

NOT MEASUREMENT
SENSITIVE

MIL-T-47500/2(MI)
24 March 1989

MILITARY SPECIFICATION
TECHNICAL DATA PACKAGES
DRAWINGS, PRODUCT

This specification is approved for use by the Department of the Army and is available for use by all departments and agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification prescribes requirements for product drawings acquired in support of Department of Defense materiel.

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 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).

SPECIFICATIONS

MILITARY

MIL-D-5480

Data, Engineering and Technical,
Reproduction Requirements for

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, U.S. Army Missile Command, ATTN: AMSMI-RD-SE-TD-ST, Redstone Arsenal, AL 35898-5270, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC A4644

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DISTRIBUTION STATEMENT A. Approved for public release;
distribution is unlimited.

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MIL-M-9868

MIL-T-47500

Microfilming of Engineering
Documents, 35MM Requirements for
Technical Data Package, General
Specification for

STANDARDS

MILITARY

DOD-STD-100

MIL-STD-1529

Engineering Drawing Practices
Vendor Substantiation for Aerospace
Propulsion System Items

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Naval Publications and Forms Center, (ATTN: NPODS), 5801 Tabor Avenue, Philadelphia, PA 19120-5099.)

2.2 Order of precedence. In the event of a conflict between the text of this document and the references cited herein (except for associated detail specifications, specification sheets, or MS standards), 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. REQUIREMENTS

3.1 General. The complete requirements for drawings described herein shall consist of this document and the basic MIL-T-47500. The contract or order will identify the selection of options for drawings to be acquired (see 6.2).

3.2 Existing drawings. Drawings and associated lists prepared prior to the application of this specification shall be acceptable, providing they meet the criteria established by MIL-T-47500 for existing data.

3.3 Product drawings. Product drawings shall be prepared in accordance with DOD-STD-100, shall reflect the end item, and document directly or by reference the following (see 6.3):

a. Details of unique processes, i.e., not published or generally available to industry, when essential to design and manufacture.

b. Performance ratings.

c. Dimensional and tolerance data.

d. Critical manufacturing processes and assembly sequences as necessary to define the product characteristics.

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- e. Toleranced input and output characteristics.
- f. Diagrams.
- g. Mechanical and electrical connections.
- h. Physical characteristics, including form and finish.
- i. Details of material identification, including heat treatment and protective coatings.
- j. Inspection, test and evaluation criteria.
- k. Necessary calibration information.
- l. Quality assurance provisions.
- m. Hardware marking requirements using a military marking specification or standard.
- n. Reliability requirements and demonstration testing.
- o. Environmental requirements and testing.
- p. Maintainability requirements and demonstration testing.
- q. Vendor substantiation data when required by contract or order.

3.4 Types and quantity of drawings. DOD-STD-100 shall be used for the selection of the type drawings necessary to satisfy contractual requirements. Unless otherwise specified in the contract or purchase order (see 6.2), the contractor is responsible for the selection of the types and quantity of drawings to satisfy the content requirements for product drawings, however, this selection is subject to Government approval.

3.5 Control drawings. Control drawing(s) shall be prepared in those instances where one of the following applies:

a. Vendor or commercial items are approved for use to meet the Government's requirements in the design, and are not covered by Government or nationally recognized industry associated standards and specifications.

b. Items not developed at Government expense.

c. Items which the Government has not acquired unlimited rights to the data.

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d. Existing items are altered for use.

e. Existing items must undergo additional selection criteria other than that imposed by the designer of the item.

f. The physical and functional interfaces affect the design or operation of co-functioning items.

3.5.1 Specification control drawings. A specification control drawing shall be prepared to depict the Government's performance, installation, and interchangeable characteristic requirements for an item, the requirements for which can be satisfied by commercial items, vendor-developed items, or items from a specialized segment of industry. As many sources, as is practical shall be specified. In no case shall less than two sources be listed. Typical examples of items from specialized segments of industry are special motors, transformers, potted servo amplifiers, hydraulic valves, and similar products of industries which normally provide customer application engineering services for a commercial product line. Specification control data shall not be tailored to the characteristics of a single vendor's product to the exclusion of other equally suitable products. Conversely, specification data shall not be so broad as to permit acceptance of products which will not perform in the equipment under all required environmental conditions.

3.5.2 Source control drawings. A source control drawing (see DOD-STD-100) shall only be prepared when:

a. It is a critical application item (see 6.4.1); and

b. A written source control drawing approval request has been approved by the Government cognizant design activity (see 6.3). The request shall include: (1) the justification for use and approval, (2) a statement that inquiry of the Federal Supply System did not provide the required item or an existing source control drawing, (3) an estimate of the cost of qualification inspection of the item, and (4) qualification requirements.

3.5.2.1 Requirements for source control drawings. Source control drawings shall present the Government's performance, installation, and interchangeable characteristic requirements for an item; the requirements for which can be satisfied by commercial items or vendor developed items. Mere reference to an existing vendor item will not suffice. Source control drawings shall identify specific critical applications by part number; normally this will be the identification number of the next higher assembly which has performance requirements stated and shall be listed in the notes on the drawing with justification for part application. Source control drawings shall not be used

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for items available only from the contractor, unless the intent to do so was previously and specifically disclosed in the proposal and accepted by the Government as a condition of the contract. Source control drawings shall contain at least two sources. The qualification testing requirements shall be contained in the drawing notes.

3.6 Selection of options. Drawings shall be prepared to meet the requirements of the selection worksheets MIL-T-47500 (see 6.2.d) and the data requirements (see 6.3).

3.7 Legibility and reproducibility. Drawings shall be of such clarity that when reproduced or microfilmed, will produce copies conforming to the legibility requirements of MIL-M-9868 or MIL-D-5480.

3.8 Vendor substantiation data. When required by contract or order, TDPs shall contain directly or by reference, those tests and requirements necessary to qualify and substantiate second sources (see MIL-STD-1529).

4. QUALITY ASSURANCE PROVISIONS

4.1 Acceptance criteria. Each drawing and referenced document shall as a minimum be examined for conformance to the following requirements:

a. Drawings have not been prepared when appropriate specifications, standards or drawings exist (see MIL-T-47500).

b. Control drawings are properly prepared per DOD-STD-100.

c. Complete definition of material requirements and conditions are stated in accordance with the applicable specifications. These shall include heat treatment and protective coatings and other required material considerations.

d. Rights in data have been approved by the Government and are properly identified in accordance with contract requirements and control drawings have been prepared.

e. The order of precedence of references and applicable specific identification of types, grades etc., are as specified (see DOD-STD-100).

f. Special inspection and test requirements are shown when required.

g. Identification requirements are specified when required (see DOD-STD-100).

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h. Legibility and reproducibility are as required (see 3.7).

i. Microfilm, reproducible and non-reproducible drawings, including originals, have been properly prepared for delivery (see 5.1).

j. Quality assurance provisions have been properly incorporated.

k. Preparation of each source control drawing has been approved by the procuring activity.

l. Drawing format materials are as specified.

4.2 Validation of quality conformance inspection. All quality conformance inspection data shall be validated against the corresponding configuration item and the applicable commercial inspection equipment standards to assure its adequacy and accuracy. Such validations shall include actual validation of the quality conformance data against the hardware. Records of the validation and certification of the data's adequacy and accuracy shall be maintained by the contractor (see 6.3).

4.3 Validation of product drawings. In those instances where hardware has been developed or produced by the contractor, product drawings shall be validated against corresponding hardware depicted or described on the product drawings. Use of the product drawings in producing, inspecting and testing satisfactory hardware is considered acceptable evidence that the validation requirement has been met. Validation results shall be documented and subject to review by the Government (see 6.3).

5. PACKAGING

5.1 Packaging. Packaging of product drawings for delivery shall be as specified in MIL-T-47500.

6. NOTES

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

6.1 Intended use. This specification reflects Department of Defense policy for acquiring only those product drawings that are needed to support Department of Defense materiel.

6.2 Acquisition requirements. Acquisition documents must specify the the following information:

- a. Title, number, and date of this specification:
- b. Applicable DIDs (6.3).

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c. Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1.1).

d. Applicable selection worksheets (reproduced, completed and included in the contract (see 3.6)).

6.3 Data requirements. The following Data Item Descriptions (DID's) must be listed, as applicable, on the Contract Data Requirements List (DD Form 1423) when this specification is applied on a contract, in order to obtain the data, except where DOD FAR Supplement 227.475-1 exempts the requirement for a DD Form 1423.

<u>Ref Para</u>	<u>DID Number</u>	<u>DID Title</u>	<u>Suggested Tailoring</u>
3.3	DI-CMAN-80780	Proposed critical manufacturing processes	--
3.3	DI-CMAN-80779	Product drawings	--
3.5.2	DI-CMAN-80783	Source control drawing approval request	--
3.6	DI-DRPR-80055	Drawing number assignment report	--
4.2 & 4.3	DI-CMAN-80792	Validation report	--

The above DID's were those cleared as of the date of this specification. The current issue of DOD 5010.12-L, Acquisition Management Systems and Data Requirements Control List (AMSDL), must be researched to ensure that only current, cleared DID's are cited on the DD Form 1423.

6.4 Drawings prepared by other than manual means. Product drawings prepared by other than manual means (by computer, plotter, photosetter, etc.) shall provide all the engineering information required by this specification and shall meet the requirements of 3.7. Subject to government approval, variations from DOD-STD-100 to accommodate the document preparation technique involved may be acceptable as long as these variations do not detract from the requirements concerning the information contents.

6.5 Definitions.

6.5.1 Critical application item. An item which is essential to the preservation of life in emergencies (parachutes, marine

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life preservers, etc.) or to the performance of an end item or system when failure to perform would adversely affect the accomplishment of a military operation.

6.5.2 Vendor substantiation data. These data are inspections and tests performed on items where verification of manufacturing capability is necessary to establish second sources of supply. These tests include but are not limited to those tests required by Government and the manufacturer's specifications (see MIL-STD-1529).

6.6 Subject term (key word) listing.

Drawings, Product

Custodian:
Army - MI

Preparing activity:
Army - MI

(Project No. CMAN-0014-2)

Review activities:
Army - AR, AT, AV, CE, CR, GL, ME, SM

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NOTE: This form may not be used to request copies of documents, nor to request waivers, deviations, or clarification of specification requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

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STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions - Reverse Side)

1. DOCUMENT NUMBER MIL-T-47500/2(MI)		2. DOCUMENT TITLE Drawings, Product					
3a. NAME OF SUBMITTING ORGANIZATION		4. TYPE OF ORGANIZATION (Mark one)					
b. ADDRESS (Street, City, State, ZIP Code)		<input type="checkbox"/> VENDOR					
		<input type="checkbox"/> USER					
		<input type="checkbox"/> MANUFACTURER					
		<input type="checkbox"/> OTHER (Specify): _____					
5. PROBLEM AREAS							
a. Paragraph Number and Wording:							
				b. Recommended Wording:			
				c. Reason/Rationale for Recommendation:			
6. REMARKS							
7a. NAME OF SUBMITTER (Last, First, MI) - Optional		b. WORK TELEPHONE NUMBER (Include Area Code) - Optional					
c. MAILING ADDRESS (Street, City, State, ZIP Code) - Optional		8. DATE OF SUBMISSION (YYMMDD)					

DD FORM 1426
82 MAR

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