TABLE OF CONTENTS

Electrical Power Distribution

Overview

This chapter describes the Energy Code requirements in Section 130.5 for electrical power distribution systems of nonresidential and hotel/motel occupancy buildings.

Scope and Applications

Please refer to Chapter 8.1.2 of the *2022 Nonresidential and Multifamily Compliance Manual*.

Service Electrical Metering Requirements

Please refer to Chapter 8.2 of the *2022 Nonresidential and Multifamily Compliance Manual*.

Separation of Electrical Circuits for Electrical Energy Monitoring

Please refer to Chapter 8.3 of the *2022 Nonresidential and Multifamily Compliance Manual*.

Compliance Methods

Please refer to Chapter 8.3.1 of the *2022 Nonresidential and Multifamily Compliance Manual*.

Application Considerations

Please refer to Chapter 8.3.2 of the *2022 Nonresidential and Multifamily Compliance Manual*.

Voltage Drop Requirements

Please refer to Chapter 8.4 of the *2022 Nonresidential and Multifamily Compliance Manual*.

Circuit Controls and Controlled Receptacles for 120-Volt Receptacles

Reference: Section 130.5(d)

Healthcare facilities are exempt from the controlled receptacle requirements.

"Office plug loads" are the loads with the largest power density (W/ft^2) in most office buildings. Controlled receptacles allow plug loads to be turned off automatically when the space is unoccupied, resulting in energy savings.

The Energy Code requires controlled and uncontrolled 120-volt receptacles in office areas, lobbies, conference rooms, kitchen areas in office spaces, copy rooms, and hotel/motel guest rooms. Healthcare facilities are exempt from the controlled receptacle requirements.

All controlled receptacles must be marked to differentiate them from uncontrolled receptacles.

Either circuit controls or controlled receptacles can be used for meeting the requirements of Section 130.5(d).

Either of the following is required for compliance:

- At least one controlled receptacle located within 6 feet of each uncontrolled receptacle
- A multiple receptacle outlet that provides at least one controlled and one uncontrolled receptacle

The controlled receptacle requirement does not require that there be one controlled receptacle for each uncontrolled receptacle.

In open office areas where receptacles are installed in modular furniture, at least one controlled receptacle must be provided for each workstation. Any controlled circuits already built into the building system can be used to meet the requirement.

Controlled receptacles or circuits must be capable of automatically switching off when the space is not occupied. See Application Considerations for example approaches of using automatic means for shutting off controlled receptacles. An automatic time switch with manual override may be used for meeting the requirement. Occupant sensing controls may also be used.

Plug-in strips and other plug-in devices shall not be used to comply with the requirement of Section 130.5(d).

Controlled receptacles are not required in the following situations:

- Receptacles in kitchen areas specifically for refrigerators and water dispensers
- Receptacles specifically for clocks. (The receptacle must be mounted 6’ or more above the floor to meet this exception.)
- Receptacles in copy rooms specifically for network copiers, fax machines, audio-visual equipment, and data equipment other than personal computers
- Receptacles on circuits rated more than 20 amperes
- Receptacles connected to an uninterruptible power supply that are intended to be in use 24 hours per day, every day of the year, and are marked to distinguish them from other standard uncontrolled receptacles or circuits.

Application Considerations

Please refer to Chapter 8.5.1 of the *2022 Nonresidential and Multifamily Compliance Manual*.

Demand Responsive Controlled Receptacles

Reference: Section 130.5(e), Section 110.12(e)

Demand responsive controlled receptacles must be installed in a space where it is required to have controlled receptacles per Section 130.5(d) and where demand responsive lighting controls are required for lighting systems. The controlled receptacles must be capable of automatically turning off all connected loads in response to a demand-response signal.

Spaces where health or life safety statute, ordinance, or regulation does not permit receptacles to be automatically controlled are exempt from this requirement.

See Appendix D of this manual for guidance on compliance with the demand-responsive control requirements.

The demand responsive controls for the installed controlled receptacles shall be tested in accordance with Nonresidential Appendix NA7.6.5. See Chapter 14 for information about the required acceptance tests.

Additions and Alterations

Please refer to Chapter 8.6 of the *2022 Nonresidential and Multifamily Compliance Manual*.

Equipment Requirements – Electrical Power Distribution Systems

Please refer to Chapter 8.7 of the *2022 Nonresidential and Multifamily Compliance Manual*.

Electrical Power Distribution Systems Compliance Documents

Overview

Please refer to Chapter 8.8.1 of the *2022 Nonresidential and Multifamily Compliance Manual*.

Compliance Documentation and Numbering

Please refer to Chapter 8.8.2 of the *2022 Nonresidential and Multifamily Compliance Manual*.