STYLE MANUAL

DETAILING SEMI® STANDARDS FORMAT AND STYLE

Version 8
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1 Introduction

1.1 *Purpose*

1.1.1 The *SEMI Standards Style Manual* (hereinafter referred to as *Style Manual*) was developed to provide formatting and style rules to be followed when creating Standards and Safety Guidelines.

NOTE 1: Many currently published Standards and Safety Guidelines do not completely follow the *Style Manual*. These Documents will be updated as they are revised. Editorial changes for compliance with the *Style Manual* as well as correcting spelling errors may be included in reapproved Documents.

1.1.2 Use of a common format and style provides an enhanced corporate identity to Standards and Safety Guidelines, and increases the recognition of these Standards and Safety Guidelines as a SEMI product.

1.2 *Scope*

1.2.1 The *Style Manual* establishes the format and style for all Standards and Safety Guidelines. The format and style of Complementary Files, Various Materials, and Auxiliary Information should follow the rules prescribed in the *Style Manual* whenever possible or practical.

1.2.2 The *Style Manual* is intended to be used by all SEMI Standards staff (hereinafter referred to as Standards staff, Standards Headquarters [HQ] staff, or Standards regional staff as appropriate) and SEMI Standards Program Members (hereinafter referred to as Program Members) worldwide in conjunction with the *Regulations Governing SEMI Standards Program* (hereinafter referred to as *Regulations*) and the *Procedure Manual: Detailing SEMI Standards Processes and Practices* (hereinafter referred as *Procedure Manual*).

1.2.3 Standards HQ staff is responsible for the final formatting of Standards and Safety Guidelines prior to publication.

1.2.4 As authorized under ¶ 8.10.1 of the *Regulations*, the *Style Manual* shall be used in the writing of SEMI Standards and Safety Guidelines.

1.2.5 Failure to follow the format and style established may mean wasted time on the part of the Program Members and Standards staff, and may result in delayed publication of the Standard or Safety Guideline.

1.2.6 The *Style Manual* is not intended to be a guide for the development of Standards and Safety Guidelines. Refer to the *Regulations* and the *Procedure Manual* for procedural information.

2 Referenced Standards and Documents

2.1 *IEEE Standards*[1]

IEEE 260.1 — IEEE Standard Letter Symbols for Units of Measurement (SI Customary Inch-Pound Units, and Certain Other Units)

IEEE 260.3 — American National Standard Mathematical Signs and Symbols for Use in Physical Sciences and Technology

IEEE 280 — IEEE Standard Letter Symbols for Quantities Used in Electrical Science and Electrical Engineering

2.2 *ASTM Standards*[2]

ASTM SI 10 — American National Standard for Metric Practice

ASTM MNL7 — Presentation of Data and Control Chart Analysis

[1] Institute of Electrical and Electronics Engineers, IEEE Operations Center, 445 Hoes Lane, Piscataway, New Jersey 08854-4141, USA. Telephone: +1.732.981.0060; Fax: +1.732.562.6380; http://www.ieee.org

[2] ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, Pennsylvania 19428-2959, USA. Telephone: +1.610.832.9500; Fax: +1.610.832.9555; http://www.astm.org

3 Document Formatting Rules

3.1 Standards HQ staff has created Microsoft Word Subtype templates (hereinafter referred to as Document templates) that contains the styles used in all Standards and Safety Guidelines. The templates are available on the SEMI Standards Web site: http://www.semi.org/standards. All Documents are formatted in Microsoft Word, and published as an Adobe Acrobat PDF file, except for Complementary Files, Various Materials, and, in some cases, Auxiliary Information. Refer to the *Procedure Manual* §§ 3.10 and 3.11 for additional information.

3.2 See Appendix 1 as a quick reference for getting started with the template. If the template is not available, refer to Table 1 for Document formatting rules.

Table 1 Document Formatting Rules

#	*Format*	*Rule*
1-1	*Page Set-up*	(1) Margins: Top, Bottom, Left, and Right: 1 inch (25.4 mm) NOTE: Use the default settings for Gutter: 0 inch (0 mm); Gutter Position: Left. (2) Orientation: Portrait (3) Paper size: Letter 8.5 inch by 11 inch (215.9 mm by 279.4 mm) (4) Width: 6.5 inch (165.1 mm) (5) Columns: Single NOTE: For improved appearance it may be necessary to hyphenate some words; use soft hyphens for this purpose. (6) Full justification (7) List of exceptions: • Main body of Document, Appendix, and Related Information titles • Table, table caption, table text • Figures, figure captions • Footnotes • Math equations (8) Page breaks are the only breaks allowed to be inserted into Documents.
1-2	*Designation and Title*	(1) 14 pt Arial, Bold, Uppercase, Align Left (2) Designation paragraph spacing: 6 pt Before (above), 0 pt After (below) (3) Title paragraph spacing: 0 pt spacing Before (above), 10 pt After (below) Example: **SEMI A##-MMYY** **SPECIFICATION FOR ...** (4) Refer to the *Procedure Manual* § 3.1.2 for Designation information. (5) Refer to the *Procedure Manual* Table A3-1, #A3-1 for additional title information.
1-3	*First Level Section Headings*	(1) 10 pt Arial, Bold, Uppercase and Lowercase (refer to Table 4, #4-7 *Capitalization*), Align Left (2) Follow by a second level section heading on the next line. Example: **1 Purpose** 1.1 *Introduction* — Text ...

#	*Format*	*Rule*
1-4	*Second and Subsequent Level Section Headings*	(1) 10 pt Times New Roman, Italic, Uppercase and Lowercase (refer to Table 4, #4-7 *Capitalization*), Align Left (2) If text follows header; separate with a space, an em dash, and a space. (3) If no text follows a section heading, the text on the next line begins with the next section level paragraph numbering. (4) If third- or fourth-level section headings are used, italicize item (e.g., 2.5.1 *Equipment*) only if other items in the list are italicized. Examples: 1.1 *Introduction* — Text ... 1.1.1 *Application* — Text ... 1.1.1.1 Text ... 1.1 *Introduction* 1.1.1 Text ... 1.1.2 Text ...
1-5	*Body of Text*	(1) 10 pt Times New Roman, Uppercase and Lowercase (refer to Table 4, #4-7 *Capitalization*) NOTE: Subscripts and superscripts may be manually set to 14 pt for improved readability. (2) One space between sentences. (3) Paragraph spacing: 6 pt Before (above), 6 pt After (below)
1-6	*Paragraph Numbering*	(1) Each paragraph shall be numbered for easy reference purposes. (2) Avoid using more than four levels of numbering, when possible. (3) Exceptions: • Figures • Tables • Equations • Notes • Bulleted lists — If a paragraph is broken into two parts by a bulleted list, the second half of the paragraph should not be numbered. • Numbered lists • Quoted material • Designation and title of a referenced standard (Referenced Standards and Documents section, Related Documents section) • Requirements, when they are preceded by a unique requirement identifier. • Notices • EXCEPTION paragraphs
1-7	*EXCEPTION Paragraphs*	(1) EXCEPTION paragraphs should immediately follow the numbered paragraphs to which they are exceptions. (2) EXCEPTION paragraphs are not numbered paragraphs. (3) When an EXCEPTION paragraph is included, start the paragraph with EXCEPTION, using uppercase letters, followed by a colon and one space. (4) If there is more than one EXCEPTION paragraph, number the EXCEPTION paragraphs sequentially, starting with 1. Examples: EXCEPTION: EXCEPTION 1: EXCEPTION 2:

#	*Format*	*Rule*
1-8	*Paragraphs That Contain Requirements*	(1) A paragraph shall contain only one requirement. Paragraphs that contain more than one requirement shall be broken into smaller paragraphs so that each contains only one requirement. Statements (sentences and clauses) that are not part of the requirement should not be included in the requirement paragraph. (2) A paragraph that contains a requirement may be emphasized by placing a border around it, with the following restrictions: • Format: See #1-5 *Body of Text*. • Border line: 1½ pt width. • Light green shading (Microsoft Word RGB: Red 204, Green 255, Blue 204) may be used as long as it does not interfere with readability on screen or when printed in color or black and white. • Paragraph number or requirement number shall be inside the border. • Consecutive paragraphs containing requirements shall be separated (by a blank line if necessary) so that the borders of the two do not overlap. • The border emphasis is not applicable to requirements contained in tables. (3) If borders are used to emphasize requirements statements, then all requirements statements, except those in tables, shall be formatted this way. Example: [EXXX.00-RQ-00001-00] All state transitions in this Standard, unless otherwise specified, shall correspond to collection events. [/RQ]
1-9	*Caution and Warning Information*	(1) Include caution and warning information regarding safety hazards or other issues, as appropriate, throughout the Standard or Safety Guideline. (2) Begin with the word **CAUTION** or **WARNING**, Uppercase, Bold, followed by a colon and one space. (3) List the sections where caution and warning information appear as a part of the last paragraph in the Scope section. Examples: **CAUTION**: This section contains safety hazard information. **WARNING**: This section contains safety hazard information.
1-10	*Bulleted Lists*	(1) Use to list random-order items. (2) Do not use closing punctuation (e.g., period, question mark) unless the item is a complete sentence. (3) Use the Bulleted style (under Bullets and Numbering in Microsoft Word), basic black circle, Align Left. (4) Indentation: Left: 0.1 inch (2.54 mm); Right: 0 inch (0 mm); Hanging by 0.15 inch (3.81 mm) (5) Spacing: 6 pt Before (above), 6 pt After (below) (6) Avoid excessive use of bulleted lists, instead use the section heading format (refer to #1-4). (7) Avoid using a bulleted list for a single item (refer to #1-4).
1-11	*Numbered Lists*	(1) Use to list items in significant order (e.g., a procedure that requires tasks to be completed in a particular sequence). (2) Do not use closing punctuation (e.g., period, question mark) unless the item is a complete sentence. (3) Use the Numbered style (under Bullets and Numbering in Microsoft Word), Align Left. (4) Arabic numeral integers, followed by a period (e.g., 1.) (5) Indentation: Left: 0.1 inch (2.54 mm); Right: 0 inch (0 mm); Hanging by 0.15 inch (3.81 mm) (6) Spacing: 6 pt Before (above), 6 pt After (below)

#	*Format*	*Rule*
1-12	*Notes*	(1) 9 pt Times New Roman (2) Follow #1-1 (7) Full justification, except if Note is contained within a bulleted list. (3) Begin each Note with 'NOTE #' followed by a colon and one space. (4) Number sequentially, starting with 1, throughout the main body of Document, Appendices, and Related Information sections. (5) Refer to Table 8, #8-11, *Notes Notice (Optional)* for optional Notes Notice.
1-13	*Footnotes*	(1) 8 pt Times New Roman, Align Left, Arabic numeral integers (2) Reference footnote in text with a sequential number superscripted, starting with 1. (3) Number footnotes sequentially, starting with 1, throughout the main body of Document, Appendices, and Related Information sections. (4) Place the footnote reference information at the bottom of the page, separated from the main body of text with a 2-inch horizontal line. (5) Begin each footnote reference with a superscripted number followed by a space. (6) Paragraph spacing: 0 pt Before (above), 2 pt After (below) (7) Use bibliographic entries to reference books, articles, proceedings, etc. Examples: [1] Heckathorn, Douglas D. "Collective Sanctions and Compliance Norms: A Formal Theory of Group-Mediated Social Control." *American Sociological Review 55* (1990): pp. 366–84. [2] Kurland, Philip B., and Ralph Lerner, eds. The Founders' Constitution. Chicago: University of Chicago Press, 2000.
1-14	*Copyrighted Material*	(1) Standards HQ staff is required to acknowledge the ownership of any material that is not original per *Regulations* ¶ 4.3 and § 16.4. (2) Include a footnote stating where permission was obtained from. Example: [1] Definitions reprinted with permission from ASTM International.
1-15	*Quoted Material*	(1) When directly quoting material that is of sufficient length to merit placement in a separate paragraph, do not number the paragraph. (2) Indent the paragraph by 0.5 inch (12.7 mm) on both the left and right side margins. (3) Refer to Table 5, #5-5 *Quotation Marks (" "; double and ' '; single)* for proper use.
1-16	*Attribution to Documents*	(1) List attribution in brackets (e.g., [SEMI S2]) at end of the definition following the period and a space. (2) List only one (the most relevant) Standard, Safety Guideline, or other document. (3) Definitions that are reprinted shall include an attribution to the originating document. Example: 5.1 *interferometer* — a noncontact optical instrument used to obtain topographical 3-D data sets. [ASTM E2444]

#	*Format*	*Rule*
1-17	*References to Standards and Documents*	(1) 10 pt Times New Roman (2) Separate the designation and title with a space, an em dash, and another space. (3) Refer to the *Procedure Manual* Table A3-1, #A3-5 for additional information. (4) The Referenced Standards and Document Notice is mandatory (refer to Table 8, #8-4 *Referenced Standards and Documents Notice*). (5) When adding a trademark symbol to a standards development organization (SDO) header (refer to *Regulations* § 1.5.11.1), add the trademark citation to the end of the SDO information. Example: [1] International Organization for Standardization, ISO Central Secretariat, BIBC II, Chemin de Blandonnet 8, CP 401, 1214 Vernier, Geneva, Switzerland; Telephone: +41.22.749.01.11, http://www.iso.org. ISO trademark is owned by The International Organization for Standardization.
1-18	*References to Source Material (e.g., Periodicals, Books, Articles, Proceedings, and Web sites)*	(1) List titles and sources of periodicals, books, articles, proceedings, and Web sites cited in the text of the Standard or Safety Guideline as a footnote reference at the bottom of the page where the citation first appears. (2) Use bibliographic entries to reference books, articles, and proceedings. (3) Format: Refer to #1-13 *Footnotes*. (4) When listing a Web site, reference the complete URL and hyperlink. 'Web site' does not precede the URL. Example: http://www.semi.org http://tf.nist.gov/timefreg/general/glossary.htm
1-19	*References to Sections and Paragraphs*	(1) Use a section symbol (§), followed by a space, to identify a particular section or subsection of the Document. The identified portion refers to the numbered paragraph or header identified by the number following the symbol and all subordinate headers and paragraphs, as well as the Exceptions and lists (bulleted or numbered) embedded therein. For example § 9.2 refers to paragraphs 9.2, 9.2.1, 9.2.2, and 9.2.4. When duplicated (e.g., §§), the symbol refers to more than one section or subsection. (2) Use a paragraph symbol (¶), followed by a space, to identify a particular paragraph of the Document. The identified portion refers to the numbered paragraph identified by the number following the symbol and the Exceptions and lists (bulleted or numbered) embedded therein. It does not, however, include the subordinate headers and paragraphs. For example ¶ 9.2 refers to paragraph 9.2 only. It does not, however, include paragraphs 9.2.1, 9.2.2, 9.2.3, and 9.2.4. When duplicated (e.g., ¶¶), the symbol refers to more than one paragraph. (3) If the Document has Appendices or Related Information sections, specify which part of the Document the section or paragraph is in (e.g., Refer to Related Information 1, ¶ R1-1; refer to Appendix 2, Figure A2-1). (4) Avoid starting a paragraph with section or paragraph symbols, rewrite to avoid when possible. (5) To find the appropriate symbol in Microsoft Word: Insert ► Symbol ► § (Section Sign) or ¶ (Paragraph Sign).
1-20	*Cross References*	(1) Insert a cross-reference link when referring to a section or paragraph within the same Document. (2) Creating Cross Reference links in Microsoft Word: • Click on **Insert** Menu • Choose **Cross-reference** • In Cross-reference dialog box: 1. Reference type: Select **Numbered item** from the dropdown menu 2. Insert reference to: Select **Paragraph number** from the dropdown menu 3. Click check box for **Insert as hyperlink** 4. For which numbered item: Select **section, table or figure being referenced** • Click Insert

#	*Format*	*Rule*
1-21	*Abbreviations and Acronyms*	(1) Refer to the *Procedure Manual* Table A3-1, #A3-7 for additional information regarding the use of *Abbreviations and Acronyms*. (2) This is a subsection of a Terminology section in most Subtypes of SEMI Standards and Safety Guidelines. In Terminology Standards, this is a main section. (3) Note that the Program does not distinguish between acronyms, which refer only to terms typically based on the initial letters of their primary words and pronounced as a single word or shorthand expression (e.g., ANSI, ISO, SNARF), and initialisms, which refer only to terms based on the initial letters of their primary words and read as a series of letters (e.g., ASTM, RSC, GCS), referring to them all as acronyms. (4) Abbreviations are used most frequently in tables, illustrations, Notes, bibliographies, and lists. (5) Generally, abbreviations should not be used in technical text with the following exceptions: • e.g., (for example,) • i.e., (that is,) • vol. (volume, in certain references) (3) The first time an abbreviation and acronym is used, spell out the full name and follow it with its abbreviation or acronym in parentheses (e.g., mass flow controller [MFC]). Generally, it does not need to be spelled out again later in the Document (see Table 6, #6-10 (1) *Parentheses* for the preferred order of parentheses).
1-22	*Italics*	Italicize the following: (1) All symbols for physical quantities and variables that can have a numerical value, such as $a = l \times w$ (see Table 6, #6-12 *Variables*). (2) Letter in parentheses used to identify listings in text. (3) Titles of books (cited within body of text). (4) Instructional information (refer to #1-25 *Instructional Information*). (5) Foreign words not commonly used in English, including *et al*., meaning 'and others,' *loc. cit*. meaning 'in the place cited,' and *ibid*, meaning 'in the same place.' (6) Transistor type or semiconductor conductivity type, as in *n-p-n*, *p-n-p*, *n-MOS*, *p-MOS*, *n-type*, or *p-type*. (7) Paragraph titles in second and subsequent level headings (refer to #1-4 *Second and Subsequent Level Section Headings*). (8) Words listed or defined in Terminology sections or Terminology Standards (refer to #1-27 *Terminology*). (9) Table column headings (refer to Table 3, #3-3 *Table Column Heading*). (10) Row column headings (refer to Table 3, #3-4 *Row Column Headings*).
1-23	*Symbols*	(1) Refer to the *Procedure Manual* Table A3-1, #A3-9 for additional information. (2) This is a subsection of a Terminology section in most Subtypes of SEMI Standards and Safety Guidelines. In Terminology Standards, this is a main section. (3) In general, avoid the use of symbols in text, except for unit symbols. (4) Do not use a hyphen, dash, or an en dash to represent 'to' or 'through' except in tables where needed to conserve space. (5) Do not use (') or (") to represent feet or inches, spell out. (6) Refer to Table 6, #6-13 *Unit Symbols* for use of unit symbols.

#	*Format*	*Rule*
1-24	*Company or Organization Names and Trademarks*	(1) Refer to the *Regulations* §§ 1.5.11 and 16.4 for information regarding restrictions on the use of company or organization names and trademarks. (2) Ensure that the trademark is represented properly as typically written by the trademark owner. (including necessity of putting "®" or "™" to the trademark) (3) If the owner typically uses "®" or "™", use the appropriate symbol only at the first convenient usage. (4) Include a footnote stating who owns the product trademark (list only the company or organization name, do not include the address, telephone, fax, or URL). (5) Do not include 'registered' when stating who owns the trademark. Example: [1] Trademark is owned by SEMI. (6) Refer to #1-17 (5) *References to Standards and Documents* for an example of SDO format.
1-25	*Instructional Information*	(1) Italicize text to indicate text/characters to be entered into the applicable field or table. (2) Bold text to indicate a menu option or which command keys should be used. (3) Use the symbol ► to indicate the steps in the menu to select.
1-26	*Programming Language*	(1) 9 pt Courier New (2) Single line spacing; Indents set at 0.25 in. (6.35 mm) increments to show structure. (3) Should be set off from regular text by soft returns. (4) Should not be outline numbered. (5) Avoid using text wrapping in code when possible. (6) May have a figure caption.
1-27	*Terminology*	(1) Refer to the *Procedure Manual* Table A3-1, #A3-6 for additional information. (2) Include a paragraph number for individual entries of abbreviations, acronyms, definitions, or symbols in this section. (3) If all entries are included in a single alphabetical list, use a second level paragraph number (e.g., x.y, as shown in 1-4 *Second and Subsequent Level Section Headings*. (4) If subsections (e.g., Abbreviations and Acronyms, Definitions, or Symbols) are used, use a third level paragraph number (e.g., x.y.z). (5) If these subsections are further divided into groups of related entries, use a fourth level paragraph number (e.g., x.y.z.w). (6) List each entry (italicize and capitalize as it appears in the Document), followed by a space, an em dash, another space, and the full name or term. For definitions only, include a period at the end. (7) If a discussion subparagraph is included, start with '*Discussion*' followed by an em dash (e.g., *Discussion* —). (8) If an explanatory Note is included, see #1-12 *Notes* for format. (9) Discussions and Notes are not included in the *SEMI International Standards: Compilation of Terms* (hereinafter referred to as *Compilation of Terms*). (10) Do not list terminology used in another documents, instead refer to the SEMI International Standards: Compilation of Terms or reprint the abbreviations, acronyms, definitions, or symbols that are used in the Document.

#	*Format*	*Rule*
1-28	*Definitions*	(1) Refer to the *Procedure Manual* Table A3-1, #A3-8 for additional information. (2) This is a subsection of a Terminology section in most Subtypes of SEMI Standards and Safety Guidelines. In Terminology Standards, this is a main section. (3) Write definitions of terms in the following dictionary-definition style: • The term, italicized, but not capitalized unless the term is a proper noun or is customarily capitalized in use, • (optional) The part of speech, abbreviated and italicized, separated from the term by a comma and space. (In general, it is assumed that the term is a noun. Therefore, the part of speech must be identified only for terms that are not nouns [e.g., *adj., v., adv.*]), • (optional) The symbol for the term being defined, separated from the term by a comma and space, • (optional) Commonly used units for the quantity being defined, placed between square brackets, • (optional) A delimiting phrase or field label (italicized and in parentheses) if the term is specific to a particular field and could have a different meaning in another context. • A space, em dash, another space, the definition (a one-phrase statement describing the term), and a period at the end. (2) Keep collections of definitions in alphabetical or alphanumeric order unless there is a compelling reason to order them differently. (3) Avoid defining with 'is when' and 'is where.' These adverb phrase introducers do not work well when defining a term. (4) Avoid defining with 'for the purposes of this Document,'. (5) Do not start the definition by repeating the term (e.g., *pitch* — pitch is the distance…). (6) Use simple and familiar terms. (7) Avoid ambiguous words (e.g., small – what does small mean?). Examples: 1. Term with delimiting phrase: *x.y pitch (of a corrugated product)* — the distance between corresponding points on adjacent crests. 2. Term with symbol and units: *x.y Hall mobility,* μ_H *[cm²/V·s]* — the ratio of the magnitude of the Hall coefficient to the resistivity. 3. Term with part of speech: *x.y dope, v.* — to add intentionally small amounts of impurities to a semiconductor to control the conductivity.

#	*Format*	*Rule*
1-29	*Numerals*	(1) Use Arabic numeral integers in designating Figures, Notes, Tables, Appendices, and Related Information sections (e.g., Figure 14, Note 4, Table 6, Appendix 2, Related Information 3). (2) Spell out all numbers from one through ten, with the following exceptions: • Use numerals when the quantity is partly fractional, as in 1.15, 1½. • Use numerals when followed by a standard unit symbol, as in 2 mm, 4 kg, or 9%. • If some numbers in a sentence are numerals (e.g., greater than ten), use numerals for all numbers in the sentence. (3) When a number begins a sentence, spell out the number. (4) It is not recommended to begin a sentence with a numeral followed by a unit symbol, but if this is essential, spell out both the number and the following unit symbol (e.g., One gram is usually sufficient). (5) Spell out round numbers, and associated unit symbols, used in an indefinite sense (e.g., The distance is a hundred meters or so). (6) Spell out numbers when there may be ambiguity resulting from two numbers adjacent to each other (e.g., fifteen 25 mm rods or 15 twenty-five millimeter rods). (7) If, for any reason, the standard abbreviation or unit symbol of the expression following a number is not used, or if the expression does not lend itself to abbreviation (e.g., year or ton), the use of numerals is optional, unless numerals are required by one of the following circumstances. (8) In contrasting statements, if some numbers must be numerals, use numerals for all (e.g., 2 tests and 16 weighings). (9) In a series of connected numerical statements implying precision, use numerals (e.g., 5 months, 3 days). (10) Use numerals after abbreviations (e.g., vol. 3). (11) Place a zero before a decimal point (e.g., 0.65 mm). (12) Write ratios as 1 to 10 or 1:10, not 1–10.
1-30	*Table of Contents (Optional)*	(1) Header: 11 pt Arial, Bold, Uppercase and Lowercase, Centered. (2) Contents: 10 pt Times New Roman, Uppercase and Lowercase, Left aligned. (3) Inserted below the title using Microsoft Word Table of Contents. (4) Limited to first and second level headings. (5) If needed, a list of tables and figures may be included.

4 Figure Formatting Rules

4.1 Table 2 outlines the formatting rules for incorporating figures into a Standard or Safety Guideline.

Table 2 Figure Formatting Rules

#	*Format*	*Rule*
2-1	*Figures*	(1) 6.5 inch (165.1 mm) max width, 8.5 inch (215.9 mm) max height (2) Orientation: Portrait (3) Accepted formats: .BMP, .JPG, .PCT, or .TIF (4) CAD is accepted, but not encouraged. Ballots or other submissions that revise graphics created in CAD programs must include the revised graphics files. (5) Number sequentially, starting with 1, all figures throughout the main body of Document. (6) Restart numbering of figures at 1 in each Appendix and Related Information section (e.g., Figure A1-1, Figure A2-1, Figure R1-1). (7) Black and white is preferred. Color is discouraged; but if used, it must be recognizable in black and white. (8) Insert figure into the Document as a Microsoft Word Picture: • Insert ► Pictures • In the Pictures dialog box, under File select the appropriate file • Click Insert
2-2	*Figure Caption*	(1) 10 pt Times New Roman, Bold, Centered (2) Arabic numeral integers (3) Place the figure caption below the figure. (4) First line: The word Figure followed by sequential number and a soft return. (5) Second line: Description using uppercase and lowercase, and no ending period (refer to Table 4, #4-7 *Capitalization*). Example: **Figure 1** **Side Load Test Apparatus**
2-3	*Figure Footnotes*	(1) 9 pt Times New Roman, Centered above Figure Caption (2) Arabic numeral integers (3) Number sequentially; restart numbering at 1 for each figure. (4) Footnote numbers are preceded by a number sign (#). (5) Do not include the footnote text within in the actual figure. Example: #1 This apparatus is to be made out of stainless steel **Figure 1** **Side Load Test Apparatus**

5 Table Formatting Rules

5.1 Table 3 outlines the formatting rules for incorporating tables into a Standard or Safety Guideline.

Table 3 Table Formatting Rules

#	*Format*	*Rule*
3-1	*Tables*	(1) 6.5 inch (165.1 mm) max width (2) Border width: ¾ pt (3) Layout: Portrait (4) Default Cell Margins: Top, Bottom, Left, and Right, 0 inch (0 mm) (5) If the table appears on more than one page, then table column headings should appear at the top of each page (Repeat Header function). (6) Do not insert a figure as a table. Recreate as a table if needed. (7) Black and white is preferred. Color is strongly discouraged; but if used, it must be recognizable in black and white. Color may only be used to indicate states, transitions, or steps where appropriate. (8) Use of light green shading is not allowed, unless the table contains requirements (refer to Table 1, #1-8 *Paragraphs that Contain Requirements*).
3-2	*Table Title*	(1) 9 pt Arial, Bold, Flush left (2) Arabic numeral integers (3) Place the table title above the table. (4) Start with Table #, where the # is sequentially numbered from the beginning of the Document, starting with 1. (5) Restart numbering of tables at 1 in each Appendix and Related Information section (e.g., Table A1-1, Table A2-1, Table R1-1). (6) Place a space after the table number, and before the title description. (7) Description using uppercase and lowercase and no ending period (refer to Table 4, #4-7 *Capitalization*). Example: **Table 1 Dimensions of…**
3-3	*Table Column Heading*	(1) 9 pt Times New Roman, Italics, Centered (2) Paragraph spacing: 6 pt Before (above), 6 pt After (below) (3) Do not use shading or color in the Table Column Heading. (4) Do not use powers of ten in the column heading, since it is not clear whether the numbers in the table have been or should be multiplied by the power of ten. Instead, indicate the multiplication (e.g., 1.45×10^6) in the first entry in the table, or use an expression such as *Young's Modulus, millions of psi* in the column heading.
3-4	*Table Row Heading*	(1) 9 pt Times New Roman, Italics, Align Left (2) Paragraph spacing: 6 pt Before (above), 6 pt After (below) (3) Do not use shading or color in the Table Row Heading. (4) When using Table Row Headings, top left cell may be blank.
3-5	*Table Entries*	(1) 9 pt Times New Roman (2) Paragraph spacing: 2 pt Before (above), 1 pt After (below) (3) Entries may be centered or left aligned as appropriate for the nature of the entry and the appearance of the table.

#	*Format*	*Rule*
3-6	*Table Footnotes*	(1) 8 pt Times New Roman (2) Arabic numeral integers (3) Number sequentially; restart numbering at 1 for each table. (4) Footnote numbers are preceded by a number sign (#). (5) Place after the last row of the table. (6) Footnote numbers within the table are superscripted.
3-7	*Requirements Within Tables*	(1) Whenever possible, a row should contain a single requirement. (2) To separate multiple requirements that would naturally fit in the same row or to separate nonrequirement text, a row may be broken into multiple rows, separated by a dashed horizontal line. The dashed line indicates that the rows are separate, but closely related. (3) If requirements paragraphs are shaded (refer to Table 1, #1-8 *Paragraphs That Contain Requirements*), the requirements rows in tables should be shaded to match.

6 Grammar and Language

6.1 Table 4 outlines the rules for grammar and language within a Standard or Safety Guideline. For information on grammar and language not specifically addressed in the *Style Manual*, refer to *The Chicago Manual of Style*.[3]

Table 4 Grammar and Language Rules

#	*Grammar/Language*	*Rule*
4-1	*Official Language*	(1) American English is the official language of all Standards and Safety Guidelines approved by the consensus procedures outlined in ¶ 4.5 of the *Regulations*.
4-2	*Simple Language*	(1) Standards and Safety Guidelines should be written so that they are easy to understand, use, and translate. (2) Avoid excessively long sentences. Break longer sentences into two shorter sentences if possible. (3) Avoid double negatives. (4) Avoid slang terms, colloquialisms, metaphors, similes, idioms, and other unnecessary culture-specific expressions.
4-3	*Spelling and Definitions of English Words*	(1) American English is the preferred spelling method. (2) Use the currently available *Merriam Webster's Collegiate Dictionary* for the accepted spellings and definitions of most English terms. (3) For accepted technical terminology, suggested references include the *SEMI International Standards: Compilation of Terms*,[4] the *Compilation of ASTM Standard Definitions*,[5] the *IEEE Standard Dictionary: Glossary of Terms and Definitions*,[6] and the *SEAJ Terminological Dictionary of Semiconductor Equipment*.[7] (4) Refer to Appendix 4 for spellings that (1) differ from the spelling in, (2) are not clearly indicated as preferred in, (3) do not appear in, or (4) do appear in the *Merriam Webster's Collegiate Dictionary*, but are listed here for convenience.

[3] *The Chicago Manual of Style*, The University of Chicago Press, 1427 E. 60th Street, Chicago, IL 60637, USA. Telephone: +1.773.702.7700; Fax: +1.773.702.9756; http://www.chicagomanualofstyle.org

[4] Available on the SEMI Web site: https://www.semi.org/en/Standards/Standards_Develop.

[5] ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, Pennsylvania 19428-2959, USA. Telephone: +1.610.832.9500; Fax: +1.610.832.9555; http://www.astm.org

[6] Institute of Electrical and Electronics Engineers, IEEE Operations Center, 445 Hoes Lane, Piscataway, New Jersey 08854-4141, USA. Telephone: +1.732.981.0060; Fax: +1.732.981.1721; http://www.ieee.org

[7] Semiconductor Equipment Association of Japan, 4F Grand Maison Shinjuku Gyoen., 1-7-10 Shinjuku Shinjuku-ku, Tokyo 160-0022 Japan. Telephone: +81.3.3353.7651; Fax: +81.3.3353.7970; http://www.seaj.or.jp

#	*Grammar/Language*	*Rule*
4-4	*Present vs. Future Tense*	(1) Future tense technical writing is usually a weak substitute for a simple declarative statement. For example, 'This Standard defines a common test method to … .' is preferred over 'This Standard will define a common test method to … .'. (2) Do not use future tense (e.g., using 'will' with the verb) in the text of Standards or Safety Guidelines unless a future consequence of a specific action is being described. For example, 'After being turned on, this equipment will take approximately three minutes to complete its warm-up and stabilization before the first measurement can be taken accurately.'' (3) Instead, for most cases, use a simple imperative sentence (present tense). For example, '1) Turn on the equipment., 2) Wait approximately three minutes for equipment to warm-up and stabilize., and 3) Start taking measurements.
4-5	*Active vs. Passive Voice*	(1) Use of passive voice in technical writing is usually a weak substitute as compared to active voice, especially since the object (i.e., the subject in active voice) to perform the action is often omitted. Example: 'The supplier shall provide a report.' is preferred over 'A report shall be provided by the supplier.' and much preferred over 'A report shall be provided.' where it is not specifically defined who is required to provide the report even if it is implied. (2) Avoid use of passive voice in the text of Standards, especially in Specifications, Test Methods, and Practices.
4-6	*Word Usage*	(1) Use only 'shall' to indicate an element (e.g., instruction or occurrence) that is required or on which there is no option. Do not use other terms (e.g., 'must', 'will', 'requires', 'needs to') for these purposes. NOTE: ANSI and IEEE do not allow the use of 'must' for mandatory requirements. a. Many existing Standards Documents currently use 'must' for various purposes (e.g., requirements, explanations or logical/necessary consequences of requirements, recommendations). As these Standards Documents are revised, all uses of 'must' to define requirements, provide explanations or logical/necessary consequences of requirements, or provide recommendations or options shall be eliminated. Rewording options include using 'shall' for requirements, 'should' for recommendations, or 'imply' (or a variation such as 'implication is') for explanations or logical/necessary consequences of requirements. Examples: 1. *Incorrect usage example*: The variable SOFTREV must uniquely identify different releases of equipment software. Any change in equipment software must result in a corresponding change to SOFTREV. 2. *Corrected usage example*: The variable SOFTREV shall uniquely identify different releases of equipment software. Therefore, any change in equipment software implies a corresponding change to SOFTREV. (2) Use only 'must' to describe an unavoidable consequence of a situation (e.g., a ball thrown in the air must come down is an unavoidable consequence of gravity). (3) Use only 'imply' (or a variation such as 'implication is') for explanations or logical/necessary consequences of requirements. (4) Use only 'can' to describe statements of possibility and capability, whether material, physical, or causal (i.e., can equals 'is able to'). (5) Use only 'should' to indicate an element that is desirable or recommended, but not required, except in a Safety Guideline where it is used to express criteria for conformance to that Document. (6) Use only 'may' to indicate an element that is completely optional. Do not use 'may' to indicate a potential or conditional requirement (e.g., 'may require, may need'). 'May equals 'is permitted to'. (7) Do not use 'shall' in Guides and Safety Guidelines.

#	*Grammar/Language*	*Rule*
4-6	*Word Usage* (cont.)	(8) Use 'shall' for all required elements, 'should' for recommended elements, and 'may' for optional elements of Specifications, Test Methods, Practices, and similar Standards in the main body and Appendix. (9) Use imperative sentences (i.e., start with a verb because the subject 'you' is implied) for required procedures and instructions in Specifications, Test Methods, Practices, and similar Standards in the main body and Appendix. (10) Do not use 'is' and 'are' (as implied imperatives) or 'will' to define required elements of Specifications, Test Methods, Practices, and similar Standards in the main body and Appendix. Examples: 1. *Example of unacceptable usage as an implied imperative:* The supplier is to provide … 2. *Example of acceptable usage:* The purpose of this Standard is to provide … (11) Do not use 'shall' to indicate a requirement (in this Document) or otherwise include requirements in the Purpose, Scope, Limitations, and Terminology sections; Notes; footnotes to text, figures, or tables; examples; or Related Information sections. Refer to the *Procedure Manual* ¶ 3.3.2. (12) If frequent use of 'should' and 'may' seems more appropriate in a Specification, Test Method, or Practice, consider writing the Standard as a Guide instead. (13) Avoid using the generic term 'Document' when possible. Instead, use 'Standard', 'Safety Guideline', or the specific Subtype (e.g., Test Method, Specification).
4-7	*Bias-Free Language Terms*	(1) Do not use restricted biased terms. Use only approved, alternative, bias-free terms (refer to Appendix 5) or rewrite text to eliminate the use of biased terms. (2) Avoid use of other biased terms (refer to Appendix 5) and use only approved, alternative, bias-free terms, or rewrite text to eliminate the use of biased terms. (3) Avoid use of colors or terms that include color except when the actual color is being described. Examples include where black implies something bad or negative and white implies something good, positive, or less harmful (e.g., blacklist vs. whitelist). (4) Avoid use of terms that perpetuate negative stereotypes or unequal power relationships. Examples include master/slave; smart/dumb; right/left (in this example, avoid using right to mean 'good' or 'normal,' and left to mean 'bad' or 'abnormal.'). (5) Avoid use of terms that assign a gender to inanimate objects. Examples include male/female connectors and male bolt/female nut. (6) Avoid use of terms that identify gender (e.g., using gender-specific pronouns) unless necessary for comprehension, or when referring to a specific individual or group of a specific gender. Preferred examples include using they, their, and them instead of he/she, his/her, him, himself, and herself. Use of they as a singular pronoun is acceptable. Do not use phrases such as 'he or she' and 'he/she' or made-up words such as 's/he'. When possible, rewriting to avoid use of gender-specific terms is preferable. Rewriting Recommendations: 1. Omit the pronoun if not really necessary (e.g., 'the user shall perform the task when the instructions state for him to do so' to 'the user shall perform the task when the instructions state to do so'). 2. Repeat the noun (e.g., 'the user shall perform the task when the instructions state for him to do so' to 'the user shall perform the task when the instructions state for the user to do so'). Avoid doing this is if the noun has to be repeated more than once in a sentence. 3. Use plural forms of nouns to use plural forms of pronouns (e.g., 'the user shall perform the task when the instructions state for him to do so' to 'the users shall perform the task when the instructions state for them to do so'). 4. Use an article (e.g., the, a) instead of a pronoun (e.g., 'the user shall perform the task when his instructions state to do so' to 'the users shall perform the task when the instructions state to do so').

#	*Grammar/Language*	*Rule*
4-7	*Bias-Free Language Terms* (cont.)	5. Use the gender-neutral pronoun one (e.g., 'the user shall perform the task when his instructions state for him to do so' to 'the user shall perform the task when the instructions state for one to do so'). 6. Use the pronoun who (e.g., 'the supplier assumes that if a user cannot perform the task correctly, then he will not be assigned the task" to 'the supplier assumes that a user who cannot perform the task correctly will not be assigned the task'). 7. Use imperative mood with the assumed subject 'you' when writing instructions (e.g., 'the user shall perform the calibration while he is monitoring the readings' to 'perform the task while monitoring the readings). 8. If the above do not work well for a specific case, completely rewrite the sentence to not use personal pronouns (e.g., 'if a man or woman decides not to follow the instructions, then his or her work on the equipment will not be allowed' to 'if someone decides not to follow the instructions, that person will not be allowed to work on the equipment'). (7) Avoid stereotyped assumptions about the roles of men and women or people of different ages and backgrounds. For example, do not assume that a construction worker is a man or that an older person does not possess skills in using modern technology. When writing about groups of people, use language that highlights that they are individual people with X characteristics in common rather than a group defined only by that characteristic. For example, write 'people with a visual impairment' rather than 'the blind and partially sighted'. (8) Pay attention to the order in which groups of people (including authors, contributors, companies) are presented. The order can imply that the first mentioned dominates the later mentioned. (9) If a Standards Document quotes biased terms directly from an external document or needs to use them in context, then include a disclaimer Note that states these terms are from the original source, why the quotation is necessary, and that SEMI is working to eliminate these biased terms from its own Standards Documents.
4-7	*Capitalization*	(1) For all section headings, table titles, and figure captions; capitalize all nouns, pronouns, verbs, adjectives, adverbs, and all other words of five letters or more. (2) Capitalize the first letter of proper nouns or words that are customarily capitalized. (3) Do not use capitals to highlight specific terms (e.g., 'panel', 'material', etc. are not proper nouns and should not be capitalized). (4) Using a mix of uppercase and lowercase letters within a word is acceptable when it is required to accurately refer to a variable name, attribute, or an enumerated information string. (5) Use uppercase letters for acronyms (see Table 1, #1-21 *Abbreviations and Acronyms*), for directions in a procedure as noted below, or to introduce caution or warning information in the text (see Table 1, #1-9 *Caution and Warning Information*). (6) Capitalize the first letters of 'committee', 'technical committee', and 'global technical committee' only when it is used as the title of a specific group, as in 'Gases Global Technical Committee'. (7) Use a capital letter when referring to specific volumes, figures, tables, etc. (e.g., Volume 1, Figure 4, Table 6). (8) Use a capital letter in such expressions as Test #, Specimen X, Cement X, Type #, Class X, Grade X, etc. (9) Use a capital letter for certain items consisting of one letter such as O-ring, V-groove, V-notch, X ray (*n.*), and X-ray (*adj.* or *v.*). (10) Use uppercase letters for emphasis within directions such as 'Turn the knob to the OFF position' or 'Turn the dial to TITRATE.' (11) Do not capitalize chemical or element names (e.g., helium, boron, iron, chromium) or units (e.g., angstrom, lux, ohm). (12) When hyphens are used in titles and section headings, capitalize the second word (e.g., *Short-Term Insulating).*

#	*Grammar/Language*	*Rule*
4-7	*Capitalization* (cont.)	(13) Capitalize Type of Document (e.g., Standard, Safety Guideline). (14) Capitalize Subtype of Standard (e.g., Classification, Guide, Practice, Specification, Test Method, Terminology). (15) Capitalize Document when referring to a SEMI Document.

7 Punctuation

7.1 Table 5 outlines the rules for punctuation within a Standard or Safety Guideline. Information on English punctuation, including use of apostrophes and semicolons, may be found in *Merriam-Webster's Collegiate Dictionary*, *A Handbook of Style*.[8]

Table 5 Punctuation Rules

#	*Punctuation*	*Rule*
5-1	*Comma (,)*	Use a comma: (1) To separate two or more parts of a compound sentence joined by a conjunction such as 'and' or 'but.' Do not use a comma in place of the conjunction. (2) To separate items in a list of items or options in text. (3) Before the word 'and' or 'or' when the word is placed before the last item in the list. (4) To separate an initial clause from the remainder of a sentence. (5) To separate multiple adjectives modifying the same noun (e.g., low-power, CMOS circuits).
5-2	*Colon (:)*	(1) Use colons to introduce lists with statement terms such as: follows, the following, for example, namely, that is.
5-3	*Ellipsis (…)*	(1) Show the intentional omission of quoted material. (2) Most word processing systems provide a special character for an ellipsis that is properly spaced and will not break at the end of a line. (3) When the ellipsis appears at the end of a sentence, place a period after the ellipsis.
5-4	*Parenthetical Expressions*	(1) Use opening and closing parentheses ( ) to set off amplifying or explanatory comments in a sentence that have little logical relation to the remainder of the sentence. (2) If multiple comments need to be set off, use square brackets [ ] inside the parentheses or use parentheses inside opening and closing em dashes. (3) See Table 6, #6-10 *Parentheses* for the preferred order of parentheses and other 'fences' in mathematical material.
5-5	*Quotation Marks ("; double and ' '; single)*	(1) Use opening and closing double quotes " " to enclose quoted material. (2) Use opening and closing single quotes ' ' to emphasize or highlight special terms, words, or phrases in text, except for directions. (3) Use single quotes to enclose material inside a quotation enclosed in double quotes. (4) Place following commas or periods inside closing quotation marks, except when single quotes are used to set off special terms or when double quotes enclose data that are to be entered into a computer and a period or comma would be interpreted as part of the data. (5) When including multiple paragraph quotations in text, use an opening quote at the beginning of each paragraph and a closing quote at the end of the final paragraph.

[8] Merriam-Webster Incorporated, 47 Federal Street, Springfield, MA, 01105, USA. Telephone: +1.413.734.3134 ext. 100; https://www.merriam-webster.com

#	*Punctuation*	*Rule*
5-6	*En Dash (–)*	(1) Use an en dash to indicate continuing or inclusive numbers, such as dates or times (e.g., 1989–90 or 2–3 days). (2) Use an en dash in place of a hyphen in a compound word when one of the components contains a hyphen or consists of two words.
5-7	*Em Dash (—)*	(1) Use an em dash, singly or in pairs, to indicate a break in thought that causes an abrupt change in sentence structure. Example: "The project will end January 15—unless the company provides additional funds." (2) Use an em dash, with a space before and after, to separate a term from its definition in a terminology list. (3) Use an em dash, with a space before and after, to separate a Document number or designation from its title in the Referenced Standards and Documents and Related Documents sections. (4) Use an em dash, with a space before and after, to separate paragraph headings from text.
5-8	*Hyphen (-)*	(1) When words must be split across two lines to maintain a pleasing appearance, hyphenate in accordance with the following rules: • Divide words at syllabic breaks, which are listed in the dictionary's pronunciation key. • Do not divide legally protected names such as SEMATECH. • Do not leave fewer than three letters together on each of the two lines. (2) Use hyphens to form a compound adjective (e.g., high-pressure service, high-volume production, cost-competitive semiconductors). (3) For the sake of appearance, omit hyphens in such expressions as '3% nickel alloy' or '3°C rise in temperature.' (4) Do not hyphenate chemical compounds or the words 'stainless steel' and 'cast iron.' (5) Do not use hyphens between adverb-adjective combinations in which the adverb ends with 'ly' (e.g., highly sensitive material, optimally focused lens). (6) Use a hyphen between parts of certain compound words (e.g., burn-in, *p-n* junction). (7) Do not use a hyphen between a prefix and its primary word as defined in the *Merriam Webster's Collegiate Dictionary*. Rare exceptions are made for some words to reduce confusion or make them easier to read (e.g., re-cover, meaning to replace the cover [as opposed to recover, as from an illness or setback], pre-engineered). (8) Use a hyphen to add a prefix to a proper, but not legally protected, noun (e.g., post-Vietnam era, mid-January time frame). (9) Use a hyphen to show the relationship between the first term or prefix for a compound adjective that must temporarily stand-alone (e.g., one- or two-page description, high- and low-temperature tests), but when using numerals, omit all but the last hyphen (e.g., 2, 4, and 6-inch specimens). (10) Use a soft hyphen (also known as a manual break) to break a word at the end of a line; hard hyphens are permanent hyphens (e.g., twenty-first) and must remain no matter where the hyphenated word or term appears.

8 Mathematical and Technical Material

8.1 Table 6 outlines formatting rules for the mathematical and technical material within a Standard or Safety Guideline.

Table 6 Mathematical and Technical Material Rules

#	*Names*	*Rule*
6-1	*Isotopes*	(1) Designate isotopes of elements either with the atomic mass following the element name, separated by a hyphen, or as a superscript preceding the chemical symbol (e.g., carbon-14, ^{14}C).
6-2	*Polymers*	(1) Where the name of the monomer is one word, add the prefix poly without hyphen or space, as in polystyrene or polyisobutylene. (2) Where the name of the monomer is two words, enclose the monomer in parentheses and add the prefix poly without hyphen or space, as in poly(vinyl chloride) or poly(methyl methacrylate). (3) Use chemical names consistent with those established by the International Union of Pure and Applied Chemistry (IUPAC).[9]
6-3	*Crystal Planes and Directions*	(1) Use the following symbols for crystallographic planes and directions: • plane (111) • family of planes {111} • direction [111] • family of directions ⟨111⟩ (2) Use a bar over the 1 to indicate negative directions (e.g., $\bar{1}\bar{1}\bar{1}$). NOTE: In Microsoft Word, this symbol can be obtained only by using the Equation Editor. It may be necessary to adjust character spacing (in text mode of the editor) to separate the bars over adjacent symbols.
6-4	*Decimal Point*	(1) Use a period, not a comma, for the decimal point (e.g., 0.65, not 0,65). (2) Use a comma to separate groups of three numerals in large numbers (e.g., 1,000,000 for one million; 1,000 for one thousand). (3) See Table 1, #1-29 *Numerals* for additional information.

[9] IUPAC Secretariat, P.O. Box 13757, Research Triangle Park, NC 27709-3757, USA; Telephone: +1.919.485.8700; http://www.iupac.org

#	*Names*	*Rule*
6-5	*Equations*	(1) Center equations in the text. (2) If there are two or more equations, number them with a right aligned number in parentheses around the equation number. In Microsoft Word, this may be done by using a right tab on the right margin. (3) Number each equation sequentially, starting with 1. (4) Begin Appendix equation numbers with A#- and Related Information equation numbers with R#-, where # is the Appendix or Related Information number. (5) When referencing equations within text, do not include the parentheses (e.g., see Equation 1). (6) Define equation terms following the equation. Examples: $x + y = z$ where x is the number of units, y is the number of wafers, and z is the total. $a + b - c = d$ where: a = number of units, b = number of wafers, c = number of defects, and d = total.
6-6	*Exponents to the Base e*	(1) If an exponent to the base *e* is relatively short and on one line, without superscripts or subscripts, use the symbol '*e*,' (e.g., *e* (a − b) cx). (2) If an exponent to the base *e* is relatively long or has superscripts or subscripts, use the symbol 'exp,' (e.g., exp [$xb^{½}$ − ln (xb / a)]).
6-7	*Fractions*	(1) Use the following guides when deciding whether to use available symbols: a solidus (diagonal line: /) or a built-up fraction (with a horizontal line). (2) Use symbols for simple fractions (e.g., ¼, ½, ¾). (3) Use the solidus in other simple mathematical expressions in the text. Use parentheses liberally to clarify ambiguities within mathematical material (e.g., log (a/b) and (log a)/b are both clear, but log a/b is not). (4) Use a built-up fraction if an expression is so long as to make use of the solidus awkward and difficult to read.
6-8	*Letter Symbols*	(1) Use symbols for physical quantities in equations that are consistent with those in prescribed IEEE 260.1, IEEE 260.3, and IEEE 280. (2) Make sure the symbols used are consistent throughout the Standard and Safety Guideline (and related Standards and Safety Guidelines), regardless of the units employed. (3) Use of certain uppercase Greek letters is discouraged because of possible confusion between them and uppercase English letters, especially alpha (A) and A, beta (B) and B, epsilon (E) and E, zeta (Z) and Z, eta (H) and H, iota (I) and I, kappa (K) and K, mu (M) and M, nu (N) and N, omicron (O) and O, rho (P) and P, tau (T) and T, upsilon (Y) and Y, and chi (X) and X.

#	*Names*	*Rule*
6-9	*Mathematical Operators*	(1) Except when using the solidus in fractions, mathematical operators (e.g., +, −, ×, /, =) should always be surrounded by nonbreaking spaces when used in equations. (2) Use the proper power of 10 instead of E notation (e.g., use 5×10^{14} instead of 5E14). (3) To represent multiplication, use × (multiplication symbol) instead of * (asterisk), · (middle dot), or the letter x. (4) To represent magnification, use × (multiplication symbol) instead of the letter x. (5) Use a superscript exponent instead of ^ (carat), (e.g., use 10^{15} instead of 10^15). (6) To represent subtraction or a negative number (quantity less than zero), use − (minus sign) instead of - (hyphen). (7) To represent plus-minus, use ± (plus-over-minus symbol) instead of +− (a plus sign followed by a minus sign) or +/− (a plus sign followed by a solidus followed by a minus sign). (8) Math symbols that cannot be entered through a keyboard can be located in the symbols dropdown menu of the template or under Insert ► Symbol.
6-10	*Parentheses*	(1) Use parentheses to clarify ambiguities in mathematical expressions. The preferred order for enclosure (fence) symbols is braces, square brackets, and parentheses as follows: { [( )] } (2) If additional enclosures are needed use larger symbols in the same order, as follow: { [({ [( )] })] } (3) Do not use angle brackets (< >), vertical bars (| |), or double bars, (‖ ‖) as enclosure symbols because these symbols have other meanings in mathematical material. (4) See Table 5, #5-4 *Parenthetical Expressions* for additional uses.
6-11	*Statistical Data*	(1) To present the essential information contained in a set of observations from one population, give the average (sample mean), the sample standard deviation or coefficient of variation, and the number of observations. (2) Use the following symbols where needed: • $\bar{x}$ = average (sample mean) • s = sample standard deviation • ν = coefficient of variation • n = number of observations (3) For data that are treated statistically, follow the recommendations in ASTM MNL7.
6-12	*Variables*	(1) Use lowercase italics to indicate variables (e.g., $ax^2 + bx + c = 0$).

#	*Names*	*Rule*
6-13	*Unit Symbols*	(1) Use accepted SI unit symbols and abbreviations. Refer to ASTM SI 10 or a similar standard for detailed information on SI units. (2) Use unit symbols after numbers denoting a definite quantity. (3) Always leave a space between a numeral and a unit symbol (e.g., 200 mm, 0.35 µm), except for the following symbols, all of which follow the numeral without a space: • % (percent) • " (angular second) • ' (angular minute) • ° (angular degree) • °C (degree, Celsius) • °F (degree, Fahrenheit) • K (degree, Kelvin) • 316L (stainless steel grade) (4) Use unit symbols in the singular only (e.g., designate fifty kilograms as 50 kg, not 50 kgs). (5) When two symbols are placed next to each other, separate them with a center dot (e.g., $cm^2/v{\cdot}s$, Ω·cm). (6) When listing two or more units as range, the symbol is repeated if the symbol is closed up to the number, but not if it is separated from the number (e.g., 10°C to 15°C, 100 to 200 µm). (7) When listing two or more units as size, the symbol is repeated after the number, separated by a multiplication symbol (e.g., 5 mm × 5 mm). (8) The International Committee on Weights and Measures has adopted standard prefixes for denoting multiples and submultiples of SI units (see ASTM SI 10).

9 Separate and Distinct Sections

9.1 Table 7 provides Appendix, Related Information, Delayed Revision, and Revision Record formatting and style rules.

9.1.1 These sections are separate and distinct from the main body.

9.2 Refer to the *Regulations* §§ 4.2.7, 4.2.8, and § 14 and the *Procedure Manual* §§ 3.10.2, 3.13, and 3.14 for additional information.

Table 7 Separate and Distinct Sections

#	*Section*	*Rule*
7-1	*Appendix*	(1) Appendix sections immediately follow the main body of the Standard or Safety Guideline. (2) Number each Appendix sequentially, starting with 1. (3) Designation and title: 14 pt Arial, Bold, Uppercase, Align Left (4) Designation paragraph spacing: 6 pt Before (above), 0 pt After (below) (5) Title paragraph spacing: 0 pt spacing Before (above), 10 pt After (below) Example: **APPENDIX 1** **APPLICATION NOTES** (6) Begin Appendix paragraph numbers with A#-, followed by the numbering system described in Table 1, #1-3 *First Level Section Headings*, and #1-4 *Second and Subsequent Level Section Headings*. (7) The Appendix Notice is mandatory (see Table 8, #8-5 *Appendix Notice*).
7-2	*Related Information*	(1) Related Information sections immediately follow any Appendices in the Standard or Safety Guideline. In the absence of Appendices, Related Information section(s) immediately follow the main body of the Standard or Safety Guideline. (2) Number each Related Information section sequentially, starting with 1. (3) Designation and title: 14 pt Arial, Bold, Uppercase, Align Left (4) Designation paragraph spacing: 6 pt Before (above), 0 pt After (below) (5) Title paragraph spacing: 0 pt spacing Before (above), 10 pt After (below) Example: **RELATED INFORMATION 1** **SCHEMA DATA** (6) Begin paragraph numbers in Related Information sections with R#-, followed by the numbering system described in Table 1, #1-3 *First Level Section Headings*, and #1-4 *Second and Subsequent Level Section Headings*. (7) The Related Information Notice is mandatory (see Table 8, #8-6 *Related Information Notice*).

#	*Section*	*Rule*
7-3	*Delayed Revision*	(1) Delayed Revision sections immediately follow any Appendices and Related Information sections in the Standard or Safety Guideline. In the absence of Appendices and Related Information sections, Delayed Revision sections immediately follow the main body of the Standard or Safety Guideline. (2) Number each Delayed Revision section sequentially, starting with 1. (3) Each line item (in a ballot) that is approved for publication receives a separate Delayed Revision section. (4) Designation and title: 14 pt Arial, Bold, Uppercase, Align Left (5) Designation paragraph spacing: 6 pt Before (above), 0 pt After (below) (6) Title paragraph spacing: 0 pt spacing Before (above), 10 pt After (below) Example: **DELAYED REVISION 1 (effective July 2011)** **APPLICATION NOTES** (7) The Delayed Revision Notice is mandatory (see Table 8, #8-7 *Delayed Revision Notice*). (8) Begin paragraph numbers in Delayed Revision sections with D#- followed by the numbering system described in Table 1, #1-3 *First Level Section Headings*, and #1-4 *Second and Subsequent Level Section Headings*. (9) A Notice introducing the Delayed Revision material precedes the Purpose section. This Notice is mandatory (see Table 8, #8-8 *Delayed Revision (Main Body) Notice*). (10) Delayed Revision Section Notices are inserted after the first section level heading where the deferred change will occur. This Notice is mandatory (see Table 8, #8-9 *Delayed Revision (Section) Notice*).
7-4	*Revision Record (Optional)*	(1) The Revision Record is placed at the end of the Document after any Appendices, Related Information, and Delayed Revision sections. It contains the information defined in *Procedure Manual* ¶ 3.14.2. (2) Designation and title: 14 pt Arial, Bold, Uppercase, Align Left (3) Designation paragraph spacing: 6 pt Before (above), 0 pt After (below) (4) Title paragraph spacing: 0 pt spacing Before (above), 10 pt After (below) (5) See Table 3, #3-1 *Tables*, #3-3 *Table Column Headings,* and #3-5 *Table Entries* for formatting information. (6) The Revision Record Notice is mandatory (see Table 8, #8-14 *Revision Record Notice*). (7) See Appendix 2 for example.

10 Notices

10.1 Table 8 outlines the official Notices found within Standards and Safety Guidelines. Notices contain information supplied by Standards HQ staff that is not subject to revision by Standards staff or Program Members.

10.2 Official Notices are maintained by Standards HQ staff.

NOTE 2: Responsibility and copyright information will be added during final formatting by Standards HQ staff. See Appendix 1 for examples.

10.3 Standards staff or Program Members can recommend the use of a new Notice in a Standard or Safety Guideline, but approval shall be received from Standards HQ staff prior to balloting.

Table 8 Notices

#	*Name*	*Description*
8-1	*Safety Guideline Conformance Notice*	Include the following Notice before the Purpose section of the main body in all Safety Guidelines: **NOTICE:** Conformance to the 'should' provisions of this Safety Guideline is necessary to declare conformance to this Document. Conformance to 'may', 'suggested', 'preferred', 'recommended', 'NOTE', or 'Related Information' provisions is not necessary to declare conformance.
8-2	*Section and Paragraph Symbol Notice*	Include the following Notice before the Purpose section of the main body of all Standards and Safety Guidelines that use the section (§) or paragraph (¶) symbol at least once in the Document: **NOTICE:** The section symbol (§) is used to reference a numbered section, paragraph, or header and all subordinate paragraphs, headers, and embedded material (i.e., EXCEPTIONs, lists) therein. The paragraph symbol (¶) is used to reference a particular numbered paragraph and embedded material therein. When duplicated (i.e., §§ and ¶¶) the symbols are used to reference more than one section or paragraph, respectively.
8-3	*Scope Notice*	Include the following Notice after the last paragraph of the Scope section: **NOTICE:** SEMI Standards and Safety Guidelines do not purport to address all safety issues associated with their use. It is the responsibility of the users of the Documents to establish appropriate safety and health practices, and determine the applicability of regulatory or other limitations prior to use.
8-4	*Referenced Standards and Documents Notice*	Include the following Notice at the end of the Referenced Standards and Documents section: **NOTICE:** Unless otherwise indicated, all documents cited shall be the latest published versions.
8-5	*Appendix Notice*	Include the following Notice below the Appendix title: **NOTICE:** The material in this Appendix is an official part of SEMI [designation] and was approved by full Letter Ballot procedures on [A&R approval date].
8-6	*Related Information Notice*	Include the following Notice below the Related Information title: **NOTICE:** This Related Information is not an official part of SEMI [designation, without publication date (month-year) code] and was derived from the work of the [global technical committee name] Global Technical Committee. This Related Information was approved for publication by (CHOOSE ONE) (full Letter Ballot procedures) (a vote in a chapter meeting of the global technical committee) on [A&R approval date].

#	*Name*	*Description*
8-7	*Delayed Revision Notice*	Include the following Notices below the Delayed Revision title: **NOTICE: This Delayed Revisions section contains material that has been balloted and approved by the [global technical committee name] Global Technical Committee, but is not immediately effective. The provisions of this material are not an authoritative part of the [Standard/Safety Guideline] until their effective date. The main body of [insert designation] remains the authoritative version. Some or all of the provisions of revisions not yet in effect may be applied prior to the effective date, providing they do not conflict with portions of the authoritative version other than those that are to be revised or replaced as part of the deferred revision, and are labeled accordingly.** **NOTICE:** Unless otherwise noted, all material to be added shall be underlined, and all material to be deleted shall be ~~struck through~~.
8-8	*Delayed Revision (Main Body) Notice*	Include the following Notice before the Purpose section of the main body; it introduces the delayed revision material: **NOTICE: This [Standard/Safety Guideline] contains material that has been balloted and approved by the [global technical committee name] Global Technical Committee, but is not immediately effective. This material and the date on which it becomes effective are included in Delayed Revisions Section[s] #. The provisions of this information are not an authoritative part of the document until their effective dates. The main body of SEMI [designation] remains the authoritative version. Some or all of the provisions of revisions not yet in effect may be applied prior to the effective date, providing they do not conflict with portions of the authoritative version other than those that are to be revised or replaced as part of the deferred change, and are labeled accordingly. Material that is to be replaced by revisions that are not yet in effect is preceded by a NOTICE indicating its status.**
8-9	*Delayed Revision (Section) Notice*	Include the following Notice after the first level section heading of the section where the deferred change will occur: **NOTICE: [Indicate the revision that will occur] upon [effective date of the revision] publication as shown in Delayed Revisions Section[s] #. The [global technical committee name] Global Technical Committee has voted that [revision that will occur] is [OPTIONAL or NOT OPTIONAL] before the Effective Date.**
8-10	*End Notice*	Include the following Notice at the end of each Standard or Safety Guideline, after any Appendices or Related Information sections (*Regulations* ¶ 4.6) unless the Notice defined in the ¶¶ 16.3.6.2 or 16.4.7 of the *Regulations* is required to be used instead: **NOTICE:** SEMI makes no warranties or representations as to the suitability of the Standards and Safety Guidelines set forth herein for any particular application. The determination of the suitability of the Standard or Safety Guideline is solely the responsibility of the user. Users are cautioned to refer to manufacturer's instructions, product labels, product data sheets, and other relevant literature, respecting any materials or equipment mentioned herein. Standards and Safety Guidelines are subject to change without notice. By publication of this Standard or Safety Guideline, SEMI takes no position respecting the validity of any patent rights or copyrights asserted in connection with any items mentioned in this Standard or Safety Guideline. Users of this Standard or Safety Guideline are expressly advised that determination of any such patent rights or copyrights and the risk of infringement of such rights are entirely their own responsibility.

#	*Name*	*Description*
8-11	*End Notice (Intellectual Property)*	Include the following Notice at the end of each Standard or Safety Guideline, after any Appendices or Related Information sections when intellectual property must be employed in order to comply with a Standard or Safety Guideline (see *Regulations* ¶ 16.3.6.2): **NOTICE:** SEMI makes no warranties or representations as to the suitability of the Standards and Safety Guidelines set forth herein for any particular application. The determination of the suitability of the Standard or Safety Guideline is solely the responsibility of the user. Users are cautioned to refer to manufacturer's instructions, product labels, product data sheets, and other relevant literature, respecting any materials or equipment mentioned herein. Standards and Safety Guidelines are subject to change without notice. The user's attention is called to the possibility that compliance with this Standard or Safety Guideline may require use of copyrighted material or of an invention covered by patent rights. [*Name of patent holder*] has filed a statement with SEMI asserting (CHOOSE ONE) (that the patented or copyrighted item can be used by the public for the purpose of implementing the Standard or Safety Guideline without specific license and without payment of royalty or other charge) (that licenses will be made available to applicants throughout the world for the purpose of implementing this Standard or Safety Guideline without unfair discrimination). Attention is also drawn to the possibility that some elements of this Standard or Safety Guideline may be subject to patented technology or copyrighted items other than those identified above. SEMI shall not be held responsible for identifying any or all such patented technology or copyrighted items. By publication of this Standard or Safety Guideline, SEMI takes no position respecting the validity of any patent rights or copyrights asserted in connection with any item mentioned in this Standard or Safety Guideline. Users of this Standard or Safety Guideline are expressly advised that determination of any such patent rights or copyrights and the risk of infringement of such rights are entirely their own responsibility.
8-12	*Notes Notice (Optional)*	Include the following optional Notice, if applicable, before the Purpose section: **NOTICE:** Paragraphs entitled 'NOTE:' are not an official part of this Standard or Safety Guideline and are not intended to modify or supersede the official Standard or Safety Guideline. These have been supplied by the global technical committee to enhance the usage of the Standard or Safety Guideline.
8-13	*Preliminary Standard Notice*	Include the following Notice before the Purpose section of a Preliminary Standard: **NOTICE:** This is a Preliminary Standard. Preliminary Standards are approved for publication by a single chapter of a technical global committee for information and comment prior to letter balloting for its adoption as a Full-consensus Standard. Preliminary Standards are published for a period of no more than two years, unless a publication extension is granted by the International Standards Committee. This Preliminary Standard will be removed from publication, and will no longer be available for purchase, during the [cycle date] publication cycle. Suggestions for improvements should be submitted to the [global committee name] Global Technical Committee or Standards staff by [deadline date].
8-14	*Revision Record Notice*	Include the following Notice after the Revision Record title: **NOTICE:** The following information is provided to track revisions to this Document. Reject Votes may not be cast against this information. Changes may be submitted to Standards staff via a Publication Improvement Proposal (PIP) form available from the SEMI Standards Web site.

APPENDIX 1
TEMPLATE EXAMPLE

"Stds Designation Number"

Responsibility Information (added by Standards HQ staff)

SEMI XX-XXXX
TITLE

"Stds Title"

This Standard was technically approved by the [global technical committee name] Global Technical Committee. This edition was approved for publication by the global Audits and Reviews Subcommittee on [A&R approval date]. Available at http://www.semiviews.org and http://www.semi.org in [month year]. Originally published [month year or year]; previously published

"Stds H1" (Purpose – Mandatory section)

1 Purpose

1.1 Text.

"Stds H2"

2 Scope

(Scope – Mandatory section)

2.1 Text.

2.2 Text.

NOTE 1: Text.

NOTICE: SEMI Standards and Safety Guidelines do not purport to address all safety issues associated with their use. It is the responsibility of the users of the Documents to establish appropriate safety and health practices, and determine the applicability of regulatory or other limitations prior to use.

3 Limitations

3.1 Text.

3.2 Text.

(Referenced Standards and Documents – Mandatory section)

4 Referenced Standards and Documents

4.1 *SEMI Standards and Safety Guidelines*

Designation — Title

Designation — Title

"Stds Text"

4.2 *Standard Source*[1]

Designation — Title

Designation — Title

NOTICE: Unless otherwise indicated, all documents cited shall be the latest published versions.

Referenced Standards and Documents Notice

5 Terminology

5.1 *Abbreviations and Acronyms*

5.1.1 *AFLA* — a four letter acronym

"Stds H3"

5.1.2 *TLA* — three letter acronym

5.2 *Definitions*

5.2.1 *term* — definition.

5.2.2 *term* — definition.

5.2.3 *term* — definition.

NOTICE: SEMI makes no warranties or representations as to the suitability of the Standards and Safety Guidelines set forth herein for any particular application. The determination of the suitability of the Standard or Safety Guideline is solely the responsibility of the user. Users are cautioned to refer to manufacturer's instructions, product labels, product data sheets, and other relevant literature, respecting any materials or equipment mentioned herein. Standards and Safety Guidelines are subject to change without notice.

By publication of this Standard or Safety Guideline, SEMI takes no position respecting the validity of any patent rights or copyrights asserted in connection with any items mentioned in this Standard or Safety Guideline. Users of this Standard or Safety Guideline are expressly advised that determination of any such patent rights or copyrights and the risk of infringement of such rights are entirely their own responsibility.

End Notice (appropriate End Notice added by Standards HQ staff)

Copyright Information (added by Standards HQ staff)

Copyright by SEMI® (Semiconductor Equipment and Materials International), 673 S. Milpitas Blvd., Milpitas, CA 95035. Reproduction of the contents in whole or in part is forbidden without express written consent of SEMI.

Key

Blue = Style Naming Scheme to be Applied

Green = Required Notices

These Notices are required in all Documents.

Orange = Mandatory Sections

These sections are required in all documents.

APPENDIX 2
REVISION RECORD EXAMPLE

REVISION RECORD

"Stds Title"

Revision Record Notice

NOTICE: The following information is provided to track revisions to this Document. Reject Votes may not be cast against this information. Changes can be submitted to Standards staff via a Publication Improvement Proposal (PIP) form available from the SEMI Standards Web site.

"Stds Table Head"

Cycle	*Authorization*	*Section*	*Description*
XXXX	Ballot XXXX	Entire Document	Text. Text. Text.

"Stds TableText"

Key

Blue = Style Naming Scheme to be Applied

Green = Required Notice

APPENDIX 3
COMMONLY USED SYMBOLS AND COMMANDS

Table A3-1 Symbols

Sign	*Name*	*Usage*
§	Section	A character used to identify a particular section or subsection of the Document (see Table 1, #1-19 *References to Sections and Paragraphs*).
¶	Paragraph (Pilcrow)	A character used to identify a particular paragraph of the Document (see Table 1, #1-19 *References to Sections and Paragraphs*).
±	Plus/Minus	Use mathematically (see Table 6, #6-9 *Mathematical Operators*).
µ	Micro	Use mathematically (see Table 6, #6-13 *Unit Symbols*).
µm	Micrometer (Micron)	Use mathematically (see Table 6, #6-13 *Unit Symbols*).
$\bar{x}$	Average (Sample Mean)	Use mathematically (see Table 6, #6-11 *Statistical Data*).
s	Sample Standard Deviation	Use mathematically (see Table 6, #6-11 *Statistical Data*).
ν	Coefficient of Variation	Use mathematically (see Table 6, #6-11 *Statistical Data*).
n	Number of Observations	Use mathematically (see Table 6, #6-11 *Statistical Data*).
=	Equal To	Use mathematically (see Table 6, #6-9 *Mathematical Operators*).
+	Plus	Use mathematically (see Table 6, #6-9 *Mathematical Operators*).
⁄	Division	Use mathematically (see Table 6, #6-9 *Mathematical Operators*).
×	Multiplication/ Magnification	Use mathematically and to represent magnification (see Table 6, #6-9 *Mathematical Operators*).
−	Minus	Use mathematically (see Table 6, #6-9 *Mathematical Operators*).
<	Less Than	Use mathematically.
>	Greater Than	Use mathematically.
≤	Less Than/Equal To	Use mathematically.
≥	Greater Than/Equal To	Use mathematically.
≈	Almost Equal To	Use mathematically.
∑	Sum	Use mathematically.
√	Square Root	Use mathematically.
™	Trademark	Refer to Table 1, #1-24 and the *Regulations* §§ 1.5.11 and 16.4 for information regarding the use of trademarks.
®	Registered Trademark	Refer to Table 1, #1-24 and the *Regulations* §§ 1.5.11 and 16.4 for information regarding the use of trademarks.
©	Copyright	Refer to the *Regulations* ¶ 4.3 and § 16 for information regarding the use of copyrighted items.
{ [({ [( )] })] }	Parentheses, Brackets, and Braces	See Table 5, #5-4 *Parentheses* for order and use of parentheses and square brackets in regular text. See Table 6, #6-10 *Parenthetical Expressions* for order and use of parentheses, square brackets, and braces in mathematical expressions.
►	Black Right-Pointing Pointer	Use to indicate the steps in the menu to select (see Table 1, #1-25 *Instructional Information*).

APPENDIX 4
PREFERRED SPELLINGS OF COMMONLY USED WORDS

A

acidproof
alignment (not alinement)
Aloxite (trademark, instead use aluminum oxide, unless the condition in *Regulations* § 1.5.11 applies)
Appendices (*pl*)
assure (to convince)

B

barcode (not bar code)
burette (not buret)

C

cancel (not cancell)
canceling (not cancelling)
catalog (not catalogue)
center (not centre)
cleanroom (not clean room)
chem-mechanical (as in chem-mechanical polishing)
color (not colour)
customer (not preferred, use purchaser)

D

data (*pl*, but may be used in collective singular sense with singular verb)
datum (*pl,* data)
disk (not disc)

E

email (not e-mail or E-mail)
ensure (to make sure/certain of)
equipment (preferred term for equipment that performs a process, measurement, transportation, storage, etc.)
et al. (*abbreviation* for et alii)

F

fiberglass (not fibreglass)
flowmeter

G

gases *(pl)* (not gasses)
gauge (not gage)
gray (not grey)
ground water (not groundwater)

H

heat treat (*v*.) (not heat-treat)
heat-treated (*adj*.)

I

indexes (*pl*) (except, use indices in a mathematical context)

insure (to guarantee financially)

in situ (in place) (never hyphenated)

K

Kel-F (trademark, instead use polychlorotrifluoroethylene, unless the condition in *Regulations* § 1.5.11 applies)

L

labeling (not labelling)

liter (unit of volume, symbol: L) (not litre)

Lucite (trademark, instead use poly(methyl methacrylate) [PMMA], unless the condition in *Regulations* § 1.5.11 applies)

M

machinability (not machineability)

meter (unit of length, symbol: m) (not metre)

microscopic (meaning very small)

microscopical (meaning pertaining to use of a microscope)

minienvironment

Mylar (trademark, instead use polyester film, unless the condition in *Regulations* § 1.5.11 applies)

N

Not Applicable (abbreviation: N/A)

nonvolatile (not non-volatile)

O

online (not on-line)

O-ring (*n*. and *adj*.)

P

period (preferred over time frame)

pipette (not pipet)

Plexiglas (trademark, instead use acrylic plastic or plexiglass, unless the condition in *Regulations* § 1.5.11 applies)

poly(vinyl chloride) (PVC)

Pyrex (trademark, instead use borosilicate glass, unless the condition in *Regulations* § 1.5.11 applies)

R

real time (*n*.)

real-time (*adj*.)

road map (except when referring to the National Technology Roadmap for Semiconductors [NTRS], use roadmap)

rust proof (*v*.)

rust-proof (*adj*.)

S

saran (*lc*)

Scotch tape (trademark, instead use pressure-sensitive tape, unless the condition in *Regulations* § 1.5.11 applies)

set point (preferred over setpoint)

stainless steel (*n.*)

stainless-steel (*adj.*)

Stokes' law (*lc* 'l')

substate (not sub-state)

substrate (not sub-strate)

sulfur (not sulphur)

T

Teflon (trademark, instead use TFE-fluorocarbon or polytetrafluoroethylene [PTFE], unless the condition in *Regulations* § 1.5.11 applies)

three-dimensional (abbreviation: 3D)

tool (instead use equipment, unless it is a handheld device that aids in accomplishing a task [e.g., wrench, screwdriver, hammer])

two-dimensional (abbreviation: 2D)

Tygon (trademark, instead use vinyl, unless the condition in *Regulations* § 1.5.11 applies)

U

ultrapure (not ultra pure or ultra-pure)

APPENDIX 5
BIASED TERMS

WARNING: The following lists contains material that may be harmful or traumatizing to some users.

Table A5-1 Restricted Biased Terms with Approved, Alternative, Bias-Free Terms

Restricted Biased Terms	*Approved, Alternative, Bias-free Terms*
blacklist	blocklist, denylist, droplist
master	primary, main, leader, active
slave	secondary, replica, follower, standby
webmaster	web product owner
whitelist	allowlist, accesslist, permitlist

Table A5-2 Biased Terms to Avoid with Approved, Alternative, Bias-Free Terms

Biased Terms to Avoid	*Approved, Alternative, Bias-Free Terms*
abort	halt, end, stop, eliminate, quit, cease, close
blind	use wording to describe the specific need, adaptation, or situation as appropriate (e.g., person with a vision/visual impairment)
chairman	chair
cripples	impairs, slows down
disabled	use wording to describe the specific need, adaptation, or situation as appropriate (e.g., person with disability, person with [specific type of impairment])
dummy value	example value, placeholder, sample
female connectors	refer to male/female connectors/fasteners below in this table
grandfather/grandfathered	legacy or legacy status, historical
handicapped	impeded
hang/hung	stop/stopped responding
he	they (including use as a singular pronoun), user, operator, manufacturer, supplier, person, individual
her/herself	their or themself (including use as a singular pronoun)
him/himself	themself (including use as a singular pronoun)
his	their (including use as a singular pronoun)
immature	underdeveloped
jig	fixture, template, device
kill	halt, end, stop, eliminate, quit, cease, close
left out	omitted from
male/female connectors/fasteners	convex/concave, plug/receptacle, pin/socket, prong/slot
man/manning	person, staff/staffing
man-hours	person-hours, labor-hours
man-made	created or caused by humans, synthetic, manufactured, industrial, artificial
manpower	workforce, staff, personnel, human resources
mans	operates, staffs
mate	join, connect, pair
native	built-in, primary

Biased Terms to Avoid	*Approved, Alternative, Bias-Free Terms*
right out of	from the start
sanity check/test	confidence check
see	refer to, determine
she	they (including use as a singular pronoun), user, operator, manufacturer, supplier, person, individual
terminate	halt, end, stop, eliminate, quit, cease, close
workmanship	skill, craft, artistry, handiwork, work, technique

Revision Record		
Description	*Version*	*Date*
Original Distribution	Version 1.1	August 17, 1999
Changed numbering style of terminology paragraphs	Version 1.2	September 29, 1999
Complete reorganization of contents; substantial editing/rewriting	Version 2	July 10, 2001
Miscellaneous additions and revisions	Version 2.1	October 2002
Safety disclaimer returned to Scope section	Version 2.1a	December 2002
Complete reorganization of contents, single column, Delayed Revisions, Symbols	Version 3	January 2005
Title change and revision of contents	Version 4	July 2006
Miscellaneous additions and revisions	Version 4.1	July 2007
Reorganization/revision of contents; removal of required sections information, clarification of sections, miscellaneous additions and revisions	Version 5	August 2011
Miscellaneous additions and revisions to harmonize with new revisions of the *Regulations* and *Procedure Guide* additional revisions including 1) allowing subscripts and superscripts to be manually set to 14 pt, 2) EXCEPTION paragraph clarifications, 3) allowing table row headings, 4) programming language clarifications, 5) allowing a Table of Contents including a list of tables and figures, 6) changing Figure and Table Notes to footnotes, 7) added examples for Present vs. Future Tense, 8) clarifications on use of Should and Shall, 9) clarifications on equation numbering in Appendices and Related Information sections, 9) removal of Responsibility Notice, 10) update of Related Information Notice, 11) updates to commonly used symbols and commands in Appendix 3, and 12) deleting user as not being a preferred word from Appendix 4.	Version 5.1	May 2013
Table 3, revision to #3-1 (3), and addition of #3-1 (6).	Version 5.2	August 2013
Miscellaneous additions and revisions to harmonize with new revisions of the *Regulations* and *Procedure Guide*, including 1) update to #1-24 Company or Organization Trademarks, 2) update to #4-4 Active vs. Passive Voice, 3) added new safety Guideline Conformance Notice, 4) update to #4-5 Word Usage (previously Should and Shall), 5) update to Appendix 3, Commonly Used Symbols and Commands, 6) update to Appendix 4, Preferred Spellings. Additional miscellaneous additions and revisions throughout.	Version 6	March 2019
Miscellaneous additions and revisions to harmonize with new revisions of the *Regulations* and *Procedure Guide*, including 1) update to #1-2 Designation and Title, 2) update to #1-21 Abbreviations and Acronyms, 3) update to #1-23 Symbols, 4) update to #1-24 Company or Organization Names and Trademarks, 5) update to #1-28 Definitions, 6) update to #4-5 Word Usage, 7) added new Section and Paragraph Symbol Notice, 8) update to Appendix 4, Preferred Spellings. Additional miscellaneous additions and revisions throughout.	Version 7	September 2020
Miscellaneous additions and revisions to harmonize with new revisions of the *Regulations* and *Procedure Manual,* including 1) update to #4-2 Simple Language, 2) addition of #4-7 Bias-Free Language Terms, 3) addition of Appendix 5, Biased Terms. Additional revisions/additions throughout for clarification.	Version 8	November 2021

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