

406.4 General Installation Requirements. Receptacle outlets shall be located in branch circuits in accordance with Part III of Article 210. General installation requirements shall be in accordance with 406.4(A) through (G).

(A) Grounding Type. Except as provided in 406.4(D), receptacles installed on 15- and 20-ampere branch circuits shall be of the grounding type. Grounding-type receptacles shall be installed only on circuits of the voltage class and current for which they are rated, except as provided in 210.21(B)(1) for single receptacles or Table 210.21(B)(2) and Table 210.21(B)(3) for two or more receptacles.

(B) Connection to Equipment Grounding Conductor. Receptacles and cord connectors that have equipment grounding conductor contacts shall have those contacts connected to an equipment grounding conductor.

Exception No. 1: Receptacles mounted on portable and vehicle-mounted generator sets and generators in accordance with 250.34.

Exception No. 2: Replacement receptacles as permitted by 406.4(D).

Δ (C) Methods of Connection to Equipment Grounding Conductor. The equipment grounding conductor contacts of receptacles shall be connected to an equipment grounding conductor of the circuit supplying the receptacle in accordance with 250.146.

Cord connectors shall be connected to the equipment grounding conductor of the circuit supplying the cord connector.

Informational Note No. 1: See 250.118 for acceptable grounding means.

Informational Note No. 2: See 250.130 for extensions of existing branch circuits.

(D) Replacements. Replacement of receptacles shall comply with 406.4(D)(1) through (D)(8), as applicable. Arc-fault circuit-interrupter type and ground-fault circuit-interrupter type receptacles shall be installed in a readily accessible location.

(1) Grounding-Type Receptacles. Where a grounding means exists in the receptacle enclosure or an equipment grounding conductor is installed in accordance with 250.130(C), grounding-type receptacles shall be used and shall be connected to the equipment grounding conductor in accordance with 406.4(C) or 250.130(C).

(2) Non-Grounding-Type Receptacles. Where attachment to an equipment grounding conductor does not exist in the receptacle enclosure, the installation shall comply with 406.4(D)(2)(a), (D)(2)(b), or (D)(2)(c).

(a) A non-grounding-type receptacle(s) shall be permitted to be replaced with another non-grounding-type receptacle(s).

(b) A non-grounding-type receptacle(s) shall be permitted to be replaced with a ground-fault circuit interrupter-type

of receptacle(s). These receptacles or their cover plates shall be marked "No Equipment Ground." An equipment grounding conductor shall not be connected from the ground-fault circuit-interrupter-type receptacle to any outlet supplied from the ground-fault circuit-interrupter receptacle.

(c) A non-grounding-type receptacle(s) shall be permitted to be replaced with a grounding-type receptacle(s) where supplied through a ground-fault circuit interrupter. Where grounding-type receptacles are supplied through the ground-fault circuit interrupter, grounding-type receptacles or their cover plates shall be marked "GFCI Protected" and "No Equipment Ground," visible after installation. An equipment grounding conductor shall not be connected between the grounding-type receptacles.

Informational Note No. 1: Some equipment or appliance manufacturers require that the branch circuit to the equipment or appliance includes an equipment grounding conductor.

Informational Note No. 2: See 250.114 for a list of a cord-and-plug-connected equipment or appliances that require an equipment grounding conductor.

(3) Ground-Fault Circuit-Interrupter Protection. Ground-fault circuit-interrupter protection for receptacles shall be provided where replacements are made at receptacle outlets that are required to be so protected elsewhere in this Code. Ground-fault circuit interrupters shall be listed.

Exception: Where the outlet box size will not permit the installation of the GFCI receptacle, the receptacle shall be permitted to be replaced with a new receptacle of the existing type, where GFCI protection is provided and the receptacle is marked "GFCI Protected" and "No Equipment Ground," in accordance with 406.4(D)(2)(a), (D)(2)(b), or (D)(2)(c), as applicable.

Δ (4) Arc-Fault Circuit-Interrupter Protection. If a receptacle located in any areas specified in 210.12(A), (B), or (C) is replaced, a replacement receptacle at this outlet shall be one of the following:

- (1) A listed outlet branch-circuit type **AFCI** receptacle
- (2) A receptacle protected by a listed outlet branch-circuit type **AFCI** type receptacle
- (3) A receptacle protected by a listed combination type **AFCI** circuit breaker

Exception: Section 210.12(E), Exception, shall not apply to replacement of receptacles.

Older homes are statistically more vulnerable to electrical fires. Extra protection for older homes is provided by the gradual replacement, over time, of non-arc-fault circuit-interpreter (AFCI) protected receptacles with new AFCI-protected ones.

(5) Tamper-Resistant Receptacles. Listed tamper-resistant receptacles shall be provided where replacements are made at receptacle outlets that are required to be tamper-resistant elsewhere in this Code, except in one of the following cases: