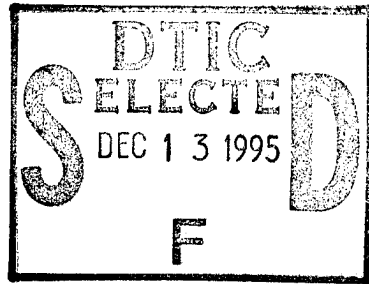


NOT MEASUREMENT
SENSITIVE

MIL-STD-962C
20 October 1995

SUPERSEDING
MIL-STD-962B
20 May 1988

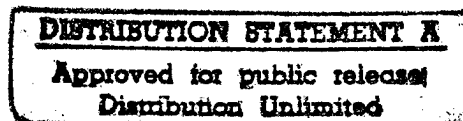


**DEPARTMENT OF DEFENSE
STANDARD PRACTICE
DEFENSE STANDARDS AND HANDBOOKS**



19951212 013

DTIC QUALITY INSPECTED 1



AMSC D7124

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FOREWORD

1. This standard is approved for use by all Departments and Agencies of the Department of Defense (DoD).

2. The DoD is committed to reducing costs, making greater use of commercial products and practices, and promoting the use of the latest technologies. Every effort must be made to ensure that the standardization documents used by the DoD foster these goals and do not act as barriers. Standardization documents provide a framework by which requirements are defined. They must allow for the various contractual circumstances and environments that exist, and must promote an atmosphere in which appropriate cost, benefit, and risk tradeoffs can be made.

3. This standard covers the content and format requirements for DoD standards and handbooks. Proper preparation and use of standardization documents is a difficult task requiring careful analysis and good judgment. The paragraphs below highlight areas of policy and intent to provide guidelines to assist in document development.

4. There are five types of DoD-prepared standards: interface standards, standard practices, design criteria standards, test method standards, and manufacturing process standards. Before developing or revising a DoD standard, consider using an existing non-Government standard. If a suitable non-Government standard is not available, consider working with industry on a technical committee of a non-Government standards body to develop a new standard or revise an existing one. If it is not practical to use a non-Government standard, consult the DoD Index of Specifications and Standards (DoDISS) to determine if an existing DoD standard could be used. Also, consider whether a standard, which is a requirements-type document, is needed or if a guidance handbook could suffice. If it is determined that a DoD standard is needed, follow the guidelines below:

a. Do not develop standards that tell a contractor how to manage a program. It is not the policy of the DoD to create standard management approaches across all programs and all contractors. Contractors must be allowed the flexibility to manage programs in innovative ways that can improve quality, reduce costs, and introduce the latest technological advances. If a common management approach is likely to have applications across industry in meeting both commercial and defense needs, a non-Government standard should be developed. If the DoD has a need to know how a contractor proposes to manage certain program elements, a non-contractual handbook should be used to provide guidance to DoD personnel on how to collect this information during the solicitation.

b. DoD interface standards should be developed to specify the physical, functional, or military operational environment interface characteristics of systems, subsystems, equipment, assemblies, components, items, or parts to permit interchangeability, interconnection, interoperability, compatibility, or communications. Non-Government standards should be used to the extent possible to specify interface requirements. DoD interface standards should only be developed to specify military-unique interface requirements. DoD interface standards may be cited as solicitation requirements without need for a waiver by the Milestone Decision Authority.

c. DoD standard practices should be developed when it is necessary to specify procedures on how to conduct non-manufacturing functions. Standard practices should only be developed for functions that, at least some of the time, are obtained via contract from private sector firms. Procedures for functions performed only by DoD personnel should be covered by such documents as regulations, directives, instructions, technical manuals, or standard operating procedures. DoD standard practices may be cited as solicitation requirements without need for a waiver by the Milestone Decision Authority.

d. DoD design criteria standards should be developed to specify military-unique design or functional criteria that must be adhered to in the development of systems, subsystems, equipment, assemblies, components, items, or parts. These design criteria are not primarily related to requirements that affect interchangeability, interoperability, interconnection, compatibility, or communications. Adherence to these design criteria standards, however, will affect the manufacturing of a product. Some examples would include military-unique design selection, nuclear blast protection, safety requirements, and human factors requirements. A DoD design criteria standard requires the Milestone Decision Authority's waiver to be cited as a solicitation requirement.

e. Non-Government standards can usually be used to satisfy DoD requirements for test methods. A DoD test method standard should only be developed if it reflects a military-unique requirement. A DoD test method standard requires the Milestone Decision Authority's waiver to be cited as a solicitation requirement.

f. The DoD discourages the development of manufacturing process standards. A DoD manufacturing process standard requires the Milestone Decision Authority's waiver to be cited as a solicitation requirement. The concept of DoD manufacturing process standards is inconsistent with both Department's emphasis on using commercial processes and reliance on performance specifications that state desired outcomes rather than "how-to's." The role for DoD process standards is limited to situations where the DoD alone has the technological expertise to specify a military-unique process. If there is an advantage to establishing requirements for an industry-wide commercial process, a non-Government standard should be developed.

g. Standards should include application guidance to help users know when and how to use a document. Such guidance might include: (1) how to apply a document to different contract types and different program phases; (2) how to make use of any flexibility allowed by the standard; (3) lessons learned; (4) the extent of Government review and approval; and (5) the relationship between the standard and other related documents.

h. Standards should be structured to facilitate tailoring of requirements -- either to tailor out requirements that are not always needed or tailor in requirements that may be needed under certain conditions.

5. Rather than develop mandatory standards that require a single approach, when other approaches may also be acceptable, a handbook offers an opportunity to preserve institutional memory and offer solutions that have worked, without mandating those solutions. Handbooks are good for providing lessons learned; classifying items, materials, or processes; defining terms; listing abbreviations or acronyms; providing interpretation; offering different technical options; and any other type of guidance information. Handbooks may also be used to provide acquisition guidance to DoD personnel on the type of information that should or may be included in solicitations in order to collect information to evaluate contractor's management and manufacturing processes. An important point about handbooks is that they are not requirements documents. They are for guidance only.

6. The figures in this standard are only fictitious examples meant to illustrate format. No such documents exist. If there is any conflict between the text of this standard and the figures, the text governs.

7. Document developers should note that interim or "used-in-lieu-of" standards and handbooks are no longer permitted. Also, military bulletins, which were covered by MIL-STD 962B, are no longer an approved document category. Existing military bulletins should be cancelled or converted to a handbook.

8. Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Office of the Assistant Secretary of Defense (Economic Security), Standardization Program Division, 5203 Leesburg Pike, Suite 1403, Falls Church, VA 22041-3466, by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

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1. SCOPE

1.1 Scope. This standard establishes the formats and contents for the preparation of DoD standards and handbooks, prepared either by Government activities or by contractors under contract to the Government (see 6.3 and 6.4).

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3, 4, and 5 of this standard. This section does not include documents cited in other sections of this standard or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements documents cited in sections 3, 4, and 5 of this standard, whether or not they are listed.

2.2 Government documents.

2.2.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DoDISS) and supplement thereto, cited in the solicitation (see 6.2).

STANDARDS

FEDERAL

FED-STD-376	-	Preferred Metric Units for General Use by the Federal Government.
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DEPARTMENT OF DEFENSE

MIL-STD-12	-	Abbreviations for Use on Drawings, and in Specifications, Standards and Technical Documents.
DOD-STD-963	-	Data Item Descriptions (DIDs), Preparation of.

(Unless otherwise indicated, copies of the above specifications, standards, and handbooks are available from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.2.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

MIL-STD-962C

DoDISS	-	Department of Defense Index of Specifications and Standards.
DoD 5010.12-L	-	Acquisition Management System and Data Requirements Control List (AMSDL).
SD-1	-	Standardization Directory.
SD-14	-	Listings of Toxic Chemicals, Hazardous Substances, and Ozone-Depleting Chemicals
Cataloging Handbook H2-1	-	Federal Supply Classification, Part 1, Groups and Classes.
United States Government Printing Office (GPO) Style Manual.		

(Copies of DoD 5010.12-L, SD-1, and SD-14 are available from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094. Copies of Cataloging Handbook H2-1 are available from the Commander, Defense Logistics Services Center, Battle Creek, MI 49017-3084. Copies of the GPO Style Manual are available from the Superintendent of Documents, U.S. Government Printing Office, North Capitol & "H" Streets, N.W., Washington, DC 20402-0002. Copies of the DoDISS are available on a yearly subscription basis either from the Government Printing Office or the DoDSSP Subscription Services, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.3 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DoD adopted are those listed in the issue of the DoDISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DoDISS are the issues of the documents cited in the solicitation (see 6.2).

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

ASME Y14.5M - Dimensioning and Tolerancing. (DoD adopted)

(Application for copies should be addressed to the American Society of Mechanical Engineers, 345 East 47th Street, New York, NY 10017-2392).

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

IEEE 260.1 - Standard Letter Symbols for Units of Measurement (SI Units, Customary Inch-Pound Units, and Certain Other Units.)
IEEE 268 - Metric Practice. (DoD adopted)

(Application for copies should be addressed to the IEEE Service Center, P.O. Box 1331, 445 Hoes Lane, Piscataway, NJ 08855-1331.)

2.4 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. DEFINITIONS

3.1 Acronyms used in this standard. The acronyms used in this standard are defined as follows:

- a. AMSC - Acquisition Management Systems Control
- b. AMSDL - Acquisition Management Systems and Data Requirements Control List
- c. CDRL - Contract Data Requirements List
- d. DepSO - Departmental Standardization Office
- e. DID - Data Item Description
- f. DoD - Department of Defense
- g. DoDISS - Department of Defense Index of Specifications and Standards
- h. DoDSSP - Department of Defense Single Stock Point
- I. FAR - Federal Acquisition Regulation
- j. FIPS - Federal Information Processing Standard
- k. FSC - Federal Supply Class
- l. FSG - Federal Supply Group
- m. GPO - Government Printing Office
- n. ODC - Ozone Depleting Chemical
- o. NATO - North Atlantic Treaty Organization
- p. NSN - National Stock Number

3.2 Class. This term provides additional categorization of differences in characteristics other than that afforded by type classification which does not constitute a difference in quality or grade, but are for specific, equally important uses, and is usually designated by Arabic numerals, such as, "class 1" or "class 2."

3.3 Composition. This term is used in classifying commodities which are differentiated strictly by their respective chemical composition and is designated in accordance with accepted trade practice.

3.4 Coordinated standard or handbook. A coordinated standard or handbook is a document required by more than one Military Department, Defense Agency, or Civilian Agency and is coordinated with various activities of the interested departments and agencies.

3.5 Data. Recorded information, regardless of form or method of the recording.

3.6 Data Item Description (DID), DD Form 1664. A completed form that defines the data required of a contractor. The form specifically defines the data content, preparation instructions, format, and intended use. DIDs are prepared in accordance with DOD-STD-963.

3.7 Department of Defense (DoD) standard. A standard used to satisfy primarily multiple, military unique applications. There are five types of DoD standards: interface standards, design criteria standards, manufacturing process standards, standard practices, and test method standards.

3.8 Design criteria standard. A standard that establishes military-unique design or functional criteria that must be adhered to in the development of systems, subsystems, equipment, assemblies, components, items, or parts.

3.9 Grade. This term usually implies differences in quality and is usually designated by capital letters, such as, "grade A" or "grade B."

3.10 Handbook. A handbook is a guidance document that enhances user awareness by providing engineering information; lessons learned; possible options to address technical issues; classification of similar item, materials, or processes; interpretative direction and techniques; and any other type of guidance information that may help the Government or its contractors in the design, construction, selection, management, support, or operation of systems, products, processes, or services.

3.11 Hard conversion. A hard conversion is the process of changing a measurement from inch-pound units to non-equivalent metric units which necessitates physical configuration changes of the item outside those permitted by established measurement tolerances. The term "hard conversion" is in general use in the United States, although it is technically incorrect when applied to specific items because no "conversion" takes place. Instead, a new metric item requiring a new part identification is created to eventually replace the customary item. The new item is often referred to as being in "hard metric."

3.12 Hybrid document. A hybrid document is one in which some requirements are given in rounded, rational metric units, and other requirements are given in rounded, rational inch-pound units. Hybrid documents are often required for use in new designs where existing usable components must interface in a metric system.

3.13 Inch-pound document. Inch-pound documents have requirements given in rounded, rational, inch-pound units, usually as a result of being originally developed in inch-pound. The magnitudes are meaningful and practical (for example, 1 ounce, not 28.3495 grams). Inch-pound documents should include those with rounded, rational, inch-pound units only (any needed metric unit

conversions should be in conformance with 4.5). NOTE: There have been instances where magnitudes expressed in metric units as a result of mathematical conversion from rounded, rational, inch-pound units are given first (preferred units) with the rounded, rational inch-pound units given in parenthesis or in a non-preferred position. These documents are inch-pound documents. Inch-pound documents are developed for items to interface or operate with other inch-pound items.

3.14 Interface standard. A standard that specifies the physical, functional, or military operational environment interface characteristics of systems, subsystems, equipment, assemblies, components, items, or parts to permit interchangeability, interconnection, interoperability, compatibility, or communications.

3.15 Limited coordination standard or handbook. A limited coordination standard or handbook, covers items of interest to a single activity, Military Department, or Defense Agency.

3.16 Manufacturing process standard. A standard that states the desired outcome of manufacturing processes or specifies procedures or criteria on how to perform manufacturing processes.

3.17 Measurement sensitive documents. A measurement sensitive document is one in which application of the requirements depends substantially on some measured quantity (for example, the document contains requirements for dimensions which are critical to the interfacing of the item).

3.18 Metric documents. Metric documents have requirements given in rounded, rational, metric units, usually as a result of being originally developed in metric. The magnitudes expressed are meaningful and practical (for example, 10 grams, not 0.35273 ounces). Documents containing only electrical units which are used in both the metric and inch-pound systems (for example, volts, amps, and ohms) are classified as metric documents. Documents also containing dimensional interfaces must have these interfaces in metric sizes to be classed as metric documents. Metric documents are developed for items to interface or operate with other metric items.

3.19 Metric units. Metric units are a system of basic measures established by the International System of Units based on "Le Systeme International d'Unites," of the General Conference on Weights and Measures. These units are described in IEEE 268.

3.20 Metriation. Metriation is the process of changing to the metric system, including the act of developing metric standardization documents or converting current standardization documents to metric units of measurement.

3.21 Non-Government standard. A standardization document developed by a private sector association, organization, or technical society which plans, develops, establishes, or coordinates standards, specifications, handbooks, or related documents. The term does not include standards of individual companies. Non-Government standards adopted by the DoD are listed in the DoDISS.

3.22 Not measurement sensitive documents. A not measurement sensitive document is one in which application of the requirements does not depend substantially on some measured quantity. This type of document can be used with either a metric system or an inch-pound system.

3.23 Recovered material. Waste materials and by-products that have been recovered or diverted from solid waste, but such term does not include those materials and by-products generated from, and commonly reused within, an original manufacturing process.

3.24 Recycled material. Product or other material recovered from the solid waste stream for use in the form of raw materials in the manufacture of new products other than fuel for producing heat or power by combustion.

3.25 Soft conversion. A soft conversion is the process of changing a measurement from inch-pound units to equivalent metric units within acceptable measurement tolerances without changing the physical configuration of the item.

3.26 Standard. A document that establishes uniform engineering or technical criteria, methods, processes, and practices.

3.27 Standard practice. A standard that specifies procedures on how to conduct certain non-manufacturing functions. Standard practices are developed for functions that, at least some of the time, are obtained via contractor from private sector firms.

3.28 Standardization document. As used in this standard, standardization document is a generic term that includes all the documents covered by this standard.

3.29 Style. This term is used to denote differences in design or appearance.

3.30 Tailoring. The process by which individual requirements (sections, paragraphs, or sentences) of the selected specifications, standards, and related documents are evaluated to determine the extent to which they are most suitable for a specific system and equipment acquisition and the modification of these requirements to ensure that each achieves an optimal balance between operational needs and cost.

3.31 Test method standard. A standard that specifies procedures or criteria for measuring, identifying, or evaluating qualities, characteristics, and properties of a product or process.

3.32 Type. This term implies differences in like items or processes relative to design, model, shape, or other configuration and is usually designated by Roman numerals, such as "type I" or "type II."

4. GENERAL REQUIREMENTS

4.1 General. This section covers general aspects of style, format, and general requirements for preparing a DoD standard or handbook.

4.2 Content. The following general content criteria shall apply for DoD standards and handbooks.

4.2.1 Contractual and administrative requirements. Standardization documents shall not include contractual requirements which are properly a part of the contract, such as cost, quantity required, time or place of delivery, methods of payment, liquidated damages, rework, repair, resubmittal, contract quality requirements, packaging, requirements for preparation, submission, delivery, approval, and distribution of data, record keeping, and actions to be taken by the Government for accepting nonconforming material. Contractual and administrative provisions considered essential for acquisition may be included in the "Notes" section for information. Standardization documents shall not prescribe mandatory requirements or instructions for the Government Contract Administration Office. These include directions relating to quality assurance functions such as inspections, audits, reviews, certifications, and technical approvals.

4.2.2 Classified material. Standardization documents are working documents and shall be designed to avoid unnecessary restrictions in their dissemination. Standardization documents containing classified information shall be appropriately marked and handled in accordance with security regulations. The title of standardization documents shall not be classified.

4.2.3 Use of copyright or patent material. Copyright or patent material shall not be included in a standardization document without the prior consent of the copyright or patent owner. When such consent is obtainable, a credit line, if requested by the copyright or patent owner, shall be placed in the standardization document close to the material involved.

4.3 Text. The text shall be written in clear and simple language, free of vague terms or those subject to misinterpretation. Unfamiliar words, words having more than one meaning, and unusual technical and trade expressions shall be avoided. Sentences shall be short. Punctuation shall be used to aid in reading and prevent misreading. Well-planned word order requires a minimum of punctuation. When extensive punctuation appears necessary for clarity, consideration should be given to revising the sentence, since misplaced or omitted punctuation marks can sometimes change the meaning of the sentence completely. To avoid this possibility, consideration should be given to converting clauses of a compound sentence into separate sentences. All sentences shall be completed and in accordance with the rules of grammar.

4.3.1 Grammar and style. Except where DoD requirements differ, the United States Government Printing Office Style Manual shall be used as a guide for capitalization, spelling, punctuation, syllabification, compounding words, tabular work, and other elements of grammar and style.

4.3.2 Abbreviations. Abbreviations shall be in accordance with MIL-STD-12, where applicable. Abbreviations not covered by MIL-STD-12 shall be in accordance with the GPO Style Manual. The first time an abbreviation is used in text, it shall be placed in parentheses and shall be preceded by the word or term spelled out in full: for example, circuit (ckt), frequency converter (freq conv), maximum working pressure (mwp). The rule shall not apply to abbreviations used for the first time in tables and equations. Abbreviations used in figures and tables, but not referenced in the text or in any other portion of the standardization document, shall be spelled out in a footnote to the applicable figure or table.

4.3.3 Acronyms. The first time an acronym is used in text, it shall be placed in parentheses and shall be preceded by the word or term spelled out in full: for example, North Atlantic Treaty Organization (NATO). The rule does not apply to acronyms used for the first time in tables and equations. Acronyms used in figures and tables, but not referenced in the text or in any other portion of the document, shall be spelled out in a footnote to the applicable figure or table. A complete list of acronyms may also be included in section 3 of the standardization document. If section 3 lists and spells out acronyms, the acronym need not be spelled out again in the text.

4.3.4 Symbols. The only symbols normally used in text are “+”, “-”, “±”, to express ranges or tolerances, the degree symbol “°”, and metric symbols, such as “mm” and “mg”. Other symbols may be used in equations and tables and shall be in accordance with IEEE 260.1. Graphic symbols, when used in figures, shall be in accordance with DoD adopted or accepted standards. Any symbol formed by a single character should be avoided if practicable, since an error destroys the intended meaning. Metric symbols need not be spelled out. The symbols for physical quantities (both metric and inch-pounds), often thought of as abbreviations, may be used in accordance with FED-STD-376.

4.3.5 Proprietary names. Trade names, copyrighted names, or other proprietary names applying exclusively to the product of one company shall not be used unless the item(s) cannot be adequately described because of the technical involvement, construction, or composition. In such instances, one, and if possible, several commercial products shall be included, followed by the words “or equal” and a description of required salient features or particular characteristics to ensure wider competition and that bidding will not be limited to the particular make specified. The same applies to manufacturer’s part numbers or drawing numbers for minor parts when it is impracticable to specify the exact requirements. The salient features or particular characteristics required to define “or equal” shall be included. The use of “brand name or equal” is discouraged but, when determined to be necessary, shall be supported by written justification and retained in the permanent document file.

4.3.6 Commonly used words and phrases. Certain words and phrases are frequently used in a standardization document. The following rules shall be applied:

a. Referenced documents shall be cited thus:

- (1) “conforming to ...”
- (2) “as specified in ...”
- (3) “in accordance with ...”

In any case, use the same wording throughout a given document and a series of directly related documents.

b. “Unless otherwise specified” shall be used to indicate an alternative course of action. The phrase shall always come at the beginning of the sentence, and, if possible, at the beginning of the paragraph. This phrase shall be used only when it is possible to clarify its meaning by providing a reference.

c. When making reference to a requirement in the document and the requirement referenced is rather obvious or not difficult to locate, the simple phrase "as specified herein" is sufficient and may be used.

d. The phrase "to determine compliance with" or "to determine conformance to" should be used in place of "to determine compliance to." In any case, use the same wording throughout.

e. In stating limitation, the phrase shall be stated thus: "The diameter shall be not greater than ..." for the upper limit, or "The diameter shall be not less than ..." for the lower limit.

f. Capitalize the word "drawing" only when it is used immediately preceding the document identifier. However, specifications, standards, and handbooks shall be identified in the text only by their document identifier; thus, MIL-E-000 (not: "specification MIL-E-000").

g. Use the following prepositional phrases when referencing figure and table information: "on a figure" or "in a table".

h. "Shall", the emphatic form of the verb, shall be used whenever a requirement is intended to express a provision that is binding. For example, in the requirements section, state that "The gauge shall indicate . . ." and in the test section, "The indicator shall be turned to zero, and 220 volts of alternating current shall be applied." For specific test procedures, the imperative form may be used, provided the entire method is preceded by "The following test shall be performed" or similar wording. Thus, "Turn the indicator to zero and apply 220 volts of alternating current." "Shall" shall not appear in sections 1, 2, 3, or 6 of a standard. "Shall" shall not be used in handbooks.

i. "Will" may be used to express a declaration of purpose on the part of the Government. It may be necessary to use "will" in cases when simple futurity is required.

j. Use "should" and "may" whenever it is necessary to express nonmandatory provisions.

k. "Must" shall not be used to express a mandatory provision. Use the term "shall."

l. Indefinite terms, such as "and/or," "suitable," "adequate," "first rate," and "best possible" shall not be used. Use of "e.g.," "etc.," and "i.e.," should be avoided.

m. The term "flammable" shall be used in lieu of "inflammable," and "nonflammable" shall be used in lieu of "unflammable" and "noninflammable."

4.4 Use of decimals. Decimals shall be used in documents instead of fractions wherever possible.

4.5 Metric practices. Metric practices shall conform to IEEE 268. When an existing inch-pound (or non-SI metric) standardization document is revised, a decision shall be made as to whether metrication is appropriate, and if so, how to metricate such a document. In general, the following methods shall be used:

a. New parallel document. For complex documents filled with many conversion-susceptible measurements, the logical method is to issue a new SI metric standardization document following the guidance herein. Great care shall be used to ensure that the new document is hard metric, and that equivalents are carefully selected. After that, the basic document and the metric document would be revised concurrently, until such time as the inch-pound document is no longer required and is canceled.

b. Metric appendix. For less complex documents or for very complex documents where retention of the original document number is considered necessary, a hard metric appendix may be prepared. The basic document would remain in inch-pound units and refer to the appendix for metric information. The appendix shall refer to the basic document for technical features and cite only the metric equivalents, exercising care to ensure that equivalents are carefully selected.

c. Metric notes. For relatively simple documents with only a few measurement units, metrication may be handled by appropriate notes or by one or more footnotes.

4.5.1 Metric Units. The metric units for commonly used quantities shall be in accordance with FED-STD-376. Optimum rationalization shall be achieved in the preparation of standardization documents. Metric sizes will generally be expressed in whole numbers. There shall be no soft conversion of units merely for the sake of conversion. In those instances where an inch-pound item is the primary item in the international marketplace, a document with soft conversion of units can be prepared.

4.5.2 Dual dimensions. The use of both metric and inch-pound measurements on drawings or other pictorial illustrations to be used in a standardization document should be avoided. The use of tables to translate the specific inch-pound units used to metric equivalents is acceptable. For text material, when preference is given in the standardization document to inch-pound units, acceptable metric units may be shown in parentheses. When preference is given to metric units, inch-pound units may be omitted or included in parentheses. In general, where it has long been standard practice to cite metric units alone (such as citing temperatures only in degrees Celsius), inch-pound equivalents may be omitted. A specific repetitive equivalent, for example 1.00 inch (25.4 mm), need be inserted only the first time it appears in a paragraph of a standardization document.

4.6 Underlining. Portions of paragraphs shall not be underlined and words or phrases shall not be capitalized for the sake of emphasis with the exceptions noted in 4.8. All of the requirements are important in obtaining the desired product or service. Preambles and acquisition notes shall not be underlined. Table and figure titles may be underlined (see 4.11.1 and 4.12.1).

4.7 Paragraph numbering. Each paragraph and subparagraph shall be numbered consecutively within each section of the standardization document, using a period to separate the number representing each breakdown.

Example for section 4:

General requirements	4
First paragraph	4.1
Second paragraph	4.2
First subparagraph	4.2.1
Second subparagraph	4.2.2

Itemization within a paragraph or subparagraph shall be identified by lower-case letters followed by a period to avoid confusion with paragraph numbers. For clarity of text, paragraph numbering should be limited to three sublevels, unless additional sublevels are unavoidable.

4.8 Paragraph identification. Each paragraph and subparagraph shall be given a subject identification. The first letter of the first word in the paragraph and subparagraph identification shall be capitalized. Paragraph and subparagraph identifications shall be either underlined, italicized, or bold type.

4.9 Document identifier. The document identifier shall be placed on each page, at the upper right corner of the cover page and at the upper center of each successive page. Drafts of proposed standardization documents shall have the word "DRAFT" preceding the document identifier.

4.10 Page number. The cover page shall not be numbered. Pages between the cover and the first section shall be numbered consecutively in the bottom center of each page with lower case Roman numerals, omitting number i (for example, ii, iii, and iv). Beginning with the first right-hand page of the first section as page 1, all pages, including appendixes and the index, shall be numbered consecutively in the bottom center of the page with Arabic numerals. On fold-out pages and other pages which must unavoidably be left blank, the page before the blank page shall be numbered with both page numbers, for example, 23/24.

4.11 Tables. A table shall be used when information can be presented more clearly than in text. Elaborate or complicated tables shall be avoided. References in the text shall be sufficiently detailed to make the purpose of the table clear. The table shall be restricted to information pertinent to the associated text. The tables shall be placed immediately following or within the paragraph containing the first reference. If space does not permit, the table may be placed on the following page. If tables are numerous or their location would interfere with correct sequencing of paragraphs and cause difficulty in understanding or interpretation, they may be placed in numerical order at the end of the document and before any figures, appendix, or index. Information included in tables shall not be repeated in the text.

4.11.1 Table numbering and title. All tables shall be numbered consecutively throughout the document with Roman numerals in the order of their reference in the text, even if only one table appears in the document, and shall be titled. The word "TABLE" shall be in full capitalization, followed by the Roman numeral and a period followed by the underlined, italicized, or bold faced title. The first letter of the title shall be capitalized. Table titles shall be centered above the table and shall be on the same line with the table number. If the title is too long to be typed on one line, the second line shall be aligned

with the first letter of the title. If a listing or tabulation appears within a paragraph as an integral part of that paragraph, and obviously does not require a title, the listing or tabulation need not be titled.

4.11.2 Table format. Tables shall be boxed in and ruled horizontally and vertically as necessary to ensure clarity of the table contents. Lines may be typed or drawn. The contents of a table shall be organized and arranged to show clearly the significance and relationship of the information. If a table is of such width that it would be impractical to place it in its normal vertical position, it may be rotated counterclockwise 90 degrees. Large tables may be divided and, if possible, printed on facing pages.

4.11.3 Continuation of tables. If a table is continued to additional page(s), a horizontal line shall not be drawn at the end of the page, unless the table is a group or method type that requires a line of separation between the groups. When lengthy group testing is being documented, the group shall not be split and carried to the next page. The entire group shall be completed on one page. When the table is continued to the next page, the title shall be repeated followed by a dash and the word "Continued" (for example, "TABLE II. Vector analysis - Continued.") The entire heading shall be repeated at the top of the page on which the continuation is presented. The table shall be closed with a horizontal line when all information has been entered.

4.12 Figures. A figure shall be clearly related to, and consistent with, the text of the associated paragraph. Dimensioning practices for outline drawings shall comply with ASME Y14.5M. The figures should be placed immediately following or within the paragraph containing the first reference to the figure. If figures are numerous or their location would interfere with correct sequencing of paragraphs and cause difficulty in understanding or interpretation, they may be placed in numerical order at the end of the document following any tables and before any appendix or index. If the figure is of such width that it would be impracticable to place it in its normal vertical position, it should be rotated counterclockwise 90 degrees.

4.12.1 Figure numbering and title. Figures shall be numbered consecutively throughout the document with Arabic numerals in the order to their reference in the text, even if only one figure is referenced in the document, and shall be titled. Figures added after the highest numbered figure are assigned the next higher Arabic numeral. The word "FIGURE" shall be in full capitalization, followed by the Arabic numeral, a period, and the underlined, italicized, or bold-faced title. Only the first letter of the title shall be capitalized. Figure titles shall be centered below the graphic and, if possible, shall be on the same line with the figure number. If the title of the figure is too long to be typed on one line, the second line shall be aligned with the first letter of the title.

4.12.2 Continuation of figures. Large figures may be broken and, if possible, printed on facing pages. When a figure is continued on the next page, the number and title shall be repeated below the figure with a dash followed by the word "Continued" at the end of the title.

4.13 Footnotes and notes. Footnotes and notes may be used as indicated below.

4.13.1 Footnotes to text. Footnotes to the text should be avoided. Their purpose is to convey additional information that is not properly a part of the text. A footnote to the text shall be placed at the bottom of the page containing the reference to it. Footnotes shall be consecutively numbered

throughout the document with Arabic numerals. The Arabic numeral shall also be used to identify the reference in the text.

4.13.2 Footnotes to tables. Footnotes may contain mandatory information that cannot be presented as data within a table. Number footnotes separately for each table as they appear in the table. Footnote numbers or symbols shall be placed immediately following a word and preceding a numeral requiring the footnote. Numbered footnotes are listed in order immediately below the table. Where numerals will lead to ambiguity (for example, in connection with a chemical formula), superscript letters, daggers, and other symbols may be used.

4.13.3 Notes to figures. Notes to figures are numbered separately from textual footnotes within the document. Drafting or dimensional notes are numbered consecutively and placed below the figure and above the title. The word "NOTES:" is typed in the left margin of the figure and the explanatory information is typed in Arabic numeral sequence under "NOTES." For example:

"NOTES:

1. Dimensions are in millimeters.
2. Inch-pound equivalents are given for information only."

4.14 Foldouts. Foldouts should be avoided since their use will require special printing and handling procedures, which may delay distribution. Whenever possible, lengthy tables should be reformatted as multiple, single page tables. When foldouts are required, they shall be grouped in one place, preferably at the end of the document (in the same location as figures) and suitable reference to their location shall be included in the text.

4.15 Cross-reference. Cross-reference shall be used only to clarify the relationship of requirements within the document and to avoid inconsistencies and unnecessary repetition. When the cross-reference is to a paragraph or subparagraph within the document, the cross-reference shall be only to the specific paragraph number. The word "paragraph" shall not appear, for example, "(see 3.1.1)".

4.16 References to other documents. Judicious referencing of other documents in standardization documents is a valuable tool that eliminates the repetition of requirements and tests adequately set forth elsewhere. However, unnecessary or untailored referencing of other documents can lead to increased costs, excessive tiering, ambiguities, and compliance with unneeded requirements. The following rules shall apply when referencing another document:

- a. If the information is less than a page and if it is not a violation of copyright provisions (see 4.2.3), it should be included directly without referencing another document.
- b. Referenced documents shall be current (not canceled or superseded), approved for use (not drafts), and readily available.

c. Unless the entire referenced document applies, it shall not be cited in total, but shall be tailored by citing the appropriate sections of the document, such as specific types, grades, or classes; test methods; or definitive descriptions (for example, "the painting requirements of MIL-STD-000"). Do not reference specific paragraph, table, or figure numbers from other documents since revisions to these documents often result in renumbering.

d. References shall not be made to the following types of documents:

(1) Directives, instructions, regulations, and other types of policy documents, except in section 6 for information only.

(2) Management, manufacturing, and process type documents that should more properly be cited in contracts or program peculiar documents. A known list of these documents is identified in the SD-1, and these documents shall not be referenced. Such a list can never be complete. Document preparers shall not reference any documents that do not comply with the intent of this restriction.

(3) Specifications, standards, drawings, or other documents that contain proprietary or unique design solutions that would restrict competition, or that would not be readily available to competing contractors because they are owned by a particular company.

4.17 Preparation of manuscripts for reproduction. Manuscripts shall be prepared for reproduction. The standardization document manuscript shall be typed, single spaced on one side only, on 8-1/2 x 11-inch plain white paper, with a margin of 1 inch at the sides, top, and bottom of the page. Bond paper (which has a watermark) shall not be used.

5. DETAILED REQUIREMENTS

5.1 General. The detailed format and content requirements required for the preparation of all standards, handbooks, and their notices are given in this section. Detailed format and content requirements that are unique to a particular standardization document are given in the following appendixes:

a. See Appendix A for detailed format and content requirements for standards.

b. See Appendix B for detailed format and content requirements for handbooks.

5.2 Self cover. All standardization documents shall have a self cover. The security classification (if applicable), title, document identifier, date of issue, the DoD seal, either the AMSC number or "AMSC N/A", and the FSC, FSG, or AREA shall appear on the self cover (see figure 1 for example). In addition, drafts of proposed standardization documents shall carry one of the following notes at the top of the self cover, as applicable:

"NOTE: This draft, dated (date) prepared by (preparing activity), has not been approved and is subject to modification. DO NOT USE PRIOR TO APPROVAL. (Project)"

"NOTE: This draft, dated (date) prepared by (name of agent), as agent for (preparing activity), has not been approved and is subject to modification. DO NOT USE PRIOR TO APPROVAL. (Project)"

This note shall be removed from the camera ready master after approval and prior to reproduction.

5.2.1 Heading. Each standardization document shall have one of the following headings on the self cover, as applicable:

DEPARTMENT OF DEFENSE
INTERFACE STANDARD

DEPARTMENT OF DEFENSE
DESIGN CRITERIA STANDARD

DEPARTMENT OF DEFENSE
TEST METHOD STANDARD

DEPARTMENT OF DEFENSE
STANDARD PRACTICE

DEPARTMENT OF DEFENSE
MANUFACTURING PROCESS STANDARD

DEPARTMENT OF DEFENSE
HANDBOOK

5.2.2 Titling. Under the heading, there shall be a short title that indicates the scope of the document. The title should be constructed as if it were the title to a book, rather than having an inverted title with the main noun name first.

5.2.3 Document identifiers. Standardization documents shall be identified and dated as specified in the following paragraphs.

5.2.3.1 Identification of coordinated documents. Coordinated documents shall be identified by the letters "MIL-STD" or "MIL-HDBK," as applicable, followed by a hyphen and an Arabic numeral. This number is assigned by the preparing activity in accordance with departmental procedures from blocks of numbers allocated to the departments. For example, "MIL-STD-123."

5.2.3.2 Identification of limited coordination documents. Limited coordination standards and handbooks shall be identified in the same manner as coordinated documents, except that a parenthetical suffix to the document identifier containing the symbol designation of the preparing activity or service

shall be added consistent with the degree of coordination of the document. For example, "MIL-STD-123(SH)" or "MIL-HDBK-123(USAF)."

5.2.4 Date of document. The date of approval shall appear under the document identifier on the self cover page only. Drafts shall not have a date in this location. The space shall be blank until the document is approved.

5.2.5 Measurement system identification. Metric documents shall be identified by the word "METRIC" placed in a rectangular box above the document identifier on the self cover. Inch-pound documents shall be identified in a similar manner, except the term "INCH-POUND" shall be used. Similarly, those documents which can be used in either the metric or inch-pound systems shall be identified by "NOT MEASUREMENT SENSITIVE." Hybrid documents which include a mixture of metric and inch-pound units shall be identified by "INCH-POUND." The "DOD" symbol shall no longer be used to identify documents which are metric or capable of being used in either measurement system. Those documents presently identified as "DOD" shall be changed to the "MIL" identifier at the time of next revision.

Examples:

METRIC	NOT MEASUREMENT SENSITIVE	INCH-POUND
MIL-STD-123	MIL-STD-234	MIL-HDBK-123

5.2.6 Supersession. A coordinated standardization document supersedes all prior issues, revisions, and change notices of that document. With concurrence of the military or federal agencies concerned, other documents may also be superseded by a coordinated document which incorporates essential requirements. Thus, the superseding document reflects a degree or range of coordination equal to or greater than any document which it supersedes. A line shall separate the number and date of the superseding document from the supersession data. The word "SUPERSEDING" shall be entered below the separation line, followed by the number and date of the superseded document, indicating that all activities concerned are to use the superseding document.

For example:

MIL-STD-123B
11 August 1995
 SUPERSEDING
 MIL-STD-123A
 6 June 1986
 MIL-STD-2345D
 1 December 1988

When more than three documents are superseded, or when a document is superseded in part, or when it is desirable to present special information for clarity, the supersession data and special information shall be placed in the "NOTES" section of the document. The following notation shall then appear under or in lieu of supersession:

MIL-STD-962C

Example:

Superseding more than
three documents:

MIL-STD-123C
20 August 1995
SUPERSEDING
(See section 6. __)

Superseding in part:

MIL-STD-123C
20 August 1995
SUPERSEDING
MIL-STD-222 (IN PART)
4 January 1988
(See section 6. __)

When a document supersedes a document of a different number, the cancellation notice for the superseded document should be processed for issuance simultaneously with the superseding document. The approval dates of the superseding document and of the cancellation notice should be the same.

5.2.7 "Inactive for new design" note. When documents are made inactive for new design concurrent with a revision action, the following note shall appear below the title and above the preamble on the self cover and be boxed for emphasis. Superseding documents for new design shall be noted in the box when applicable.

Inactive for new design after (date)
For new design use MIL-STD-000.

5.2.8 Designation of federal supply class (FSC), group (FSG), or area assignment. The document shall be assigned a FSC or FSG as defined in the Cataloging Handbook H2-1, Part 1, or a standardization area as defined in the SD-1. The applicable FSC, FSG, or area assignment shall appear in the lower right corner of the self cover. The symbol "GP" shall follow the FSG number, (for example, 59GP) when the FSG number identifies the assignment or project. Documents covering more than one FSC shall be designated with the applicable FSG or with the appropriate standardization area if more than one FSG is covered. Dual or multiple FSC, FSG, or standardization area designations shall not be used.

5.2.9 AMSC number. All standardization documents shall reflect either an AMSC number or "AMSC N/A" at the bottom left of the self cover. The following indicates which documents require an AMSC number and which ones require "AMSC N/A."

- a. All new and revised that are the source standards for DIDs require an AMSC number. Those standards that are not source documents for DIDs shall be marked "AMSC N/A."
- b. Handbooks, shall be marked "AMSC N/A."

- c. Change notices that do not affect data requirements require the same AMSC number or "AMSC N/A" as shown on the document being changed. While change notices do not require clearance, a copy of all notices bearing an AMSC number shall be sent to the AMSDL Clearance Office concurrent with submittal of the manuscript to the DoDSSP for printing. Change notices that affect data requirements shall be submitted for clearance.
- d. Validation notices, cancellation notices, reinstatement notices, inactive for new design notices, and supplements require "AMSC N/A."

5.3 Foreword. A foreword shall be included in all standardization documents. The foreword shall include a preamble and a beneficial comments paragraph. Additional numbered statements may be included to explain the purpose of the document, background information, or reasons for changes, if it is a revision to a document. The foreword shall begin on the back side of the self cover and shall be numbered with Roman numeral ii. See the foreword of this standard for an example.

5.3.1 Preambles. One of the following preambles shall appear as the first paragraph of the foreword:

a. Preamble for coordinated documents.

"This (standard or handbook.) is approved for use by all Departments and Agencies of the Department of Defense."

b. Preambles for limited coordination documents.

"This (standard or handbook) is approved for use by the (Preparing Activity), Department of the (), and is available for use by all Departments and Agencies of the Department of Defense."

"This (standard or handbook) is approved for use by the Department of the () and is available for use by all Departments and Agencies of the Department of Defense."

c. Preamble for documents with restricted distribution. If distribution of a document is restricted, the following shall be added at the end of the appropriate preamble: "within the distribution limitations noted at the bottom of the cover."

5.3.2 Beneficial comments statement. The last paragraph of the foreword shall include the following beneficial comments statement:

"Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: (insert name and address of the preparing activity) by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter."

5.4 Contents page. The single word "CONTENTS" in capital letters shall head the contents page. The contents page shall include section and paragraph numbers, section and paragraph titles, figures, tables, appendixes, and the index, and the page numbers to locate them. See the contents page of this standard for an example.

5.5 Appendix. Appendixes may be added to a document for purposes of illustration, application, or to group similar requirements together for clearer presentation. Appendixes shall be referenced in the applicable part of the main body of the document. See the appendixes of this standard for an example.

5.5.1 Numbering and titling. The appendix shall begin on the next page following the main text of the standardization document. The upper center of each page shall be marked with the document identifier and the word "APPENDIX" two lines below the identifier. When it is essential to include more than one appendix, identification shall be alphabetical (A, B, etc.). The title shall be located two lines below the word "APPENDIX" on the beginning page only.

5.5.2 Section and paragraph numbering. The sections in the appendix shall be designated by a letter corresponding to the appendix letter, followed by a period and an Arabic numeral. For example, the first section in Appendix A would be "A.1" and the second section in Appendix B would be "B.2." Paragraphs and subparagraphs shall be numbered consecutively within each section of the appendix. For example:

Requirements section of Appendix D.....	D.4
First paragraph.....	D.4.1
First subparagraph.....	D.4.1.1
Second paragraph.....	D.4.2

5.5.3 Page numbering. Page numbers shall be numbered consecutively following the last page of the document.

5.5.4 Scope. An appendix shall have a statement of scope as its first paragraph to indicate the coverage and limitations of the appendix to ensure its proper application and use. For standards only, the following shall be included: "This Appendix (is or is not) a mandatory part of this standard. The information contained herein is intended for (compliance or guidance only)". Appendixes for handbooks shall always be for guidance only.

5.5.5 References. References which may be required and which relate only to the appendix shall be listed in the appendix under the heading "APPLICABLE DOCUMENTS" and shall not be referenced in section 2 of the document. The references shall be listed as specified for section 2 (see the appropriate appendix for information on applicable documents).

5.6 Index. An alphabetical index may be placed at the end of a standardization document to permit ready reference to contents. Its use shall be limited to lengthy documents. If used, an index follows the basic document and any appendix. The pages are numbered continuously following the last page of the basic document or appendix, as applicable. The document identifier shall appear in the upper center of each page.

5.7 Concluding material. The following concluding material shall be provided at the end of the document following any tables, figures, appendixes, or indexes, and before the DD Form 1426.

- a. Preparing activity.
- b. Custodians (applies to coordinated documents).
- c. Review activities (applies to single department or fully coordinated documents).
- d. Industry association interest (if any).
- e. Civil agency coordinating activities (if any).
- f. Agent, if assigned.
- g. Project number (required for all standardization documents, except for validation notices).

5.7.1 Activity symbols. The symbols used to identify the preparing activity, custodians, review activities, and other interested activities shall be in accordance with the current issue of SD-1. In addition, acronyms for interested industry associations (includes Non-Government Standards Bodies) that were included in the coordination process may be listed.

"Custodians: (where appropriate)

Army - AR
Navy - OS
Air Force - 16

Preparing activity:

Navy - OS
(Project 9110-1234)

Review activities: (where appropriate)

Army - AT, CR, ME
Navy - EC, SH, YD
Air Force - 11, 26, 85
DLA - GS

Industry associations: (where appropriate)

AIA, ASTM, EIA, SAE

Civil Agency Coordinating Activities: (where appropriate)

AGR - APS
HHS - FEC"

The preparing activity shall list potential custodians and review activities during document development from interest as registered in the FSC DoDISS and its cumulative bimonthly supplement, cataloging data, project history files, and other sources. The preparing activity shall confirm the selected level of interest with these activities during coordination. A preparing activity or custodian shall not be listed as a review activity. If a military department has no interested activity, the department shall be omitted

from its sequential order of listing. The listing of review activities shall be in alphabetical or numerical order, as applicable.

5.8 Standardization Document Improvement Proposal (DD Form 1426). Preparing activities shall include this form as the last sheet of all standardization documents. It is not required on notices. The preparing activity shall fill in the information for blocks 1, 2, 3, and 8 of the form. This form is not required on classified documents; however, if used, security regulations shall apply. (For an example, see the DD Form 1426 at the end of this standard.)

5.9 Revisions. Documents shall be revised when more than 25 percent of the document has changed or when the security classification changes. Documents may be revised if less than 25 percent of the document changes, if the preparing activity judges that a revision is needed for clarity in the presentation of the changes.

5.9.1 Revision content and format. Revisions shall follow the content and format instructions prescribed by this standard for new standardization documents, except revision shall be indicated by a capital letter immediately following the document identifier. The latest approval date shall appear under the document identifier. The first revision shall be marked with the letter "A" and succeeding revisions shall be indicated by letters in alphabetical sequence, except the letters "I", "O", "Q", "S", and "Z" shall not be used.

5.9.2 Summary sheet for proposed standardization documents. A summary sheet shall be prepared for proposed revisions indicating significant additions, deletions, corrections, or modifications. The summary sheet shall accompany the proposed draft when it is circulated for coordination.

5.10 Notices.

5.10.1 Purpose. Notices are used to issue page changes, inactivate for new design, cancel, reinstate, reactivate, or validate standards and handbooks. Notices shall not be used to transmit revisions.

5.10.2 Change notices. Minor changes to a standardization document shall be made by issuing new pages or completely revised replacement pages. Change notices shall be prepared to transmit the new or revised pages. Amendments shall not be issued for standards or handbooks. Change notices and the appended pages are noncumulative. Change notices serve as a record of changes and should be retained until the standardization document is revised or canceled. The content and format of the change notice shall be similar to that shown on figure 2.

5.10.2.1 Page substitution information. If an additional page is to be inserted by a change notice, it shall be identified by the previous page number followed by the letter "a", "b", and so forth. For example, page 8a follows page 8 as an inserted page. Each additional new page shall have the words "NEW PAGE" placed in the lower left-hand corner. A note "Supersedes page (insert number) of (designation of revision or notice of page being replaced)" shall be placed in the lower left-hand corner of each revised page (see figure 3). Compete pages (both sides) shall be replaced so that the old page can be removed and the new page inserted. Any unchanged page that is being replaced because it is on

the opposite side of a page being changed shall be noted as having been "REPRINTED WITHOUT CHANGE." An example of the different page substitutions is shown on figure 3.

5.10.3 Validation notice. A validation notice shall be prepared to indicate that a standardization document is technically valid without change. A validation notice shall be issued without a project number and without formal coordination. The notice is required at the time of the five year overage review if the document is determined to be valid and in compliance with defense acquisition and standardization policies. Technical changes shall not be made on the validation notice, but the preparing activity may update the custodians, review activities, and other interested activities on the notice. The format of the notice shall be similar to that shown on figures 4 and 5. The actual wording may vary to indicate the reason for the notice, however, it shall include a definite statement that the document as approved is still valid for acquisition without change.

5.10.4 Inactive for new design notice. An inactive for new design notice shall be prepared to indicate that an interface, method, practice, or process is prohibited for use in new design (see figure 6). Superseding documents for new design application shall be referenced in the notice when applicable. When applicable, a precautionary note shall be included as follows: "CAUTION: The supersession information is valid as of the date of this notice and may be superseded by subsequent revisions of the superseding document." Inactive status can also be accomplished in a revision. Documents inactivated for new design may be maintained by revision or change notice without updating of the existing inactive for new design notice. When an inactive for new design document is revised or a change notice issued, one of the following notes shall appear in a box beneath the document title, as applicable:

This document is inactive for new design.

This document is inactive for new design. Refer to
(fill in document identifier) for new designs.

5.10.5 Cancellation notice. A cancellation notice shall be prepared when a standardization document is no longer required (see figures 7 and 8). The cancellation notice shall indicate supersession information and classification cross-references, when applicable.

5.10.6 Reinstatement notice. A reinstatement notice shall be prepared to reinstate a canceled standardization document. The preparing activity, or with its permission, another activity, may reinstate a canceled standardization document by a notice of reinstatement (see figure 9). The notice of reinstatement, with a sequentially assigned Arabic numeral, will supersede the previous notice of cancellation. If the standardization document is coordinated, only the custodians and interested activities who have approved the reinstatement shall be shown on the reinstatement notice. If the coordinated document is reinstated for use by a single activity, the activity symbol shall be shown after

the document number and this information shall also be reflected in the text. The text for the reinstatement notice shall be as shown on figure 9. Reinstatement notices submitted to the DoDSSP for printing and distribution will be accompanied by a copy of the reinstated document, and if applicable, any change notices. Both shall be suitable for photo-offset reproduction. Reinstated documents will be distributed as attachments to the reinstatement notice including a new DD Form 1426.

5.10.7 Reactivation notice. A reactivation notice shall be prepared to reactivate an inactive for new design document. The preparing activity, or with its permission, another activity, may reactivate an inactive for new design document by a notice of reactivation (see figure 10). The notice of reactivation, with a sequentially assigned Arabic numeral, will supersede the notice of inactive for new design. If the standardization document is coordinated, only the custodians and interested activities who have approved the reactivation shall be shown on the reinstatement notice. If the coordinated document is reinstated for use by a single activity, the activity symbol shall be shown after the document number and this information shall also be reflected in the text. The text for the reactivation notice shall be as shown on figure 10.

5.10.8 Notice content and format.

5.10.8.1 Document identifier. The document identifier of a notice shall be located in the upper right corner of the first page. The following elements shall be included with the first letters in alignment (block form):

- a. The document identifier of the standardization document being changed, inactivated, canceled, reinstated, reactivated, or validated. The document identifier includes the activity symbol designating limited coordination, if applicable.
- b. The word "NOTICE" followed by the assigned notice number shall be placed below the document identifier of the standardization document being changed. All notices issued against the same revision of a standardization document shall be assigned sequential Arabic numerals starting with "1".
- c. The date that the notice is approved aligned directly below the word "NOTICE."
- d. Applicable measurement system identification (see 5.2.5).

5.10.8.2 Heading and title. A notice shall carry the same heading and title as the standardization document. The notice of change, cancellation, inactivation, reinstatement, reactivation, or validation shall be enclosed in a box in the upper left-hand corner of the first page (see figures 2 and 4 through 10).

5.10.8.3 Notice block. Notices shall have the words "NOTICE OF" followed by the type of notice placed in a rectangular box in the upper left corner of the first page (see figures 2 through 10).

5.10.8.4 Preamble. A preamble is not required.

5.10.8.5 FSC, FSG, or area designation. The FSC, FSG, or area designation shall be the same as for the basic document and shall be shown in the lower right-hand corner of the first page.

5.10.8.6 Concluding material. The concluding material for all notices shall be in accordance with 5.7, except that validation notices shall not require project numbers.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. Documents conforming to the requirements of this standard are intended for use as DoD standardization documents and are listed in the DoDISS. The purpose of this standard is to establish a common format throughout the DoD for the preparation of standards and handbooks.

6.2 Issue of DoDISS. When this standard is used in acquisition, the applicable issue of the DoDISS must be cited in the solicitation (see 2.2.1 and 2.3).

6.3 Associated Data Item Descriptions (DIDs). This standard is cited in DoD 5010.12-L, Acquisition Management Systems and Data Requirements Control List (AMSDL), as the source document for the following DIDs. When it is necessary to obtain the data, the applicable DIDs must be listed on the Contract Data Requirements List (DD Form 1423), except where the DoD Federal Acquisition Regulation Supplement exempts the requirement for a DD Form 1423.

<u>DID Number</u>	<u>DID Title</u>
DI-SDMP-81470	Department of Defense (DoD) Interface Standard Documents
DI-SDMP-81471	Department of Defense (DoD) Handbook Documents
DI-SDMP-81472	Department of Defense (DoD) Design Criteria Standard Documents
DI-SDMP-81474	Department of Defense (DoD) Standard Practice Documents
DI-SDMP-81475	Department of Defense (DoD) Test Method Standard Documents
DI-SDMP-81476	Department of Defense (DoD) Manufacturing Process Standard Documents

The above DIDs were current as of the date of this standard. The current issue of the AMSDL must be researched to ensure that only current and approved DIDs are cited on the DD Form 1423.

6.4 Tailoring guidance. To ensure proper application of this standard, invitations for bids, requests for proposals, and contractual statements of work should tailor the requirements in sections 4 and 5 of this standard to exclude any unnecessary requirements. For example, if the statement of work requires the development of a revised standard, then all material related to handbooks and notices should be excluded.

6.5 Subject term (key word) listing.

- Cancellation notices
- Change notices
- Data item descriptions
- Design criteria standards
- Interface standards
- Manufacturing process standards
- Notices
- Reinstatement notices
- Revisions
- Standard practices
- Standardization documents
- Test method standards
- Validation notices

6.6 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

METRIC

MIL-STD-123
1 October 1995

DEPARTMENT OF DEFENSE INTERFACE STANDARD

INTEROPERABILITY OF TELECOMMUNICATION EQUIPMENT



AMSC N/A

AREA TCSS

FIGURE 1. Example of self cover.

NOTICE OF
CHANGE

INCH-POUND

MIL-STD-123C
NOTICE 2
8 July 1995

DEPARTMENT OF DEFENSE
INTERFACE STANDARD

INTEROPERABILITY OF TELECOMMUNICATIONS EQUIPMENT

TO ALL HOLDERS OF MIL-STD-123C:

1. THE FOLLOWING PAGES OF MIL-STD-123C HAVE BEEN REVISED AND SUPERSEDED THE PAGES LISTED:

NEW PAGE	DATE	SUPERSEDED PAGE	DATE
5	8 July 1995	5	11 June 1993
6	1 May 1991	6	Reprinted without change
15	8 July 1995	15	1 May 1991
15a	8 July 1995	New page	
16	8 July 1995	16	1 May 1991

2. RETAIN THIS NOTICE AND INSERT BEFORE TABLE OF CONTENTS.

3. Holders of MIL-STD-123C will verify that page changes and additions indicated above have been entered. This notice page will be retained as a check sheet. This issuance, together with appended pages, is a separate publication. Each notice is to be retained by stocking points until the standard is completely revised or canceled.

Custodians:
Army - SC
Navy - EC
Air Force - 04
DISA - DC

Preparing activity:
DISA - DC
(Project TCSS-0101)

AMSC N/A

AREA TCSS

FIGURE 2. Example of a change notice.

MIL-STD-123C

3. DEFINITIONS

3.1 Terms. Definitions of terms used in this document shall be as specified in the current edition of FED-STD-1037. In addition, the following definitions are applicable for the purposes of this standard.

3.1.1 Cable cutoff wavelength. For a single-mode fiber under specified length, bend, and deployment conditions, the wavelength at which the fiber's second-order mode is attenuated a measurable amount when compared to a multimode reference fiber.

3.1.2 Optical interface. Within a fiber optic communications link, any point at which an optical signal is passed from one equipment or medium to another without transduction to an electrical signal.

3.1.3 Optical line code. Sequences of optical pulses suitably structured by wave form or other characteristics to permit information transfer over the optical link.

3.1.4 Optical receiver dynamic range. The ratio in decibels (dB) between the minimum receiver input optical power required for a specified bit error ratio (BER) and the receiver input power at which overload occurs.

3.1.5 Peak wavelength. The wavelength at which the intensity of the source is maximum.

NOTE: In some cases, it is appropriate to specify the "central wavelength" (of an optical source) in place of the "peak wavelength". See 6.3 for further explanation of these terms.

3.1.6 Zero-dispersion slope. The value of the dispersion slope at the fiber's zero-dispersion wavelength. (See next term.)

SUPERSEDES PAGE 5 OF NOTICE 1 TO MIL-STD-123C.

FIGURE 3. Example of replacement page.

MIL-STD-123C

3.2 Abbreviations and acronyms. Abbreviations and acronyms used in this document are defined below. Those listed in the current edition of FED-STD-1037 have been included for the convenience of the reader.

ANSI	American National Standards Institute
BCI	bit-count integrity
BER	bit error ratio
DCE	data circuit-terminating equipment
DISA	Defense Information Systems Agency
DO	design objective
DoD	Department of Defense
DoDISS	Department of Defense Index of Specifications and Standards
DTE	data terminal equipment
DUI	data unit interval
FOTP	fiber optic test procedure
JCS	Joint Chiefs of Staff
kbps	kilobits per second
LAN	local area network
LED	light emitting diode
Mbps	megabits per second
MLM	multilongitudinal-mode (laser)
nm	nanometer(s)
NMCA	National Military Command System
OC	optical carrier
OFSTP	optical fiber system test procedure
PCM	pulse-code modulation
ppm	parts per million
ps	picosecond(s)
SLM	single longitudinal-mode (laser)
SMF	single-mode fiber
TDM	time-division multiplexing
TIA	Telecommunications Industries Association

REPRINTED WITHOUT CHANGE.

FIGURE 3. Example of replacement page - Continued.

MIL-STD-123C

5.8 Optical transmitter characteristics.5.8.1 Wavelength.

5.8.1.1 Long-haul. Optical transmitters shall have a peak (or central) wavelength within the ranges indicated in appendix C. See 6.3 for the distinction between peak and central wavelength.

5.8.1.2 Tactical. The peak wavelength of optical transmitters used for tactical links shall be not less than 1270 nanometers (nm) and not greater than 1310 nm.

5.8.2 Spectral width. For light-emitting diodes (LEDs), the spectral width shall be 120 nm or less at full-width half-maximum. For lasers, the spectral width is not standardized.

NOTE: Full-width half-maximum is a measure used to quantify the spectral width of an LED source. Full-width half-maximum refers to the spectral width of the source measured at a point 3 dB below the power output at the peak wavelength. It is recommended that spectral widths of lasers used in long-haul applications be within the ranges given in appendix C.

5.8.3 Power stability. The power output of an optical transmitter shall not vary from its nominal value by more than 3 dB over the life of the transmitter. This 3-dB variance is attributable to aging only.

5.9 Optical receiver characteristics.

5.9.1 Long-haul. The dynamic range of optical receivers shall be not less than 26 dB (DO 30 dB). The lower end of the dynamic range shall be the minimum receiver input value at which a BER of 10⁻⁹ is attained.

SUPERSEDES PAGE 15 OF MIL-STD-123C.

FIGURE 3. Example of replacement page - Continued.

5.10 Total distortion. The maximum total distortion, due to any combination of causes and including both rise and fall times, shall not exceed 25 percent of the theoretical data unit interval for pulses transmitted from the input to the output of a fiber optic link.

5.11 Power margin. The system power margin measured at the input of the receiver shall be not less than 3 dB. System power margin is defined as the difference between available power and the power needed to overcome system losses and still satisfy the minimum input power requirements of the receiver. The 3-dB power margin referred to above is an unallocated margin. That is, it is figured into the link power budget after all other allowances (such as for temperature, aging, splices, etc.) have been made.

5.12 Fiber and cable plant characteristics.

5.12.1 Cable plant. As a design objective, the cable plant should: (a) have the capacity to accept an optical line rate of 622.08 Mbps and (b) be capable of a single-mode operation at both 1310 and 1550 nm.

5.12.2 Single-mode fiber. This paragraph establishes no standards for a single-mode fiber used in tactical applications. No single-mode systems are planned for the initial tactical communications systems. This does not preclude the use of single-mode fiber in future tactical systems.

NEW PAGE

15a

FIGURE 3. Example of replacement page - Continued.

NOTICE OF
VALIDATION

METRIC

MIL-STD-234B
NOTICE 1
25 August 1995

DEPARTMENT OF DEFENSE
TEST METHOD STANDARD

BALLISTIC PENETRATION OF ARMOR PLATING

MIL-STD-234B, dated 25 March 1990, has been reviewed and determined to be valid for use in acquisition.

Custodians:
Army - AT
Navy - SH

Preparing activity:
Army - AT

Review activities:
Army - ME, MR
Navy - MC

AMSC N/A

FSC 2350

FIGURE 4. Example of validation notice.

NOTICE OF
VALIDATION

METRIC

MIL-STD-234B
NOTICE 1
25 August 1995

DEPARTMENT OF DEFENSE
TEST METHOD STANDARD

BALLISTIC PENETRATION OF ARMOR PLATING

MIL-STD-234B remains inactive for new design, however, the document is valid for use.

Custodians:

Army - AT

Navy - SH

Preparing activity:

Army - AT

Review activities:

Army - ME, MR

Navy - MC

AMSC N/A

FSC 2350

FIGURE 5. Example of validation notice for inactive for new design.

NOTICE OF INACTIVE
FOR NEW DESIGN

NOT MEASUREMENT
SENSITIVE

MIL-HDBK-417A
NOTICE 1
18 October 1995

DEPARTMENT OF DEFENSE
HANDBOOK

CLASSIFICATION SYSTEM FOR
SOLID ELASTOMERIC MATERIALS

MIL-HDBK-417A, dated 8 February 1976, and any subsequent revisions or change notices are inactive for new design and shall be no longer used as a guidance reference for new designs.

New designs should use American Society for Testing and Materials Standard D 2000, entitled "Elastomeric Materials or Automotive Applications." CAUTION: The supersession information is valid as of the date of this notice and may be superseded by subsequent revisions of the superseding document.

(Application for copies of ASTM publications should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.)

Custodians:
Army - MR
Navy - SH
Air Force - 11

Preparing activity:
Army - MR
(Project 9320-1234)

AMSC N/A

FSC 9320

FIGURE 6. Example of inactive for new design notice.

NOTICE OF
CANCELLATION

METRIC

MIL-STD-999C
NOTICE 1
25 August 1995

MILITARY STANDARD

CHAINS, ROLLER: POWER TRANSMISSION
OFFSET SIDEBARS, SINGLE-PITCH (METRIC)

MIL-STD-999C, dated 25 March 1980, is hereby canceled without replacement.

Custodians:
Army - ME
Navy - SH
Air Force - 99

Preparing activity:
Army - ME
(Project 3020-0100)

AMSC N/A

FSC 3020

FIGURE 7. Example of cancellation notice without replacement.

NOTICE OF
CANCELLATION

METRIC

MIL-STD-999C
NOTICE 1
25 August 1995

MILITARY STANDARD

CHAINS, ROLLER: POWER TRANSMISSION
OFFSET SIDEBARS, SINGLE-PITCH (METRIC)

MIL-STD-999C, dated 25 March 1980, is hereby canceled. Future acquisitions should refer to SAE 123, "Chains, Roller: Power Transmission.

(Application for copies of SAE publications should be addressed to the Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096.)

Custodians:

Army - ME

Navy - SH

Air Force - 99

Preparing activity:

Army - ME

(Project 3020-0100)

AMSC N/A

FSC 3020

FIGURE 8. Example of cancellation notice with replacement document.

NOTICE OF
REINSTATEMENT

METRIC

MIL-STD-999C
NOTICE 3
25 August 1995
SUPERSEDING
NOTICE 2
18 April 1990

DEPARTMENT OF DEFENSE
INTERFACE STANDARD

CHAINS, ROLLER: POWER TRANSMISSION
OFFSET SIDEBARS, SINGLE-PITCH (METRIC)

MIL-STD-999C, dated 25 March 1980, and Notice 1, dated 22 December 1988, are hereby reinstated and may be used for acquisition.

Custodians:
Army - ME
Navy - SH
Air Force - 99

Preparing activity:
Army - ME
(Project 3020-0100)

AMSC N/A

FSC 3020

FIGURE 9. Example of a reinstatement notice.

NOTICE OF
REACTIVATION

METRIC

MIL-STD-999C
NOTICE 3
25 August 1995
SUPERSEDING
NOTICE 2
18 April 1990

DEPARTMENT OF DEFENSE
INTERFACE STANDARD

CHAINS, ROLLER: POWER TRANSMISSION
OFFSET SIDEBARS, SINGLE-PITCH (METRIC)

MIL-STD-999C, dated 25 March 1980, and Notice 1, dated 22 December 1988, are hereby reactivated and may be used for new acquisition.

Custodians:
Army - ME
Navy - SH
Air Force - 99

Preparing activity:
Army - ME
(Project 3020-0100)

AMSC N/A

FSC 3020

FIGURE 10. Example of a reactivation notice.

APPENDIX A

FORMAT AND CONTENT OF DEPARTMENT OF DEFENSE STANDARDS

A.1 SCOPE

A.1.1 Scope. This appendix establishes the format and content for the preparation of DoD standards. This appendix is a mandatory part of this standard. The information contained herein is intended for compliance.

A.2 APPLICABLE DOCUMENTS

This section is not applicable to this appendix.

A.3 DEFINITIONS

The definitions in section 3 of this standard apply to this appendix.

A.4 GENERAL REQUIREMENTS

A.4.1 General. There shall only be five types of DoD standards: interface standards; design criteria standards; test method standards; standard practices; and manufacturing process standards. Standards shall not mix interface requirements with test methods, practices, or processes. Standards shall conform to the requirements in sections 4 and 5 of this standard, as well as the requirements in this appendix.

A.4.1.1 Interface standards. Interface standards shall specify the physical or functional interface characteristics of systems, subsystems, equipment, assemblies, components, items, or parts to permit interchangeability, interconnection, interoperability, compatibility, or communications.

A.4.1.2 Design criteria standards. Design criteria standards shall specify military-unique design or functional criteria that must be adhered to in the development of systems, subsystems, equipment, assemblies, components, items, or parts, but does not relate to interface requirement discussed in A.4.1.1.

A.4.1.3 Test method standards. Test method standards shall specify the procedures or criteria for measuring, identifying, or evaluating qualities, characteristics, performance, and properties of a product or process.

A.4.1.4 Standard practices. Standard practices shall specify procedures on how to conduct non-manufacturing functions that, at least some of the time, are obtained via contract from private sector firms.

APPENDIX A

A.4.1.5 Manufacturing process standards. In general, the DoD shall not develop manufacturing process standards. However, on rare occasions, it may be necessary for the DoD to develop a standard that specifies manufacturing processes where the DoD alone has a need and the knowledge to specify such processes. A manufacturing process standard shall specify the outcome of a manufacturing process or specific procedures or criteria on how to perform a manufacturing process.

A.4.2 Organization of standards. Standards shall be organized as shown below. Every element and section, unless it is followed by the words "if applicable," shall be included in a standard. If there is no information pertinent to any of the six sections, the following shall appear below the section heading: "This section is not applicable to this standard."

- a. Self cover (see 5.2 and figures 1 through 4).
- b. Foreword (see 5.3).
- c. Contents (see 5.4).
- d. Section 1: Scope (see A.5.1).
- e. Section 2: Applicable documents (see A.5.2).
- f. Section 3: Definitions (see A.5.3).
- g. Section 4: General requirements (see A.5.4).
- h. Section 5: Detailed requirements (see A.5.5).
- i. Section 6: Notes (see A.5.6).
- j. Individual numbered tasks, requirements, and test methods, if applicable (see A.4.3.1).
- k. Appendixes, if applicable (see 5.5).
- l. Index, if applicable (see 5.6).
- m. Concluding material (see 5.7).
- n. DD Form 1426 (see 5.8).

A.4.3 Sectionalized format. If possible, standards should be written in a sectionalized format to facilitate tailoring and selective application of requirements. The following are options that may be used to sectionalize standards:

APPENDIX A

- a. Group common requirements under different classifications in the body of the standard (see A.5.1.1).
- b. Group common requirements in different appendixes.
- c. Establish individual tasks, requirements, or test methods (see A.4.3.1).
- d. Develop a standard that is divided into separate parts (see A.4.3.2).

A.4.3.1 Individual tasks, requirements, or test methods. Individual tasks, requirements, or test methods in standards may be presented as individual or common groups of requirements under a task, requirement, or test method numbered identifier (see figures A-1 and A-2 as examples). If used, they shall appear in numerical sequence after section 6 and before any appendix. Any numbering system may be used, but shall provide for consecutive numbering upon revising the task, requirement, or test method. For example:

- a. If a requirement is numbered 204 for the first issue, the first revision could be 204A, the second revision 204B, and so forth. Or,
- b. If a requirement is numbered 1100 for the first issue, the first revision could be 1100.1, the second revision 1100.2, and so forth.

Each individual task, requirement, or test method shall begin on a right-hand page. The first page of the task, requirement, or test method shall include the identifying number, including the latest revision identifier, and the title of the task, requirement, or test method, located at the top center of the page. The identifying number, including the latest revision identifier, and date of approval shall appear in the lower right-hand corner of odd number pages and in the lower left-hand corner of even number pages. When an individual task, requirement, or test method is revised, its approval date shall reflect the approval date of the standard revision or of the change notice. Tasks, requirements, or test methods that have not been updated shall retain the previously indicated date.

A.4.3.2 Standards issued in parts. Standards may be issued in parts where the nature of the contents warrants such handling. All parts shall be identified by the same document identifier followed by a dash and sequential number.

Example: MIL-STD-176-1
 MIL-STD-176-2
 MIL-STD-176-3

Each part may be revised and issued independently of the other parts. Revisions shall be identified as specified in 5.9.1, except the revision letter shall be placed after the last number.

Example: MIL-STD-176-3A

APPENDIX A

A.5 DETAILED REQUIREMENTS

A.5.1 Content of Section 1: SCOPE. Section 1 shall include a scope that briefly states the coverage of the standard. Section 1 may also include paragraphs on the standard's purpose, applicability, and classifications of items, materials, methods, practices, or processes. This section shall not contain requirements.

A.5.1.1 Classification. Designation of classification such as types, grades, and classes, when applicable, shall be listed under this heading in section 1 and shall be in accordance with accepted industry practice. The same designation shall be used throughout the standard. When more than one type, grade, class, or other classification is listed, each shall be briefly defined. The classification shall remain constant from revision to revision of the standard, unless a change is necessitated by a valid reason, such as a change in industry practice. Where the characteristics of an item change enough to affect interchangeability, delete the original designation and add a new classification. Whenever it becomes necessary to change the designation without changing the characteristics of the item, a cross reference shall be included in the "NOTES" section of the standard indicating the relationship between the old and new designations. This cross-reference shall remain in "Notes" section in all successive revisions identifying designations in all revisions since the original designation change. Such changes shall be kept to a minimum.

A.5.2 Content of Section 2: APPLICABLE DOCUMENTS.

A.5.2.1 Listing of applicable documents. Section 2 shall list only those documents referenced in sections 3, 4, and 5 of the standard that are needed to meet requirements or provide useful information for meeting requirements (see section 2 of this standard for an example). If a document is only cited as an example or for background information, it does not have to be listed in section 2. For the type of documents that may be referenced, see 4.16. Figures bound integrally with the standard shall not be listed in section 2 unless they are reduced-size copies of drawings provided for information only and use of the full-size drawings is normally required with the standard. The first paragraph in section 2 shall be as follows:

"2.1 General. The documents listed in this section are specified in sections 3, 4, and 5 of this standard. This section does not include documents cited in other sections of this standard or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements documents cited in sections 3, 4, and 5 of this standard, whether or not they are listed."

A.5.2.2 Government documents. Referenced Government specifications, standards, and handbooks shall be listed by document title and identifier, excluding revision letters, parenthetical suffix (symbol designation of the preparing activity or service), and the "00" designation for interim documents. Titles shall be taken from the documents rather than from an index. Government specifications, standards, handbooks, drawings, and publications as applicable shall be listed numerically (except federal specifications which shall be listed alpha-numerically) under headings in individual

APPENDIX A

groups such as federal, Department of Defense, and departmental activity (such as Naval Air Systems Command). These listings shall be included under the following subparagraphs:

"2.2 Government documents.

"2.2.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DoDISS) and supplement thereto, cited in the solicitation (see 6.2)."

The following types of publications shall be listed (as applicable) in the order shown after 2.2.1:

- Federal Specifications (list CIDs under this heading)
- Department of Defense Specifications
- Federal Standards
- Federal Information Processing Standards
- Department of Defense Standards
- Department of Defense Handbooks

The following parenthetical source statement shall follow the listing of Government specifications, standards, and handbooks:

"(Unless otherwise indicated, copies of the above specifications, standards, and handbooks are available from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)"

If Federal Information Processing Standards (FIPS) are listed under 2.2.1, the following parenthetical source statement shall also appear:

"(Copies of the Federal Information Processing Standards (FIPS) are available to Department of Defense activities from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094. Others must request copies of FIPS from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161-2171.)"

The following paragraph shall be used to list Government drawings, publications, or other Government documents not listed under 2.2.1:

"2.2.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation."

APPENDIX A

The following types of publications shall be listed (as applicable) in the order shown after 2.2.2:

Other Government Documents (for example, Department of Transportation Specifications, U.S. Department of Agriculture Specifications, etc.)
Drawings
Publications

A parenthetical source statement shall follow each individual document or each group of related documents providing the name and address of the source.

A.5.2.3 Non-Government standards and other publications. Non-Government standards and other publications not normally furnished by the Government shall be listed in appropriate order (numerically or alpha-numerically) under the headings of the respective non-Government standards bodies. The document(s) shall be listed by title and identifier, if applicable. Titles shall be taken from the document rather than from an index. If the non-Government standard has been adopted by the DoD and listed in the DoDISS, the specific issue date or other revision indicator shall not be given. After the title of each non-Government standard adopted by the DoD, add "(DoD adopted)." This listing shall be included under the following subparagraph:

"2.3 Non-Government publications. The following document(s) form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DoD adopted are those listed in the issue of the DoDISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DoDISS are the issues of the documents cited in the solicitation (see 6.2)."

In addition, the following parenthetical source statement shall follow each individual publication or each group of related publications which may be obtained from a common source:

"(Application for copies should be addressed to the (name and address of the source).)"

A.5.2.4 Order of precedence. In order to avoid confusion or possible conflict between the requirements of the standard and the documents referenced therein, the following statement shall be included:

"2.4 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained."

A.5.3 Content of Section 3: DEFINITIONS. Definitions of all key terms used in the standard shall be stated in sufficient detail to provide for adequate clarity, unless the terminology is generally accepted and not subject to misinterpretation. Definitions may be included by reference to another document. When standard definitions exist, a different definition shall not be used. Definitions shall be listed in alphabetical order. A list of acronyms and abbreviations may also be included under definitions.

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A.5.4 Content of Section 4: GENERAL REQUIREMENTS. Requirements included in this section shall be applicable to the entire interface requirements, standard practice, test method, or manufacturing process. In general, the requirements in this section will not vary and can be expected to be imposed in most or all applications.

A.5.4.1 Toxic chemicals, hazardous substances, and ozone depleting chemicals (ODCs). Standards should avoid requiring the use of toxic chemicals, hazardous substances, or ODCs, whenever feasible. Requirements should be stated in terms of performance to avoid requiring a specific chemical or substance. If a toxic chemical, hazardous material, or ODC must be specified, it shall be listed as a key word in section 6 (see A.5.6.7). The SD-14 provides a readily accessible list of toxic chemicals, hazardous substances, and ODCs. (NOTE: The list of toxic chemicals and hazardous substances changes. Any updates to the list will be reflected first in the EPA Title III List of Lists (EPA 560/4-92-001).)

A.5.4.2 Recycled, recovered, or environmentally preferable materials. Where applicable, standards shall include in section 4 the following paragraph to encourage procurement and usage of products made from recycled, recovered, or environmentally preferable materials:

"4.X Recycled, recovered, or environmentally preferable materials. Recycled, recovered, or environmentally preferable materials should be used to the maximum extent possible provided that the material meets or exceeds the operational and maintenance requirements, and promotes economically advantageous life cycle costs."

A.5.4.3 Data requirements. Standards shall not contain requirements for the development, preparation, acquisition of rights, submission, delivery, maintenance, updating, approval, or distribution of plans, reports, drawings, manuals, or other data products. Data can only be required in the contract. A standard may be the source document for a DID. The DID will cite specific tasks in the standard, that when performed, will result in the need for data. For example, a test method standard on shock testing may result in the need for a DID for a shock test report. Standards that are or will be identified in the AMSDL as the source document for a DID(s) may list the associated DID in section 6 (see A.5.6.3). For sectionalized standards, DIDs may be listed with the associated tasks, requirements, or test methods using the same language as required by A.5.6.3. If a standard is the source document for a DID(s), it shall have an AMSC number assigned by the AMSDL Clearance Office listed in the SD-1.

A.5.5 Content of Section 5: DETAILED REQUIREMENTS. Requirements that pertain to a specific interface, standard practice, test method, or manufacturing process shall be specified in this section. In general, section 5 should be written in a sectionalized format in order to tailor requirements to a particular application (see A.4.3).

APPENDIX A

A5.6 Content of Section 6: NOTES. Section 6 is not contractually binding. It shall only contain information of a general or explanatory nature, and no requirements shall appear therein. It shall contain information designed to assist in determining the applicability of the standard, additional supersession data, changes in classification, and other information deemed appropriate. This section shall include the following in the order listed, as applicable:

- a. Parenthetical note.
- b. Intended use.
- c. Associated DIDs.
- d. Tailoring guidance for contractual application.
- e. Supersession data (see 5.2.6).
- f. Cross-reference of classifications and substitutability data.
- g. Patent notice.
- h. Subject term (key word) listing.
- i. International interest.
- j. Identification of changes.

A.5.6.1 Parenthetical note. The following parenthetical note shall appear immediately below "6. NOTES":

"(This section contains information of a general or explanatory nature which may be helpful, but is not mandatory.)"

A.5.6.2 Intended use. Information relative to the use of the subject matter covered by the standard shall be included under this heading as 6.1. If there are any particular applications for which the document is not well adapted, this information shall also be included.

A.5.6.3 Associated DIDs. If a standard is the source document for a DID(s), the following paragraph shall be included in section 6. In the case of a sectionalized standard, it may be included under an associated individual task, requirement, or test method.

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"6.X Associated Data Item Descriptions (DIDs). This standard is cited in DoD 5010.12-L, Acquisition Management Systems and Data Requirements Control List (AMSDDL), as the source document for the following DIDs. When it is necessary to obtain the data, the applicable DIDs must be listed on the Contract Data Requirements List (DD Form 1423), except where the DoD Federal Acquisition Regulation Supplement exempts the requirement for a DD Form 1423.

DID NumberDID Title

The above DIDs were current as of the date of this standard. The current issue of the AMSDDL must be researched to ensure that only current and approved DIDs are cited on the DD Form 1423."

A.5.6.4 Tailoring guidance for contractual application. When appropriate, section 6 shall include a paragraph to assist users of the document to identify and select options contained within the document.

A.5.6.5 Cross-reference. A cross-reference of old to new classifications showing substitutability relationship shall be included, if applicable.

A.5.6.6 Patent notice. When a standard is prepared to cover a patented process, method, practice, or item, the standard shall list the patents involved and include the following paragraph.

"6.X Patent notice. The Government has a royalty-free license under the following listed patents for the benefit of manufacturers of the item either for the Government or for use in equipment to be delivered to the Government.

US patent number"

If royalty-free licenses are not obtainable, the standard shall list the patents together with their expiration date and the statement that the Government does not have a royalty-free license.

A.5.6.7 Subject term (key word) listing. Standards shall contain a listing of subject terms (key words) which would allow identification of the document during retrieval searches. Subject terms may be descriptors, keywords, posting terms, identifiers, open-ended terms, subject headings, acronyms, code words, or any words or phrases that identify the principal subjects covered in the document, and that conform to standard terminology and are exact enough to be used as subject index entries. If the standard requires the use of any toxic chemicals, hazardous substances, or ODCs listed in SD-14, these should be included in the key word listing. The subject terms shall not repeat words found in the title of the document. The subject terms are to be listed alphabetically in a single column with the main noun or word first, followed by sequential modifiers separated by commas. Word groups considered to be proper or recognized nouns such as "printed circuit board" should not be separated. The number of subject terms listed shall not exceed 25.

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A.5.6.8 International standardization agreements. The preparing activity is responsible for implementation of international standardization agreements as they relate to its responsibilities. When standards implement international standardization agreements as part of their requirements, the following statement shall be added:

"Certain provisions of this standard (identified by paragraph number or similar manner, if appropriate) are the subject of international standardization agreement (insert appropriate document reference). When change notice, revision, or cancellation of this standard is proposed which will modify the international agreement concerned, the preparing activity will take appropriate action through international standardization channels, including departmental standardization offices, to change the agreement or make other appropriate accommodations."

A.5.6.9 Identification of changes from previous issue. Revisions of standards should include asterisks or vertical lines at the margins of the pages to indicate where changes have been made with respect to the previous issue. The following note shall be included as the last paragraph in section 6 of the standard, when applicable:

"6.X Changes from previous issue. The margins of this standard are marked with asterisks (or vertical lines) to indicate where changes from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue."

If the changes are extensive and too numerous to annotate, the following note shall be included in section 6 of the standard, but every effort should be made to annotate the changes:

"6.X Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes."

APPENDIX A

METHOD 101.6A
MOISTURE
(GAS CHROMATOGRAPHY METHOD)

1. SCOPE

1.1 This method may be used for the determination of moisture in single or double base powder.

1.2 The moisture is extracted from the propellant with methanol, injected into a column, and then the moisture peak is compared with a standard.

2. SPECIMEN

2.1 The sample shall consist of 3.0 grams of propellant.

3. APPARATUS

3.1 Hewlett Packard 3752 with Dual Thermal Conductivity detector or its equivalent interfaced to a PEP-II computer (or other means of peak measurement).

3.2 10ml syringe.

3.3 Magnetic stirrer and stirring bar.

3.4 60 ml bottle and stopper.

3.5 100 ml volumetric flask.

3.6 Calibration loop.

4. REAGENTS AND STANDARDS

4.1 Methanol - Anhydrous

4.2 Distilled Water

Method 101.6A
13 May 1984

FIGURE A-1. Example of individual test method.

APPENDIX A

REQUIREMENT 32

TEST PROVISIONS

1. Purpose. This requirement establishes criteria for test provisions.
2. Documents applicable to Requirement 32:

MIL-STD-415	Test Provisions for Electronic Systems and Associated Equipment, Design Criteria for
MIL-STD-2165	Testability Program for Electronic Systems and Equipment
3. Definitions. Not applicable.
4. Requirements
 - 4.1 Built-in test devices. Built-in test devices shall maintain their accuracy under all operating conditions required by the equipment under test. These devices shall be provided with connections or access for their operational checkout or calibration.
 - 4.2 External test points. Protection shall be provided in the test point circuitry to prevent equipment damage caused by the external grounding of test points.
 - 4.3 Failure effect. Provisions for testing shall be so designed that any failure of built-in test devices will not degrade equipment operating or cause equipment shut down.
 - 4.4 Test provisions. Test provisions to provide means for monitoring performance, calibration, calibration, and fault isolation shall be in accordance with MIL-STD-415.
5. Information for guidance only
 - 5.1 Testability program. When specified by the contracting activity, a testability program should be implemented in accordance with MIL-STD-2165.

REQUIREMENT 32
12 February 1988

Figure A-2. Example of individual requirement.

APPENDIX B

FORMAT AND CONTENT OF
DEPARTMENT OF DEFENSE HANDBOOKS

B.1 SCOPE

B.1.1 Scope. This appendix establishes the format and content for the preparation of DoD handbooks. This appendix is a mandatory part of this standard. The information contained herein is intended for compliance.

B.2 APPLICABLE DOCUMENTS

This section is not applicable to this appendix.

B.3 DEFINITIONS

The definitions in section 3 of this standard apply to this appendix.

B.4 GENERAL REQUIREMENTS

B.4.1 General. Handbooks are for guidance only and shall not contain requirements. Handbooks shall be prepared for such purposes as:

- a. Documenting lessons learned.
- b. Classification of items, materials, processes, etc.
- c. Interpretation material.
- d. Design, construction, or selection guidance.
- e. Standard terminology, definitions, abbreviations, or acronyms.
- f. Any other type of guidance information.

Handbooks shall conform to the requirements of sections 4 and 5 of this standard, as well as the requirements in this appendix.

B.4.2 Organization of handbooks. The organization of handbooks is flexible. A handbook may have as many sections as is needed to provide useful guidance information to users. However, as a minimum, the following organizational elements and sections shall be included in handbooks in the order listed, unless it is followed by the words "if applicable":

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- a. Self cover (see 5.2, figure 5, and B.5.1).
- b. Foreword (see 5.3 and B.5.3).
- c. Contents (see 5.4).
- d. Section 1: Scope (see B.5.4).
- e. Section 2: Applicable documents (see B.5.5).
- f. Section 3: Definitions (see B.5.6).
- g. After Section 3, a handbook may have as many sections as needed, and they may have any title to the section.
- h. The last section shall be entitled "NOTES" (B.5.7).
- i. Appendixes, if applicable (see 5.5).
- j. Index, if applicable (see 5.6).
- k. Concluding material (see 5.7).
- l. DD Form 1426 (see 5.8).

B.5 DETAILED REQUIREMENTS

B.5.1 Self cover. In addition to the requirements of 5.2, the self cover for handbooks shall contain the following information below the DoD seal: "This handbook is for guidance only. Do not cite this document as a requirement."

B.5.2 AMSC number. Handbooks shall not contain data requirements and shall not be the source document for any DID. Handbooks shall be marked with "AMSC N/A" on the self cover (see 5.2.9).

B.5.3 Foreword. In addition to the requirements of 5.3, the following statements shall be included as the second paragraph in the handbook's foreword: "This handbook is for guidance only. This handbook cannot be cited as a requirement. If it is, the contractor does not have to comply."

B.5.4 Content of Section 1: SCOPE. Section 1 shall include a scope that briefly states the coverage of the handbook. Section 1 may also include paragraphs on the handbook's purpose, applicability, and classifications of items, materials, methods, practices, or processes. In addition, the scope shall include the following statements: "This handbook is for guidance only. This handbook cannot be cited as a requirement. If it is, the contractor does not have to comply."

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B.5.5 Content of Section 2: APPLICABLE DOCUMENTS.

B.5.5.1 Listing of applicable documents. Section 2 shall list only those documents referenced in the handbook that the user will need in order to understand fully the guidance information provided by the handbook. Documents cited in the handbook only as an example or for background information do not need to be included in section 2. The first paragraph in section 2 shall be as follows:

"2.1 General. The documents listed below are not necessarily all of the documents referenced herein, but are the ones that are needed in order to fully understand the information provided by this handbook."

B.5.5.2 Government documents. Referenced Government specifications, standards, and handbooks shall be listed by document title and identifier, excluding revision letters, parenthetical suffix (symbol designation of the preparing activity or service), and the "00" designation for interim documents. Titles shall be taken from the documents rather than an index. Government specifications, standards, handbooks, drawings, and publications as applicable shall be listed numerically (except federal specifications which shall be listed alpha-numerically) under headings in individual groups such as federal, Department of Defense, and departmental activity (such as Naval Air Systems Command). These listings shall be included under the following subparagraphs:

"2.2 Government documents.

"2.2.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the latest issue of the Department of Defense Index of Specifications and Standards (DoDISS) and supplement thereto."

The following types of publications shall be listed (as applicable) in the order shown after 2.2.1:

- Federal Specifications (list CIDs under this heading)
- Department of Defense Specifications
- Federal Standards
- Federal Information Processing Standards
- Department of Defense Standards
- Department of Defense Handbooks

The following parenthetical source statement shall follow the listing of Government specifications, standards, and handbooks:

"(Unless otherwise indicated, copies of the above specifications, standards, and handbooks are available from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)"

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If Federal Information Processing Standards (FIPS) are listed under 2.2.1, the following parenthetical source statement shall also appear:

"(Copies of the Federal Information Processing Standards (FIPS) are available to Department of Defense activities from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094. Others must request copies of FIPS from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161-2171.)"

The following paragraph shall be used to list Government drawings, publications, or other Government documents not listed under 2.2.1:

"2.2.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this document to the extent specified herein."

The following types of publications shall be listed (as applicable) in the order shown after 2.2.2:

Other Government Documents (for example, Department of Transportation Specifications, U.S.
Department of Agriculture Specifications, etc.)
Drawings
Publications

A parenthetical source statement shall follow each individual document or each group of related documents providing the name and address of the source.

B.5.5.3 Non-Government standards and other publications. Non-Government standards and other publications not normally furnished by the Government shall be listed in appropriate order (numerically or alpha-numerically) under the headings of the respective non-Government standards bodies. The document(s) shall be listed by title and identifier, if applicable. Titles shall be taken from the document rather than from an index. If the non-Government standard has been adopted by the DoD and listed in the DoDISS, the specific issue date or other revision indicator shall not be given. After the title of each non-Government standard adopted by the DoD, add "(DoD adopted)." This listing shall be included under the following subparagraph:

"2.3 Non-Government publications. The following document(s) form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DoD adopted are those listed in the latest issue of the DoDISS, and supplement thereto."

In addition, the following parenthetical source statement shall follow each individual publication or each group of related publications which may be obtained from a common source:

"(Application for copies should be addressed to the (name and address of the source).)"

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B.5.5.4 Order of precedence. In order to avoid confusion or possible conflict between the requirements of the handbook and the documents referenced therein, the following statement shall be included:

"2.4 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained."

B.5.6 Content of Section 3: DEFINITIONS. Definitions of all key terms used in the handbook shall be stated in sufficient detail for adequate clarity, unless the terminology is generally accepted and not subject to interpretation. Definitions may be included by reference to another document. When standard definitions exist, a different definition shall not be used. Definitions shall be listed in alphabetical order. A list of acronyms and abbreviations may also be included under definitions.

B.5.7 Content of "NOTES" Section: The last numbered section in a handbook shall be "NOTES" and as a minimum shall contain the following information, if applicable:

- a. Intended use.
- b. Supersession data (see 5.2.6).
- c. Cross-reference of classifications and substitutability data.
- d. Subject term (key word) listing.
- e. Identification of changes.

B.5.7.1 Intended use. Information relative to the use of the subject matter covered by the handbook shall be included under this heading as 6.1. If there are any particular applications for which the document is not well adapted, this information shall also be included.

B.5.7.2 Cross-reference. A cross-reference of old to new classifications showing substitutability relationship shall be included, if applicable.

B.5.7.3 Subject term (key word) listing. Handbooks shall contain a listing of subject terms (key words) which would allow identification of the document during retrieval searches. Subject terms may be descriptors, keywords, posting terms, identifiers, open-ended terms, subject headings, acronyms, code words, or any words or phrases that identify the principal subjects covered in the document, and that conform to standard terminology and are exact enough to be used as subject index entries. If the handbook identifies any toxic chemicals, hazardous substances, or ODC listed in the SD-14, these should be included in the key word listing. The subject terms are to be listed alphabetically in a single column with the main noun or word first, followed by sequential modifiers separated by commas. Word

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groups considered to be proper or recognized nouns such as "printed circuit board" should not be separated. The number of subject terms listed shall not exceed 25.

B.5.7.4 Identification of changes from previous issue. Revisions of handbooks should include asterisks or vertical lines at the margins of the pages to indicate where changes have been made with respect to the previous issue. The following note shall be included as the last paragraph in the "NOTES" section of the handbook, when applicable:

"6.X Changes from previous issue. The margins of this handbook are marked with asterisks (or vertical lines) to indicate where changes from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations."

If the changes are extensive and too numerous to annotate, the following note shall be included in the "NOTES" section of the handbook, but every effort should be made to annotate the changes:

"6.X Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes."

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