at the line terminals of the equipment. The required field marking(s) in 110.24(A) shall be adjusted to reflect the new level of maximum available fault current.
- Exception:** The field marking requirement in 110.24(A) and 110.24(B) shall not be required in industrial installations where conditions of maintenance and supervision ensure that only qualified persons service the equipment.

NOTE: *All new installations, upgrades, and modifications to commercial or industrial services fall under the requirements of 110.24. Baltimore County will require, at the time of inspection, a copy of the documentation from the utility company verifying the maximum available fault current in addition to the required field markings. Any new installations or modifications to the service that result in the utility making changes which result in a maximum AIC higher than 10,000 will not be released to the utility for connection until the electrical contractor installing the service can demonstrate that all customers affected by the change have service equipment suitable to withstand the increased fault current.*

- **110.26 (A) (3) Exception No. 1:** In existing dwelling units, service equipment or panel boards that do not exceed 200 amperes shall be permitted in spaces where the height of the working space is less than 6 ½ ft.

- **110.26 (D) Illumination.** Illumination shall be provided for all working spaces about service equipment, switchboards, panel boards, or motor control centers installed indoors and shall not be controlled by automatic means only.

NOTE: Illumination provided in working spaces about service equipment, panel boards, switchboards, and motor control centers is not permitted to be automatic only. Any occupancy sensors, motion detectors, etc. in such areas must also be provided with a non-automatic means to turn lights on and off. This is to prevent the lights from going off from non-activity while an electrician is working in a panel.

- **210.8 Ground-Fault Circuit-Interrupter Protection for Personnel.** Ground-fault circuit interruption for personnel shall be provided as required in 210.8(A) through (C). The ground-fault circuit interrupter shall be installed in a readily accessible location.

NOTE: The 'readily accessible' requirement applies only to the GFIs specified in 210.8. Receptacles installed on a flat rooftop for the purpose of servicing equipment are considered readily accessible.

- **210.12 (B) Branch Circuit Extensions or Modifications – Dwelling Units.** In any of the areas specified in 210.12 (A), where branch circuit wiring is modified, replaced, or extended, the branch circuit shall be protected by one of the following:
 1. A listed combination-type AFCI located at the origin of the branch circuit.
 2. A listed outlet branch-circuit type AFCI located at the first receptacle outlet of the existing branch circuit.
- **210.52 (I) Foyers.** Foyers that are not part of the hallway in accordance with 210.52 (H) and that have an area that is greater than 60 sq. ft. shall have a receptacle(s) located in each wall space 3 ft. or more in width and unbroken by doorways, floor to ceiling windows, and similar openings

- 225 PART II

NOTE: All subpanels that are fed from and external to a building or structure are considered by Baltimore County Electrical Inspections to be an 'other structure'. As an 'other structure' these subpanels must comply with Article 225 Part II and the grounding requirements of Article 250 Part III.

- **225.27 Raceway Seal.** Where a raceway enters a building or structure from an underground distribution system, it shall be sealed in accordance with 300.5 (G). Spare or unused raceways shall also be sealed. Sealants shall be identified for use with the cable insulation, shield or other components.

NOTE: This Article applies to all underground raceway installations where the raceway enters the building. The sealant must be approved for its use and application.

- **230.24 (A) Exception No. 5: (Walkable Roof)** Where the voltage between conductors does not exceed 300 and the roof area is guarded or isolated, a reduction in clearance to 3 ft. shall be permitted.

NOTE: A roof is considered to be isolated only if there are no windows or permanently installed or fixed means of access to the roof.

- **250.53 (A)(2) Supplemental Electrode Required.** A single rod, pipe, or plate electrode shall be supplemented by an additional electrode of a type specified in 250.52 (A)(2) through (A) (8)

NOTE: In the past, single ground rods were permitted to serve as electrodes for detached garages, and temporary service, etc. This article now requires that a second rod be installed at least 6' away unless a resistance of less than 25 ohms can be demonstrated.

- **300.11 (A)(2) Non-Fire Rated Assemblies.** "...Where independent support wires are used, they shall be distinguishable by color, tagging, or other effective means.

NOTE: *Independent support wires in NON-FIRE RATED ceiling used for supporting electrical wiring and equipment must be identified in such a way that it can be distinguished from other support wiring in the ceiling.*

- **Table 310.15 (B)(2)(a)** Ambient temperature correction factors apply only to Tables 310.15 (B)(16) and 310.15 (B)(17) as these are the only two tables whose ampacities are based on an ambient temperature of 86°F.
- **Table 310.15 (B)(2)(b)** Ambient temperature correction factors apply to all tables whose ampacities are based on an ambient temperature of 104°F
- **Table 310.15 (B)(16)** replaces Table 310.16
- **314.27 (C) Boxes at Ceiling Suspended (Paddle) Fan Outlets.** "...Where spare, separately switched, undergrounded conductors are provided to a ceiling mounted outlet box, in a location acceptable for a ceiling suspended (paddle) fan in single or multi-family dwellings, the outlet box or outlet box system shall be listed for sole support of a ceiling-suspended (paddle) fan."

NOTE: *In dwelling units, if a three wire cable is run to a ceiling box in a location suitable for a ceiling fan, it will be presumed that a ceiling fan will at some point be installed there. Consequently, a ceiling fan outlet box must be installed at the location regardless of the type of fixture being installed.*

- **338.10 (B)(4)(a) Interior Installations** "...Where installed in thermal insulation, the ampacity shall be in accordance with the 60°C conductor temperature rating. The maximum conductor temperature rating shall be permitted to be used for ampacity adjustment and correction purposes, if the final derated ampacity does not exceed that for a 60°C rated conductor.

NOTE: *Type SE and SER cables used indoors are subject to the same installation methods as non-metallic sheathed cable except for Article 334.80 (ampacity requirements). Where not installed in thermal insulation these cables are subject to the normal ampacities set forth in Table 310.15 (B)(16) and may be fused at the 75°C rating (if otherwise permitted)...where installed in thermal insulation their final ampacity (after derating) may not exceed that of 60°C conductor and must be fused based on the 60°C rating.*

- **404.2 (C) Switches Controlling Lighting Loads.** Where switches control lighting loads supplied by a grounded general purpose branch circuit, the grounded circuit conductor for the controlled lighting circuit shall be provided at the switch location.

Exception: The grounded circuit conductor shall be permitted to be omitted from the switch enclosure where either of the following conditions in (1) or (2) apply:

1. Conductors for switches controlling lighting loads enter the box through a raceway...or
2. Cable assemblies for switches controlling lighting loads enter the box through a framing cavity that is open at the top or bottom on the same floor level, or through a wall, floor, or ceiling that is unfinished on one side.

NOTE: *This new section requires that a grounded conductor be provided at switch locations where the switch is being used for a lighting load. The purpose is to accommodate any future use of electronic lighting control devices. Such devices require a grounded conductor to operate. The requirement applies to all installations regardless of occupancy type. Baltimore County does not consider an unfinished attic or basement to be access to an open framing cavity and therefore, will require a grounded conductor to be provided at switch locations in all finished areas unless installed in a raceway system. The only exception to this would be in such areas where the grounded circuit conductor would be accessible to the switch from a dropped ceiling or a raised accessible floor. For the*

purposes of this section the switched receptacle permitted in 210.70(A)(1) Exception No. 1 is considered to be a lighting load.

This section applies to all single pole, 3-way, and 4-way switches regardless of voltage.

- **406.4 (D) Replacements**

- (4) Arc Fault Circuit-Interrupter Protection**

- NOTE:** Effective January 1, 2014 all replacement receptacles in locations required by this Code to be protected by AFCIs must be AFCI protected. This may be accomplished by any of the three means listed in this section.

- (5) Tamper-Resistant Receptacles**

- NOTE:** All replacement receptacles in locations required by this Code to be tamper resistant receptacles must be tamper resistant.

- (6) Weather-Resistant Receptacles**

- NOTE:** All replacement receptacles in locations required by this Code to be weather resistant receptacles must be weather resistant.

- **406.12 Tamper-Resistant Receptacles in Dwelling Units Exception**

NOTE: This section was revised to add exceptions to the requirement that all receptacles in dwellings be tamper resistant. The term 'nonlocking-type' was added to the section to indicate that twist lock type receptacles would not need to be tamper resistant. The following are not required to be tamper resistant:

- (1) Receptacles more than 5 ½ ft. above the floor
- (2) Receptacles that are part of a luminaire or appliance
- (3) A single receptacle (for an appliance) or a duplex receptacle (for two appliances) located in a space that is dedicated to the appliance. Those appliances are required to be: (a) not easily moved from one place to another and, (b) cord and plug connected
- (4) Non-grounding receptacles used for replacements as permitted in 406.4 (D)(2)(a)

- **406.13** Tamper-Resistant Receptacles are now required in guest rooms and guest suites.

- **406.14** Tamper-Resistant Receptacles are now required in all child care facilities.

- **408.4 Field Identification Required (B) Source of Supply**

All switchboards and panel boards supplied by a feeder in other than one or two-family dwellings shall be marked to indicate the device or equipment where the power supply originates.

NOTE: In all occupancies other than one and two-family dwellings, subfed panel boards and switchboards must be marked to indicate where their feeder originates.

- **410.130(G)(1) Disconnecting Means General**

“...For existing installed luminaires without disconnecting means, at the time a ballast is replaced, a disconnecting means shall be installed.”

NOTE: A disconnecting means is required to be added to existing fluorescent luminaires (using double ended lamps) when the ballast is replaced.

- **410.14 Disconnecting Means.**

Transformers, other than Class 2 or Class 3 transformers, shall have a disconnecting means located either in sight of the transformer or in a remote location. Where located in a remote location, the disconnecting means shall be lockable and the location shall be field marked on the transformer.

NOTE: *A disconnecting means on the primary side of the transformer is now required to be in sight of the transformer or, if not in sight, the disconnecting means must be lockable. If the disconnecting means is in a remote location, that location must be field marked on the transformer. The field marking must be suitable for the environment encountered.*