2023

NATIONAL ELECTRICAL CODE®
STYLE MANUAL

Preparation and Date of Adoption

This manual was originally prepared by the Editorial Task Group of the National Electrical Code Committee and adopted by the National Electrical Code Correlating Committee on May 13, 1969. It was amended September 22, 1975, October 11, 1984, October 12, 1989, and May 9, 1994.

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CHAPTER 1 GENERAL

1.1 Purpose. The *National Electrical Code (NEC) Style Manual* is prepared under the guidance of the NEC Correlating Committee and is used to advise members of the National Electrical Code Committee and the Technical Committee on Electrical Safety in the Workplace on the required editorial style and arrangement of their respective documents. It shall be used by the technical committees to make the documents as clear, usable, and unambiguous as possible.

1.2 Scope. This manual provides editorial and administrative requirements for writing *NFPA 70®, National Electrical Code®,* and NFPA *70E®, Standard for Electrical Safety in the Workplace®.* Except as otherwise specified in this manual, the *National Electrical Code* and the *Standard for Electrical Safety in the Workplace* shall comply with the *Manual of Style for NFPA Technical Committee Documents*. For the purposes of this manual, use of the term *document* or *documents* includes *NFPA 70, National Electrical Code,* and NFPA *70E, Standard for Electrical Safety in the Workplace,* unless specifically stated otherwise. Additionally, unless specifically stated otherwise, use of the term *technical committee (TC)* includes the NEC code-making panels and the NFPA *70E* technical committee.

1.2.1 Editorial Guidelines. For editorial, stylistic matters, formatting of tables, and capitalization practices not included in the *NEC Style Manual*, see the *Manual of Style for NFPA Technical Committee Documents.*

1.2.2 Format. These documents are formatted differently from other NFPA standards. Examples of these differences include, but are not limited to, arrangement of the document, its internal numbering system, and use of informational notes. The National Electrical Code Correlating Committee staff liaison shall be responsible for recommending to the correlating committee resolutions of any apparent conflicts or discrepancies between the *Manual of Style for NFPA Technical Committee Documents* and this manual.

1.3 Uniform Application of Documents. To encourage uniform application without alterations, it is important that the documents contain clearly stated mandatory requirements in the text.

1.4 Examples. The examples shown throughout this manual are intended to be representative of the style and arrangement of the text. The actual text used in the examples may or may not match the current document text.

CHAPTER 2 DOCUMENT STRUCTURE AND NUMBERING

2.1 Arrangement. Documents shall be organized as specified in 2.1.1 through 2.1.12.

2.1.1 Introduction. The Introduction shall contain the scope, purpose, and administrative provisions.

2.1.2 Definitions.

2.1.2.1 Defined Terms. Terms defined in these documents shall have a meaning that is unique to their application and are not intended to include commonly defined general terms or commonly defined technical terms from related codes and standards.

2.1.2.1.1 Terms Defined in the *Regulations Governing the Development of NFPA Standards*. Terms defined in the NFPA Regulations are for consistent use in NFPA standards and are under the purview of the NFPA Standards Council. These terms shall not be subject to revision through the codes and standards process.
(See NFPA Regulations, 3.3.6.1.)

2.1.2.2 Location. Definitions of terms used in the document shall only be located in Article 100. The article shall not be subdivided.

2.1.2.3 Numbering. Definitions shall not be numbered.

2.1.2.4 Lists. Numbered lists shall be permitted in definitions.

2.1.2.5 Style. Definitions shall be in alphabetical order and shall not contain the term that is being defined. Definitions shall not contain requirements or recommendations.

2.1.2.6 Definition Title Structure. Definitions that have subparts shall be listed alphabetically by the base term, with a comma and then the modifying descriptor.

Example:
Circuit Breaker, Adjustable. (Adjustable Circuit Breaker)
Circuit Breaker, Inverse Time. (Inverse Time Circuit Breaker)

2.1.2.6.1 Electronic Searching. To assist in electronic searching, the defined term shall then appear in parentheses as it would be found in the document.

Example:
Service Conductors, Overhead. (Overhead Service Conductors)
The overhead conductors between the service point and the first point of connection to the service-entrance conductors at the building or other structure. (CMP-10)

2.1.2.6.2 Article Number. For definitions that apply in only one article, the article number in parentheses shall follow the definition.

Example:
Sign Body.
A portion of a sign that may provide protection from the weather but is not an electrical enclosure. (600) (CMP-18)

2.1.2.6.3 Code-Making Panel Number. For the *National Electrical Code*, the code-making panel responsible for the definition shall be identified in parentheses at the end of the definition following any extract or article information.

Example:
Patient Bed Location.
The location of a patient sleeping bed, or the bed or procedure table of a Category 1 space. [**99:**3.3.138] (CMP-15)

2.1.2.7 Terms with Multiple Definitions. If two or more definitions exist for a term in Article 100, a task group shall be formed to work on the development of a single definition. If this cannot be accomplished, another term shall be selected or the term shall be identified in the context of the specific application.

Example:
Accessible (as applied to equipment).
Capable of being reached for operation, renewal, and inspection. (CMP-1)
Accessible (as applied to wiring methods).
Capable of being removed or exposed without damaging the building structure or finish or not permanently closed in by the structure or finish of the building. (CMP-1)

2.1.2.8 Synonyms, Similar Terms, or Alternate Terms. If the defined term has synonyms, similar terms, or alternate terms associated with the main term that all are to be understood as having the same definition, the base term being defined shall be followed by the alternate term in parentheses.

Example:
Attachment Plug (Plug Cap) (Plug).
A device that, by insertion in a receptacle, establishes a connection between the conductors of the attached flexible cord and the conductors connected permanently to the receptacle. (CMP-18)

Example:
Attachment Fitting, Weight-Supporting (WSAF) (Weight-Supporting Attachment Fitting).
A device that, by insertion into a weight-supporting ceiling receptacle, establishes a connection between the conductors of the attached utilization equipment and the branch-circuit conductors connected to the weight-supporting ceiling receptacle. (CMP-18)

2.1.2.9 Acronyms and Abbreviated Terms. If a defined term has an acronym or abbreviated term it shall be included in the definitions article and shall follow the defined term. Use of only the acronym or abbreviation for terms contained in the definitions article shall be permitted in subsequent uses throughout the document. Acronyms for defined terms shall be unique to their use within the *National Electrical Code* or NFPA *70E* and not used with any other term.

Example:
Article 100
Ground-Fault Circuit Interrupter (GFCI).
A device intended for the protection of personnel that functions to de-energize a circuit or portion thereof within an established period of time when a ground-fault current exceeds the values established for a Class A device. (CMP-2)

Example:
Article 210
210.8 GFCI Protection for Personnel.
GFCI protection for personnel shall be provided as required in 210.8(A) through 210.8(F). The GFCI shall be installed in a readily accessible location.

2.1.2.10 Definitions in Informative Annexes. Definitions contained in informative annexes shall be used only in the context of that annex.

2.1.3 Chapters.

2.1.3.1 Chapters. Chapters shall be the major subdivisions of the document that cover broad areas and are divided into articles.

2.1.3.2 Title. Chapters shall have a title that is descriptive and concise.

2.1.3.3 *National Electrical Code (NFPA 70)*. Chapters in *NFPA 70, National Electrical Code*, shall be organized as follows:
Chapter 1 General
Article 100 — Definitions
Article 110 — General Requirements for Electrical Installations
Chapter 2 Wiring and Protection Articles 200–299
Chapter 3 Wiring Methods and Materials Articles 300–399
Chapter 4 Equipment for General Use Articles 400–499
Chapter 5 Special Occupancies Articles 500–599
Chapter 6 Special Equipment Articles 600–699
Chapter 7 Special Conditions Articles 700–799
Chapter 8 Communications Systems Articles 800–899
Chapter 9 Tables

2.1.3.4 *Standard on Electrical Safety in the Workplace* (NFPA *70E*). Chapters in NFPA *70E, Standard for Electrical Safety in the Workplace*, shall be organized as follows:
Chapter 1 Safety-Related Work Practices
Article 100 — Definitions
Articles 105–199
Chapter 2 Safety-Related Maintenance Requirements Articles 200–299
Chapter 3 Safety Requirements for Special Equipment Articles 300–399

2.1.4 Articles.

2.1.4.1 Usage. Articles shall be the chapter subdivisions that cover a specific subject.

2.1.4.2 Title. Articles shall have a title that is descriptive and concise.

2.1.4.3 Divisions. Articles shall be the divided into sections and can include parts.

2.1.4.4 Scope. Each article shall have a scope, which shall be the first section of the article. Where an article has multiple parts, the scope shall be the first section in Part I. The approval of article scope statements shall be the responsibility of the National Electrical Code Correlating Committee.

Example:
Article 230 Service
Part I. General
230.1 Scope.

2.1.5 Parts.

2.1.5.1 Usage. Parts shall be the divisions of an article for logically grouping requirements.

2.1.5.2 Title. Parts shall have titles and shall be descriptive and concise.

2.1.5.3 Divisions. To logically group requirements, the article shall be permitted to be subdivided into parts. If an article contains parts, the general requirements shall be the first part titled "Part I. General".

2.1.5.4 Numbering. Parts shall be designated by Roman numerals and numbered sequentially.

Example:
Part I. General
Part II. Installation
Part III. Construction Specifications

2.1.6 Sections.

2.1.6.1 Usage. Sections shall be the subdivisions of an article that cover a specific rule.

2.1.6.2 Title. Section titles shall be descriptive and concise.

2.1.6.3 Subdivisions. Sections shall be permitted to be subdivided for clarity, with each subdivision representing either a rule or a part of a rule.

2.1.6.3.1 Subdivision Levels. Three levels of subdivisions shall be permitted, and any level shall be permitted to contain a list.

2.1.6.3.2 Subdivision Titles. First and second level subdivisions shall have titles. Third level subdivisions shall be permitted to have titles. If titles are provided for third level subdivisions in a section, each third level subdivision shall have a title.

2.1.6.3.3 References to Subdivisions. References to subdivisions within a requirement shall include the section number prior to the subdivision.

2.1.6.3.4 Subdivision Example. The following illustrates typical subdivision numbering with lists.

Example:

Chapter	**Wiring and Protection**
Article	**210 Branch Circuits**
Part	**Part I. General**
Section	**210.5 Identification for Branch Circuits.**
First level subdivision	**(A) Grounded Conductor.** The grounded conductor of a branch circuit shall be identified in accordance with 200.6.
First level subdivision	**(B) Equipment Grounding Conductor.** The equipment grounding conductor shall be identified in accordance with 250.119.
First level subdivision	**(C) Identification of Ungrounded Conductors.** Ungrounded conductors shall be identified in accordance with 210.5(C)(1) or 210.5(C)(2), as applicable.
Second level subdivision	**(1) Branch Circuits Supplied from More Than One Nominal Voltage System.** Where the premises wiring system has branch circuits supplied from more than one nominal voltage system, each ungrounded conductor of a branch circuit shall be identified by phase or line and system at all termination, connection, and splice points in compliance with 210.5(C)(1)(a) and 210.5(C)(1)(b).
Third level subdivision	(a) *Means of Identification.* The means of identification shall be permitted to be by separate color coding, marking tape, tagging, or other approved means.
Third level subdivision	(b) *Posting of Identification Means.* The method utilized for conductors originating within each branch-circuit panelboard or similar branch-circuit distribution equipment shall be documented in a manner that is readily available or shall be permanently posted at each branch-circuit panelboard or similar branch-circuit distribution equipment.
Second level subdivision	**(2) Branch Circuits Supplied from Direct-Current Systems.** Where a branch circuit is supplied from a dc system operating at more than 50 volts, each ungrounded conductor of 4 AWG or larger shall be identified by polarity at all termination, connection, and splice points by marking tape, tagging, or other approved means; each ungrounded conductor of 6 AWG or smaller shall be identified by polarity at all termination, connection, and splice points in compliance with 210.5(C)(2)(a) and 210.5(C)(2)(b). The identification methods utilized for conductors originating within each branch circuit panelboard or similar branch-circuit distribution equipment shall be documented in a manner that is readily available or shall be permanently posted at each branch circuit panelboard or similar branch-circuit distribution equipment.
Third level subdivision	(a) *Positive Polarity, Sizes 6 AWG or Smaller*. Where the positive polarity of a dc system does not serve as the connection point for the grounded conductor, each positive ungrounded conductor shall be identified by one of the following means:
List item	(1) A continuous red outer finish
List item	(2) A continuous red stripe durably marked along the conductor's entire length on insulation of a color other than green, white, gray, or black
List item	(3) Imprinted plus signs (+) or the word POSITIVE or POS durably marked on insulation of a color other than green, white, gray, or black, and repeated at intervals not exceeding 610 mm (24 in.) in accordance with 310.120(B)
Third level subdivision	(b) *Negative Polarity, Sizes 6 AWG or Smaller*. Where the negative polarity of a dc system does not serve as the connection point for the grounded conductor, each negative ungrounded conductor shall be identified by one of the following means:
List item	(1) A continuous black outer finish
List item	(2) A continuous black stripe durably marked along the conductor's entire length on insulation of a color other than green, white, gray, or red

2.1.7 Tables and Figures.

2.1.7.1 Usage. Tables shall be permitted to provide code rules arranged in a tabular format. Figures shall be permitted to illustrate requirements.
(See 3.5, Writing Style.)

2.1.7.2 Mandatory. Tables and figures, including any accompanying notes, shall be mandatory requirements, unless specifically noted in 2.1.7.3. Tables and figures shall be referenced in the text and shall be designated by the section number in which they are referenced. Each table shall have a title and each figure shall have a caption. Titles and captions shall be as brief as possible, consistent, and clear.

Example:
220.42 General Lighting.
The demand factors specified in Table 220.42 shall apply to that portion of the total branch circuit load calculated for general illumination. They shall not be applied in determining the number of branch circuits for general illumination.

Table 220.42 Lighting Load Demand Factors

2.1.7.3 Nonmandatory. If a technical committee wishes to use a table or figure to illustrate only a typical situation, not a mandatory requirement, that table or figure shall be identified as an informational note or be placed in an annex. Each table shall have a title and each figure shall have a caption.

2.1.8 Lists.

2.1.8.1 Usage. Lists shall be permitted to provide additional clarity to a requirement.
(See 3.5, Writing Style.)

2.1.8.2 Format. List items shall be single words, phrases, or sentences. Items in a list shall not contain titles. All items in a list shall have parallel construction.
(See 3.5.5, Parallel Construction.)

2.1.8.3 Numbering. The first list in any subdivision level or exception shall be numbered. Multilevel list items shall be arranged alternately in numerical and alphabetical order.

Example:
Incorrect:
220.53 Appliance Load — Dwelling Unit(s).
It shall be permissible to apply a demand factor of 75 percent to the nameplate rating load of four or more appliances fastened in place, other than electric ranges, clothes dryers, space-heating equipment, or air-conditioning equipment, that are served by the same feeder or service in a one-family, two-family, or multifamily dwelling.
Correct:
220.53 Appliance Load — Dwelling Unit(s).
It shall be permissible to apply a demand factor of 75 percent to the nameplate rating load of four or more appliances rated ¼ hp or greater, or 500 watts or greater, that are fastened in place, and that are served by the same feeder or service in a one-family, two-family, or multifamily dwelling. This demand factor shall not apply to the following:
(1) Household electric cooking equipment that is fastened in place
(2) Clothes dryers

(3) Space heating equipment
(4) Air-conditioning equipment
(5) Electric vehicle supply equipment (EVSE)

2.1.9 Exceptions.

2.1.9.1 Usage. Exceptions shall convey alternatives or differences to a basic requirement. Exceptions to requirements shall be used sparingly. The technical committee shall determine when a code requirement is most effective as positive code language or as an exception.

2.1.9.1.1 Adding Exceptions. If a new exception(s) is proposed to a requirement that already has an exception(s), the technical committee should consider a revision of the basic rule or a rearrangement of the section without the use of exceptions to express the requirement more clearly.

2.1.9.2 Format. Exceptions shall be written in complete sentences. Exceptions shall be permitted to use the terms *shall, shall not,* or *shall be permitted* depending on whether they specify a mandatory requirement that is one of the following:
(1) Different from the requirement
(2) Opposite to the requirement
(3) Permits, but does not require, a variance from the main requirement

2.1.9.3 Structure. The placement and order of exceptions shall immediately follow the main rule or subdivision to which they apply. If exceptions are made to items such as within a numbered list or specific subdivision, the exception shall clearly indicate the items to which the exception applies. Exceptions containing the mandatory terms *shall* or *shall not,* shall be listed first in the sequence. Permissive exceptions containing *shall be permitted* shall follow any mandatory exceptions.

Example:
210.11(C)(3) Bathroom Branch Circuits.
In addition to the number of branch circuits required by other parts of this section, one or more 120-volt, 20-ampere branch circuit shall be provided to supply bathroom(s) receptacle outlet(s) required by 210.52(D) and any countertop and similar work surface receptacle outlets. Such circuits shall have no other outlets.

Exception: Where the 20-ampere circuit supplies a single bathroom, outlets for other equipment within the same bathroom shall be permitted to be supplied in accordance with 210.23(B)(1) and 210.23(B)(2).

Example:
210.12(B) Dwelling Units.
All 120-volt, single-phase, 10-, 15-, and 20-ampere branch circuits supplying outlets or devices installed in the following locations shall be protected by any of the means described in 210.12(A)(1) through 210.12(A)(6):
(1) Kitchens
(2) Family rooms
- - - -
(12) Hallways
(13) Laundry areas
(14) Similar areas
Exception No. 1: AFCI protection shall not be required for an individual branch circuit supplying a fire alarm system installed in accordance with 760.41(B) or 760.121(B). The branch circuit shall be installed in a metal raceway, metal auxiliary gutter, steel-armored cable, or Type MC or Type AC cable meeting the applicable requirements of 250.118,

with metal boxes, conduit bodies, and enclosures.

Exception No. 2: AFCI protection shall not be required for the individual branch circuit supplying an outlet for arc welding equipment in a dwelling unit until January 1, 2025.

2.1.9.4 Numbering. If there are two or more consecutive exceptions, each shall be numbered.

2.1.10 Informational Notes.

2.1.10.1 Usage. Informational notes shall contain explanatory information to support or improve usability of the associated requirement and shall be located directly after the requirement to which they apply. If an informational note is needed to explain the text of the document, consideration shall be given to rewriting the text of the document to make the rule clear.

2.1.10.2 Language. Informational notes shall not be written in mandatory language and shall not contain requirements, make interpretations, or make recommendations.

2.1.10.3 Format. Informational notes shall be structured as shown in the example, using the word "See" followed by the reference standard, the title of the standard and section if used, and an explanation for the reference.

Example:
"See" "Referenced Standard", "Standard Title", "Section Number", "Explanation of the reference"
Informational Note: See NFPA *101*, *Life Safety Code*, 7.8, for illumination of means of egress.

Example:
Informational Note: See ANSI/IEEE C2, *National Electrical Safety Code*, Section 127A, Coal Handling Areas. Certain dusts might require additional precautions due to chemical phenomena that can result in the generation of ignitable gases.

2.1.10.3.1 References. Informational notes that reference a requirement or another standard shall be permitted.
(See 4.2, References to Other NFPA Standards.)

2.1.10.4 Numbering. If there are two or more informational notes in a definition, section, or subdivision, consecutive numbering of the informational notes shall only occur in that definition, section, or subdivision.

Example:
430.31 General.
Part III specifies overload devices intended to protect motors, motor-control apparatus, and motor branch-circuit conductors against excessive heating due to motor overloads and failure to start.
Informational Note No. 1: See Informative Annex D, Example D8.
Informational Note No. 2: See Article 100 for the definition of *Overload*.
(A) Where Hazard Exists.
These provisions shall not require overload protection where a power loss would cause a hazard, such as in the case of fire pumps.
Informational Note: See 695.7 for protection of fire pump supply conductors.
(B) Not Over 1000 Volts.

Part III shall not apply to motor circuits rated over 1000 volts, nominal.
Informational Note: See Part XI for over 1000 volts, nominal.

2.1.10.5 Listing Requirements. General standard references for listing or certification shall only be included in Annex A. Requirements specifying product listing or certification and requirements specifying the use of listed or certified products to achieve compliance shall not contain informational notes for the sole purpose of identifying applicable product standards.
(See 4.2.1, Listing Requirements.)

2.1.11 Informative Annexes.

2.1.11.1 Usage. Annexes shall contain nonmandatory material, such as references, examples, calculations, and tables. Annexes do not form part of the requirements of the document, and a statement to that effect shall appear at the beginning of each annex. Annexes shall have titles and shall be designated by capital letters.

Example:
Informative Annex C
Conduit, Tubing, and Cable Tray Fill for Conductors and Fixture Wires of the Same Size
This informative annex is not a part of the requirements of this NFPA document but is included for informational purposes only.

2.1.11.2 Cross-References Between Different Editions. Annexes that are used to cross- reference material from one edition of the document to another edition shall remain as an annex for a minimum of two document cycles. NFPA staff shall have the responsibility of updating any cross-reference annex.

2.1.12 Extracted Material.

2.1.12.1 Usage. Extracted material is content under the purview of another NFPA technical committee that has relevance to requirements within these documents.

2.1.12.2 Extracted Material from an NFPA Document. Extracting provides a means to incorporate a mandatory requirement from another NFPA standard. Extracted text may differ between documents due to different revision cycles.

2.1.12.3 Extract Requirements. Extract material shall be in accordance with the *NFPA Extract Policy* and the requirements in 2.1.12.3.1 through 2.1.12.3.3.
The *NFPA Extract Policy* is available at www.nfpa.org.

2.1.12.3.1 Reason. There shall be a specific technical reason for the extract.

2.1.12.3.2 Context. A section or paragraph being extracted from another document shall represent a complete thought and shall be entirely extracted. The context of the original material shall not be compromised or violated. Any editing of the extracted text shall be confined to making the style consistent with that of the *NEC Style Manual* and then only with the concurrence of the committee

having primary jurisdiction. Such concurrence shall be obtained through the staff liaison for the source document.

2.1.12.3.3 Identification. If used, the number, title, and edition of the NFPA document from which extracted material is taken shall appear as the first informational note following the scope section. The document number and paragraph from which the extracted material is taken shall appear in brackets at the end of the section in which the extracted material is used.

Example:
Article 514 Motor Fuel Dispensing Facilities
514.1 Scope.
This article shall apply to motor fuel dispensing facilities, marine/motor fuel dispensing facilities, motor fuel dispensing facilities located inside buildings, and fleet vehicle motor fuel dispensing facilities.
Informational Note No. 1: Text that is followed by a reference in brackets has been extracted from NFPA 30A-2018, *Code for Motor Fuel Dispensing Facilities and Repair Garages*. Only editorial changes were made to the extracted text to make it consistent with this *Code*.
514.11(B) Attended Self-Service Motor Fuel Dispensing Facilities.
At attended motor fuel dispensing facilities, the devices or disconnects shall be readily accessible to the attendant. [**30A:**6.7.1]

2.2 Numbering Conventions. The following requirements are intended to improve document usability by preventing the continual renumbering of articles and sections from one edition to the next.

2.2.1 Parallel Numbering Required. Technical committees shall use the following section numbers for the same purposes within articles. This requirement shall not apply to Articles 90, 100, and 110. If the article does not contain listing or reconditioning requirements, the subdivisions shall not be included in the article.

Required Parallel Numbering Format
XXX.1 Scope.
XXX.2 Listing Requirements.
XXX.3 Reconditioned Equipment.
XXX.3(A) Permitted to be Installed.
XXX.3(B) Not Permitted to be Installed.

2.2.1.1 Parallel Numbering Within Similar Articles. To the extent possible, technical committees shall use the same section numbers (and part numbers, where applicable) for the same purposes within articles covering similar subjects.

Example:
Articles with similar requirements might be organized as follows:
Part I. General
XXX.1 Scope.
XXX.2 Listing Requirements.
XXX.3 Reconditioned Equipment.
XXX.3(A) Permitted to be Installed.
XXX.3(B) Not Permitted to be Installed.
Part II. Installation

XXX.10 Uses Permitted.
XXX.12 Uses Not Permitted.
Part III. Construction Specifications
XXX.104 Conductors.
XXX.112 Insulation.

Example:
A typical family of articles might be organized as follows:
Article 330 Metal-Clad Cable: Type MC
Part I. General
330.1 Scope.
330.2 Listing Requirements.
Part II. Installation
330.10 Uses Permitted.
330.12 Uses Not Permitted.
Part III. Construction Specifications
330.104 Conductors.
330.112 Insulation.

2.2.2 Nonconsecutive Numbering. Articles and sections in the documents are, in general, numbered consecutively. However, gaps or unused numbers can be left for future articles and sections. Assigning numbers to articles shall be the responsibility of the National Electrical Code Correlating Committee, advised by NFPA staff. Assigning numbers to sections within articles is the responsibility of technical committees, advised by NFPA staff.

Example:
Article 422 Appliances
Part I. General 422.1–422.6
Part II. Installation 422.10–422.23
Part III. Disconnecting Means 422.30–422.35
Part IV. Construction Specifications 422.40–422.48

2.3 Service and Feeder Demand Calculations.

2.3.1 Load Calculation. Requirements that provide specific methods and demand factors for service and feeder calculations shall be in the load calculation article. Requirements that describe a load characteristic shall not be required to be in the calculation article.

Example:
517.22 Demand Factors.
Demand factors for receptacle loads supplied by branch circuits not exceeding 150 volts to ground and installed in Category 1, Category 2, Category 3, and Category 4 patient care spaces shall be in accordance with 220.110.

Example of requirement that is not required to be in the calculation article:
625.42 Rating.
The EVSE shall have sufficient rating to supply the load served. Electric vehicle charging loads shall be considered to be continuous loads for the purposes of this article. Service and feeder shall be sized in accordance with the product ratings, unless the overall rating of the installation can be limited through controls as permitted by 625.42(A) or 625.42(B).

CHAPTER 3 EDITORIAL GUIDELINES

3.1 Mandatory Rules, Permissive Rules.

3.1.1 Mandatory Rules. *Shall, shall not,* and *shall not be,* shall indicate mandatory rules. Terms such as *is to be, shall be not,* and *must*, whose meanings are less clear, shall not be used. The terms *may* or *can* shall not be used in mandatory rules.

3.1.2 Permissive Rules. *Shall be permitted* and *shall be permissible* indicate allowed optional or alternate methods. (Note that these are still mandatory language and constitute rules.) The term *may* shall only be used where it recognizes a discretionary judgment on the part of an authority having jurisdiction or in an informational note.

Example:
The authority having jurisdiction may waive specific requirements in the *Code* or permit alternate methods.

3.2 Word Choices.

3.2.1 Unenforceable Terms. The documents shall not contain references or requirements that are unenforceable or vague. The terms contained in Table 3.2.1 shall be reviewed in context, and if the resulting requirement is unenforceable or vague, the term shall not be used.

Example of unenforceable or vague terms:
Correct: Conduit shall be supported at intervals not exceeding 3 m (10 ft).
Incorrect: Conduit shall be adequately supported at periodic intervals.

Table 3.2.1 Possibly Unenforceable and Vague Terms

Acceptable	Adequate	Adjacent
Appreciable	Appropriate	Approximate(ly)
Available	Avoid(ed)	Can
Care	Consider(ed)(ation)	Could
Designed for the purpose	Desirable	Easy(ily)
Equivalent(ly)	Familiar	Feasible
Few	Frequent(ly)	Firmly
Generally	Good	Lightly
Likely	Legible(y)	Many
May	Maybe	Metallic(ally)
Might	Most(ly)	Near(ly)
Neat(ly)	Normal(ly)	Note
Periodic(ally)	Practical(ly)	Practices
Prefer(red)	Proper(ly)	Ready(ily)
Reasonable(y)	Safe(ly)(ty)	Satisfactory
Secure(ly)	Several	Significant
Similar	Substantial(ly)	Sufficient(ly)
Suitable	Usual(ly)	Workmanlike

3.2.2 Expressing Maximum and Minimum Limits. Maximum and minimum limits shall be expressed with the types of wording shown in the following examples:

Examples:
Shall not exceed 300 volts to ground . . .
Shall have a clearance of not less than 5 cm (2 in.). . .
Shall be supported at intervals not exceeding 1.5 m (5 ft). . .

3.2.3 Acronyms and Uncommon Abbreviations. All acronyms and any abbreviations that are not in common use and not in Article 100 shall be spelled out with the abbreviation following in parentheses for the first use of the term in the body of each article. Each subsequent use of the term in the article shall be permitted to be the acronym or abbreviation only. Acronyms for defined terms shall be unique and not used with any other term.
(See 2.1.2.9, Acronyms and Abbreviated Terms.)

3.2.4 Standard Terms. Standard terms have been established through accepted use or by definition and shall be used in preference to similar terms that do not have such recognition. Annex A provides guidance for syntax, spelling, punctuation, and usage of many standard technical terms.

3.2.5 Consistent Application of Terms.

3.2.5.1 Ampacity. The defined term *ampacity* applies to the current-carrying capacity of conductors only. Therefore, this term shall be used for the ampere rating of conductors. Switches, motors, and

similar equipment do not have ampacities. They have ratings such as current ratings, voltage ratings, and horsepower ratings. Such equipment shall not be referred to as having an ampacity value.

3.2.5.2 Authority Having Jurisdiction (AHJ). This term shall be used to indicate any kind of inspection authority, enforcement authority, or the like. The use of this term will result in standardization and is consistent with other NFPA standards. This term is defined in *NFPA Regulations Governing the Development of NFPA Standards,* 3.3.6.1.

3.2.5.3 Lockable Open. Where a requirement specifies that a disconnecting means be capable of being locked in the open position, the phrase *lockable open in accordance with 110.25* shall be used.

3.2.5.4 Nationally Recognized Testing Laboratory. Use of the terms *Nationally Recognized Testing Laboratory* or *NRTL* shall be avoided. The definition of *listed* in Article 100 provides the details necessary for application in the document. The Nationally Recognized Testing Laboratory program, also known as NRTL, is an OSHA program for the accreditation of laboratories that test products for the workplace and is not to be applied generally in the document. The preferred term to use is *Qualified Electrical Testing Laboratory.*

3.2.5.5 Requirements for Guarding. Requirements for guarding shall be stated in as complete a manner as possible and in as nearly standardized form as can be reasonably achieved. For example, the two terms *protected against contact with live parts* and *protected against accidental contact with live parts* do not mean the same thing. It may be necessary for qualified persons to have access to live parts, or it may be desirable to provide varying degrees of protection, depending on the location. Among other things, this distinction could affect the type of ventilation louvers or drains that would be acceptable for some types of equipment. The intent of the type and degree of protection should be clear.

3.2.5.6 Requirements for Protection Against Physical Damage. If *protection against physical damage* is a requirement, it shall be standardized by the use of this term instead of using the phrase *provided with mechanical protection*. An acceptable method of providing protection can be stated as an example without restricting the rule to a specific method.

3.2.5.7 Voltage. The term *voltage* is well understood and shall be used in preference to other terms such as *potential*. Because voltage is expressed in volts, a requirement shall be written to avoid repetition of this term if it is possible to do so without losing clarity.

Example:
Correct: A circuit supplying the primary of an isolating transformer shall not exceed 300 volts between conductors.
Incorrect: The voltage of a circuit supplying the primary of an isolating transformer shall not exceed 300 volts between conductors.

3.3 Formulas and Equations.

3.3.1 Usage. Formulas and equations shall be expressed in standard mathematical symbols.

3.4 Units of Measurement.

3.4.1 Measurement System of Preference. Metric units of measurement shall be in accordance with the modernized metric system known as the International System of Units (SI).

3.4.2 Dual System of Units. The SI units shall appear first, and the inch-pound units shall immediately follow in parenthesis. In tables the SI and inch-pound units shall appear in separate columns.

3.4.3 Trade Sizes. Where the actual measured size of a product is not the same as the nominal size, trade size designators shall be used rather than dimensions. Trade practices shall be followed in all cases.

3.4.4 Industry Practice. Where industry practice is to express units in inch-pound units, the inclusion of SI units shall not be required.

3.4.5 Safety. Where hard conversion to SI would have a negative impact on safety, the soft conversion shall be used.

3.4.6 Approximate Conversion. The conversion from inch-pound units to SI units shall be permitted to be an approximate conversion.

3.4.7 Standard Conversions. See Annex B for information on standard conversions.

3.4.8 Units. For dimensions less than 1 m, the SI unit shall be expressed as mm. For dimensions from 1 m to less than 1 km, the SI units shall be expressed in m. For dimensions of 1 km or greater, the SI units shall be expressed as km.

3.5 Writing Style. These guidelines shall be followed to help produce clear, unambiguous language.

3.5.1 General Guidelines.

3.5.1.1 Sentence Structure. Short, simple declarative sentences shall be used. Writing rules in long sentences full of commas, dependent clauses, and parenthetical expressions creates confusion and misunderstanding and shall be avoided. Requirements shall be written in multiple sentences or expressed using a list or table, or both to provide clarity.

Example:
Correct:
(A) Occupancy Limitation.
In dwelling units and guest rooms or guest suites of hotels, motels, and similar occupancies, the voltage shall not exceed 120 volts, nominal, between conductors that supply the terminals of the following:
(1) Luminaires
(2) Cord-and-plug-connected loads 1440 volt-amperes, nominal, or less than ¼ hp
(B) 120 Volts Between Conductors.
Circuits not exceeding 120 volts, nominal, between conductors shall be permitted to supply the following:
(1) The terminals of lampholders applied within their voltage ratings
(2) Auxiliary equipment of electric-discharge lamps

Incorrect:
(A) Occupancy Limitation.
In dwelling units and guest rooms or guest suites of hotels, motels, and similar occupancies, the voltage shall not exceed 120 volts, nominal, between conductors that supply the terminals of luminaires and cord-and-plug-connected loads 1440 volt-amperes, nominal, or less than ¼ hp.
(B) 120 Volts Between Conductors.
Circuits not exceeding 120 volts, nominal, between conductors shall be permitted to supply the terminals of lampholders applied within their voltage ratings and auxiliary equipment of electrical-discharge lamps.

3.5.1.2 Multiple Requirements. Multiple requirements within a single subdivision shall be avoided. Additional subdivisions or lists shall be used to express independent requirements.

3.5.1.3 Tense. Requirements shall be written in present tense.

Example:
Correct: No conductor shall be used in such a manner that its operating temperature exceeds that designated for the type of insulated conductor involved.
Incorrect: No conductor shall be used in such a manner that its operating temperature will exceed that designated for the type of insulated conductor involved.

3.5.1.4 Word Choice. Common words shall be used, and overly complex terminology shall be avoided. (See 3.5.4, Word Clarity).

3.5.1.5 Positive Text. Positive language shall be used wherever possible.

Example:
Correct: Boxes used in wet locations shall be listed for wet locations.
Incorrect: Ordinary electrical boxes shall not be used in wet locations.

3.5.2 Lists and Tables. If possible, lists or tables to present requirements shall be used, rather than long text descriptions.
(See 2.1.7, Tables and Figures, and 2.1.8, Lists.)

3.5.3 Plural. Unless referring to a single item of equipment, references to electrical components and parts shall be plural rather than singular. This results in greater consistency and makes it clear that the requirement refers to all components or parts of a given type or class.

Examples:

Correct:	**Incorrect:**
Luminaires	A luminaire
Receptacles	A receptacle
Switches and circuit breakers	A switch or circuit breaker
Outlet boxes and enclosures	An outlet box or enclosure
Installations shall...	An installation shall...

3.5.4 Word Clarity. Words and terms used in the documents shall be specific and clear in meaning, and shall avoid jargon, trade terminology, industry-specific terms, or colloquial language that could be difficult to understand. Language shall be brief, clear, and emphatic. The following are examples of outdated expressions and word uses that shall not be permitted:

Above or below (referring to text) — avoid using to describe the location of text.

Example:
Correct: ...shall be in accordance with 250.21(A)(3)(a), 250.21(A)(3)(b), and 250.21(A)(3)(c).
Incorrect: ...shall be in accordance with (a), (b), and (c) below.

And such, and the like — it is preferable to rearrange the sentence to use *such as* followed by examples.

As allowed — Use *allowed* instead.

Herein — Usually this word can be dropped without affecting clarity. Otherwise say *in this section* or whatever else is actually meant by herein.

If — Use to indicate a condition.

Provided that — Use *if* instead.

Thereof — Rewrite sentence to say *of* or *of them.*

Utilize — Use *use* instead.

When — Use to express time.

Where — Use to convey a location or a situation. Not to be used to express time.

3.5.5 Parallel Construction. Requirements that are the same or similar shall use parallel construction for consistency.

Example:
225.42 Surge Protection.
(A) Surge-Protective Device.
Where a feeder supplies any of the following, a surge-protective device (SPD) shall be installed:
(1) Dwelling units
(2) Dormitory units
(3) Guest rooms and guest suites of hotels and motels
(4) Areas of nursing homes and limited-care facilities used exclusively as patient sleeping rooms

230.67 Surge Protection.
(A) Surge-Protective Device.
All services supplying the following occupancies shall be provided with a surge-protective device (SPD):
(1) Dwelling units
(2) Dormitory units
(3) Guest rooms and guest suites of hotels and motels
(4) Areas of nursing homes and limited-care facilities used exclusively as patient sleeping rooms

3.5.5.1 Organization and Numbering. (See 2.2.1, Parallel Numbering Required.)

3.5.5.2 Lists. All items in a list shall be parallel — that is, singular or plural, written in the same verb tense, using phrases or sentences but not a mix.
(See 2.1.8, Lists.)

CHAPTER 4 REFERENCES

4.1 References to Other Rules Within the Documents.

4.1.1 In the *National Electrical Code (NFPA 70)*. General requirements contained in Chapters 1 through 4 shall not be repeated in other articles of the document. Committees shall always be mindful of the structure of the document as specified in 90.3 when contemplating the inclusion of a reference to another requirement. The use of redundant references shall be avoided. Only references to other requirements within the document shall be included.

4.1.2 In Other Documents. General requirements contained in Chapter 1 shall not be repeated in other articles of the document. Committees shall always be mindful of the structure of the document as specified in 90.3 when contemplating the inclusion of a reference to another requirement. The use of redundant references shall be avoided. Only references to other requirements within the document shall be included.

4.1.3 Reference Structure. If used, references from documents covered by this manual shall include only the section number being referenced. The word *section* shall not be used unless the reference is used at the beginning of a sentence. References shall indicate the subject of the rules being referenced; the subject shall follow the number. Requirements shall be referenced directly by using the phrase *in accordance with* or *shall comply with*. The phrase *in accordance with the provisions of* shall not be used where referencing a requirement.

4.1.4 References to an Entire Article. References shall not be made to an entire article, except for the Article 100 or where referenced to provide the necessary context. References to specific parts within articles shall be permitted. References to all parts of an article shall not be permitted. The article number shall precede the part number.

Example:
If a switch or circuit breaker serves as the disconnecting means, it shall be within sight from the motor controller and shall comply with Article 430, Part IX.

Example:
517.26 Application of Other Articles.
The life safety branch of the essential electrical system shall meet the requirements of Article 700, except as amended as follows:
(1) Section 700.4 shall not apply.
(2) Section 700.10(D) shall not apply.
(3) Section 700.17 shall be replaced with the following: Branch circuits that supply emergency lighting shall be installed to provide service from a source in accordance with 700.12 when normal supply for lighting is interrupted

or where single circuits supply luminaires containing secondary batteries.
(4) Section 700.32 shall not apply.

Example:
Incorrect:
520.50(D) Enclosure.
Panel construction shall be in accordance with Article 408.
Correct:
520.50(D) Enclosure.
Panel construction shall be in accordance with Article 408, Part IV.

Example:
Incorrect:
525.3(A) Portable Wiring and Equipment.
Wherever the requirements of other articles of this *Code* and Article 525 differ, the requirements of Article 525 shall apply to the portable wiring and equipment.
Correct:
525.3(A) Portable Wiring and Equipment.
Wherever the requirements of other articles of this *Code* and this article differ, the requirements of this article shall apply to the portable wiring and equipment.

4.1.5 References to Other Requirements. If a list of references to other requirements is developed it shall be in a table format under the section title Other Requirements.

4.1.6 References to Chapter 9 Tables. If Chapter 9 tables are referenced, the chapter number shall be followed by the table number.

4.1.7 References to Informative Annexes. If annexes are referenced, the annex designation shall be followed by the annex section or part.

Example:
550.18(B)
Informational Note: See Informative Annex D, Example D11, for an illustration of the application of this calculation.

4.2 References to Other NFPA Standards. Except as permitted in 4.2.3 for NFPA *70E*, references to other standards shall not be contained in requirements. References to standards shall be permitted in definitions and informational notes except as specified in 4.2.1.
(See 2.1.10, Informational Notes.)

4.2.1 Listing Requirements. General standard references for listing or certification shall only be included in Annex A. Requirements specifying product listing or certification and requirements specifying the use of listed or certified products to achieve compliance shall not contain informational notes for the sole purpose of identifying applicable product standards.

4.2.2 Informative Annex A. Annex A shall contain two tables.

4.2.2.1 Table A.1(a). Table A.1(a) shall contain the relevant product safety standard(s) for conductors and equipment that have an associated listing (certification) requirement in the document. The annex

entry shall identify the document article, part or section requiring the listed (certified) product and the number and title of the related product safety standard.

4.2.2.1.1 Product Certification Requirements. Where a requirement specifies product certification, there shall be an associated product certification standard reference included in Table A.1(a) of Annex A.

4.2.2.2 Table A.1(b). If conductors and equipment do not have an associated listing (certification) requirement in the document, a technical committee shall be permitted to include the relevant product safety standard(s) as additional information in Table A.1(b) of Annex A. Each informational annex entry shall identify the relevant document article, part or section and the number and title of the related product safety standard.

4.2.3 Mandatory References. Mandatory references to other NFPA standards shall be permitted within the requirements of NFPA *70E*.

ANNEX A STANDARD TERMS

The following list provides guidance for syntax, spelling, punctuation, and usage for many of the standard terms used in the documents. Many words are listed with an abbreviation to indicate usage. For example, adjective = a, noun = n, and verb = v.

A

abovegrade (a)
aboveground (a)
acknowledgment (no *e*)
adapter
adjustable-speed (a)
affect (v) = to influence; effect (n) = result
air conditioner (n)
air-condition (v)
air-conditioning (a)
airflow (a, n)
airspace (a)
airtight (a)
air-handling (a)
alternating current (n) (abbrev. ac)
alternating-current (a) (abbrev. ac)
American Wire Gage (abbrev. AWG)
ampacity
ampere (see units of measurement) (20-ampere-rated receptacle)
and/or (try to avoid)
apparatus (singular and plural)
approved
arc fault (n)
arc-fault (a)
arrester (not *arrestor*)
at least (avoid; use *not less than* to indicate minimum dimension)
autoignition
authority having jurisdiction (abbrev. AHJ)
automatic-reset (a)

B

backfeed
backfill (n, v)
backup (a, n)
back-wiring spaces
belowgrade (a)
belowground (a)
bipolar

braid-covered (a)
branch circuit (n)
branch-circuit (a)
branch-circuit ground-circuit
branch-circuit overcurrent device
buildup (n)
build up (v)
busbar buses
busing

C
cable tray
cablebus
capacitors
ceiling-suspended (paddle) fan
circuit-grounding connection
circuit-interrupting device
circuit-protective device
circular mil (a)
Class I location
Class I, Division 2, location
clean-up (n)
cleanup (v)
closed-circuit (a)
Code (initial cap and italic when referring to the *NEC*)
cold-storage warehouse
combination-load equipment
common-return (a)
communications system, utilities, equipment, and so on (not *communication*)
concrete-encased electrode
conductive-film heating elements
continuous current rating
control boards
control circuit (a)
constant-current systems
copper (Cu)
copper-clad (a)
cord- and plug-connected appliances
corner-grounded delta systems
corrosion-resistant (a)
counter space
counter-mounted (a)
countertop
crawl space

cross-connect arrays
cross members
cross section (n)
cross-sectional (a)
cubic inches (in.) (see units of measurement)
current-carrying (a)
current-limiting (a)
cut off (v)
cutoff (a, n)
cutouts (n)

D
data (singular and plural, use with plural verb)
dead-front switchboards
de-energize
deicing
delta [use symbol (Δ) in equations]
delta-connected (a)
delta corner grounded
derating
Design B motor
dipole (a)
direct buried (n)
direct-buried (a)
direct current (n) (abbrev. dc)
direct-current (a) (abbrev. dc)
disconnecting means (not disconnection means)
dripproof
drywall
dual-element fuses
ducts (as in air-handling ducts, not for use with raceways)
ductwork
dust-ignitionproof (a)
dustproof (a)
dusttight (a)

E
effect (n) = result; affect (v) = to influence
e.g. (avoid using, use instead *for example*)
electric/electrical (use to be determined by staff)
electrical (as applied to requirements, standards, codes)
electric-discharge lighting
energized (electrically connected to a source of voltage
engine-generator set
ensure (not *insure*)

equipment (singular and plural)
equipment grounding conductor
etc. (try to avoid, use *and so on*, *and so forth*, or *such as*)
Exception No. 1 (when referring to specific exception)
Exception Nos. 1 and 2 (more than one exception)
exception (general, lowercase if used alone) explosionproof
extra-hard usage

F

faceplate (n)
face-up position
fault-interrupting device
fault-current forces
fiberglass reinforced
field connection box
field-installed (a)
fire alarm circuit
fire-extinguishing equipment
fire-resistant construction
fireproof
firestopped
fixed, electric space-heating equipment
fixed-load (a)
fixed stage equipment
flame retardant (n)
flame-retardant (a)
flat-top raceways fluxes
foamed-in-place material
forced-air system
full-load current
full-load rating
full-voltage resistor
fuseholder

G

gal (plural), 3-gal (a)
gas-air (a)
gauge, not gage
general-purpose (a)
general-use (a)
gray buses
grain-drying systems
grid-connected systems
grille

ground-fault circuit interrupter (n) (abbrev. GFCI)
ground-fault circuit-interrupter (a) (abbrev. GFCI)
ground-fault (a)
ground fault (n)
ground-fault protective device
grounding electrode conductor
guarding
guest rooms

H
hand-carried (n)
hand-held (a)
hand-supported (a)
handhole (n)
handlamp (n)
hazardous (classified) location
headroom (n)
heat-generating equipment
heat-resistant (a)
heavy-duty (a)
hertz (rather than cycles per second) (see units of measurement)
high-heat type
high-impedance grounded neutral system
high-leg (a)
high-pressure (a)
high-tension (a)
higher-rated (a)
horsepower (see units of measurement)
hour (do not abbreviate)

I
i.e. (avoid using, use *that is*)
if (indicates condition -- can usually be used instead of *provided*, *provided that*)
igniter
ignitible (not *ignitable*)
impedance
impedance grounded neutral system
in-between (a, n)
indexes (not *indices*)
informational note (lower case when used alone in text)
inrush current
instantaneous-trip (a)
internal-combustion-driven (a)

K
knob-and-tube wiring

L
lampholder
lead-sheathed (a)
less-flammable transformers
let-through (n)
light-emitting diode (abbrev. LED)
likely (use instead of *liable*)
likely to become energized -- failure of insulation on
line-to-ground fault current
line-to-neutral loads
liquidtight (a)
live parts (electric conductors, buses, terminals, or components that are uninsulated or exposed and shock hazard exists)
load-interrupter (a)
load-side (a)
locked-rotor (a, n)
locknut (n)
long-time rating
low-power-factor (a)
low-voltage (a)
lower-rated (a)

M
make-or-break (a)
manhole maximum
meatpacking (a, n)
messenger-supported (a)
metal (instead of metallic)
metal-clad (a)
metal-enclosed switchgear (n)
metal-sheathed (a)
metal-shield connectors (n)
mineral-insulated (a)
minimum
minute (do not abbreviate)
mixer-amplifier (n)
motor control (a)
motor-circuit switch (n)
motor-compressors (n)
motor-driven (a)
motor-generator (a)
motor-generator set (abbrev. MG set)
motor-starting currents

multibuilding
multiconductor (instead of multiple-conductor or multi-conductor)
multimedia
multioutlet
multiphase
multipole

N
nameplate
nameplate rating load
NEC ® (always italic, with registered trademark on first reference)
network-powered (a)
No. 20 gauge sheet metal
non-current-carrying (a)
non-grounding-type (a)
non-power-limited (a)
nonaccessible
noncontinuous noncurrent
nondwelling unit (a)
nonexplosionproof
nonflexible
noninductive
noninterchangeability
nonmetallic
nonmetallic-sheathed (a)
nonshielded cable nontime
not over (instead of *not more than*)
not exceeding (instead of *not more than*)
not less than

O
off-premises source
oil-break (a)
oil-filled reactors
on-premises source
open-conductor supports
open-resistance (a)
optical fiber (a)
other than a dwelling unit (avoid, use *nondwelling*)
overcurrent device
overcurrent protective device
overtemperature (n)
over-temperature (a)
overvoltage (n)

P
panelboard
parallel (instead of multiple conductors)
part-winding start induction
pendant
phase-to-phase (a)
photovoltaic
plug-in units
pole-mounted (a)
positive-pressure ventilation
power conversion system (abbrev. PCS)
power factor (abbrev. PF)
power-conditioning unit (abbrev. PCU)
power-limited (a)
power-supply cord
practicable (means feasible)
practical (means useful)
pre-amplifier
pressure terminal connectors
pressure splicing connectors
protection against physical damage (state conditions)
protector
PVC-coated (a)

R
raceway
re-fused (a)
rectifier-derived dc system
remote-control (a)
resistance temperature device (abbrev. RTD)
resistor
revolutions per minute (abbrev. rpm)
road show (a, n)
root-mean-square (a)
runoff (n)

S
screw shell
screw shell devices
second (referring to time; do not abbreviate)
secondary-circuit fault protection
secondary-to-primary (a)
semiconducting (a)
service-disconnect enclosure
service disconnecting means
service-drop conductors

service-entrance conductors
service-lateral conductors
service-supplied ac (a)
set screw type (a)
set screw (n)
sheet metal (a)
short circuit (n)
short-circuit and ground-fault protective device
short-circuit current ratings
short-time duty
shunt-trip
sidelight
side-wiring spaces
silicon controlled rectifier (abbrev. SCR)
single-conductor cable
single-phase (not 1-phase, but 2-phase, 3-phase, etc.)
single-pole (a)
skin-effect heating
small-appliance branch circuit
solid-state (a)
space-heating equipment
specific-purpose (a)
stage-lighting (a)
stage set lighting
steady-state current
steel-frame (a)
storage battery charging equipment
strain-relief (a)
strut-type (a)
sunlight-resistant (a)
sunroom
supply-side equipment
surface metal raceway
surge arrester (n)
surge-arrester (a)
surge-protective capacitors
switchboards

T

tamper-resistant (a)
temperature-rated (a)
tenpenny nail
that (use where phrase is directly related to statement; do not set off with comma)
through (instead of *thru* or *from* and *to*)

time-current characteristics
time-delay fuse
toward (not towards)
trip-type (a)
turnbuckle (n)
Type MI cable

U
under-carpet (a)
upon (overused, try to avoid; *on* usually correct)

V
voltage
voltage-drop (a)
volt (see units of measurement)
voltmeter

W
wall switch-controlled (a)
weatherproof
wet-pit (n)
when (condition of time)
where (location or situation)
which (additional information in a phrase; set off with commas)
3-wire (a)
wire-bending space
workmanlike (avoid, unenforceable)
workplace
workspace wye
circuit (n)
wye-connected (a)

X
X-ray (not X-Ray)

ANNEX B UNITS OF MEASUREMENT

In the text, all units of measure, when accompanied by a number value, will be styled as follows:

feet (foot)	ft
meter	m
inch	in.
centimeter	cm
millimeter	mm
square feet	ft^2
square meter	m^2
square inch	$in.^2$
square centimeter	cm^2
square millimeter	mm^2
cubic feet per minute	ft^3/min
pounds	lb
kilograms	kg
degrees Celsius	°C
degrees Fahrenheit	°F
degree (angle)	degrees
percent	percent
thousand circular mils	kcmil
horsepower	hp (spelled out in heads)
hertz	Hz
kilovolt	kV
kilowatt	kW
kilovolt-amperes	kVA
kilovolt-amperes reactive	kVAr
volt	volt [abbreviate volt (V) when used with a number to mean rating]
ampere	ampere
watt	watt
volt-ampere	volt-ampere (spell out in heads)
megavoltampere	MVA
milliampere	mA
millivolt	mV
millivoltampere	mVA
milliwatt	mW
micrometer	m
microjoule	mJ
joule	J
kilojoule	kJ
gallon	gal

Display text (tables, figure callouts, equations, and examples)

Units of measure are abbreviated as follows in display text. Exception: If units are used without a number preceding in a table title or table column head, units should be spelled out.

kilovolt	kV
kilowatt	kW
volt	V
ampere	A
volt-ampere	VA
kilovolt-ampere	kVA
percent	%
thousand circular mils	kcmil
degrees Celsius	°C
degrees Fahrenheit	°F

Hyphenation

Hyphenate all units of measurement when used as adjectives before a noun, except when multiple units of measurement are used in the same phrase.

Example:
a 5.5-kW, 240-volt dryer
a 2 in. x 2 in. x2 in. box

Numbers

0.1 (use place-holding number before decimal)
0 through 2000 (use *through* to express range)
1000 (no comma in 4-digit numbers)
10,000
2 ½ (use case fraction)
first (not 1st)

ANNEX C CONVERSION REFERENCE TABLE

U.S. Customary Unit	Existing SI Unit	Proposed SI Unit	Equivalent U.S. Unit
1/32 in.		0.8 mm	0.031 in.
0.06 in.	1.52 mm	1.5 mm	0.059 in.
0.0625 in.	1.59 mm	1.59 mm	0.063 in.
1/16 in.		1.6 mm	0.063 in.
0.090 in.	2.29 mm	2.3 mm	0.091 in.
1/8 in.	3.18 mm	3 mm	0.118 in.
¼ in.	6.35 mm	6 mm	0.24 in.
0.375 in.	9.52 mm	9.5 mm	0.374 in.
3/8 in.		10 mm	0.394 in.
½ in.	12.7 mm	13 mm	0.51 in.
5/8 in.	15.87 mm	16 mm	0.63 in.
¾ in.	19 mm	19 mm	0.75 in.
15/16 in.	23.8 mm	24 mm	0.945 in.
1 in.	25.4 mm	25 mm	0.98 in.
1 ¼ in.	31.8 mm	32 mm	1.26 in.
1 ½ in.	38 mm	38 mm	1.50 in.
1 ¾ in.	44.5 mm	45 mm	1.77 in.
1 7/8 in.		48 mm	1.89 in.
2 in.	50.8 mm	50 mm	1.97 in.
2 1/8 in.		54 mm	2.13 in.
2 ¼ in.		57 mm	2.24 in.
2 3/8 in.		60 mm	2.36 in.
2 ½ in.	64 mm	65 mm	2.56 in.
3 in.	76 mm	75 mm	2.95 in.
3 ½ in.		90 mm	3.54 in.
3 ¾ in.		95 mm	3.74 in.
4 in.	102 mm	100 mm	3.94 in.
4 ½ in.		115 mm	4.53 in.
4 11/16 in.		120 mm	4.72 in.
5 in.		125 mm	4.92 in.
5 ½ in.		140 mm	5.51 in.
6 in.	152 mm	150 mm	5.91 in.
6 ½ in.		165 mm	6.5 in.
7 in.		175 mm	6.89 in.
7 ½ in.		190 mm	7.4 in.
8 in.	203 mm	200 mm	7.87 in.
8 ½ in.		215 mm	8.46 in.
9 in.	229 mm	225 mm	8.86 in.
10 in.		250 mm	9.84 in.

11 ½ in.		290 mm	11.42 in.
12 in.	305 mm	300 mm	11.81 in.
13 in.		325 mm	12.8 in.
14 in.		350 mm	13.78 in.
15 in.	381 mm	375 mm	14.76 in.
16 in.	406 mm	400 mm	15.75 in.
17 in.		425 mm	16.73 in.
18 in.	457 mm	450 mm	17.72 in.
19 in.		475 mm	18.7 in.
20 in.		500 mm	19.69 in.
22 in.	557 mm	550 mm	21.65 in.
24 in.	610 mm	600 mm	23.62 in.
26 in.	659 mm	650 mm	25.59 in.
27 in.		675 mm	26.57 in.
30 in.	762 mm	750 mm	29.53 in.
36 in.	914 mm	900 mm	35.73 in.
38 in.		950 mm	37.40 in
40 in.	1.02 m	1.0 m	39.37 in.
42 in.	1.07 m	1.0 m	39.37 in.
44 in.		1.1 m	43.30 in.
54 in.		1.4 m	55.12 in.
96 in.	2.44 m	2.5 m	98.43 in.
1 ft	305 mm	300 mm	0.98 ft
2 ft	610 mm	600 mm	1.97 ft
2 ½ ft	762 mm	750 mm	2.46 ft
3 ft	914 mm	900 mm	2.95 ft
3.5 ft	1.07 m	1.0 m	3.28 ft
4 ft	1.22 m	1.2 m	3.94 ft
4 ½ ft	1.37 m	1.4 m	4.59 ft
5 ft	1.52 m	1.5 m	4.92 ft
5 ½ ft	1.68 m	1.7 m	5.58 ft
6 ft	1.83 m	1.8 m	5.91 ft
6 ft 6 in.		2.0 m	6.56 ft
6 ½ ft	1.98 m	2.0 m	6.56 ft
6 ft 7 in.	2.0 m	2.0 m	6.56 ft
7 ft	2.13 m	2.1 m	6.89 ft
7 ft 6 in.	2.29 m	2.3 m	7.55 ft
8 ft	2.44 m	2.5 m	8.20 ft
9 ft	2.74 m	2.7 m	8.858 ft
10 ft	3.05 m	3.0 m	9.84 ft
12 ft	3.66 m	3.7 m	12.14 ft
14 ft	4.27 m	4.3 m	14.11 ft
15 ft	4.57 m	4.5 m	15.09 ft

16 ft	4.88 m	4.9 m	16.08 ft
17 ft	5.2 m	5.2 m	17.06 ft
18 ft	5.49 m	5.5 m	18.05 ft
20 ft	6.1 m	6.0 m	19.69 ft
21 ft	6.4 m	6.4 m	20.997 ft
22 ft	6.7 m	6.7 m	21.98 ft
25 ft	7.62 m	7.5 m	24.61 ft
27 ft	8.23 m	8.0 m	26.25 ft
30 ft	9.14 m	9.0 m	29.53 ft
35 ft	10.67 m	11 m	36.09 ft
40 ft	12.2 m	12 m	39.37 ft
50 ft	15.2 m	15 m	49.22 ft
60 ft		18 m	59.06 ft
70 ft		21 m	68.9 ft
75 ft	23 m	23 m	75.46 ft
80 ft	24.4 m	25 m	82 ft
100 ft	30.5 m	30 m	98.43 ft
135 ft		41 m	134.48 ft
140 ft	42.7 m	42 m	137.76 ft
150 ft		45 m	147.65 ft
200 ft	61 m	60 m	196.86 ft
1000 ft	305 m	300 m	984.3 ft

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