Mike Holt's 2008 *NEC* Index

Introduction

This index is a free resource from Mike Holt Enterprises, Inc. It was designed to help you find what you're looking for in the *Code* book in seconds! This index lists all those difficult key words and gives you the section where these words appear in the code. It's a great tool to get you familiar with those hard to find references in the *NEC*! Use this index along with your *Code* Book and Tabs and you'll be in great shape!

About the Author

Mike Holt worked his way up through the electrical trade from an apprentice electrician to become one of the most recognized experts in the world as it relates to electrical power installation. He was a Journeyman Electrician, Master Electrician, and Electrical Contractor. Mike came from the real world, and his dedication to electrical training is the result of his own struggles as an electrician looking for a program that would help him succeed in this challenging industry.

It is for reasons like this that Mike continues to help the industry by providing free resources such as this index. It is the goal of Mike Holt and everyone on the Mike Holt Team to do everything in our power to aid in your pursuit of excellence.

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Code Book

Need to order a *Code* book? The spiral edition makes the code book much easier to use. The spiral coil allows you to conveniently study by placing the book folded on your desk. It lays flat and you can even put it on a hook in your truck. The most widely adopted element of a building code in the United States and the world, the *NEC*[®] is the benchmark for safe and efficient electrical installations. Whether your jurisdiction adopts the 2008 *Code* immediately or down the road, you need to extend your knowledge and take advantage of the benefits right away, not months or years behind your peers in the electrical industry. NFPA product. For more information, visit www.MikeHolt.com.



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The National Electrical Code

The *National Electrical Code (NEC)* is written for persons who understand electrical terms, theory, safety procedures, and electrical trade practices. These individuals include electricians, electrical contractors, electrical inspectors, electrical engineers, designers, and other qualified persons. The Code was not written to serve as an instructive or teaching manual for untrained individuals [90.1(C)].

Learning to use the NEC is somewhat like learning to play the game of chess; it's a great game if you enjoy mental warfare. You must first learn the names of the game pieces, how the pieces are placed on the board, and how each piece moves.

In the electrical world, this is equivalent to completing a comprehensive course on basic electrical theory, such as:

- What electricity is and how is it produced
- Dangers of electrical potential: fire, arc blast, arc fault, and electric shock
- Direct current
- Series and parallel circuits
- Electrical formulas
- Alternating current
- Induction, motors, generators, and transformers

Once you understand the fundamentals of the game of chess, you're ready to start playing the game. Unfortunately, at this point all you can do is make crude moves, because you really do not understand how all the information works together.

To play chess well, you will need to learn how to use your knowledge by working on subtle strategies before you can work your way up to the more intriguing and complicated moves.

Again, back to the electrical world, this is equivalent to completing a course on the basics of electrical theory. You have the foundation upon which to build, but now you need to take it to the next level, which you can do by reading this textbook.

Not a Game

Electrical work isn't a game, and it must be taken very seriously. Learning the basics of electricity, important terms and concepts, as well as the basic layout of the *NEC* gives you just enough knowledge to be dangerous. There are thousands of specific and unique applications of electrical installations, and the *Code* doesn't cover every one of them. To safely apply the *NEC*, you must understand the purpose of a rule and how it affects the safety aspects of the installation.

NEC Terms and Concepts

The *NEC* contains many technical terms, so it's crucial for *Code* users to understand their meanings and their applications. If you don't understand a term used in a *Code* rule, it will be impossible to properly apply the *NEC* requirement. Be sure you understand that Article 100 defines the terms that apply to two or more articles. For example, the term "Dwelling Unit" applies to many articles. If you don't know what a dwelling unit is, how can you apply the *Code* requirements for it?

In addition, many articles have terms unique for that specific article. This means that the definitions of those terms are only applicable for that given article. For example, Section 250.2 contains the definitions of terms that only apply to Article 250, Grounding and Bonding.

Small Words, Grammar, and Punctuation

It's not only the technical words that require close attention, because even the simplest of words can make a big difference to the intent of a rule. The word "or" can imply alternate choices for equipment wiring methods, while "and" can mean an additional requirement. Let's not forget about grammar and punctuation. The location of a comma "," can dramatically change the requirement of a rule.

Slang Terms or Technical Jargon

Electricians, engineers, and other trade-related professionals use slang terms or technical jargon that isn't shared by all. This makes it very difficult to communicate because not everybody understands the intent or application of those slang terms. So where possible, be sure you use the proper word, and don't use a word if you don't understand its definition and application. For example, lots of electricians use the term "pigtail" when describing the short conductor for the connection of a receptacle, switch, luminaire, or equipment. Although they may understand this, not everyone does.

NEC Style and Layout

Before we get into the details of the *NEC*, we need to take a few moments to understand its style and layout. Understanding the structure and writing style of the *Code* is very important before it can be used effectively. If you think about it, how can you use something if you don't know how it works? The *National Electrical Code* is organized into ten components.

- 1. Table of Contents
- 2. Article 90 (Introduction to the *Code*)
- 3. Chapters 1 through 9 (major categories)
- 4. Articles 90 through 830 (individual subjects)
- 5. Parts (divisions of an article)
- 6. Sections and Tables (Code requirements)
- 7. Exceptions (*Code* permissions)
- 8. Fine Print Notes (explanatory material)
- 9. Annexes (information)
- 10. Index

1. Table of Contents. The Table of Contents displays the layout of the Chapters, Articles, and Parts as well as the page numbers. It's an excellent resource and should be referred to periodically to observe the interrelationship of the various *NEC* components. When attempting to locate the rules for a particular situation, knowledgeable *Code* users often go first to the Table of Contents to quickly find the specific *NEC* part that applies.

2. Introduction. The *NEC* begins with Article 90, the introduction to the *Code*. It contains the purpose of the *NEC*, what is covered and what is not covered along with how the *Code* is arranged. It also gives information on enforcement and how mandatory and permissive rules are written as well as how explanatory material is included. Article 90 also includes information on formal interpretations, examination of equipment for safety, wiring planning, and information about formatting units of measurement.

3. Chapters. There are nine chapters, each of which is divided into articles. The articles fall into one of four groupings: General Requirements (Chapters 1 through 4), Specific Requirements (Chapters 5 through 7), Communications Systems (Chapter 8), and Tables (Chapter 9).

- Chapter 1 General
- Chapter 2 Wiring and Protection
- Chapter 3 Wiring Methods and Materials
- Chapter 4 Equipment for General Use
- Chapter 5 Special Occupancies
- Chapter 6 Special Equipment
- Chapter 7 Special Conditions

- Chapter 8 Communications Systems (Telephone, Data, Satellite, and Cable TV)
- Chapter 9 Tables–Conductor and Raceway Specifications

4. Articles. The *NEC* contains approximately 140 articles, each of which covers a specific subject. For example:

- Article 110 General Requirements
- Article 250 Grounding and Bonding
- Article 300 Wiring Methods
- Article 430 Motors and Motor Controllers
- Article 500 Hazardous (Classified) Locations
- Article 680 Swimming Pools, Fountains, and Similar Installations
- Article 725 Remote-Control, Signaling, and Power-Limited Circuits
- Article 800 Communications Systems
- 5. Parts. Larger articles are subdivided into parts.

Author's Comment: Because the parts of a *Code* article aren't included in the section numbers, we have a tendency to forget what "Part" the *NEC* rule is relating to. For example, Table 110.34(A) contains the working space clearances for electrical equipment. If we aren't careful, we might think this table applies to all electrical installations, but Table 110.34(A) is located in Part III, which contains the requirements for Over 600 Volts, Nominal installations. The rules for working clearances for electrical equipment for systems 600V, nominal, or less are contained in Table 110.26(A)(1), which is located in Part III—600 Volts, Nominal, or Less.

6. Sections and Tables.

Sections. Each NEC rule is called a *Code* section. A *Code* section may be broken down into subsections by letters in parentheses "(A), (B)," etc. Numbers in parentheses (1), (2), etc., may further break down a subsection, and lowercase letters (a), (b), etc., further break the rule down to the third level. For example, the rule requiring all receptacles in a dwelling unit bathroom to be GFCI protected is contained in Section 210.8(A)(1). Section 210.8(A)(1) is located in Chapter 2, Article 210, Section 8, subsection (A), sub-subsection (1).

Many in the industry incorrectly use the term "Article" when referring to a *Code* section. For example, they say "Article 210.8," when they should say "Section 210.8."

Tables. Many *Code* requirements are contained within tables, which are lists of *NEC* requirements placed in a systematic arrangement. The titles of the tables are extremely important; you must read them carefully in order to understand

the contents, applications, limitations, etc., of each table in the *Code*. Many times notes are provided in or below a table; be sure to read them as well since they are also part of the requirement. For example, Note 1 for Table 300.5 explains how to measure the cover when burying cables and raceways, and Note 5 explains what to do if solid rock is encountered.

7. Exceptions. Exceptions are *Code* requirements or allowances that provide an alternative method to a specific requirement. There are two types of exceptions—mandatory and permissive. When a rule has several exceptions, those exceptions with mandatory requirements are listed before the permissive exceptions.

Mandatory Exception. A mandatory exception uses the words "shall" or "shall not." The word "shall" in an exception means that if you're using the exception, you're required to do it in a particular way. The phrase "shall not" means it isn't permitted.

Permissive Exception. A permissive exception uses words such as "shall be permitted," which means it's acceptable (but not mandatory) to do it in this way.

8. Fine Print Note (FPN). A fine print note contains explanatory material intended to clarify a rule or give assistance, but it isn't a *Code* requirement [90.5(C)].

9. Annexes. Annexes aren't a part of the *NEC* requirements, and are included in the *Code* for informational purposes only.

10. Index. The Index at the back of the *NEC* is helpful in locating a specific rule.

Author's Comment: Changes to the *NEC* since the previous edition(s), are identified by shading, but rules that have been relocated aren't identified as a change. A bullet symbol "•" is located on the margin to indicate the location of a rule that was deleted from a previous edition.

How to Locate a Specific Requirement

How to go about finding what you're looking for in the *Code* depends, to some degree, on your experience with the *NEC*. *Code* experts typically know the requirements so well they just go to the correct rule without any outside assistance. The Table of Contents might be the only thing very experienced *NEC* users need to locate the requirement they're looking for. On the other hand, average *Code* users should use all of the tools at their disposal, and that includes the Table of Contents and the Index.

Table of Contents. Let's work out a simple example: WhatNEC rule specifies the maximum number of disconnects

permitted for a service? If you're an experienced *Code* user, you'll know Article 230 applies to "Services," and because this article is so large, it's divided up into multiple parts (actually eight parts). With this knowledge, you can quickly go to the Table of Contents and see that it lists Service Equipment Disconnecting Means requirements in Part VI.

Author's Comment: The number 70 precedes all page numbers because the *NEC* is NFPA standard number 70.

Index. If you use the Index, which lists subjects in alphabetical order, to look up the term "service disconnect," you'll see there's no listing. If you try "disconnecting means," then "services," you'll find the Index specifies the rule is located in Article 230, Part VI. Because the *NEC* doesn't give a page number in the Index, you'll need to use the Table of Contents to find the page number, or flip through the *Code* to Article 230, then continue to flip through pages until you find Part VI.

Many people complain that the *NEC* only confuses them by taking them in circles. As you gain experience in using the *Code* and deepen your understanding of words, terms, principles, and practices, you will find the *NEC* much easier to understand and use than you originally thought.

Customizing Your Code Book

One way to increase your comfort level with the *Code* is to customize it to meet your needs. You can do this by highlighting and underlining important *NEC* requirements, and by attaching tabs to important pages.

Highlighting. As you read through this textbook, be sure you highlight those requirements in the *Code* that are the most important or relevant to you. Use yellow for general interest and orange for important requirements you want to find quickly. Be sure to highlight terms in the Index and Table of Contents as you use them.

Underlining. Underline or circle key words and phrases in the *NEC* with a red pen (not a lead pencil) and use a six-inch ruler to keep lines straight and neat. This is a very handy way to make important requirements stand out. A small six-inch ruler also comes in handy for locating specific information in the many *Code* tables.

Tabbing the *NEC***.** By placing tabs on *Code* articles, sections, and tables, it will make it easier for you to use the *NEC*. However, too many tabs will defeat the purpose. You can order a custom set of *Code* tabs online at www.MikeHolt.com, or by calling 1.888.NEC.CODE.

2008 NEC Index

Description

Section

Description

Agricultural Buildings

- grioditara Bananigo	
Definitions	547.2
Equipotential Planes and Bonding of	
Equipotential Planes	547.10
Luminaires	547.8
Scope	547.1
Wiring Methods	547.5
Air-Conditioning and Refrigeration Equipment General	
Ampacity and Rating	440.6
Conductor Size for Several Motor-Compressors	440.0
Conductor Size for Single Motor-Compressors	440.33
Disconnect Location	440.14
Short-Circuit and Ground-Fault Overcurrent	440.14
Device Size	440.22
Room Units	440.22
Branch-Circuit Requirements	440.62
Disconnecting Means.	440.63
Leakage Current Detector-Interrupter and	
Arc-Fault Circuit Interrupter	440.65
Supply Cords	440.64
Appliances	
Disconnect	
Cord-and-Plug-Connected Appliance Disconnects	422.33
Permanently Connected Appliance Disconnects	422.31
Unit Switches as Disconnects	422.34
General	
Branch-Circuit Rating	422.10
Central Heating Equipment (Furnaces)	422.12
Central Vacuums	422.15
Cord-and-Plug-Connected Vending Machines	422.51
Electric Drinking Fountains	422.52
Flexible Cords	422.16
Overcurrent Protection	422.11
Storage Water Heaters	422.13
Support of Ceiling Paddle Fans	422.18

Armored Cable

Bends	320.24
Boxes and Fittings	320.40
Conductor Ampacities	320.80
Construction	320.100
Equipment Grounding Conductor	320.108
Exposed Work	320.15

boothphon	0001011
In Accessible Attics or Roof Spaces	320.23
Securing and Supporting	320.30
Through or Parallel to Framing Members	320.17
Uses Not Permitted	320.12
Uses Permitted	320.10
Assembly Occupancles	
General Classifications	518.2
Other Articles	518.3
Scope	518.1
Wiring Methods	518.4
Audio Signal Processing, Amplification, and	
Reproduction Equipment	
Audio Systems Near Bodies of Water	640.10
Definitions	640.2
Grounding and Bonding	640.7
Locations and Other Articles	640.3
Loudspeakers in Fire-Resistance-Rated	
Partitions, Walls, and Ceilings	640.25
Mechanical Execution of Work	640.6
Number of Conductors in a Raceway	640.23
Protection of Electrical Equipment	640.4
Scope	640.1

Use of Flexible Cords and Flexible Cables

R

Wiring Methods

Wiring of Equipment Racks

Boxes Boxes and Conduit Bodies for Conductors 4 AWG and Larger 314.28 Boxes Recessed in Walls or Ceilings 314.20 Conductors That Enter Boxes or Conduit Bodies 314.17 Covers and Canopies 314.25 Damp or Wet Locations 314.15 Handhole Enclosures 314.30 Metal Boxes 314.4 Nonmetallic Boxes 314.3 Number of 6 AWG and Smaller Conductors in Boxes and Conduit Bodies 314.16 Outlet Box 314.27 Repairing Gaps Around Boxes 314.21 Short-Radius Conduit Bodies 314.5 Support of Boxes and Conduit Bodies 314.23

Section

640.21

640.9

640.22

Description

Surface Extensions	314.22
Wiring to be Accessible	314.29
while to be necession	517.27
Branch Circuits	
Arc-Fault Circuit-Interrupter—Protected Circuits	210.12
Branch Circuits Required	210.11
Branch-Circuit Rating	210.3
Branch-Circuit Requirements for Devices	210.7
Buildings with Multiple Occupancies	210.25
Conductor Sizing	210.19
GFCI Protection	210.8
Guest Rooms and Guest Suites	210.18
Identification for Branch Circuits	210.5
Multiwire Branch Circuits	210.4
Outlet Device Rating	210.21
Overcurrent Protection	210.20
Permissible Loads	210.23
Building Supplied by Feeder	
Access to Occupants	225.35
Disconnect Construction	225.38
Disconnect Location	225.32
Disconnecting Means	225.31
Grouping of Disconnects	225.34
Identification of Multiple Feeders	225.37
Identified as Suitable for Service Equipment	225.36
Maximum Number of Disconnects	225.33

C

Cabinets, Cutout Boxes, and Meter Enclosure

Rating of Disconnecting Means

Number of Supplies

Damp or Wet Locations	312.2
Enclosures	312.5
Installed in Walls	312.3
Repairing Gaps	312.4
Used for Raceway and Splices	312.8
Cable Trays	
Cable Installation	392.8
Conductor Ampacity of Multiconductor	
Cables in Cable Trays	392.11
Equipment Grounding Conductor	392.7
Installation	392.6
Number of Multiconductor Cables in Cable Trays	392.9
Uses Not Permitted	392.4
Uses Permitted	392.3
Coloulations	

Calculations

Branch-Circuit Load220.12General Lighting220.12Maximum Load on a Branch Circuit220.18Other Loads—All Occupancies220.14

Description

Section

225.30

225.39

Section

Feeder and Service Load	
Commercial—Kitchen Equipment Load	220.56
Commercial—Show Window and Track	
Lighting Load	220.43
Dwelling Unit—Appliance Load	220.53
Dwelling Unit—Electric Clothes Dryer Load	220.54
Dwelling Unit—Electric Ranges and Cooking	
Appliances	220.55
Dwelling Unit—Small-Appliance and	
Laundry Load	220.52
Feeder/Service Neutral Unbalanced Load	220.61
Fixed Electric Space-Heating Load	220.51
General Lighting Demand Factors	220.42
Motor Load	220.50
Noncoincident Loads	220.60
Receptacle Load	220.44
Optional Method	
Determining Existing Loads	220.87
Dwelling Unit—Optional Load Calculation	220.82
Multifamily—Optional Load Calculation	220.84
Optional Calculation—Two Dwelling Units	220.85
Carnivals, Circuses, Fairs, and Similar Events	
Definitions	525.2
Equipment Bonding	525.2 525.30
Equipment Grounding	525.30
Equipment Grounding Conductor Continuity	525.51
Assurance	525.32
GFCI-Protected Receptacles and Equipment	525.23
Multiple Sources of Supply	525.23
Other Articles	525.3
Outdoor Portable Distribution or Termination Boxes	525.22
Overhead Conductor Clearances	525.5
Protection of Electrical Equipment	525.6
Rides, Tents, and Concessions	525.21
Scope	525.1
Services	525.10
Wiring Methods	525.20
While Wethous	525.20
Cartridge Fuse	240.61
Circuit Breakers	
Applications	240.85
Indicating	240.81
Markings	240.83
Method of Operation	240.80
-	
Commercial Garages, Repair, and Storage	511.2
Classification of Hazardous Areas	511.3
Definitions	511.2
GFCI-Protected Receptacles	511.12
Scope Seals	511.1
Seals Special Equipment	511.9
Special Equipilient	511.10

Co

Wiring and Equipment Above Hazardous Locations	511.7
Wiring and Equipment in Hazardous Locations	511.4
ommunications Circuits	
	000 25
Abandoned Cable	800.25
Access to Electrical Equipment Behind Panels	
Designed to Allow Access	800.21
Applications of Communications Cables	800.154
Cable Grounding	800.100
Definitions	800.2
Dwelling Unit Communications Outlet	800.156
Installation of Communications Cables	800.133
Installation of Equipment	800.18
Lightning Conductors	800.53
Listing of Communications Cables	800.113
Listing Requirements for Communications Cables	800.179
Listing Requirements for Communications Raceways	800.182
Mechanical Execution of Work	800.24
Other Articles	800.3
Overhead Communications Cables	800.44
Primary Protection	800.90
Raceways for Communications Circuits	800.110
Scope	800.1
Spread of Fire or Products of Combustion	800.26
Unlisted Cables Entering Buildings	800.48
mmunity Antenna Television (CATV) and	

Coi **Radio Distribution Systems**

Abandoned Cable	820.25
Access to Electrical Equipment Behind Panels	
Designed to Allow Access	820.21
Applications of Coaxial Cables and Raceways	820.154

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Description

Section

Cable Grounding	820.100
Definitions	820.2
Grounding or Interruption of Metallic Members	
of Coaxial CATV Cables	820.93
Installation of Coaxial Cables and Equipment	820.133
Listing of Coaxial Cables	820.113
Listing Requirements for Coaxial Cables	820.179
Listing Requirements for Coaxial Raceways	820.182
Locations and Other Articles	820.3
Mechanical Execution of Work	820.24
Overhead Coaxial Cables	820.44
Power Limitations	820.15
Raceways for Coaxial Cables	820.110
Scope	820.1
Spread of Fire or Products of Combustion	820.26
Underground Circuits Entering Buildings	820.47
Unlisted Cables and Raceways Entering Buildings	820.48
Conductors	
Conductor Ampacity	310.15
Conductor Construction	310.13
Conductor Identification	310.12
Conductors	310.2
Conductors in Parallel	310.4
Corrosive Conditions	310.9
Insulation Temperature Limitation	310.10
Location	310.8
Minimum Size Conductors	310.5
Stranded Conductors	310.3

D

Definitions

E

Electrical Metallic Tubing	
Bends	358.24
Couplings and Connectors	358.42
Listing Requirement	358.6
Number of Bends (360°)	358.26
Number of Conductors	358.22
Reaming and Threading	358.28
Securing and Supporting	358.30
Trade Size	358.20
Uses Not Permitted	358.12
Uses Permitted	358.10
Electrical Nonmetallic Tubing	
Bends	362.24
Bushings	362.46
Equipment Grounding Conductor	362.60
Joints	362.48

100

Number of Bends (360°)	362.26
Number of Conductors	362.20
Securing and Supporting	362.30
Trade Sizes	362.20
Trimming	362.28
Uses Not Permitted	362.12
Uses Permitted	362.10
	202110
Electric Signs and Outline Lighting	
Ballasts, Transformers, and Electronic Power Supplies	600.21
Branch Circuits	600.5
Definitions	600.2
Disconnects	600.6
Grounding and Bonding	600.7
Listing Location	600.3
	600.9
Markings Doutable on Mabile Signs	600.4 600.10
Portable or Mobile Signs	600.10 600.1
Scope	000.1
Elevators, Escalators, and Moving Walks	
Branch Circuit for Hoistway Pit	620.24
Branch Circuit for Machine Room/Machinery Space	620.23
Disconnecting Means	620.51
GFCI-Protected Receptacles	620.85
Scope	620.1
Wiring in Elevator Hoistways and Machine Rooms	620.37
Wiring in Elevator Hoistways and Machine Rooms Emergency Standby Power Systems	620.37
	620.37 700.2
Emergency Standby Power Systems	
Emergency Standby Power Systems Application of Other Articles	700.2
Emergency Standby Power Systems Application of Other Articles Capacity	700.2 700.5
Emergency Standby Power Systems Application of Other Articles Capacity Coordination	700.2 700.5 700.27
Emergency Standby Power Systems Application of Other Articles Capacity Coordination Emergency Illumination	700.2 700.5 700.27 700.16
Emergency Standby Power Systems Application of Other Articles Capacity Coordination Emergency Illumination Equipment Approval	700.2 700.5 700.27 700.16 700.3
Emergency Standby Power Systems Application of Other Articles Capacity Coordination Emergency Illumination Equipment Approval Ground-Fault Protection of Equipment	700.2 700.5 700.27 700.16 700.3 700.26
Emergency Standby Power Systems Application of Other Articles Capacity Coordination Emergency Illumination Equipment Approval Ground-Fault Protection of Equipment Loads on Emergency Branch Circuits	700.2 700.5 700.27 700.16 700.3 700.26 700.15
Emergency Standby Power Systems Application of Other Articles Capacity Coordination Emergency Illumination Equipment Approval Ground-Fault Protection of Equipment Loads on Emergency Branch Circuits Scope Signs Tests and Maintenance	700.2 700.5 700.27 700.16 700.3 700.26 700.15 700.1
Emergency Standby Power Systems Application of Other Articles Capacity Coordination Emergency Illumination Equipment Approval Ground-Fault Protection of Equipment Loads on Emergency Branch Circuits Scope Signs Tests and Maintenance Transfer Equipment	700.2 700.5 700.27 700.16 700.3 700.26 700.15 700.1 700.8 700.4 700.6
Emergency Standby Power Systems Application of Other Articles Capacity Coordination Emergency Illumination Equipment Approval Ground-Fault Protection of Equipment Loads on Emergency Branch Circuits Scope Signs Tests and Maintenance	700.2 700.5 700.27 700.16 700.3 700.26 700.15 700.1 700.8 700.4
Emergency Standby Power Systems Application of Other Articles Capacity Coordination Emergency Illumination Equipment Approval Ground-Fault Protection of Equipment Loads on Emergency Branch Circuits Scope Signs Tests and Maintenance Transfer Equipment	700.2 700.5 700.27 700.16 700.3 700.26 700.15 700.1 700.8 700.4 700.6
Emergency Standby Power Systems Application of Other Articles Capacity Coordination Emergency Illumination Equipment Approval Ground-Fault Protection of Equipment Loads on Emergency Branch Circuits Scope Signs Tests and Maintenance Transfer Equipment Wiring Enclosure	700.2 700.5 700.27 700.16 700.3 700.26 700.15 700.1 700.8 700.4 700.6
Emergency Standby Power Systems Application of Other Articles Capacity Coordination Emergency Illumination Equipment Approval Ground-Fault Protection of Equipment Loads on Emergency Branch Circuits Scope Signs Tests and Maintenance Transfer Equipment Wiring	700.2 700.5 700.27 700.16 700.3 700.26 700.15 700.1 700.8 700.4 700.6 700.9
Emergency Standby Power SystemsApplication of Other ArticlesCapacityCoordinationEmergency IlluminationEquipment ApprovalGround-Fault Protection of EquipmentLoads on Emergency Branch CircuitsScopeSignsTests and MaintenanceTransfer EquipmentWiringEnclosureDamp or Wet LocationsVertical Position	700.2 700.5 700.27 700.16 700.3 700.26 700.15 700.1 700.8 700.4 700.6 700.9 240.32
Emergency Standby Power Systems Application of Other Articles Capacity Coordination Emergency Illumination Equipment Approval Ground-Fault Protection of Equipment Loads on Emergency Branch Circuits Scope Signs Tests and Maintenance Transfer Equipment Wiring Enclosure Damp or Wet Locations Vertical Position Equipment Grounding Conductor	700.2 700.5 700.27 700.16 700.3 700.26 700.15 700.1 700.8 700.4 700.6 700.9 240.32 240.32
Emergency Standby Power Systems Application of Other Articles Capacity Coordination Emergency Illumination Equipment Approval Ground-Fault Protection of Equipment Loads on Emergency Branch Circuits Scope Signs Tests and Maintenance Transfer Equipment Wiring Enclosure Damp or Wet Locations Vertical Position Equipment Grounding Conductor Equipment Bonding Jumpers	700.2 700.5 700.27 700.16 700.3 700.26 700.15 700.1 700.8 700.4 700.6 700.9 240.32 240.32 240.33
Emergency Standby Power Systems Application of Other Articles Capacity Coordination Emergency Illumination Equipment Approval Ground-Fault Protection of Equipment Loads on Emergency Branch Circuits Scope Signs Tests and Maintenance Transfer Equipment Wiring Enclosure Damp or Wet Locations Vertical Position Equipment Grounding Conductor Equipment Bonding Jumpers Identification of Equipment Grounding Conductors	700.2 700.5 700.27 700.16 700.3 700.26 700.15 700.1 700.8 700.4 700.6 700.9 240.32 240.32 240.33
Emergency Standby Power Systems Application of Other Articles Capacity Coordination Emergency Illumination Equipment Approval Ground-Fault Protection of Equipment Loads on Emergency Branch Circuits Scope Signs Tests and Maintenance Transfer Equipment Wiring Enclosure Damp or Wet Locations Vertical Position Equipment Grounding Conductor Equipment Bonding Jumpers Identification of Equipment Grounding Conductors Sizing Equipment Grounding Conductor	700.2 700.5 700.27 700.16 700.3 700.26 700.15 700.1 700.8 700.4 700.6 700.9 240.32 240.32 240.33 250.102 250.119 250.122
Emergency Standby Power Systems Application of Other Articles Capacity Coordination Emergency Illumination Equipment Approval Ground-Fault Protection of Equipment Loads on Emergency Branch Circuits Scope Signs Tests and Maintenance Transfer Equipment Wiring Enclosure Damp or Wet Locations Vertical Position Equipment Grounding Conductor Equipment Bonding Jumpers Identification of Equipment Grounding Conductors	700.2 700.5 700.27 700.16 700.3 700.26 700.15 700.1 700.8 700.4 700.6 700.9 240.32 240.32 240.33

Description

Section

Feeders

F

Section

I CEUEIS	
Equipment Grounding Conductor	215.6
Ground-Fault Protection of Equipment	215.10
Identification for Feeders	215.12
Minimum Rating	215.2
Overcurrent Protection	215.3
Fire Alarm Systems	
Abandoned Cable	760.25
Access to Electrical Equipment Behind Panels	
Designed to Allow Access	760.21
Applications of Power-Limited Fire Alarm	
Cables (PLFA)	760.154
Definitions	760.2
Equipment Marking	760.124
Fire Alarm Circuit Cables Extending Beyond	,
a Building	760.32
Fire Alarm Circuit Identification	760.32
Fire Alarm Circuit Requirements	760.35
Listing and Marking Requirements of	700.55
Power-Limited Fire Alarm Cables (PLFA)	760.179
Mechanical Execution of Work	760.179
Other Articles	760.24
Power Sources for Power-Limited Fire Alarm Circuits	760.121
Power-Limited Fire Alarm Circuits, Class 2,	7(0.120
Class 3, and Comunications Circuits	760.139
Scope	760.1
Separation from Power Conductors	760.136
Support	760.143
Wiring Methods on Load Side of Power-Limited	
Fire Alarm Power Source	760.130
Fixed Electric Space-Heating Equipment	
Branch Circuits	424.3
Disconnect for Electric Duct Heater Controllers	424.65
Disconnecting Means.	424.19
Fixture Wires	
Allowable Ampacity of Fixture Wires	402.5
Minimum Size	402.6
Neutral Conductor	402.8
Overcurrent Protection	402.12
Raceway Size	402.7
Types	402.3
Uses Not Permitted	402.11
Uses Permitted	402.10
Flexible Cords and Flexible Cables	
Ampacity of Flexible Cords and Flexible Cables	400.5
Equipment Grounding Conductor Identification	400.23
Neutral Conductor Identification	400.22
Overcurrent Protection	400.13
Protection from Damage	400.14

Pull at Joints and Terminals	400.10
Suitability	400.3
Types of Flexible Cords and Flexible Cables	400.4
Uses Not Permitted	400.8
Uses Permitted	400.7

Flexible Metal Conduit

Bends	348.24
Fittings	348.42
Grounding and Bonding	348.60
Listing Requirements	348.6
Number of Bends (360°)	348.26
Number of Conductors	348.22
Securing and Supporting	348.30
Trade Size	348.20
Trimming	348.28
Uses Not Permitted	348.12
Uses Permitted	348.10
ountains	

Fountains

Bonding	680.53
Cord-and-Plug-Connected Equipment	680.56
General	680.50
GFCI-Protected Receptacles	680.58
Luminaires, Submersible Pumps, and Other	
Submersibel Equipment	680.51
Methods of Equipment Grounding	680.55
Signs in or Adjacent to Fountains	680.57





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Description

G

Section

General Requirements

Approval of Conductors and Equipment	110.2
Code Arrangement	90.3
Conductor Sizes	110.6
Conductor Termination and Splicing	110.14
Copper Conductors	110.5
Deteriorating Agents	110.11
Enclosure Types	110.20
Enforcement	90.4
Examination of Equipment for Product Safety	90.7
Examination, Identification, Installation, and	
Use of Equipment	110.3
Flash Protection Warning	110.16
Formal Interpretations	90.6
High-Leg Conductor Identification	110.15
Identification of Disconnecting Means	110.22
Interrupting Protection Rating	110.9
Mandatory Requirements and Explanatory Materia	1 90.5
Manufacturer's Markings	110.21
Mechanical Execution of Work	110.12
Mounting and Cooling of Equipment	110.13
Purpose of the NEC	90.1
Scope of the NEC	90.2
Short-Circuit Current Rating	110.10
Suitable Wiring Methods	110.8
Units of Measurement	90.9
Voltages	110.4
Wiring Integrity.	110.7

Grounding and Bonding

Bonding Metal Parts Containing 277V and	
480V Circuits	250.97
Bonding of Piping Systems and Exposed	
Structural Metal	250.104
Buildings or Structures Supplied by a Feeder	
or Branch Circuit	250.32
Clean Surfaces	250.12
Generators—Portable and Vehicle-Mounted	250.34
Grounding Electrode Conductor	250.62
High-Impedance Grounded Systems	250.36
Intersystem Bonding Terminal	250.94
Lightning Protection System	250.106
Main Bonding Jumper and System Bonding Jumper	250.28
Metal Boxes	250.148
Objectionable Current	250.6
Protection of Fittings	250.10
Ranges, Ovens, and Clothes Dryers	250.140
Receptacle Grounding Terminal to Metal Enclosure	250.146
Separately Derived Systems	250.30
Service Equipment—Grounding and Bonding	250.24
Service Raceways and Enclosures	250.92

Section

Description

Systems Required to be Grounded Termination of Grounding and Bonding Conductors	250.20 250.8
Grounding Electrode	250.0
Auxiliary Grounding Electrodes	250.54
Common Grounding Electrode	250.58
Contact Resistance of Ground Rod to the Earth	250.56
Grounding Electrode Installation Requirements	250.53
Grounding Electrode System	250.50
Grounding Electrode Types	250.52
Lightning Protection Electrode	250.60
Grounding Electrode Conductor	
Grounding Electrode Conductor Installation	250.64
Grounding Electrode Conductor Termination Fittings	250.70

Grounding Electrode Conductor Termination Fittings	250.70
Sizing Grounding Electrode Conductor	250.66
Termination to the Grounding Electrode	250.68

H

Hazardous Locations

Classifications of Locations	500.5
Definitions	500.2
Equipment	500.8
General	500.4
Other Articles	500.3
Protection Techniques	500.7
Scope—Articles 500 Through 504	500.1
Specific Occupancies	500.9
Hazardous Locations—Class I	
Conductor Insulation	501.20
Conduit and Cable Seals	501.15
Control Transformers and Relays	501.120
Enclosures	501.115
Flexible Cords	501.140
Grounding and Bonding	501.30
Limited-Energy and Communications Systems	501.150
Luminaires	501.130
Meters, Instruments, and Relays	501.105
Motors and Generators	501.125
Multiwire Branch Circuits	501.40
Receptacles and Attachment Plugs	501.145
Scope	501.1
Transformers and Capacitors	501.100
Utilization Equipment	501.135
Wiring Methods	501.10
Hazardous Locations—Class II	
Control Transformers	502.120
Explosionproof Equipment	502.5
Flexible Cords	502.140

Description

Section

	Luminaires	502.130
	Motors and Generators	502.125
	Multiwire Branch Circuits	502.40
	Receptacles and Attachment Plugs	502.145
	Scope	502.1
	Seals	502.15
	Switches, Circuit Breakers, Motor Controllers,	
	and Fuses	502.115
	Wiring Methods	502.10
Ha	azardous Locations—Class III	
	Control Transformers	503.120
	Flexible Cords	503.140
	General	503.5
	Grounding and Bonding	503.30
	Limited-Energy and Communications Systems	503.150
	Luminaires	503.130
	Motors and Generators	503.125
	Receptacles and Attachment Plugs	503.145
	Scope	503.1
	Switches, Circuit Breakers, Motor Controllers,	
	and Fuses	503.115
	Wiring Methods	503.10
H	ealth Care Facilities	
	Applicability	517.10
	Definitions	517.2
	Essential Electrical Systems for Hospitals	517.30
	General Care Areas	517.18
	Grounding of Equipment in Patient Care Areas	517.13
	Receptacles With Insulated Grounding Terminals	517.16
	Scope	517.1
	Wiring Methods	517.12
H	eating Cables	424.44
Hy	ydromassage Bathtubs	
	Accessibility	680.73
	Equipotential Bonding	680.74
	General	680.70
	GFCI Protection	680.71
	Other Electrical Equipment	680.72

502.30

502.150

Information Technology Equipment

645.6
645.2
645.10
645.15
645.4
645.7
645.1

Grounding and Bonding

Limited-Energy and Communications Systems

Description

Supply Circuits and Interconnecting Cables	645.5
Uninterruptible Power Supplies (UPS)	645.11

Intermediate Metal Conduit

Bends	342.24
Bushings	342.46
Couplings and Connectors	342.42
Dissimilar Metals	342.14
Listing Requirements	342.6
Number of Bends (360°)	342.26
Number of Conductors.	342.22
Reaming	342.28
Securing and Supporting	342.30
Trade Size	342.20
Uses Permitted	342.10

Introduction to the National Electrical Code

Code Arrangement	90.3
Enforcement	90.4
Examination of Equipment for Product Safety	90.7
Formal Interpretations	90.6
Mandatory Requirements and Explanatory Material	90.5
Purpose of the NEC	90.1
Scope of the NEC	90.2
Units of Measurement	90.9

L

Legally Required Standby Power Systems

Application of Other Articles	
Capacity and Rating	

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Description

Section

701.3 701.6

Coordination	701.18
Definitions	701.2
Equipment Approval	701.4
Ground-Fault Protection of Equipment	701.17
	701.17
Scope	
Signs	701.9
Tests and Maintenance	701.5
Transfer Equipment	701.7
Wiring	701.10
Lighting Outlet	210.70
Lighting Systems Operating at 30V or Less	
Listing Required	411.3
Secondary Circuits	411.5
Specific Location Requirements	411.4
Liquidtight Flexible Metal Conduit	
Bends	350.24
Fittings	350.42
Grounding and Bonding	350.60
Listing Requirements	350.6
Number of Bends (360°)	350.26
Number of Conductors	350.22
Securing and Supporting	350.30
Trade Size	350.20
Uses Not Permitted	350.20
Uses Permitted	350.12
Uses I el mitted	550.10
Liquidtight Flexible Nonmetallic Conduit	
Bends	356.24
Equipment Grounding Conductor	356.60
Fittings	356.42
Listing Requirement	356.6
Number of Bends (360°)	356.26
Number of Conductors	356.22
Securing and Supporting	356.30
Trade Size	356.20
Uses Not Permitted	356.12
Uses Permitted	356.10
Luminaires	
Branch-Circuit Conductors and Ballasts	410.68
Clothes Closets	410.16
Connection of Electric-Discharge Luminaires	410.24
Cord-Connected Luminaires	410.62
Listing Required	410.62
	410.0
Luminaire Mounting	
Luminaires Connected Together	410.65
Luminaires in Specific Locations	410.10
Luminaires Near Combustible Material	410.11
Luminaires Used as a Raceway	410.64
Outlet Boxes to be Covered	410.22
Polarization of Luminaires	410.50

Description	Section
Screw-Shell Lampholders	410.90
Space for Cove Lighting	410.18
Supports	410.30

М

Manufactured Wiring Systems

Construction	604.6
Definition	604.2
Other Articles	604.3
Scope	604.1
Securing and Supporting	604.7
Uses Permitted	604.4

Marinas and Boatyards

Boat Receptacle Disconnecting Means	555.17	
Definitions	555.2	
Electrical Connections	555.9	
Electrical Equipment Enclosures	555.10	
Grounding	555.15	
Load Calculations for Service and Feeder Conductors	555.12	
Location of Service Equipment	555.7	
Motor Fuel Dispensing Stations—Hazardous		
Locations	555.21	
Receptacles	555.19	
Repair Facilities	555.22	
Scope	555.1	
Transformers	555.5	
Metal Wireways		
Conductors—Maximum Size.	376.21	
Number of Conductors and Ampacity	376.22	
Splices, Taps, and Power Distribution Blocks	376.56	
Supports	376.30	
Uses Not Permitted	376.12	
Uses Permitted	376.10	
Wireway Sizing	376.23	

Metal-Clad Cable

Bends	330.24
Conductor Ampacities	330.80
Equipment Grounding Conductor	330.108
Fittings	330.40
In Accessible Attics or Roof Spaces	330.23
Securing and Supporting	330.30
Through or Parallel to Framing Members	330.17
Uses Not Permitted	330.12
Uses Permitted	330.10

Motor Control Circuits

Disconnect for Control Circuits	430.75
Overcurrent Protection for Control Circuits	430.72
Protection of Conductors from Physical Damage	430.73

Description

Section

Motor Controllers

Controller for Each Motor	430.87
Controller Rating	430.83
Need Not Open All Conductors of the Circuit	430.84
Motor Fuel Dispensing Facilities	
Circuit Disconnect	514.11
Classification of Locations	514.3
Definition	514.2
Grounding and Bonding	514.16
Maintenance and Service of Dispensing Equipment	514.13
Raceway Seal	514.9
Scope	514.1
Underground Wiring	514.8
Wiring and Equipment Above Class I Locations	514.7
Wiring and Equipment Within Class I Locations	514.4
Motors	
Disconnecting Means	
Combination Controller and Disconnect	430.111
Disconnect Requirement	430.102
Disconnecting Means Rating	430.109
Marking and Mounting	430.104
Operation of Disconnect	430.103
Readily Accessible	430.107
General	
Branch-Circuit Short-Circuit and Ground-Fault	
Protection	430.52
Feeder Protection	430.62
Location of Motors	430.14
Motor Controller Terminal Requirements	430.9
Motor Feeder Taps	430.28
Overload	430.31
Several Motors—Conductor Size	430.24
Single Motor Conductor Size	430.22
Table FLC Versus Motor Nameplate Current Rating	430.6
Multioutlet Assemblies	
Through Partitions	380.3

Through Partitions380.3Uses380.2

Ν

Neutral Conductor

Identification of Terminals	200.10		
Neutral Conductor Identification	200.6		
Polarity	200.11		
Terminal Identification	200.9		
Use of White or Gray Color	200.7		
Nonmetallic-Sheathed Cable			
Attics and Roof Spaces	334.23		
Bends	334.24		
Conductor Ampacity	334.80		

Section

Description

Conductors	334.104
Construction	334.100
Equipment Grounding Conductor	334.108
Exposed	334.15
Insulation	334.112
Listed	334.6
Securing and Supporting	334.30
Through or Parallel to Framing Members	334.17
Uses Not Permitted	334.12
Uses Permitted	334.10

0

Optical Fiber Cables and Raceways

Abandoned Cable	770.25
Access to Electrical Equipment Behind Panels	
Designed to Allow Access	770.21
Applications of Optical Fiber Cables and Raceways	770.154
Definitions	770.2
Innerduct	770.12
Installation of Optical Fiber Cables	770.133
Listing of Optical Fiber Cables	770.113
Listing Requirements for Communications Raceways	770.182
Listing Requirements for Optical Fiber Cables	770.179
Locations and Other Articles	770.3
Mechanical Execution of Work	770.24
Optical Fiber Cables	770.6
Raceways for Optical Fiber Cables	770.110
Scope	770.1



Description

Section

Spread of Fire or Products of Combustion	770.26
Unlisted Cables Entering Buildings	770.48
Optional Standby Power Systems	
Application of Other Articles	702.3
Capacity and Rating	702.5
Definition	702.2
Equipment Approval	702.4
Outdoor Generator Sets	702.11
Scope	702.1
Signs	702.8
Transfer Equipment	702.6
Wiring	702.9
Overcurrent	
Ground-Fault Protection of Equipment	240.13
Location of Overcurrent Devices	240.24
Overcurrent Protection Location in Circuit	240.21
Protection of Conductors	240.4
Protection of Equipment	240.3
Protection of Flexible Cords and Fixture Wires	240.5
Standard Ampere Ratings	240.6
Supplementary Overcurrent Protection	240.10
Ungrounded Conductors	240.15
Overhead Conductors	
Attachment	225.16
Clearance for Overhead Conductors	225.18
Clearances from Buildings	225.19
Masts as Support	225.17
Minimum Size of Conductors	225.6
Supports Over Buildings	225.15
Trees for Conductor Support	225.26

Р

Panelboards

Circuit Directory or Circuit Identification	408.4				
Equipment Grounding Conductor	408.40				
Maximum Number of Overcurrent Devices	408.54				
Neutral Conductor Terminations	408.41				
Overcurrent Protection of Panelboards	408.36				
Panelboards in Damp or Wet Locations	408.37				
Unused Openings	408.7				
Permanently Installed Pools, Outdoor Spas,					
and Outdoor Hot Tubs					
Area Lighting, Receptacles, and Equipment	680.22				
Cord-and-Plug-Connected Equipment	680.7				
Definitions	680.2				
Electric Water Heater	680.9				
Equipment Rooms and Pits	680.11				
Equipotential Bonding	680.26				
Feeders	680.25				

General	680.20
Junction Box, Transformer, or GFCI Enclosure	680.24
Maintenance Disconnecting Means	680.12
Motors	680.21
Other Articles	680.3
Overhead Conductor Clearance	680.8
Scope	680.1
Specialized Equipment	680.27
Underground Wiring Location	680.10
Underwater Luminaires	680.23
Plug Fuses	

Edison-Base Fuse	240.51
Type S Fuses	240.53
Type S Fuses, Adapters, and Fuseholders	240.54

PVC Conduit

Bends	352.24
Bushings	352.46
Equipment Grounding Conductor	352.60
Expansion Fittings	352.44
Joints	352.48
Number of Bends (360°)	352.26
Number of Conductors	352.22
Securing and Supporting	352.30
Trade Size	352.20
Trimming	352.28
Uses Not Permitted	352.12
Uses Permitted	352.10

R

Radio and Television Equipment

Amateur Transmitting and Receiving Stations-

Antenna Systems	
Antenna Discharge Units	810.57
Clearance on Building	810.54
Grounding Conductors	810.58
Other Sections	810.51
General	
Community Television Antenna	810.4
Other Articles	810.3
Scope	810.1
Receiving Equipment—Antenna Systems	
Antenna Discharge Unit	810.20
Avoid Contact with Conductors of Other Systems	810.13
Clearances	810.18
Grounding Conductors	810.21
Metal Antenna Supports—Grounding	810.15
Support of Lead-In Cables	810.12
Receptacles	

Attachment Plugs, Cord Connectors, and	
Flanged Surface Devices	406.6

Description

General

Scope

and Class 3 Cables and Raceways

Section

Connecting Receptacle Grounding Terminal to Equipment Grounding Conductor 406.10 **Dwelling Unit Receptacle Outlet Requirements** 210.52 General Installation Requirements 406.3 Heating, Air-Conditioning, and Refrigeration (HACR) Equipment 210.63 **Receptacle Faceplates** 406.5 **Receptacle Mounting** 406.4 Receptacle Rating and Type 406.2 Receptacles in Damp or Wet Locations 406.8 Receptacles in Guest Rooms, Guest Suites, Dormitories, and Similar Occupancies 210.60 Show Windows 210.62 Tamper-Resistant Receptacles in Dwelling Units 406.11 **Recessed Luminaires** Clearances 410.116 Thermally Protected 410.115 Wiring 410.117 **Remote-Control, Signaling, and Power-Limited Circuits Class 1 Circuit Requirements** Class 1 Circuit Classifications and Power-Supply Requirements 725.41 Class 1 Circuit Conductors 725.49 Class 1 Circuit Wiring Methods 725.46 Conductors of Different Circuits in Same 725.48 Cable, Enclosure, or Raceway Number of Conductors in a Raceway 725.51 **Class 2 and Class 3 Circuit Requirements** Applications of Class 2 and Class 3 Cables 725.154 Conductors of Different Circuits in Same Cable, Enclosure, or Raceway 725.139 Equipment Marking 725.124 Power Sources for Class 2 and Class 3 Circuits 725.121 725.136 Separation from Power Conductors 725.143 Support Wiring Methods on Load Side of the Class 2 or Class 3 Power Source 725.130 Wiring Methods on Supply Side of the Class 2 or Class 3 Power Source 725.127 Abandoned Cable 725.25 725.35 **Circuit Requirements** Definitions 725.2 **Electrical Equipment Behind Access Panels** 725.21 Mechanical Execution of Work 725.24 Other Articles 725.3 Safety-Control Equipment 725.31 725.1 **Listing Requirements** Listing and Marking Requirements of Class 2

Section

725.179

Description	Section
Overcurrent Ground-Fault Protection of Equipment Overload Protection Required	230.95 230.90
Service Drop Means of Attachment Point of Attachment Service Masts Used as Supports Size and Rating Vertical Clearance for Service-Drop Conductors	230.27 230.26 230.28 230.23 230.23
Service Lateral Protection Against Damage Service-Lateral Conductor Size and Rating	230.32 230.31
Service-Entrance Cable Bends Uses Not Permitted Uses Permitted	338.24 338.12 338.10
Service-Entrance Conductors Cable Trays High-Leg Identification Number of Service-Entrance Conductor Sets Overhead Service Locations Protection Against Physical Damage Service Cable Supports Size and Rating Spliced Conductors Wiring Methods	230.44 230.56 230.40 230.54 230.50 230.51 230.42 230.46 230.43
Spas and Hot Tubs Emergency Switch for Spas and Hot Tubs General GFCI Protection Indoor Installations Outdoor Installations	680.41 680.40 680.44 680.43 680.42
Storable Swimming Pools General GFCI-Protected Receptacles Pumps Receptacle Locations	680.30 680.32 680.31 680.34
Surface Metal Raceways Equipment Grounding Conductor Listing Requirements Number of Conductors Securing and Supporting Separate Compartments Size of Conductors Splices and Taps Uses Not Permitted Uses Permitted	386.60 386.6 386.22 386.30 386.70 386.21 386.56 386.12 386.10

Rigid Metal Conduit

J	
Bends	344.24
Bushings	344.46
Couplings and Connectors	344.42
Dissimilar Metals	344.14
Listing Requirements	344.6
Number of Bends (360°)	344.26
Number of Conductors	344.22
Reaming	344.28
Securing and Supporting	344.30
Trade Size	344.20
Uses Permitted	344.10

Section

S

Service

Disconnect

Equipment Connected to the Supply Side of						
the Service Disconnect	230.82					
Grouping of Disconnects	230.72					
Manual or Power Operated	230.76					
Number of Disconnects	230.71					
Rating of Disconnect						
General						
Conductors Considered Outside a Building	230.6					
Not to Pass Through a Building or Structure	230.3					
Number of Services	230.2					
Raceway Seals	230.8					
Service Conductors Separate from Other Conductors	230.7					
Vegetation as Support	230.10					

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	Motors and Trans	ansformers				

Description

Surge Protective Devices

285.5
285.11
285.4
285.12
285.6
285.23
285.24
285.25
285.3

Switches

Accessibility and Grouping	404.8
Circuit Breakers Used as Switches	404.11
Damp or Wet Locations	404.4
Grounding of Enclosures	404.12
Indicating	404.7
Mounting Snap Switches	404.10
Position of Knife Switches	404.6
Rating and Use of Snap Switches	404.14
Switch Connections	404.2
Switch Enclosures	404.3
Switch Faceplates	404.9
Switch Marking	404.15

T

Temporary Installations

All Installations	590.2
General	590.4
Ground-Fault Protection for Personnel	590.6
Listing of Decorative Lighting	590.5
Scope	590.1
Time Constraints	590.3
Track Lighting	
Fastening	410.154
Installation	410.151
Transformers	
Accessibility	450.13
Marking	450.11
Overcurrent Protection	450.3
Ventilation	450.9

Description

Section

Section

U

Underground Feeder and Branch-Circuit Cable

Ampacity	340.80
Bends	340.24
Insulation	340.112
Listing Requirements	340.6
Uses Not Permitted	340.12
Uses Permitted	340.10

W

Wiring Methods

Boxes or Conduit Bodies	300.15
Conductors	300.3
Ducts, Plenums, and Other Air-Handling Spaces	300.22
Electrical Continuity	300.10
Induced Currents in Ferrous Metal Enclosures	
and Raceways	300.20
Inserting Conductors in Raceways	300.18
Length of Free Conductors	300.14
Mechanical Continuity	300.12
Not Permitted in Raceways	300.8
Panels Designed to Allow Access	300.23
Protection Against Corrosion and Deterioration	300.6
Protection Against Physical Damage	300.4
Raceway Sizing	300.17
Raceways Exposed to Different Temperatures	300.7
Raceways in Wet Locations Above Grade	300.9
Securing and Supporting	300.11
Splices and Pigtails	300.13
Spread of Fire or Products of Combustion	300.21
Supporting Conductors in Vertical Raceways	300.19
Underground Installations	300.5

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