

Table 10 Table of Contents and Section Contents

<i>Standard Types/Sections</i>	<i>Classification</i>	<i>Guide</i>	<i>Practice</i>	<i>Specification</i>	<i>Terminology</i>	<i>Test Method</i>	<i>Safety Guidelines</i>
<i>Table of Contents</i> ^{#1}	O	O	O	O	O	O	O
Purpose	M	M	M	M	M	M	M
Scope	M	M	M	M	M	M	M
Limitations	O	O	O	O	O	O	O
Referenced Standards and Documents	M	M	M	M	M	M	M
Terminology	O	O	O	O	O	O	O
Related Documents	O	O	O	O	O	O	O
Basis of Classification	M						
Classification	M						
Test Methods	O			M/O ^{#2}			
<i>'Application Specific'</i> ^{#3}		M					M
Summary of Practice			M				
Apparatus			O			O	
Reagents and Materials			O			O	
Safety Precautions			O			O	
Test Specimens			O			O	
Procedure			M			M	
Calculations						M	
Interpretation of Results			O				
Report			O			M	
Ordering Information				O			
Requirements		P		M			P
Sampling				O			
Certification				O			
Product Labeling				O			
Packing and Package Labeling				O			
Abbreviations and Acronyms					O		
Definitions					O		
Symbols					O		
Summary of Test Method						M	
Preparation of Apparatus						O	
Calibration and Standardization						O	
Precision and Bias						O	

#1 The optional Table of Contents is not an official section of the Document. It is located after the title and before the Purpose section (see *Style Manual*, 1-30).

#2 Mandatory for materials-related Specifications; optional for other Specifications.

#3 For Application Specific sections in Guides, see Appendix 3, Table A3-1, A3-14 for special instructions.

3.3 Types of Letter Ballot Actions

3.3.1 Because the Standards Document development activity is global, consensus on a Draft Document is confirmed using a Letter Ballot issuance, voting, and approval process. This section describes how the decision is made using the Letter Ballot. The Letter Ballot is used for final technical approval of a Draft Document. The Informational Ballot is used to collect opinions in earlier development stages, and is not used for final technical approval.

APPENDIX 3

CONTENTS AND USAGE OF EACH SECTION FOUND WITHIN STANDARDS AND SAFETY GUIDELINES

Table A3-1 Descriptions of Sections Found in Standards and Safety Guidelines

#	Sections	Description
A3-1	<i>Title</i>	<ol style="list-style-type: none"> (1) Every Standard and Safety Guideline must have a title. (2) Select a unique title that describes the content of the Standard or Safety Guideline. (3) Do not use the word 'Standard' in the title. (4) Begin the title with the Subtype of Standard being developed (e.g., Specification for ..., Guide for ..., Test Method for ..., Draft Specification for ..., Preliminary Test Method for ...) or with Safety Guideline for (5) Use only a single Subtype of Standard except in very unusual circumstances. If the Document is comprised of two Subtypes (e.g., Specification and Guide for ...), the text must clearly identify those parts that are of each Subtype.
A3-2	<i>Purpose</i>	<ol style="list-style-type: none"> (1) Every Standard and Safety Guideline must have a Purpose section. (2) Provide a concise explanation of the significance and application of the Standard or Safety Guideline. (3) Indicate the intended user and the proper application of the Standard or Safety Guideline. (4) If appropriate, differentiate this Standard from other similar or related Standards or Safety Guidelines.
A3-3	<i>Scope</i>	<ol style="list-style-type: none"> (1) Every Standard and Safety Guideline must have a Scope section. (2) State the function and range of application of the Standard or Safety Guideline. Note any excluded functions or ranges, if appropriate. (3) List the materials, products, systems, or services covered by the Standard or Safety Guideline. (4) If any specific caution or warning Notices are included in the Standard or Safety Guideline, list the paragraph numbers where they occur in the last sentence of the appropriate paragraph (see <i>Style Manual</i> #1-9). (5) The Scope Notice is mandatory (see <i>Style Manual</i>, #8-1). (6) Per § 3.2.3, the Scope section cannot contain a list of section and/or subsection numbers and/or their headings. Note that a Table of Contents may be included following the Document title (refer to <i>Style Manual</i>, 1-30).
A3-4	<i>Limitations</i>	<ol style="list-style-type: none"> (1) State any relevant items not specifically covered in the Standard and Safety Guidelines. (2) For Test Methods and Practices, include all known items that may cause erroneous results to be obtained. (3) For each such item, describe how the existence of the problem can be identified and measures to be taken to circumvent the problem.

#	Sections	Description
A3-5	<i>Referenced Standards and Documents</i>	<p>(1) When references to publicly available Standards/standards are within the Document, it must include a Referenced Standards and Documents section.</p> <p>(2) List all publicly available Standards/standards that are cited in the Standard or Safety Guideline outside the Terminology section and published by SEMI or another recognized SDO such as ANSI, ASTM, Deutsches Institut für Normung e.V. (DIN), International Electrotechnical Commission (IEC), ISO, and Japanese Standards Association (JSA).</p> <p>(3) List SEMI Standards and Safety Guidelines first, in alphanumeric order by designation.</p> <p>(4) List standards published by other SDOs using a separate subsection for each SDO. Place these subsections in alphabetical order by the name of the SDO. List the standards in each subsection in alphanumeric order by designation.</p> <p>(5) Do not include the publication date (e.g., month-year) code unless only a specific edition of the cited Standard/standard must be employed.</p> <p>(6) <i>Other Documents</i> — List SEMI Auxiliary Documents, regulations, codes, and similar types of nonstandard technical documents cited in the Standard or Safety Guideline outside the Terminology section, under the subheading Other Documents. Exclude from listing technical books, magazines and magazine articles, and journals and journal articles.</p> <p>(7) For all cited standards and technical documents not originating from SEMI, provide a footnote referencing the source of the standard or technical document and the address from which a copy can be obtained. When available, also list fax and Web site information of the organization that distributes the standard or technical document.</p> <p>(8) Be sure to list only published standards or Standards and Safety Guidelines. Never refer to draft documents or Draft Documents being developed by SEMI or any other SDO in this section (or elsewhere in the Standard or Safety Guideline). Note that if it is necessary to reference a Draft Document under development, allude to the material by a descriptive phrase, not necessarily the title. Include a Note to the effect that a Standard or Safety Guideline covering the topic is being developed by a SEMI Standards global technical committee. The global technical committee can be identified, if desired.</p> <p>(9) References to periodicals, books, and Web sites cited in the Standard or Safety Guideline should be listed as numbered footnotes at the bottom of the page that the reference first occurs. Cite only publicly available references in a SEMI Standard or Safety Guideline.</p> <p>(10) For Related Information sections that reference publicly available SEMI Standards, Safety Guidelines, standards, and/or documents, create a separate Referenced Standards and Documents section to be contained within each Related Information.</p> <p>(11) The Referenced Standards and Document Notice is mandatory (see <i>Style Manual</i> #8-2).</p>
A3-6	<i>Terminology</i>	<p>(1) Terminology is an important part of most Standards and Safety Guidelines. However, in some cases, terminology for a given technical area is collected together in a Terminology Standard. Terminology includes abbreviations and acronyms, definitions, and symbols.</p> <p>(2) List abbreviations and acronyms, definitions, and symbols in alphabetical order in separate subsections. If desired, further divide one or more of these subsections so that related terms are grouped before alphabetizing. In rare occasions, groups of related terms may be ordered nonalphabetically (e.g., a group of terms related to a particular subject might start with the definition of the subject itself).</p> <p>(3) Terminology only used in a Related Information section of the Document is not put in the main body's Terminology section, but can be put in a separate Terminology section within the Related Information.</p>

#	Sections	Description
A3-7	<i>Abbreviations and Acronyms</i>	<ol style="list-style-type: none"> (1) 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. Note that the Program does not distinguish between ‘acronyms’, which refer only to terms based on the initial letters of their primary words and read as a single word (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), calling them all acronyms. (2) Before including an entry in this section, check to determine if the item is included in the <i>Compilation of Terms</i>, available on the SEMI Standards Web site. Make sure that all entries taken from the <i>Compilation of Terms</i> exactly match the original entries in the compilation itself, if possible. Similar, but not identical, definitions of the same term are strongly discouraged. (3) List descriptions of abbreviations and acronyms commonly used in the technical area. (4) If a Standard or Safety Guideline contains a large number of abbreviations and/or acronyms, group them together in the Terminology section. (5) List abbreviations and acronyms in alphabetical or alphanumeric order unless there is a compelling reason to order them differently. If desired, divide the list into numbered subsections so that related items are grouped before alphabetizing. (6) For clarification or tutorial discussion, a numbered discussion paragraph may be added following the entry. Start the paragraph with <i>Discussion</i> — . (7) Abbreviations are used most frequently in tables, illustrations, Notes, bibliographies, and lists. (8) Acronyms are pronounceable words or shorthand expressions formed from most, or all, of the initial letters of a name or other term composed of two or more words. (10) The first time an abbreviation and acronym that is not already commonly accepted is used, spell out the full name and follow it with its abbreviation or acronym in parentheses. Generally, it does not need to be spelled out again later in the Document. (11) Use commonly accepted abbreviations and acronyms where they are available. (12) ‘SEMI’ is a registered trademark standing for Semiconductor Equipment and Materials International. Do not use this acronym to stand for anything else.
A3-8	<i>Definitions</i>	<ol style="list-style-type: none"> (1) 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. (2) Before including an entry in this section, check to determine if the item is included in the <i>Compilation of Terms</i>, available on the SEMI Standards Web site. Make sure that all entries taken from the <i>Compilation of Terms</i> exactly match the original entries in the compilation itself. (3) Avoid defining a term used only once within a Document. (4) List definitions for terms commonly used in the technical area. (5) List definitions of terms in alphabetical order. If desired, divide the list into numbered subsections so that related terms are grouped before alphabetizing. (6) Avoid the use of discussions, equations, figures, and Notes in the Terminology section. Place these at the first point of use within the Document. (7) If needed for clarification or tutorial discussion, add an explanatory Note in a separate paragraph following the definition. (8) Identify the sources of definitions from other Standards or Safety Guidelines that are quoted. If the source is a standard or other document not published by SEMI, obtain a copyright release letter from the copyright owner and the primary author, if known, before submitting the Document for balloting.

#	Sections	Description
A3-9	<i>Symbols</i>	<ol style="list-style-type: none"> (1) 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. (2) List descriptions of symbols commonly used in the technical area. (3) List symbols in alphabetical order. If desired, divide the list into numbered subsections so that related items are grouped before alphabetizing. (4) Do not include in the list standard symbols used for Système International d'Unités (SI) or other familiar units. (5) If needed for clarification or tutorial discussion, add an explanatory Note in a separate paragraph following the definition. (6) In a Standard or Safety Guideline with many equations, it may be convenient to list all of the symbols as a separate subsection of the terminology section rather than under each equation.
A3-10	<i>Related Documents</i>	<ol style="list-style-type: none"> (1) List in this section any SEMI Standards, Safety Guidelines, standards, other technical papers, and/or documents that provide useful background material for carrying out the Standard or Safety Guideline, but are not specifically cited in the Standard or Safety Guideline. (2) Only references that are publicly available should be listed. (3) Last section of the main body of the Standard or Safety Guideline.
A3-11	<i>Basis of Classification</i>	<ol style="list-style-type: none"> (1) Clearly state and describe the categories and subcategories on which the groupings of the classifications are based. (2) If necessary, develop additional section headings to enhance the explanation of the groupings.
A3-12	<i>Classification</i>	<ol style="list-style-type: none"> (1) List groupings by category and subcategory using a tabular form or other selected means.
A3-13	<i>Test Methods</i>	<ol style="list-style-type: none"> (1) List the test methods to be used to determine if the materials, products, systems, or services meet the requirements of the Specification. Indicate in this section if retesting is allowed. (2) Include test methods for each attribute covered in the <i>Ordering Information</i> and <i>Requirements</i> sections. (3) Where available, cite applicable standard test methods available from ASTM, DIN, Japan Electronics and Information Technology Industries Association (JEITA), SEMI, or other SDOs. (4) If several standard test methods exist for a particular attribute, indicate either (1) the preferred test method for the purpose of determining the suitability of the product(s) or service(s) or (2) the basis for choosing one test method over another. (5) If an appropriate standard test method is not available, describe a test method in abridged form. Instead of writing an abridged test method in this section, the test method can be a separate Test Method and cited in this section. (6) If no standard test method can be identified for a specific attribute and no test method is described, state that the value of the attribute must be determined by a method agreed upon by the supplier and the purchaser.
A3-14	<i>'Application Specific'</i>	<ol style="list-style-type: none"> (1) Describe the instructions, options, or recommendations intended to increase the awareness of the user to available techniques, starting points, or approaches. (2) If appropriate, include criteria for making a selection among various options. (3) Use appropriate section name(s) for the type of content included in this section (i.e., the section name 'Application Specific' should not be used).
A3-15	<i>Summary of Practice</i>	<ol style="list-style-type: none"> (1) Preview the procedure by concisely listing the key steps. (2) If desired, include a flow chart of the key steps as a graphical representation.

#	Sections	Description
A3-16	<i>Apparatus</i>	<ol style="list-style-type: none"> (1) List all of the equipment required to carry out the procedure. Include a diagram of the apparatus in this section, if reasonable. (2) Do not include names or graphical trademarks of specific companies or commercial organizations in the text of a Standard or Safety Guideline or in Appendix sections or Complementary Files of such Documents. If possible, avoid referring to specific company equipment names (e.g., trade names, trademarks) (see <i>Regulations</i> § 1.5.11). (3) Specify the requirements to be met by each individual equipment. (4) For each individual equipment specify the range or nominal value of all parametric requirements that directly affect the test result. (5) Specify the requirements so that the stated precision and bias of the test can be met by competent operators; do not overspecify or underspecify. (6) Make sure that all equipment and supplies called for in the procedure are described in this section. (7) Describe in this section any requirements for setting up and preparing the apparatus to carry out the procedure.
A3-17	<i>Reagents and Materials</i>	<ol style="list-style-type: none"> (1) List all process chemicals, gases, and other materials required to carry out the procedure. (2) Do not include names or graphical trademarks of specific companies or commercial organizations in the text of a Standard or Safety Guideline or in Appendix sections or Complementary Files of such Documents. If possible, avoid referring to specific company equipment names (e.g., trade names, trademarks) (see <i>Regulations</i> § 1.5.11). (3) Cite SEMI Specifications for required process chemicals and gases, where these are available to identify the assay and grade required by the procedure. Be sure to include the cited Standards in the <i>Referenced Standards and Documents</i> section. (4) If water is required for use in the procedure, reference SEMI F63; be sure to indicate the grade of water required.
A3-18	<i>Safety Precautions</i>	<ol style="list-style-type: none"> (1) Identify any hazardous materials, operations, and equipment required to perform the procedure safely. (2) Cite appropriate SEMI Safety Guidelines or other applicable safety standards and regulations. (3) Cite a material safety data sheet (MSDS), where applicable. (4) Insert cautionary Notes concerning the use of hazardous items immediately before the points in the procedure or other sections where the item must be used.
A3-19	<i>Test Specimens</i>	<ol style="list-style-type: none"> (1) Describe all test specimens required to carry out the procedure or test method. (2) Write procedures/instructions in this section as imperative sentences (i.e., start with a verb because the subject 'you' is implied). The previous sentence is an imperative sentence, for example. (3) Describe the essential properties of the required test specimens. (4) Present a step-by-step procedure for selecting, preparing, and conditioning the test specimens.
A3-20	<i>Procedure</i>	<ol style="list-style-type: none"> (1) List detailed, step-by-step instructions for performing the procedure. (2) Write procedures/instructions in this section as imperative sentences (i.e., start with a verb because the subject 'you' is implied). The previous sentence is an imperative sentence, for example. (3) Instruct the user of the Standard to record all information required for interpreting the results of the procedure; include all information specified in the report section. (4) Review the sequence of steps in the procedure to ensure that: <ul style="list-style-type: none"> • each step follows from the previous step, • all branches are clearly identified, and • no choices available to the user of the Practice remain unspecified.
A3-21	<i>Calculations</i>	<ol style="list-style-type: none"> (1) Describe in sequence, each calculation required to obtain the test result.

#	Sections	Description
A3-22	<i>Interpretation of Results</i>	<ol style="list-style-type: none"> (1) List the steps required to interpret the results of the procedure, if appropriate. (2) Some Practices, such as Practices to prepare a specimen for a test, do not require interpretation of the results. (3) If interpretation is required, write procedures to interpret results in this section as imperative sentences (i.e., start with a verb because the subject 'you' is implied). The first sentence above is an imperative sentence, for example.
A3-23	<i>Report</i>	<ol style="list-style-type: none"> (1) List the essential results of carrying out the procedure, if appropriate. Include the following items: <ul style="list-style-type: none"> • Identification of the test specimens, if any; • The location where the procedure was performed and the operator who carried it out; • Description of the specific equipment used to carry out the procedure, including software version, if appropriate; • Any optional portions of the procedure or choices exercised in carrying out the procedure; and • Results of carrying out the procedure. (2) Do not request information for the report unless its collection and recording are explicitly spelled out in the procedure.
A3-24	<i>Ordering Information</i>	<ol style="list-style-type: none"> (1) List all required and optional items to be included in a purchase order for the materials, products, systems, or services covered by this Specification. (2) The list should be complete enough that an order based on it will result in definition of the desired product or service. (3) The list may be developed in tabular or outline format. (4) Be sure to list any choices of grades or other items that must be selected to define the product or service completely. (5) Where there is not a unique test method for particular attributes, indicate that the purchase document must show the test method to be used for such attributes.
A3-25	<i>Requirements</i>	<ol style="list-style-type: none"> (1) List the requirements that must be met for the materials, products, systems, or services to fulfill the Specification. (2) For a product covered by the Specification, list the attributes of items such as materials of construction, methods of manufacture, chemical composition, physical properties, mechanical properties, and dimensions. (3) For servicing covered by the Specification, list the attributes or characteristics that the services must have. (4) If desired, group related requirements into independent sections. (5) Liberal use of tables and outlines facilitates understanding of the Specification requirements.
A3-26	<i>Sampling</i>	<ol style="list-style-type: none"> (1) Specify procedures for selecting test specimens from a lot in order to determine the acceptability of the lot.
A3-27	<i>Certification</i>	<ol style="list-style-type: none"> (1) List the requirements for certifying that the product(s) or service(s) meet the Specification. If desired, use the following standard paragraphs: <ol style="list-style-type: none"> x.1 Upon request of the purchaser in the contract or order, a manufacturer's or supplier's certification that the product was manufactured and tested in accordance with this Specification, together with a report of the test results, shall be furnished at the time of shipment. x.2 If desired, the supplier and purchaser may agree that the product shall be certified as 'capable of meeting' certain requirements. In this context, 'capable of meeting' shall signify that the supplier is not required to perform the appropriate tests. However, if the purchaser performs the test(s) and the product fails to meet the requirement(s), the product may be subject to rejection.
A3-28	<i>Product Labeling</i>	<ol style="list-style-type: none"> (1) List information to be included on the label of the product, including (if appropriate) a statement of conformance with the Specification.

#	Sections	Description
A3-29	<i>Packing and Package Labeling</i>	(1) List requirements for protective or outer packaging, including information to be placed on the package label(s).
A3-30	<i>Summary of Test Methods</i>	(1) Preview the procedure by concisely listing the key steps. (2) If desired, include a flow chart of the key steps as a graphic.
A3-31	<i>Preparation of Apparatus</i>	(1) Present a step-by-step procedure for preparing or setting up the equipment required to carry out the Test Method. (2) Write procedures/instructions in this section as imperative sentences (i.e., start with a verb because the subject 'you' is implied). The previous sentence is an imperative sentence, for example. (3) Include this section only for equipment requiring special set-up procedures; use the Calibration and Standardization section for these procedures.
A3-32	<i>Calibration and Standardization</i>	(1) Give step-by-step procedures for calibrating or standardizing the apparatus. (2) Write procedures/instructions in this section as imperative sentences (i.e., start with a verb because the subject 'you' is implied). The previous sentence is an imperative sentence, for example. (3) Do not include this section if calibration and standardization procedures are automatically provided in the apparatus. (4) Describe calibration and standardization procedures in the Procedure section if they are required before each test.
A3-33	<i>Precision and Bias</i>	(1) Provide in this section a statement of the precision and bias expected to be achieved by a competent operator in using the Test Method together with a description of the basis for the statement such as the results of a single laboratory or multilaboratory (i.e., round-robin) test. (2) SEMI E89 provides guidance for performing a measurement systems analysis (MSA), which will provide precision and bias estimates among other metrics.