

HalfMoon Education Live Continuing Education Webinars

# National Electrical Code 2020: Grounding and Bonding

Online - Friday, January 27, 2023 | 9:00 am - 5:00 pm CST

**Credits:**

Professional Engineers: 7.0 PDHs

Architects: 7.0 HSW CE Hours      AIA: 7.0 LU|HSW

International Code Council: .7 CEUs (Electrical)

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### **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 – continued; 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 - continued**

- 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)

### **Presented by**

#### **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 47 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, and he has taught classes for seven Iowa community colleges.

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Attendance will be monitored, and attendance certificates will be available after the webinar for those who attend the entire course and score a minimum 80% on the quiz that follows the course (multiple attempts allowed).

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