2011 NEC & 2012 IRC

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- NEC 334.10(1) & IRC E3801.4 (Table) Type NM Cable in Garages
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- NEC 701.6 Legally Required Standby Systems
- NEC 760.41 NPLFA Power Source
### Electrical
**NEC 90.3 Code Arrangement**
- Divided into nine chapters
- Chapters 1-4 apply generally installations
- Chapters 5-7 special situations, these chapters modify the general rules of chapters 1-4
- Chapter 8 is communication
- Chapter 9 contains tables

**NEC 90.5(D) Informational Annex**
- Fine Print Notes have been replaced with the term “Informational Annex”
- Further clarification is made to explain that these are not enforceable

**NEC 110.16 Arc Flash Hazard Warning**
- Requires a field applied identification that an electrical safety hazard exists
- Required on any switchboard, panelboard, etc that requires examination or service
- Does not apply to dwelling units

**NEC 110.24 Available Fault Current**
- Field applied sticker with the available Fault Current and the date that the Fault Current was calculated
- Changes to existing equipment will require an application of a new sticker
- Does not apply to dwelling units

**NEC 110.26(A)(3) & IRC E3405.2 Working Clearances**
- 2 new exceptions added for locations of electrical equipment
- Existing dwelling units head clearance
- Glass meters only extending no more than 6”
### NEC 110.26(D)/IRC E3405.6 Illumination
- Requires a light at indoor working spaces for service equipment, panels, etc
- Cannot be controlled by Automatic means only

### NEC 210.8 (A)(7) Sinks
- Clarifies that a receptacle within 6’ of the outside edge of any sink shall have GFCI protection.
- Kitchen sinks are covered in 210.8(A)(6)

### NEC 210.8(B) 6&7 GFI Protection
- 210.8 (B) (6)-Indoor wet locations have been added (such as a carwash)
- 210.8 (B) (7)-Locker rooms with associated showering facilities

### NEC 210.8 (B)(8) Garage GFCI Protection
- All garages, service bays and similar area receptacles shall be GFCI Protected
- This requirement is in addition to the requirements of NEC article 511

### NEC 210.12(A) and IRC E 3902.12 Arc Fault Circuit Interrupters
- Applies to dwellings over 4 stories
- Also applies to apartments, condos, guest rooms and guest suites that have permanent provisions for cooking
NEC 210(B) & IRC E3902.12 Arc Fault in Dwelling Units

- USBC amendment deletes expansion for rooms other than bedrooms for 1 and 2 family only

NEC 210.52(C) (5) & IRC E3901.4.5 Countertop Receptacles

- Listed receptacle assemblies may be installed in the counter top
- Gives designers and architects an avenue to achieve code compliance

NEC 210.52 (E) (3) & IRC E3901.7 Balconies, Decks, and Porches

- Receptacles for all Balconies, decks and porches
- Receptacle shall be located within the Balcony, deck or porch
- Receptacle placement to be no higher than 6 foot 6 inches

NEC 210.52(G) & IRC E3901.9 Accessory Buildings

- Accessory Buildings with power shall require a receptacle
- This receptacle shall be GFCI protected

NEC 210.52(I) & IRC E3901.11 Foyers

- Foyers not part of a hallway
- Greater than 60 square feet
- Wall spaces 3 foot or more in width
- Wall spacing rules do not apply to foyers
### NEC 225.27 & IRC E3803.6 Raceway Seals
- Raceway seals required at outside underground raceways entering a building
- Sealed with compound like Duct Seal

### NEC 225.30 Number of Supplies
- Only one branch circuit or feeder shall be allowed to supply power back to the original building
- Typically applies to emergency power conditions when generator is in a separate building

### NEC 240.24(E) Overcurrent Devices
- Overcurrent devices shall not be located in dormitory bathrooms

### NEC 250.2 Definition - Supply Side Bonding Jumper

### NEC 250.30(C) Outdoors Source
- Separately derived systems located outside the building or structure supplied
- Grounding electrode system shall be tied into the buildings grounding electrode system
### NEC 250.52(A)(2) Building Steel
- Anchor bolts connected to the rebar in the footing by the “usual means”
- At least 10 foot of structural steel is in direct contact with earth

### NEC 250.52 (A)(3) & IRC E3608.1.2 Concrete Encased Electrode
- Clarification for Concrete Encased Electrode
- If vapor barrier is installed then the concrete encased electrode is not considered in “direct Contact”

### NEC 250.53(A) & IRC E3608.4 Rod, Pipe Or Plate Electrodes
- Supplemental electrodes now required for Rod, Pipe or Plate electrodes
- Exception for 25 ohms or less

### NEC 250.68(C) & IRC E 3608.1.1.1 Bonding Jumper Connections
- New section
- Clarifies what can be used to make a bonding jumper (building steel, rebar conductor etc.) that connects to the grounding electrode(s)

### NEC 250.92 (B) & IRC E3609.4 Service Bonding
- Bonding jumpers required when concentric, eccentric, reducing washers are used
### NEC 250.121 & IRC E3610.4 Equipment Grounding Conductors
- Equipment grounding conductor is not allowed to be used as a Grounding Electrode Conductor
- GEC is located between the service point and the service disconnecting means

### NEC 250.122 & IRC E3908.12 Equipment Grounding Conductors - Tables
- Conductor sizes for 30 and 40 amp circuits have been removed. Follow 60 amp requirements
- 4000 amp reduced to a 750 kcmil conductor

### NEC 300.4 E Boxes Installed Under Roof Decking
- Boxes now require 1 1/8” below the lowest level of the roof decking
- Follows in line with the cable, tubing and conduit rules

### NEC 300.4 H
- New section for structural joints intended for expansion, deflection or contraction
- Used in buildings, bridges, parking garages or other structures

### NEC 300.5 C & IRC E3803.11 Raceways Under Buildings
- MI cable and MC cable to be installed under a building
- Type MC cable shall be the direct burial type and listed for the purpose
- Type MI shall be suitably protected from physical damage
NEC 300.11 (A)(2) Non-fire Rated Assemblies
- Non fire rated assemblies require supporting methods to be distinguishable
- Identified by color, tagging or other effective means

NEC 310 (Tables) Table Restructuring
- Complete re-numbering of all Tables in the NEC
- An example would be:
  Table 310.16 is now 310.15 (B) (16)

NEC 310.15(B)(3)(a) Adjustment Factors
- "Current Carrying" has been removed from the NEC language
- IRC remains unchanged
- Adjustments based on number of conductors in raceway (excluding Ground) and 310.15 (B)(5) and (6)

NEC 310.(B)(3)(c) Conductors Above Rooftops
- Circular Raceways replaced the term conduit
- Table values have been left unchanged

NEC 314.27(C) & IRC 3905.8 Ceiling Fan Outlets
- Listed Ceiling Fan box required when a spare separately switched conductor is present in the box
### NEC 334.10(1) & IRC E3801.4 (Table) Type NM Cable in Garages
- Attached and detached garages and storage buildings
- These cables can be run exposed where not exposed to physical damage
- Accessory structures such as play houses would still require NM cable to be concealed

### NEC 338.10(B)(4)(a) & IRC E3705.4.4 Type SE Cable
- Follow 60 Degree column when installed in thermal insulation
- De-rating by maximum cable rating or 60 degree column
- Defer to 310.15(A)(2) exception for short runs in thermal insulation

### NEC 404.2(C) & IRC E4001.15 Switches for Lighting Loads
- Switch boxes shall have a neutral conductor in each box
- Exceptions are: unfinished wall on back side of box or box is fed by a raceway

### NEC 404.9(B) & IRC E4001.11.1 Grounding of Switches
- New exceptions for grounding connection
- Switch has a integral nonmetallic enclosure
- Switch is part of a listed non-metallic assembly

### NEC 406.4(D)(4) Replacement Receptacle AFCI
- USBC administrative provisions apply
**NEC 406.4(D)(5) Receptacle Replacement**
- USBC administrative provisions apply for replacement

**NEC 404.6(D)(6) Weather Resistant Receptacle**
- Replacement Receptacles installed outdoors will now require the use of a Listed Weather Resistant receptacle
- Look for “WR” on the face of receptacle

**NEC 406.9(B)(1) Wet Location Covers**
- For commercial applications, Grade Supported boxes require in-use covers to be rated “Extra Duty”

**NEC 406.12 & IRC 4002.14 Tamper Resistant Receptacles**
- Tamper Resistant Receptacles not required in the following areas:
  - Above 5’6” from floor
  - Receptacles part of a luminaire
  - Single receptacle for an appliance or duplex for two appliances
  - For replacement non-grounding receptacles

**NEC 406.13 Guest Room and Suite Receptacles**
- Tamper Resistant Receptacles required
### NEC 406.14 Child Care Facility
- Child Care Facilities require Tamper Resistant Receptacles
- Child Care Facility- Definition
- Schools, Churches and Daycare all apply!

### NEC 408.4(B) Panel Identification
- Panel boards and switchboards fed with a feeder shall have power source location identified
- Not required for one and two family dwelling units
- Label affixed to the panel cover

### NEC 410.16 & IRC 4003.12 Clothes Closet Luminaires
- LED lighting may be installed in a closet
- LED follows the same spacing rules as incandescent lighting

### NEC 410.64 Luminaires as a Raceway
- When used as a raceway, Luminaires shall be listed for through-wiring

### NEC 422.30 & IRC E4101.5 Appliance Disconnecting Means
- Disconnecting means for appliances shall be grouped and identified
**NEC 450.14 Transformer Disconnecting Means**
- Transformers disconnecting means shall be within sight of the transformer
- Disconnect not within sight of the transformer will be marked for location
- Breaker lock permitted

**NEC 503.10(A)(3) Flexible Wiring Methods**
- Interlocked armor, polymeric coated Type MC cable is permitted in Class III division I locations
- Must be installed with dust tight fittings

**NEC 514.11 Motor Fuel Dispensing Disconnects**
- All power, data, video and communication circuits shall be simultaneously disconnected from their sources of supply

**NEC 517.13(B) Grounding of Metal Boxes**
- Metal boxes shall be connected to the insulated equipment grounding conductor

**NEC 517.16 Isolated Ground Receptacles**
- Isolated Ground Receptacles are no longer allowed in Patient Care Areas

\[517.17A\]
### NEC 517.18 General Care Areas
- The required circuits shall not be fed from a multiwire branch circuit

### NEC 517.18(B) Patient Bed Receptacles
- Quadruplex receptacles listed Hospital Grade now allowed for Patient Bed Locations

### NEC 525.5(B)(2) Conductor Clearances
- Portable structures shall not be placed within 15 feet horizontally and vertically of conductors over 600 volts to ground

### NEC 590.4(D) Temporary Installations
- Temporary power receptacles installed in a wet location shall be “Extra-Duty” type
- Includes 125 and 250 volt receptacles

### NEC 680.2 Definitions - Low Voltage Contact Limit
- New definition
- A voltage not exceeding the following:
  - 15 volts for sinusoidal ac
  - 21.2 volts for non-sinusoidal ac
  - 30 volts for continuous dc
  - 12.4 volts for dc that is interrupted at a rate of 10 to 200 Hz
### NEC 680.10(Table) Conduit Burial Depths
- Nonmetallic raceways can be installed 4” deep under concrete slab and can extend 6” from edge of slab
- 6” deep if not covered with concrete
- Allowed from pool edge to a distance of 5’
- Where space limitations apply

### NEC 680.21(C) GFCI Motor Protection
- 120 volt through 240 volt outlets supplying pool pump motors must be GFCI protection
- Applies to permanent installations

### NEC 680.26(B)(7) Fixed Metal Part Grounding
- All fixed metal parts within 5 of pool edge to be bonded

### NEC 680.43 Ex. #2 Indoor Spas and Hot Tubs
- New exception for indoor spas and hot tubs on a finished floor
- Equipotential bonding not required

### NEC 680.73 Receptacle Accessibility
- Receptacle face in direct view of opening and located not farther back then 12”
- GFCI protection device required to be readily accessible
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<th>NEC 694 Small Wind Electric Systems</th>
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<td>• New Article</td>
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<th>NEC 700.10(D)(1) Emergency Systems</th>
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<td>• Fire rating required to be 2 hour minimum for Buildings greater than 75 Ft. or occupancy of 1000 and greater</td>
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<td>• USBC Amendment - Exception No. 2: Exterior Unit equipment permitted to be power by the same branch circuit or powered by the same feeder or Service powering the normal exterior lighting</td>
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<th>NEC 701.6 Legally Required Standby Systems</th>
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<td>• Ground fault indication is now required for legally required standby systems</td>
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<th>NEC 760.41 NPLFA Power Source</th>
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<td>• NPLFA power source (disconnect) now required to be marked</td>
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<td>• NPLFA shall be on a dedicated circuit</td>
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