

Agenda

Presented by Rick Chambers

Definitions, Purpose of Grounding, System and Service Grounding

Definitions	Systems permitted to be grounded (250.21)
Purposes of Grounding and Bonding (250.4)	
Systems not permitted to be grounded (250.22)	
Types of grounding	Location of service grounding connection (250.24)
Effects of electricity on humans	Sizing and routing the grounded conductor
Objectionable current (250.6)	Special rules for parallel service conductors
Permitted connections (250.8, 250.12)	
Examples	Systems required to be grounded (250.20)
Which conductor to ground (250.26)	

Main and System Bonding Jumpers

Definitions and functions of bonding and bonding jumpers (250.28)
Sizing main and system bonding jumpers (250.102)
Examples

Grounding at Separate Buildings and Generators; The Grounding Electrode System

Grounding at separate buildings and generators (250.32 – 250.35)
Definitions and general requirements for grounding electrodes (250.50)
List of electrodes permitted and not permitted (250.52)
Electrodes that must be supplemented and installation requirements (250.53 and 250.54)
The common grounding electrode (250.58)
Grounding electrode conductors and connections (250.62 – 250.70)

The Grounding Electrode System: Bonding at Services

Protection requirements for grounding electrodes (250.64)
Sizing and material requirements (250.66)
Connections to electrodes (250.68 and 250.70)
Examples of sizing conductors
Bonding service raceways and enclosures (250.80 – 250.92)
Bonding for communications systems (250.94)
Requirements for maintaining continuity and conductivity (250.96)
Bonding of systems over 250V to ground (250.97)
Bonding of multiple raceway systems (250.102)
Bonding of metal water piping systems and other piping systems (250.104)
Bonding of interconnected exposed structural metal framing (250.104)

Equipment Grounding Conductors

Metal enclosures and fixed equipment (250.110 and 250.110)	
Types of equipment grounding conductors and identification requirements (250.118 and 250.119)	
Sizing requirements (Table 250.122)	Examples
Use of structural metal framing (250.136)	
Grounding of equipment by the grounded circuit conductor (250.140 and 250.142)	
Grounding receptacles and surface-mounted boxes (250.146)	
Continuity and attachment of equipment grounding conductors to metal boxes (250.148)	

National Electrical Code 2020: Grounding and Bonding

Live, Interactive Webinar - Tuesday, June 7, 2022

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Learning Objectives

You'll be able to:

Identify the purposes of grounding and bonding.

Define systems permitted to be grounded as well as systems required to be grounded.

Discuss definitions and functions of bonding and bonding jumpers.

Explore requirements for grounding at separate buildings, as well as requirements for grounding electrodes.

Identify protection requirements for grounding electrodes.

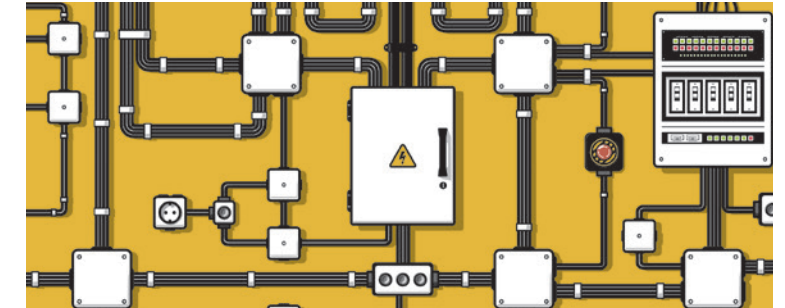
Discuss requirements for types of equipment grounding conductors.



HalfMoon Education Live Webinars

National Electrical Code 2020: Grounding and Bonding

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Explore the purposes of grounding and bonding of electrical systems and equipment

Discuss sizing main and system bonding jumpers

Examine grounding at separate buildings and generators

Study protection requirements for grounding electrodes

Learn about bonding requirements for maintaining continuity and conductivity

Study grounding of equipment by the grounded circuit conductor

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Rick Chambers *Chambers Electric, Inc. Iowa City, IA*
Mr. Chambers is a State of Iowa Electrical Examining board approved Instructor and a licensed Class A master electrician with more than 45 years of experience in all areas of the trade. Teaching is one of his greatest passions and he loves passing on knowledge and skills to others. Mr. Chambers taught electrical apprentices for the Associated Builders and Contractors of Iowa for 30 years. He currently teaches classes on the National Electrical Code Update, license exam preparation, grounding and bonding, electrical theory, electric motors, transformers, motor controls, health care facilities wiring, troubleshooting, residential wiring, commercial and industrial wiring, agricultural wiring, ampacity calculations, conduit and box sizing calculations, voltage drop calculations, commercial service calculations, overcurrent protection, the NEC for PV installers, swimming pool wiring, and arc flash safety. Mr. Chambers has taught classes for seven Iowa community colleges, many Iowa industries, the University of Iowa, UI Hospitals and Clinics, the VA Medical Center, and private classes for electrical contractors. He is also a past president and the current membership chair of the International Association of Electrical Inspectors, Iowa Chapter. On an unrelated note, Mr. Chambers is a two-time inductee into the Iowa Rock-and-Roll Hall of Fame.

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- 2020 National Electrical Code Update**
- Fri, May 6, 2022 | 8:30 am - 4:00 pm CDT
- IBC Significant Changes: Fire Protection and Means of Egress**
- Fri, May 6, 2022 | 11:00 am - 3:30 pm CDT
- Design Considerations and Mixed Occupancy Options for Speculative Buildings**
- Tues, May 10, 2022 | 9:00 am - 3:40 pm CDT
- IBC Significant Changes: Accessibility, Systems, and Materials**
- Fri, May 13, 2022 | 11:00 am - 3:30 pm CDT
- Revit Basics of Building Modeling**
- Fri, May 13, 2022 | 9:00 am - 1:00 pm CDT
- Fri, May 20, 2022 | 9:00 am - 1:00 pm CDT
- International Existing Building Code 2021**
- Tues, May 17, 2022 | 9:00 am - 4:30 pm CDT
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