

**Electrical**

**2011 NEC & 2012 IRC**

- NEC 90.3 Code Arrangement
- NEC 90.5(D) Informational Annex
- NEC 110.16 Arc Flash Hazard Warning
- NEC 110.24 Available Fault Current
- NEC 110.26(A)(3) & IRC E3405.2 Working Clearances
- NEC 110.26(D) & IRC E3405.6 Illumination
- NEC 210.8(A)(7) Sinks
- NEC 210.8(B) 6&7 GFI Protection
- NEC 210.8 (B)(8) Garage GFCI Protection
- NEC 210.12(A) and IRC E 3902.12 Arc Fault Circuit Interrupters
- NEC 210(B) & IRC E3902.12 Arc Fault in Dwelling Units
- NEC 210.52(C)(5) & IRC E3901.4.5 Countertop Receptacles
- NEC 210.52(E)(3) & IRC E3901.7 Balconies, Decks, and Porches
- NEC 210.52(G) & IRC E3901.9 Accessory Buildings
- NEC 210.52(I) & IRC E3901.11 Foyers
- NEC 225.27 & IRC E3803.6 Raceway Seals
- NEC 225.30 Number of Supplies
- NEC 240.24(E) Overcurrent Devices
- NEC 250.2 Definition - Supply Side Bonding Jumper
- NEC 250.30(C) Outdoors Source
- NEC 250.52(A)(2) Building Steel
- NEC 250.52(A)(3) & IRC E3608.1.2 Concrete Encased Electrode
- NEC 250.53(A) & IRC E3608.4 Rod, Pipe or Plate Electrodes
- NEC 250.68(C) & IRC E3608.1.1.1 Bonding Jumper Connections
- NEC 250.92(B) & IRC E3609.4 Service Bonding
- NEC 250.121 & IRC E3610.4 Equipment Grounding Conductors
- NEC 250.122 & IRC E3908.12 Equipment Grounding Conductors- Tables
- NEC 300.4 E Boxes Installed Under Roof Decking
- NEC 300.4 H
- NEC 300.5 C & IRC E3803.11 Raceways Under Buildings
- NEC 300.11(A)(2) Non-fire Rated Assemblies
- NEC 310 (Tables) Table Restructuring
- NEC 310.15(B)(3)(a) Adjustment Factors
- NEC 310(B) (3)(c) Conductors Above Rooftops
- NEC 314.27(C) & IRC 3905.8 Ceiling Fan Outlets

## 2012 Code Change Training

### Companion Guide

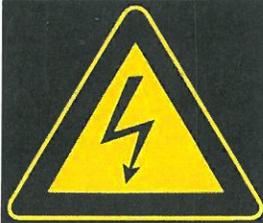
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- NEC 334.10(1) & IRC E3801.4 (Table) Type NM Cable in Garages
- NEC 338.10(B)(4)(a) & IRC E3705.4.4 Type SE Cable
- NEC 404.2(C) & IRC E4001.15 Switches for Lighting Loads
- NEC 404.9(B) & IRC E4001.11.1 Grounding of Switches
- NEC 406.4(D)(4) Replacement Receptacle AFCI
- NEC 406.4(D)(5) Receptacle Replacement
- NEC 404.6(D)(6) Weather Resistant Receptacle
- NEC 406.9(B)(1) Wet Location Covers
- NEC 406.12 & IRC 4002.14 Tamper Resistant Receptacles
- NEC 406.13 Guest Room and Suite Receptacles
- NEC 406.14 Child Care Facility
- NEC 408.4(B) Panel Identification
- NEC 410.16 & IRC 4003.12 Clothes Closet Luminaires
- NEC 410.64 Luminaires as a Raceway
- NEC 422.30 & IRC E4101.5 Appliance Disconnecting Means
- NEC 450.14 Transformer Disconnecting Means
- NEC 503.10(A)(3) Flexible Wiring Methods
- NEC 514.11 Motor Fuel Dispensing Disconnects
- NEC 517.13(B) Grounding of Metal Boxes
- NEC 517.16 Isolated Ground Receptacles
- NEC 517.18 General Care Areas
- NEC 517.18(B) Patient Bed Receptacles
- NEC 525.5(B)(2) Conductor Clearances
- NEC 590.4(D) Temporary Installations
- NEC 680.2 Low Voltage Contact Limit
- NEC 680.10(Table) Conduit Burial Depths
- NEC 680.21(C) GFCI Motor Protection
- NEC 680.26(B)(7) Fixed Metal Part Grounding
- NEC 680.43 Ex. #2 Indoor Spas and Hot Tubs
- NEC 680.73 Receptacle Accessibility
- NEC 694 Small Wind Electric Systems
- NEC 700.10(D)(1) Emergency Systems
- NEC 700.12(F) Ex. #2 Emergency Systems
- NEC 701.6 Legally Required Standby Systems
- NEC 760.41 NPLFA Power Source

**ELECTRICAL**  
**2011 NEC, 2012 IRC & 2012 VRC**

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| <input type="checkbox"/> | <p><b><u>NEC 90.3 Code Arrangement</u></b></p> <ul style="list-style-type: none"> <li>• Divided into nine chapters</li> <li>• Chapters 1-4 apply generally installations</li> <li>• Chapters 5-7 special situations, these chapters modify the general rules of chapters 1-4</li> <li>• Chapter 8 is communication</li> <li>• Chapter 9 contains tables</li> </ul> |
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| <input type="checkbox"/> | <p><b><u>NEC 90.5(D) Informational Annex</u></b></p> <ul style="list-style-type: none"> <li>• Fine Print Notes have been replaced with the term “Informational Annex”</li> <li>• Further clarification is made to explain that these are not enforceable</li> </ul> |
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| <input type="checkbox"/> | <p><b><u>NEC 110.16 Arc Flash Hazard Warning</u></b></p> <ul style="list-style-type: none"> <li>• Requires a field applied identification that an electrical safety hazard exists</li> <li>• Required on any switchboard, panelboard, etc that requires examination or service</li> <li>• Does not apply to dwelling units</li> </ul> |  |
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| <input type="checkbox"/> | <p><b><u>NEC 110.24 Available Fault Current</u></b></p> <ul style="list-style-type: none"> <li>• Field applied sticker with the available Fault Current and the date that the Fault Current was calculated</li> <li>• Changes to existing equipment will require an application of a new sticker</li> <li>• Does not apply to dwelling units</li> </ul> |  |
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| <input type="checkbox"/> | <p><b><u>NEC 110.26(A)(3) &amp; IRC E3405.2 Working Clearances</u></b></p> <ul style="list-style-type: none"> <li>• 2 new exceptions added for locations of electrical equipment</li> <li>• Existing dwelling units head clearance</li> <li>• Glass meters only extending no more than 6”</li> </ul> |  |
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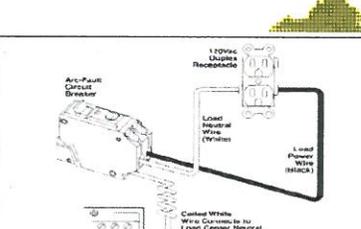
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| <input type="checkbox"/> | <p><b>NEC 110.26(D)/IRC E3405.6 Illumination</b></p>   |  |
|                          | <ul style="list-style-type: none"> <li>• Requires a light at indoor working spaces for service equipment, panels, etc</li> <li>• Cannot be controlled by Automatic means only</li> </ul> |   |

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| <input type="checkbox"/> | <p><b>NEC 210.8 (A)(7) Sinks</b></p>  |  |
|                          | <ul style="list-style-type: none"> <li>• Clarifies that a receptacle within 6' of the outside edge of any sink shall have GFCI protection.</li> <li>• Kitchen sinks are covered in 210.8(A)(6)</li> </ul> |   |

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| <input type="checkbox"/> | <p><b>NEC 210.8(B) 6&amp;7 GFI Protection</b></p>  |  |
|                          | <ul style="list-style-type: none"> <li>• 210.8 (B) (6)-Indoor wet locations have been added (such as a carwash)</li> <li>• 210.8 (B) (7)-Locker rooms <u>with</u> associated showering facilities</li> </ul> |  |

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| <input type="checkbox"/> | <p><b>NEC 210.8 (B)(8) Garage GFCI Protection</b></p>  |  |
|                          | <ul style="list-style-type: none"> <li>• All garages, service bays and similar area receptacles shall be GFCI Protected</li> <li>• This requirement is in addition to the requirements of NEC article 511</li> </ul> |   |

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| <input type="checkbox"/> | <p><b>NEC 210.12(A) and IRC E 3902.12 Arc Fault Circuit Interrupters</b></p>   |  |
|                          | <ul style="list-style-type: none"> <li>• Applies to dwellings over 4 stories</li> <li>• Also applies to apartments, condos, guest rooms and guest suites that have permanent provisions for cooking</li> </ul> |   |

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| <input type="checkbox"/> | <p><b><u>NEC 210(B) &amp; IRC E3902.12 Arc Fault in Dwelling Units</u></b></p> <ul style="list-style-type: none"> <li>• USBC amendment deletes expansion for rooms other than bedrooms for 1 and 2 family only</li> </ul> |  |
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| <input type="checkbox"/> | <p><b><u>NEC 210.52(C) (5) &amp; IRC E3901.4.5 Countertop Receptacles</u></b></p> <ul style="list-style-type: none"> <li>• Listed receptacle assemblies may be installed in the counter top</li> <li>• Gives designers and architects an avenue to achieve code compliance</li> </ul> |  |
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| <input type="checkbox"/> | <p><b><u>NEC 210.52 (E) (3) &amp; IRC E3901.7 Balconies, Decks, and Porches</u></b></p> <ul style="list-style-type: none"> <li>• Receptacles for all Balconies, decks and porches</li> <li>• Receptacle shall be located within the Balcony, deck or porch</li> <li>• Receptacle placement to be no higher than 6 foot 6 inches</li> </ul> |  |
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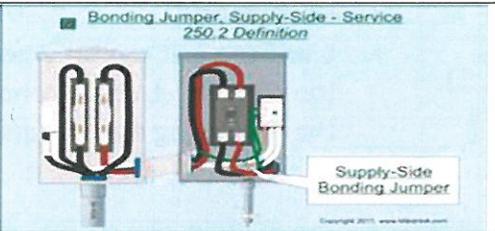
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| <input type="checkbox"/> | <p><b><u>NEC 210.52(G) &amp; IRC E3901.9 Accessory Buildings</u></b></p> <ul style="list-style-type: none"> <li>• Accessory Buildings with power shall require a receptacle</li> <li>• This receptacle shall be GFCI protected</li> </ul> |  |
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| <input type="checkbox"/> | <p><b><u>NEC 210.52(I) &amp; IRC E3901.11 Foyers</u></b></p> <ul style="list-style-type: none"> <li>• Foyers not part of a hallway</li> <li>• Greater than 60 square feet</li> <li>• Wall spaces 3 foot or more in width</li> <li>• Wall spacing rules do not apply to foyers</li> </ul> |  |
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| <input type="checkbox"/> | <b>NEC 225.27 &amp; IRC E3803.6 Raceway Seals</b>  |   |
|                          | <ul style="list-style-type: none"><li>• Raceway seals required at outside underground raceways entering a building</li><li>• Sealed with compound like Duct Seal</li></ul> |  |

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| <input type="checkbox"/> | <b>NEC 225.30 Number of Supplies</b>  |   |
|                          | <ul style="list-style-type: none"><li>• Only one branch circuit or feeder shall be allowed to supply power back to the original building</li><li>• Typically applies to emergency power conditions when generator is in a separate building</li></ul> |  |

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| <input type="checkbox"/> | <b>NEC 240.24(E) Overcurrent Devices</b>   |  |
|                          | <ul style="list-style-type: none"><li>• Overcurrent devices shall not be located in <u>dormitory</u> bathrooms</li></ul> |  |

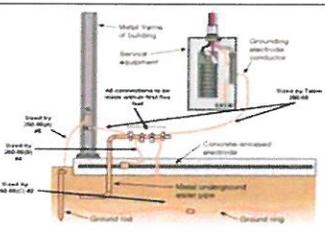
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| <input type="checkbox"/> | <b>NEC 250.2 Definition - Supply Side Bonding Jumper</b> |  |
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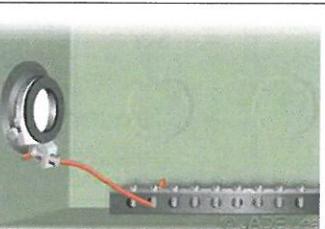
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| <input type="checkbox"/> | <b>NEC 250.30(C) Outdoors Source</b>   |   |
|                          | <ul style="list-style-type: none"><li>• Separately derived systems located outside the building or structure supplied</li><li>• Grounding electrode system shall be tied into the buildings grounding electrode system</li></ul> |  |

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| <input type="checkbox"/> | <p><b>NEC 250.52(A)(2) Building Steel</b></p>   |  |
|                          | <ul style="list-style-type: none"> <li>Anchor bolts connected to the rebar in the footing by the "usual means"</li> <li>At least 10 foot of structural steel is in direct contact with earth</li> </ul> |   |

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| <input type="checkbox"/> | <p><b>NEC 250.52 (A)(3) &amp; IRC E3608.1.2 Concrete Encased Electrode</b></p>  |  |
|                          | <ul style="list-style-type: none"> <li>Clarification for Concrete Encased Electrode</li> <li>If vapor barrier is installed then the concrete encased electrode is not considered in "direct Contact"</li> </ul> |   |

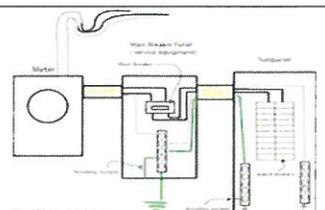
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| <input type="checkbox"/> | <p><b>NEC 250.53(A) &amp; IRC E3608.4 Rod, Pipe Or Plate Electrodes</b></p>   |  |
|                          | <ul style="list-style-type: none"> <li>Supplemental electrodes now required for Rod, Pipe or Plate electrodes</li> <li>Exception for 25 ohms or less</li> </ul> |  |

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| <input type="checkbox"/> | <p><b>NEC 250.68(C) &amp; IRC E 3608.1.1.1 Bonding Jumper Connections</b></p>   |  |
|                          | <ul style="list-style-type: none"> <li>New section</li> <li>Clarifies what can be used to make a bonding jumper (building steel, rebar conductor etc.) that connects to the grounding electrode(s)</li> </ul> |   |

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| <input type="checkbox"/> | <p><b>NEC 250.92 (B) &amp; IRC E3609.4 Service Bonding</b></p>   |  |
|                          | <ul style="list-style-type: none"> <li>Bonding jumpers required when concentric, eccentric, reducing washers are used</li> </ul> |   |

**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



Notes: Conductor = grey  
Pier Conductor = black  
Conductor Conductor

**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

| Rating of Protective Device (Amps) | Minimum Size of Equipment Grounding Conductor (kcmil) | Minimum Size of Equipment Grounding Conductor (AWG) |
|------------------------------------|---|---|
| 15                                 | 14  | 12  |
| 20                                 | 12  | 10  |
| 30                                 | 10  | 8   |
| 40                                 | 8   | 6   |
| 60                                 | 6   | 4   |
| 100                                | 4   | 2   |
| 150                                | 3   | 1   |
| 200                                | 2   | 1/2   |
| 300                                | 1 1/2   | 3/8   |
| 400                                | 1 1/4   | 3/8   |
| 500                                | 1 1/4   | 3/8   |
| 600                                | 1 1/4   | 3/8   |
| 750                                | 1 1/4   | 3/8   |
| 1000                               | 1 1/4   | 3/8   |
| 1500                               | 1 1/4   | 3/8   |
| 2000                               | 1 1/4   | 3/8   |
| 2500                               | 1 1/4   | 3/8   |
| 3000                               | 1 1/4   | 3/8   |
| 4000                               | 1 1/4   | 3/8   |
| 5000                               | 1 1/4   | 3/8   |
| 6000                               | 1 1/4   | 3/8   |
| 7500                               | 1 1/4   | 3/8   |
| 10000                              | 1 1/4   | 3/8   |

**NEC 300.4 E Boxes Installed Under Roof Decking**

- Boxes now require 1 1/2" below the lowest level of the roof decking
- Follows in line with the cable, tubing and conduit rules



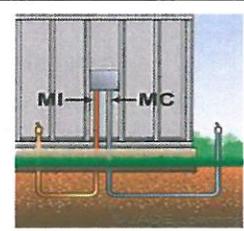
**NEC 300.4 H**

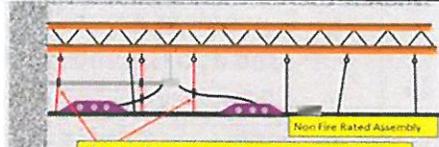
- New section for structural joints intended for expansion, deflection or contraction
- Used in buildings, bridges, parking garages or other structures



**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



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| <input type="checkbox"/> | <p><b>NEC 300.11 (A)(2) Non-fire Rated Assemblies</b></p> <ul style="list-style-type: none"><li>• Non fire rated assemblies require supporting methods to be distinguishable</li><li>• Identified by color, tagging or other effective means</li></ul> |  <p>Non Fire Rated Assembly</p> <p>An independent means of secure and support shall be provided and shall be permitted to be attached to the assembly. The red wires represent this means.</p> |
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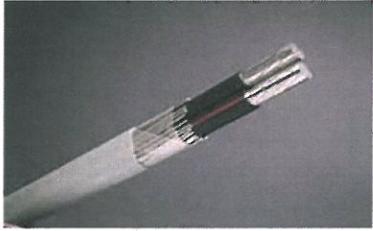
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| <input type="checkbox"/> | <p><b>NEC 310 (Tables) Table Restructuring</b></p> <ul style="list-style-type: none"><li>• Complete re-numbering of all Tables in the NEC</li><li>• An example would be:<br/>Table 310.16 is now 310.15 (B) (16)</li></ul> |
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| <input type="checkbox"/> | <p><b>NEC 310.15(B)(3)(a) Adjustment Factors</b></p> <ul style="list-style-type: none"><li>• “Current Carrying” has been removed from the NEC language</li><li>• IRC remains unchanged</li><li>• Adjustments based on number of conductors in raceway (excluding Ground) and 310.15 (B)(5) and (6)</li></ul> |
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| <input type="checkbox"/> | <p><b>NEC 310.(B)(3)(c) Conductors Above Rooftops</b></p> <ul style="list-style-type: none"><li>• Circular Raceways replaced the term conduit</li><li>• Table values have been left unchanged</li></ul> |  |
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| <input type="checkbox"/> | <p><b>NEC 314.27(C) &amp; IRC 3905.8 Ceiling Fan Outlets</b></p> <ul style="list-style-type: none"><li>• Listed Ceiling Fan box required when a spare separately switched conductor is present in the box</li></ul> |  |
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| <input type="checkbox"/> | <b><u>NEC 334.10(1) &amp; IRC E3801.4 (Table) Type NM Cable in Garages</u></b>   |  |
|                          | <ul style="list-style-type: none"> <li>• Attached and detached garages and storage buildings</li> <li>• These cables can be run exposed where not exposed to physical damage</li> <li>• Accessory structures such as play houses would still require NM cable to be concealed</li> </ul> |  |

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| <input type="checkbox"/> | <b><u>NEC 338.10(B)(4)(a) &amp; IRC E3705.4.4 Type SE Cable</u></b>   |   |
|                          | <ul style="list-style-type: none"> <li>• Follow 60 Degree column when installed in thermal insulation</li> <li>• De-rating by maximum cable rating or 60 degree column</li> <li>• Defer to 310.15(A)(2) exception for short runs in thermal insulation</li> </ul> |  |

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| <input type="checkbox"/> | <b><u>NEC 404.2(C) &amp; IRC E4001.15 Switches for Lighting Loads</u></b>   |  |
|                          | <ul style="list-style-type: none"> <li>• Switch boxes shall have a neutral conductor in each box</li> <li>• Exceptions are: unfinished wall on back side of box or box is fed by a raceway</li> </ul> |  |

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| <input type="checkbox"/> | <b><u>NEC 404.9(B) &amp; IRC E4001.11.1 Grounding of Switches</u></b>  |   |
|                          | <ul style="list-style-type: none"> <li>• New exceptions for grounding connection</li> <li>• Switch has a integral nonmetallic enclosure</li> <li>• Switch is part of a listed non-metallic assembly</li> </ul> |  |

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| <input type="checkbox"/> | <b><u>NEC 406.4(D)(4) Replacement Receptacle AFCI</u></b>                                |   |
|                          | <ul style="list-style-type: none"> <li>• USBC administrative provisions apply</li> </ul> |  |

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| <input type="checkbox"/> | <b>NEC 406.4(D) (5) Receptacle Replacement</b>   |   |
|                          | <ul style="list-style-type: none"> <li>• USBC administrative provisions apply for replacement</li> </ul> |  |

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| <input type="checkbox"/> | <b>NEC 404.6(D)(6) Weather Resistant Receptacle</b>   |   |
|                          | <ul style="list-style-type: none"> <li>• Replacement Receptacles installed outdoors will now require the use of a Listed Weather Resistant receptacle</li> <li>• Look for "WR" on the face of receptacle</li> </ul> |  |

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| <input type="checkbox"/> | <b>NEC 406.9(B)(1) Wet Location Covers</b>   |  |
|                          | <ul style="list-style-type: none"> <li>• For commercial applications, <u>Grade Supported</u> boxes require in-use covers to be rated "Extra Duty"</li> </ul> |  |

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| <input type="checkbox"/> | <b>NEC 406.12 &amp; IRC 4002.14 Tamper Resistant Receptacles</b>  |  |
|                          | <ul style="list-style-type: none"> <li>• Tamper Resistant Receptacles not required in the following areas:</li> <li>• Above 5'6" from floor</li> <li>• Receptacles part of a luminaire</li> <li>• Single receptacle for an appliance or duplex for two appliances</li> <li>• For replacement non-grounding receptacles</li> </ul> |  |

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| <input type="checkbox"/> | <b>NEC 406.13 Guest Room and Suite Receptacles</b>  |   |
|                          | <ul style="list-style-type: none"> <li>• Tamper Resistant Receptacles required</li> </ul> |  |

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| <input type="checkbox"/> | <b>NEC 406.14 Child Care Facility</b>   |
|                          | <ul style="list-style-type: none"><li>• Child Care Facilities require Tamper Resistant Receptacles</li><li>• Child Care Facility- Definition</li><li>• Schools, Churches and Daycare all apply!</li></ul> |

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| <input type="checkbox"/> | <b>NEC 408.4(B) Panel Identification</b>   |
|                          | <ul style="list-style-type: none"><li>• Panel boards and switchboards fed with a feeder shall have power source location identified</li><li>• Not required for one and two family dwelling units</li><li>• Label affixed to the panel cover]</li></ul> |

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| <input type="checkbox"/> | <b>NEC 410.16 &amp; IRC 4003.12 Clothes Closet Luminaires</b>   |
|                          | <ul style="list-style-type: none"><li>• LED lighting may be installed in a closet</li><li>• LED follows the same spacing rules as incandescent lighting</li></ul> |



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| <input type="checkbox"/> | <b>NEC 410.64 Luminaires as a Raceway</b>   |
|                          | <ul style="list-style-type: none"><li>• When used as a raceway, Luminaires shall be listed for through-wiring</li></ul> |



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| <input type="checkbox"/> | <b>NEC 422.30 &amp; IRC E4101.5 Appliance Disconnecting Means</b>  |
|                          | <ul style="list-style-type: none"><li>• Disconnecting means for appliances shall be grouped and identified</li></ul> |



|                          |   |   |
|--------------------------|---|---|
| <input type="checkbox"/> | <b>NEC 450.14 Transformer Disconnecting Means</b>   |  |
|                          | <ul style="list-style-type: none"><li>Transformers disconnecting means shall be within sight of the transformer</li><li>Disconnect not within sight of the transformer will be marked for location</li><li>Breaker lock permitted</li></ul> |   |

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| <input type="checkbox"/> | <b>NEC 503.10(A)(3) Flexible Wiring Methods</b>   |  |
|                          | <ul style="list-style-type: none"><li>Interlocked armor, polymeric coated Type MC cable is permitted in Class III division I locations</li><li>Must be installed with dust tight fittings</li></ul> |   |

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| <input type="checkbox"/> | <b>NEC 514.11 Motor Fuel Dispensing Disconnects</b>   |  |
|                          | <ul style="list-style-type: none"><li>All power, data, video and communication circuits shall be simultaneously disconnected from their sources of supply</li></ul> |  |

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| <input type="checkbox"/> | <b>NEC 517.13(B) Grounding of Metal Boxes</b>   |  |
|                          | <ul style="list-style-type: none"><li>Metal boxes shall be connected to the insulated equipment grounding conductor</li></ul> |   |

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|--------------------------|--|---|
| <input type="checkbox"/> | <b>NEC 517.16 Isolated Ground Receptacles</b>  |  |
|                          | <ul style="list-style-type: none"><li>Isolated Ground Receptacles are no longer allowed in Patient Care Areas</li></ul> <p>517.19A</p> |   |

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|--------------------------|--|---|
| <input type="checkbox"/> | <b>NEC 517.18 General Care Areas</b>   |  |
|                          | <ul style="list-style-type: none"><li>The required circuits shall not be fed from a multiwire branch circuit</li></ul> |   |

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|--------------------------|--|---|
| <input type="checkbox"/> | <b>NEC 517.18(B) Patient Bed Receptacles</b>   |  |
|                          | <ul style="list-style-type: none"><li>Quadplex receptacles listed Hospital Grade now allowed for Patient Bed Locations</li></ul> |   |

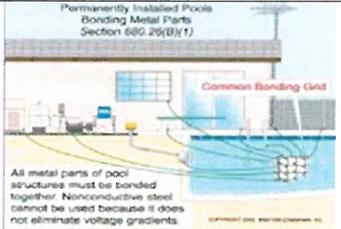
|                          |   |  |
|--------------------------|---|--|
| <input type="checkbox"/> | <b>NEC 525.5(B)(2) Conductor Clearances</b>   |  |
|                          | <ul style="list-style-type: none"><li>Portable structures shall not be placed within 15 feet horizontally and vertically of conductors over 600 volts to ground</li></ul> |  |

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| <input type="checkbox"/> | <b>NEC 590.4(D) Temporary Installations</b>  |  |
|                          | <ul style="list-style-type: none"><li>Temporary power receptacles installed in a wet location shall be "Extra-Duty" type</li><li>Includes 125 and 250 volt receptacles</li></ul> |   |

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|--------------------------|---|--|
| <input type="checkbox"/> | <b>NEC 680.2 Definitions - Low Voltage Contact Limit</b>  |  |
|                          | <ul style="list-style-type: none"><li>New definition</li><li>A voltage not exceeding the following:<ul style="list-style-type: none"><li>15 volts for sinusoidal ac</li><li>21.2 volts for non-sinusoidal ac</li><li>30 volts for continuous dc</li><li>12.4 volts for dc that is interrupted at a rate of 10 to 200 Hz</li></ul></li></ul> |  |

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|--------------------------|---|
| <input type="checkbox"/> | <b>NEC 680.10(Table) Conduit Burial Depths</b>  |
|                          | <ul style="list-style-type: none"><li>• Nonmetallic raceways can be installed 4" deep under concrete slab and can extend 6" from edge of slab</li><li>• 6" deep if not covered with concrete</li><li>• Allowed from pool edge to a distance of 5'</li><li>• Where space limitations apply</li></ul> |

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|--------------------------|---|---|
| <input type="checkbox"/> | <b>NEC 680.21(C) GFCI Motor Protection</b>  |  |
|                          | <ul style="list-style-type: none"><li>• 120 volt through 240 volt outlets supplying pool pump motors must be GFCI protection</li><li>• Applies to permanent installations</li><li>•</li></ul> |   |

|                          |   |  |
|--------------------------|---|--|
| <input type="checkbox"/> | <b>NEC 680.26(B)(7) Fixed Metal Part Grounding</b>  |  <p>Permanently Installed Pools<br/>Bonding Metal Parts<br/>Section 680.26(B)(7)</p> <p>Common Bonding Grid</p> <p>All metal parts of pool structures must be bonded together. Nonconductive steel cannot be used because it does not eliminate voltage gradients.</p> |
|                          | <ul style="list-style-type: none"><li>• All fixed metal parts within 5' of pool edge to be bonded</li></ul> |  |

|                          |   |   |
|--------------------------|---|---|
| <input type="checkbox"/> | <b>NEC 680.43 Ex. #2 Indoor Spas and Hot Tubs</b>   |  |
|                          | <ul style="list-style-type: none"><li>• New exception for indoor spas and hot tubs on a finished floor</li><li>• Equipotential bonding not required</li></ul> |   |

|                          |  |   |
|--------------------------|--|---|
| <input type="checkbox"/> | <b>NEC 680.73 Receptacle Accessibility</b>   |  |
|                          | <ul style="list-style-type: none"><li>• Receptacle face in direct view of opening and located not farther back than 12"</li><li>• GFCI protection device required to be readily accessible</li></ul> |   |

|                          |   |   |
|--------------------------|---|---|
| <input type="checkbox"/> | <b>NEC 694 Small Wind Electric Systems</b>                      |   |
|                          | <ul style="list-style-type: none"> <li>• New Article</li> </ul> |  |

|                          |   |   |
|--------------------------|---|---|
| <input type="checkbox"/> | <b>NEC 700.10(D)(1) Emergency Systems</b>   |   |
|                          | <ul style="list-style-type: none"> <li>• Fire rating required to be 2 hour minimum for Buildings greater than 75 Ft. or occupancy of 1000 and greater</li> <li>• USBC Amendment - Exception No. 2:<br/>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</li> </ul> |  |

|                          |  |  |
|--------------------------|--|--|
| <input type="checkbox"/> | <b>NEC 701.6 Legally Required Standby Systems</b>  |  |
|                          | <ul style="list-style-type: none"> <li>• Ground fault indication is now required for legally required standby systems</li> </ul> |  |

|                          |   |   |
|--------------------------|---|---|
| <input type="checkbox"/> | <b>NEC 760.41 NPLFA Power Source</b>  |   |
|                          | <ul style="list-style-type: none"> <li>• NPLFA power source(disconnect) now required to be marked</li> <li>• NPLFA shall be on a dedicated circuit</li> </ul> |  |