

NOT MEASUREMENT
SENSITIVE

MIL-T-47500/6(MI)
24 March 1989

MILITARY SPECIFICATION
TECHNICAL DATA PACKAGES
QUALITY ASSURANCE PROVISIONS

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 format and detail requirements for the preparation and maintenance of quality assurance provisions (QAPs). QAPs are utilized to assure conformance to established technical and quality standards.

1.2 Application. The requirements of this specification are applicable to QAPs for weapon systems, end items, assemblies, subassemblies, and components selected as spare/repair parts.

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).

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 A4648
DISTRIBUTION STATEMENT A. Approved for public release;
distribution is unlimited.

AREA CMAN

MIL-T-47500/6(MI)

SPECIFICATIONS

MILITARY

MIL-D-5480	Data, Engineering and Technical, Reproduction Requirement for
MIL-M-9868	Microfilming of Engineering Documents, 35MM Requirements for
MIL-M-38761	Microfilming and Photographing of Engineering/Technical Data and Related Documents, PCAM Cards, Engineering Data Micro-reproduction System, General Requirement for, Preparation of
MIL-T-47500	Technical Data Packages, General Specification for

STANDARDS

MILITARY

DOD-STD-100	Engineering Drawing Practices
MIL-STD-105	Sampling Procedures and Tables for Inspection by Attributes
MIL-STD-109	Quality Assurance Terms and Definitions
MIL-STD-414	Sampling Procedure and Table for Inspection by Variables for Percent Defective
MIL-STD-490	Specification Practices
MIL-STD-961	Military Specification and Associated Documents, Preparation of Single and Multilevel Continuous Sampling Procedures and Tables for Inspection by Attributes
MIL-STD-1235	

(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. QAPs are an integral part of the technical data packages. QAPs are stipulations of actions to be taken to

MIL-T-47500/6(MI)

determine that the manufactured items (subassembly or components) conform to stated requirements. QAPs support technical requirements at each point or level at which inspection is to be accomplished. They specify what is to be inspected, how many items are to be inspected, how the inspection is to be conducted (i.e., how the product is to be evaluated, examined, or tested), and the criteria to be used for determination of acceptability of the product.

3.2 Documents requiring QAPs. When there is no specification for the item, QAPs shall be prepared and maintained on drawings or on a document referenced on the drawing (see 6.3). QAPs in specifications shall be prepared in accordance with MIL-STD-961 or MIL-STD-490 as appropriate.

3.2.1 Product drawings. Product drawings containing inspection characteristics which are classified as critical, major, or minor (in accordance with MIL-STD-109) shall have QAPs.

3.3 Documents not requiring QAPs. QAPs are not required for TDPs for:

a. Drawings which are not to be a part of a technical data package.

b. Drawings for commercial, proprietary, or off-the-shelf items, unless altered for Government use.

NOTE: Documents which contain an approved source of supply will contain quality conformance inspections and approval procedures or a reference to a document which does contain the approval procedures.

c. Items purchased to recognized military and Non-Government standards. (Inspection requirements are stated therein.)

3.4 Quality engineering planning list. The quality engineering planning list (QEPL) is a cross-index of the quality engineering documentation to design engineering documentation. The QEPL shall be traceable to the current configuration of the item and reflect the status of the quality assurance provisions for assemblies, subassemblies, priority parts, and critical processes (see 6.3).

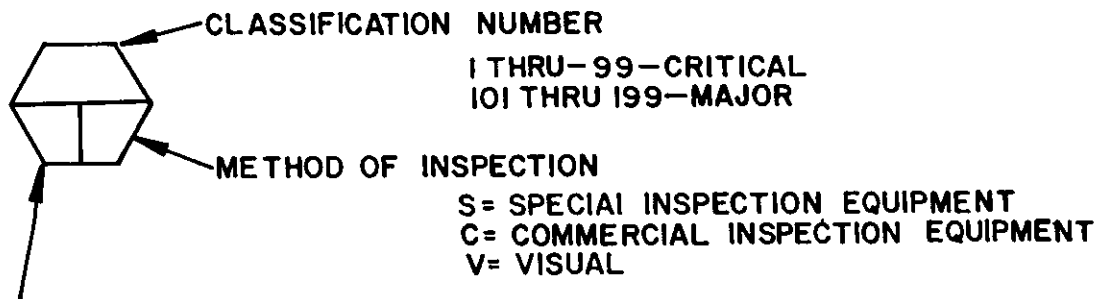
3.5 Classification of characteristics. The contractor's quality engineering department shall, in accordance with design engineering, establish those characteristics which are critical, major, or minor. The results of a failure mode effects analysis

MIL-T-47500/6(MI)

should be considered when determining the significance of a characteristic. For definition of characteristics, see 6.4.4 and 6.4.5. On drawings containing characteristics which are classified as critical, major, or minor, the following information and legend will be added to the drawing and the QAP symbol placed next to each characteristic. See Figure 1 for an example of the use of the QAP symbol.

QUALITY ASSURANCE PROVISIONS

CLASSIFICATION OF CHARACTERISTICS AND INSPECTION REQUIREMENTS ARE IDENTIFIED ON THIS DRAWING AS FOLLOWS:



ACCEPTABLE QUALITY LEVEL (AQL). WHEN NO SAMPLING IS ALLOWED, 100% INSPECTION IS PERFORMED AND THE AQL ALLOWED WILL BE INDICATED AS "0".

Figure 1. Example of use of QAP symbol on drawings.

3.5.1 One hundred percent inspection. Critical characteristics usually require 100 percent inspection. One hundred percent inspection may also be specified for majors, and in some cases, for specially treated minor characteristics.

3.5.2 Additional requirements. In addition, the contractor shall:

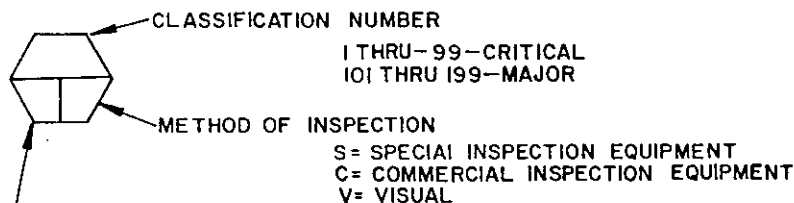
- a. Indicate sampling plan (including AQL) to be utilized, i.e., MIL-STD-105, MIL-STD-414, MIL-STD-1235 or other approved government sampling plans.
- b. Specify inspection lot information requirements, if appropriate.
- c. Add additional notes to the drawing as needed to identify additional first part inspection requirements, destructive test requirements, and related supporting inspection criteria, etc. See Figure 2 for an example of additional notes.

MIL-T-47500/6(MI)

3.5.3 Recapitulation of quality conformance characteristics. The quality conformance characteristics identified on the drawing by the designed classification number shall be stated in the "Quality Assurance Provisions" drawing notes. The purpose for this note is to recapitulate and assure that quality personnel are made aware of all characteristics requiring quality conformance inspection. See Figure 2 for an example.

QUALITY ASSURANCE PROVISIONS

- A. UNLESS OTHERWISE SPECIFIED IN THE CONTRACT, THE CONTRACTOR IS RESPONSIBLE FOR THE PERFORMANCE OF ALL INSPECTION REQUIREMENTS AS SPECIFIED HEREIN.
- B. CLASSIFICATION OF CHARACTERISTICS AND INSPECTION REQUIREMENTS ARE IDENTIFIED ON THIS DRAWING AS FOLLOWS:



ACCEPTABLE QUALITY LEVEL (AQL). WHEN NO SAMPLING IS ALLOWED, 100% INSPECTION IS PERFORMED AND THE AQL ALLOWED WILL BE INDICATED AS "0".

- C. SAMPLING INSPECTION SHALL BE IN ACCORDANCE WITH MIL-STD 105.
- D. A FIRST ARTICLE SAMPLE IS REQUIRED WHEN SPECIFIED IN THE CONTRACT. ACCEPTANCE WILL BE BASED ON CONFORMANCE TO THE REQUIREMENTS OF THIS DRAWING.

E. QUALITY CONFORMANCE INSPECTION SHALL CONSIST OF THOSE CHARACTERISTICS CLASSIFIED AS MAJORS NRS. 101, 102, 103, 104, 105 AND 106.
(NOTE: if the drawing also contains critical or minor quality conformance characteristics, they will be listed in this statement)

- F. ALL OTHER CHARACTERISTICS ARE SUBJECT TO INSPECTION UNDER THE CONTRACTORS QUALITY OR INSPECTION SYSTEM

Figure 2. Example of QAP notes on drawings.

3.5.4 Compliance with specifications. Drawing notes requiring compliance with material and process specifications which contain a section entitled "Quality Assurance Provisions" shall not be classified with regard to defect classification. The QAPs within such specification shall control required

MIL-T-47500/6(MI)

inspections. If tighter control or inspection is required on a specific application of the process, it should be indicated in the engineering note and so stated with specific change in inspection criteria in the quality assurance provisions on the drawing.

3.5.5 Use of special inspection equipment (SIE). When SIE is used to conduct an inspection or test, "S" shall be indicated in the QAP symbol. The SIE part number shall be identified in the "Quality Assurance Provisions" drawing notes for the particular characteristics to be tested.

3.5.6 Unspecified characteristics. Characteristics determined to be in one of the following categories shall not be specified for inspection on the drawing (except by the general quality note expressed in the following paragraph).

- a. Provided only for producibility or manufacturing convenience.
- b. Is adequately inspected by the required process specification.

3.5.7 When a drawing contains only characteristics as defined in paragraph 3.5.6, the following note will be added to the drawing:

NOTE: Quality assurance provisions. All characteristics are subject to inspection under the contractor's inspection or quality system.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements (examinations and tests) as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in this specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items must meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of ensuring that all

MIL-T-47500/6(MI)

products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to acceptance of defective material.

4.2 Nonconforming QAPs. Failure of QAPs to conform to the requirements of this specification will result in rejection as nonconforming. Nonconforming QAPs shall be re-examined after correction of all discrepancies. The supplier shall identify the deficiencies corrected and the action taken to prevent recurrence.

5. PACKAGING

5.1 Packaging. Packaging requirements shall be as specified in MIL-T-47500 and the contract or purchase order.

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 of acquiring only those QAPs that are needed to support inspection and test of the specified characteristics (functional, dimensional, visual, etc.).

6.2 Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number, and date of this specification.
- b. Applicable DID's (see 6.3).
- c. Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1.1).

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.

MIL-T-47500/6(MI)

<u>Ref Para</u>	<u>DID Number</u>	<u>DID Title</u>	<u>Suggested Tailoring</u>
3.2	DI-CMAN-80789	Quality assurance provisions	--
3.4	DI-CMAN-80788	Quality engineering planning list	--

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 cleared DID's are cited on the DD Form 1423.

6.4 Tailoring. Tailoring of requirements in this specification shall be by selection of optional requirements on the selection worksheets (MIL-T-47500), selection of data requirements (see 6.3), and selection of requirements stated herein.

6.5 Responsibility for quality. The quality of product depends on the competence and integrity of design, development of adequate QAPs, effectiveness of manufacturing operations, diligence of support operations, and pride of workmanship of each individual. Thus, it is of critical importance that any quality assurance program be based on a solid foundation of clear assignments of responsibility by both the Government and contractor. Any or all of the quality effort may be contracted but the Government remains ultimately responsible for quality assurance management. Therefore, it is imperative that quality managers, engineers, and specialists understand the quality assurance concept and responsibilities in that appropriate application of QAPs can be made to achieve the purpose of quality assurance. Recognizing the ever present consumer and producer risks and cost/schedule constraints, the quality assurance element can properly assume it's responsibility through appropriate use of QAPs in a systematic QA program of activities. Thus, the quality assurance concept may be viewed as the implementation of quality assurance activities including QAPs.

6.6 Definitions.

6.6.1 Quality assurance (QA). A planned and systematic pattern of all actions necessary to provide adequate confidence that adequate technical requirements are established; products and services conform to established technical requirements; and satisfactory performance is achieved.

6.6.2 Quality assurance provisions (QAPs). Quality assurance provisions are the documented requirements,

MIL-T-47500/6(MI)

procedures and criteria necessary for demonstrating that designs conform to user requirements and that materiel and associated services conform to approved designs.

6.6.3 Quality engineering planning list (QEPL). A QEPL is a list of documents developed during the engineering development of a new item or an end item. The QEPL identifies the QAP documents, the associated hardware/software items, and the type of document to be used in each case; that is, specification, drawing, depot maintenance work requirement, etc.

6.6.4 Critical characteristic. A characteristic which if defective could result in a hazardous or unsafe condition for individuals using, maintaining, or depending upon the product. (NOTE: A discrepant critical characteristic shall be defined as a critical defect (see 3.5.3).)

6.6.5 Major characteristic. A characteristic which if defective could affect or involves (1) health, (2) performance, (3) interchangeability, reliability, or maintainability of the item or its repair parts, (4) effective use of operation, (5) weight, or (6) appearance (when a factor). (NOTE: A discrepant major characteristic shall be defined as a major defect (see 3.5).)

6.7 Subject term (key word) listing.

Quality Assurance Provisions

Custodian:
Army - MI

Preparing activity:
Army - MI

(Project No. CMAN-0014-6)

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

INSTRUCTIONS: In a continuing effort to make our standardization documents better, the DoD provides this form for use in submitting comments and suggestions for improvements. All users of military standardization documents are invited to provide suggestions. This form may be detached, folded along the lines indicated, taped along the loose edge (*DO NOT STAPLE*), and mailed. In block 5, be as specific as possible about particular problem areas such as wording which required interpretation, was too rigid, restrictive, loose, ambiguous, or was incompatible, and give proposed wording changes which would alleviate the problems. Enter in block 6 any remarks not related to a specific paragraph of the document. If block 7 is filled out, an acknowledgement will be mailed to you within 30 days to let you know that your comments were received and are being considered.

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.

(Fold along this line)

(Fold along this line)

DEPARTMENT OF THE ARMY



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE \$300

BUSINESS REPLY MAIL
FIRST CLASS PERMIT NO. 12062 WASHINGTON D. C.
POSTAGE WILL BE PAID BY THE DEPARTMENT OF THE ARMY

Commander
US Army Missile Command
ATTN: AMSM-RD-SE-TD-ST
Redstone Arsenal, AL 35898-5270



STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions - Reverse Side)

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

(TO DETACH THIS FORM, CUT ALONG THIS LINE.)