



NEC Article® 210.8(B)

Ground-Fault Circuit Interrupter Protection for Personnel - Other Than Dwelling Units

Edition

- 2014: Expanded requirements to include indoor wet locations, locker rooms with associated showering facilities, garage, service bays and similar areas.
- **2017:** Expanded requirements to include crawl spaces and unfinished areas of the basement not intended as habitable rooms.

Now applies to all single-phase receptacles 150 V to ground or less and 50 A or less AND three-phase receptacles 150 V to ground or less and 100 A or less.

2020: Expanded to include indoor damp locations, along with accessory buildings, unfinished areas of basements, laundry areas, and within 6 feet from the outside edge of a bathtub or shower stall.

Suggested Solutions

Standard & TR: GFNT1-HG, GFNT2-HG, GFTR1-HG, GFTR2-HG Guidelight: GFNL1-HG, GFNL2-HG Weather-Resistant: GFWT1-HG,GFWT2-HG Lev-Lok®: MGFN1-HG, MGFN2-HG, MGFT1-HG, MGFT2-HG



NEC Article® 517.16

Use of Isolated Ground Receptacles

Edition

- **2014:** Isolated ground receptacles shall not be permitted in a patient care vicinity. However, can be used outside of the patient care vicinity.
- **2017:** Added clarifying notes regarding proper connection of redundant ground paths.
- 2020: Added clarifying language to ensure that the use of an isolated ground receptacle does not defeat the safety features of the grounding system.

Suggested Solutions

Standard: 8200-IG, 8300-IG Decora®: D8200-IG, D8300-IG 4-in-1: 1254-IG, 21254-IG <u>Lev-Lok</u>® Standard: M8200-IG, M8300-IG, MT820-IG, MT830-IG Decora®: MD820-IG, MD830-IG, MDT82-IG, MDT83-IG





NEC Article® 517.18(A)

General Care (Category 2) Spaces - Patient Bed Location

Edition

2014: Expanded marking requirements to include General Care Areas *(formerly only required in critical care areas);* clarified specific portion of essential electrical system.

2017: Same as 2014; simply added the "Category 2" nomenclature. **2020:** Same as 2017.

Suggested Solutions Wall Plates



NEC Article[®] 517.18(B)

General Care (Category 2) Spaces - Patient Bed Location Receptacles

Edition

2014: Increased number of receptacles from four to eight.2017: Same as 2014.2020: Same as 2017.

Related NFPA 99 Reference

[2018]6.3.2.2.2(A): Electrical System Requirements – Receptacles Serving Patient Bed Locations in Category 2 Spaces

Suggested Solutions

Standard: 8200, 8300, 8200-H, 8300-H, 8210, 8310 Pwr Ind: 8200-PL, 8300-PL Leaded: 8200-L, 8300-L, 8200-C, 8300-C Decora®: 16262-HG, 16362-HG Decora® Pwr Ind: 16262-PL, 16363-PL Lev-Lok® Standard: M8200, M8300 Pwr Ind & Illum: M8200-PL, M8300-PL, M8200-IL, M8300-IL Decora®: M1626-HG, M1636-HG Decora® Pwr Ind & Illum: M1626-PL, M1626-IL, M1636-PL, M1636-IL





NEC Article® 517.18(C)

General Care (Category 2) Spaces - Pediatric Locations

Edition

- 2014: Removes requirement for TR receptacles in nurseries. 2017: Added "or spaces with similar risk as determined by the
- governing body."
- 2020: Clarified that the "governing body" is that of the health care facility. Also added that the TR receptacles must be "identified as" such.

Related NFPA 99 Reference

[2018]6.3.2.2.1(D): Electrical System Requirements – Types of Receptacles

Suggested Solutions

Standard: 8200-SG, 8300-SG Decora®: 16262-SG, 16362-SG Lev-Lok® Standard: M8200-SG, M8300-SG Standard Illum: MT820-IL, MT830-IL Decora®: 16262-SG, 16362-SG Decora® Illum: MT162-IL, MT163-IL



NEC Article[®] 517.19(A)

Critical Care (Category 1) Spaces - Patients Bed Location Branch Circuits

Edition

- 2014: Changes term "emergency system" to "critical branch" to be specific as to which portion of the EES must be employed.
- 2017: Added "the electrical receptacles or the cover plates for the electrical receptacles supplied from the life safety and critical branches shall have a distinctive color or marking so as to be readily identifiable."

2020: Same as 2017.

Related NFPA 99 Reference

[2018]6.7.2.3.5(B): Electrical System Requirements – Feeders from Alternate Source

Suggested Solutions

Standard: 8200, 8300, 8200-H, 8300-H, 8210, 8310 Pwr Ind: 8200-PL, 8300-PL Leaded: 8200-L, 8300-L, 8200-C, 8300-C Decora®: 16262-HG, 16362-HG Decora® Pwr Ind: 16262-PL, 16363-PL Lev-Lok® Standard: M8200, M8300 Pwr Ind & Illum: M8200-PL, M8300-PL, M8200-IL, M8300-IL Decora®: M1626-HG, M1636-HG Decora® Pwr Ind & Illum: M1626-PL, M1626-IL, M1636-PL, M1636-IL





NEC Article[®] 517.19(B)(1)

Critical Care (Category 1) Spaces - Patient Bed Location Receptacles

Edition

2014: Increases number of receptacles from 6 to 14; changes term "emergency system" to "critical branch" to be specific as to which portion of the EES must be employed.
2017: Same as 2014.

2020: Same as 2017.

Related NFPA 99 Reference

[2018]6.3.2.2.2(B): Electrical System Requirements – Receptacles Serving Patient Bed Locations in Category 1 Spaces other Than Operating Rooms

Suggested Solutions

Standard: 8200, 8300, 8200-H, 8300-H, 8210, 8310 Pwr Ind: 8200-PL, 8300-PL Leaded: 8200-L, 8300-L, 8200-C, 8300-C Decora®: 16262-HG, 16362-HG Decora® Pwr Ind: 16262-PL, 16363-PL Lev-Lok® Standard: M8200, M8300 Pwr Ind & Illum: M8200-PL, M8300-PL, M8200-IL, M8300-IL Decora®: M1626-HG, M1636-HG Decora® Pwr Ind & Illum: M1626-PL, M1626-IL, M1636-PL, M1636-IL



NEC Article[®] 517.19(B)(2)

Critical Care (Category 1) Spaces - Receptacle Requirements

Edition

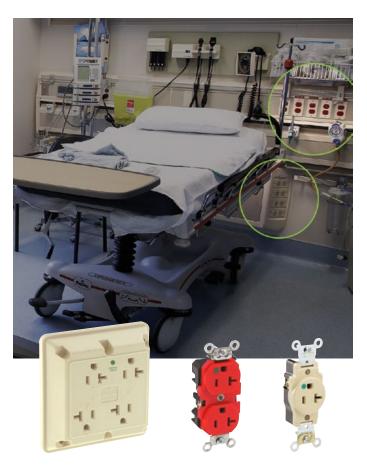
2014: Receptacles required in 517.19(B)(1) shall be permitted to be of the single, duplex, or quadruplex type or combination thereof, shall be listed hospital grade and identified as such.
2017: Same as 2014.
2020: Same as 2017.

Related NFPA 99 Reference

[2018]6.3.2.2.2(B): Electrical System Requirements - Receptacles Serving Patient Bed Locations in Category 1 Spaces other Than Operating Rooms

Suggested Solutions

Standard: 8200, 8300, 8200-H, 8300-H, 8210, 8310 Pwr Ind: 8200-PL, 8300-PL Leaded: 8200-L, 8300-L, 8200-C, 8300-C Decora®: 16262-HG, 16362-HG Decora® Pwr Ind: 16262-PL, 16363-PL 4-in-1: 1254H, 21254H Lev-Lok® Standard: M8200, M8300 Pwr Ind & Illum: M8200-PL, M8300-PL, M8200-IL, M8300-IL Decora®: M1626-HG, M1636-HG Decora® Pwr Ind & Illum: M1626-PL, M1626-IL, M1636-PL, M1636-IL





NEC Article® 517.19(C)(1)

Critical Care (Category 1) Spaces - Operating Room Receptacles, Minimum Number & Supply

Edition

- 2014: Each operating room location shall be provided with a minimum of 36 receptacles (single or duplex), with at lest 12 of them connected to either the normal system branch circuit or a critical branch circuit that is supplied by a different transfer switch than other receptacles in the same location.
- 2017: Added requirement to divide total number of receptacles between at least two branch circuits...at least 12, but no more than 24 on a single branch.

2020: Same as 2017.

Related NFPA 99 Reference

[2018]6.3.2.2.2(C): Electrical System Requirements – Receptacles in Operating Rooms

Suggested Solutions

Standard: 8200, 8300, 8200-H, 8300-H, 8210, 8310 Pwr Ind: 8200-PL, 8300-PL Leaded: 8200-L, 8300-L, 8200-C, 8300-C Decora®: 16262-HG, 16362-HG Decora® Pwr Ind: 16262-PL, 16363-PL Lev-Lok® Standard: M8200, M8300 Power Ind & Illum: M8200-PL, M8300-PL, M8200-IL, M8300-IL Decora: M1626-HG, M1636-HG Decora® Power Ind & Illum: M1626-PL, M1626-IL, M1636-PL, M1636-IL



NEC Article® 517.19(C)(2)

Critical Care (Category 1) Spaces - Operating Room Receptacles, Receptacle Requirements

Edition

- **2014:** Receptacles required in 517.19(C)(1) shall be permitted to be of the single or duplex type or combination thereof, shall be listed hospital grade and identified as such.
- 2017: Added quadruplex receptacles, and both locking and non-locking (only non-locking are required to be hospital grade).2020: Same as 2017.

Related NFPA 99 Reference

[2018]6.3.2.2.2(C): Electrical System Requirements – Receptacles in Operating Rooms

Suggested Solutions

Standard: 8200, 8300, 8200-H, 8300-H, 8210, 8310 Pwr Ind: 8200-PL, 8300-PL Leaded: 8200-L, 8300-L, 8200-C, 8300-C Decora®: 16262-HG, 16362-HG Decora® Pwr Ind: 16262-PL, 16363-PL <u>Lev-Lok</u>® Standard: M8200, M8300 Pwr Ind & Illum: M8200-PL, M8300-PL, M8200-IL, M8300-IL Decora®: M1626-HG, M1636-HG Decora® Pwr Ind & Illum: M1626-PL, M1626-IL, M1636-PL, M1636-IL





NEC Article® 517.20(A)

Wet Procedure Location - Receptacles and Fixed Equipment

Edition

- **2014:** All receptacles and fixed equipment within the area of the wet procedure location shall have ground-fault circuit-interrupter protection for personnel if power interruption can be tolerated or be served by an isolated power system.
- 2017: Same as 2014.
- 2020: Clarified that the trip value is defined as in a Class A GFCI (previously specified a value of 6 mA).

Suggested Solutions

Standard & TR: GFNT1-HG, GFNT2-HG, GFTR1-HG, GFTR29-HG Guidelight: GFNL1-HG, GFNL2-HG Weather-Resistant: GFWT1-HG,GFWT2-HG Lev-Lok®: MGFN1-HG, MGFN2-HG, MGFT1-HG, MGFT2-HG





NEC Article® 517.31(E)

Essential Electrical Systems for Hospitals and Other Health Care Facilities - Receptacle Identification

Edition

- **2014:** The cover plates for the electrical receptacles or the electrical receptacles themselves are supplied from the essential electrical system shall have a distinctive color or marking so as to be readily identifiable [51730(E)].
- 2017: Moved to current section.
- 2020: Changed "essential electrical system" to "life safety and critical branches".

Related NFPA 99 Reference

[2018]6.7.2.3.5(B): Essential Electrical System Requirements – Feeders from Alternate Source

Suggested Solutions

Any wallplate or uniquely colored receptacle





NEC Article[®] 517.33(E)

Life Safety Branch - Generator Set and Transfer Switch Locations

Edition

2014: ...selected receptacles at the generator set and essential transfer switch locations (requires a receptacle to be available in the vicinity for task lighting, test equipment, etc.) (shall be connected to the life safety branch) [517.32(E)].
2017: Same as 2014; moved to 517.33(E).

2017: Same as 2014, mov

2020: Same as 2017.

Related NFPA 99 Reference

[2018]6.7.5.1.2.4(4): Essential Electrical System Requirements – Type 1

Suggested Solutions

Standard: 5262, 5362 Lev-Lok[®]: M5262, M5362





NEC Article® 517.34(A)

Critical Branch - Task Illumination, Fixed Equipment and Selected Receptacles

Edition

- **2014:** The critical branch of the essential electrical system shall supply power for task illumination, fixed equipment, selected receptacles, and special circuits serving the...areas and functions related to patient care... [517.33(A)]
- 2017: Moved to 517.34(A).
- 2020: Updated to include clinical IT-network equipment and wireless phone and paging equipment for clinical staff communication

Related NFPA 99 Reference

[2018]6.7.5.1.3.2: Essential Electrical System Requirements -Distribution (Type 1 EES), Critical Branch

Suggested Solutions

Indicates that receptacles supplied by the Critical Branch of the essential electrical system must be available in the following areas: critical care areas that utilize anesthetizing gases, patient care areas, pharmacy dispensing areas, nurses' stations, telephone and data rooms, blood, bone and tissue banks, lab areas, general care areas, recovery rooms, etc.





NEC® Article 517.42(E)

Essential Electrical Systems for Nursing Homes and Limited Care Facilities - Receptacle Identification

Edition

2014: The cover plates for the electrical receptacles or the electrical receptacles themselves supplied from the essential electrical system shall have a distinctive color or marking so as to be readily identifiable [517.41(E)].
2017: Moved to 517.42(E).

2020: Same as 2017.

Related NFPA 99 Reference

[2018]6.7.6.3.2: Essential Electrical System Requirements -Distribution (Type 2 EES), Wiring Requirements

Suggested Solutions

Any wall plate or uniquely colored receptacle



NEC Article[®] 517.43(F)

Automatic Connection to Life Safety Branch -Generator Set Location

Edition

2014: The life safety branch shall supply power for task illumination and selected receptacles in the generator set location [517.42(F)].
2017: Moved to 517.43(F).
2020: Same as 2017.

Related NFPA 99 Reference

[2018]6.7.5.1.2.4(5): Essential Electrical System Requirements -Distribution (Type 1 EES), Wiring Requirements, Receptacles

Suggested Solutions

Standard: 5262, 5362 Lev-Lok[®]: M5262, M5362





NEC Article 620.51(E)

Elevators, Dumbwaiters, Escalators, Moving Walks, Platform Lifts and Stairway Chairlifts

Edition

- 2017: Where any of the disconnecting means has been designated as supplying an emergency system load, surge Protection shall be provided.
- 2020: Expanded to include a "...legally required system load, or a critical operation power system load.

Suggested Solutions

52000/57000 Series Surge Protective Devices 42000/47000 Series Surge Protective Devices 32000/37000 Series Surge Protective Devices



NEC Article 645.18

Emergency Switchboards and Panelboards

Edition

- 2017: Surge Protection shall be provided for critical operations data systems.
 - Defined as "an information technology equipment system that requires continuous operation for reasons of public safety. Emergency management, national security, or business continuity.
- 2020: Added "Listed" to surge protection requirement.

Suggested Solutions

52000/57000 Series Surge Protective Devices 42000/47000 Series Surge Protective Devices 32000/37000 Series Surge Protective Devices





NEC Article® 700.8

Emergency Switchboards and Panelboards

Edition

2014: A listed SPD shall be installed in or on all emergency system switchboards and panelboards.
2017: Same as 2014.
2020: Same as 2017.

Suggested Solutions

52000/57000 Series Surge Protective Devices 42000/47000 Series Surge Protective Devices 32000/37000 Series Surge Protective Devices



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