

INCH-POUND

MIL-D-3954C  
AMENDMENT 3  
28 March 2002  
SUPERSEDING  
AMENDMENT 2  
29 March 1979

MILITARY SPECIFICATION

DUMMY LOADS, ELECTRICAL, WAVEGUIDE,  
GENERAL SPECIFICATION FOR

This amendment forms a part of MIL-D-3954C, dated 19 November 1973, and is approved for use by all Departments and Agencies of the Department of Defense.

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Federal specifications: Delete "QQ-A-250/1 - Aluminum Alloy 11, Plate and Sheet" and substitute "SAE AMS-QQ-A-250/1 - Aluminum 1100, Plate and Sheet."

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Military specifications: Delete "MIL-B-20148 - Brazing Sheet, Aluminum Alloy" and substitute "SAE AMS-B-20148 - Brazing Sheet, Aluminum Alloy."

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3.2: Delete and substitute:

"3.2 First article. Dummy loads furnished under this specification shall be products which have been tested and have passed the first article inspection specified in 4.5 (see 6.3)."

3.3, first sentence: Delete and substitute:

"The material for each part shall be as specified herein."

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3.3(a): Delete and substitute:

"Aluminum alloy plates and sheets shall conform to SAE AMS-QQ-A-250/11 or SAE AMS-QQ-A-250/1; extruded aluminum alloy shall conform to SAE AMS-QQ-A-200/9 or SAE AMS-QQ-A-250/11."

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3.3(f): Delete and substitute:

"Aluminum alloy brazing sheets shall conform to Alcoa #11, or equivalent, in accordance with class 1 of SAE AMS-B-20148.

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\* 4: Delete and substitute:

“4. VERIFICATION”

\* 4.1: Delete and substitute:

“4.1 Classification of inspections. The inspection requirements specified herein are classified as follows:

- a. First article inspection (see 4.5).
- b. Conformance inspection (see 4.6).

\* 4.1.1: Delete.

\* 4.2: Delete and substitute:

“4.2 Responsibility for compliance. All items shall 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 products or supplies 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 accept defective material.”

\* Add the following new paragraphs:

“4.4.1 Test method variation. Variation from the specified test method used to verify the electrical parameters are allowed provided that it is demonstrated to the preparing activity or to their agent that such variations in no way relax the requirements of this specification and that they are approved before testing is performed. For proposed test variations, a test method comparative error analysis shall be made available for checking by the preparing activity or their agent.

4.4.2 Test equipment and inspection facilities. Test and measuring equipment and inspection facilities of sufficient accuracy, quality, and quantity to permit performance of the required inspection shall be established and maintained by the supplier. The establishment and maintenance of a calibration system to control the accuracy of the measuring and test equipment shall be in accordance with ANSI-Z540.1.

4.4.3 Accuracy of test equipment. The frequency-measuring device used shall have an accuracy of  $\pm 0.1$  percent or better. The overall accuracy in the determination of VSWR shall be better than  $\pm 2$  percent.”

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\* 4.5: Delete and substitute:

“4.5 First article inspection. Unless otherwise specified (see 6.2), 3 dummy loads of each class shall be required for first article inspection. First article inspection shall consist of the tests specified in table II and performed by the supplier, after award of contract and prior to production, at a location acceptable to the Government. First article inspection shall be performed on sample units, which have been produced with equipment and procedures normally, used in production. First article approval is valid only on the contract or purchase order under which it is granted, unless extended by the Government to other contracts or purchase orders.”

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\* 4.5.1 and 4.5.2: Delete.

\* 4.5.3, 4.5.4: Delete and substitute:

“4.5.3 Failures. One or more failures shall be cause for refusal to grant first article approval.

4.5.4 Disposition of sample units. Sample units, which have been subjected to first article testing, shall not be delivered on the contract.

\* 4.6.1 through 4.6.1.1.1.1: Delete and substitute:

“4.6.1 Inspection of product for delivery. Inspection of product for delivery shall consist of group A inspection.

4.6.1.1 Inspection lot. An inspection lot shall consist of all dummy loads of the same PIN produced under essentially the same conditions, and offered for inspection at one time.

4.6.1.1.1 Group A inspection. Group A inspection shall consist of the inspection specified in table III in the order shown.

4.6.1.1.1.1 Sampling plan (group A). Table III tests shall be performed on a production lot basis. Samples shall be selected in accordance with table IIIa. If one or more defects are found, the lot shall be screened for that particular defect and defects removed. A new sample of parts shall be selected in accordance with table IIIa and all group A tests again performed. If one or more defects are found in the second sample, the lot shall be rejected and shall not be supplied to this specification.”

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\* Table II, title: Delete and substitute.

"TABLE II. Examinations and tests."

\* Add the following table and notes:

TABLE IIIa. Inspection level.

Lot size	Visual and mechanical inspection	
	Major	Minor <sup>1/</sup>
1 to 8	All	5
9 to 15	All	5
16 to 25	20	5
26 to 50	20	5
51 to 90	20	7
91 to 150	20	11
151 to 280	20	13
281 to 500	47	16
501 to 1,200	47	19
1,201 to 3,200	53	23
3,201 to 10,000	68	29
10,000 to 35,000	77	35
35,001 to 150,000	96	40
150,0001 to 500,000	119	40
500,001 and over	143	40

<sup>1/</sup> Samples may be pulled from either the production lot itself or from samples pulled from the lot for major defect testing. In no case will the sample size exceed the lot size.

## NOTES:

1. Major defect: A major defect is a defect, other than critical, that is likely to result in failure, nor to reduce materially the usability of the unit of product for its intended purpose.
2. Minor defect: A minor defect is a defect that is not likely to reduce materially the usability of the unit of product for its intended purpose, or is a departure from established standards having little bearing on the effective use or operation of the unit.

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\* 4.6.2 through 4.6.2.1.3: Delete and substitute:

"4.6.2 Conformance inspection. Conformance inspection shall consist of group B. Except where the results of these inspections show noncompliance with the applicable requirements (see 4.6.2.1.4), delivery of products, which have passed group A shall not be, delayed pending the results of these conformance inspections.

4.6.2.1 Group B inspection. Group B inspection shall consist of the inspections specified in table IV in the order shown, and shall be made on sample units which have been subjected to and passed the group A inspection. Dummy loads having identical piece parts may be combined for lot purposes and shall be in proportion to the quantity of each PIN numbered adapter produced.

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4.6.2.1.1 Group B sampling plan. The group B sampling plan shall consist of 2 samples, which have been previously subjected to group A testing.

4.6.2.1.2 Nonconforming production control sample units. If a sample unit fails the inspection specified in group B, the contractor shall immediately investigate the cause of failure and shall report to the procuring activity the results thereof and details of the corrective action taken to correct units of product, which were manufactured under the same conditions, with the same materials, processes, and so forth. No sample shall be delivered as a production item under the contract.”

4.6.2.1.3 Disposition of sample units. Sample units, which have passed all the group B inspection, may be delivered on the contract or purchase order, if the lot is accepted. Any dummy load deformed or otherwise damaged during testing shall not be delivered on the contract or order.

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\* 4.7.9: Delete and substitute:

“4.7.9 Power dissipation (see 3.12). Unless otherwise specified, the contractor shall certify that the dummy load is capable of dissipating the power as indicated in 4.7.9.1. The certificates shall be in the contractor’s certified test report to the procuring activity when first article testing is invoked in a contract. When specified (see 3.1 and 6.2(e)), the test shall be in accordance with 4.7.9.1.”

Add the following new paragraph:

“4.7.9.1 Power dissipation test (see 3.12). The specified peak and average power shall be applied simultaneously at any one frequency within the specified range (see 3.1). When no peak power is specified, apply 1.5 times rated average power. Power shall be maintained for a period of 15 minutes after the load has reached thermal equilibrium. It is considered that thermal equilibrium has been reached when the temperature of the load has not changed by more than 5°C over a period of 5 minutes. Unless otherwise specified, (see 3.1), the internal pressure of the load shall be 20 pounds per square inch gage (psig). For liquid cooled loads, the minimum flow rates and coolant pressure specified (see 3.1) shall be used with the input temperature as specified.”

\* 4.7.10: Delete and substitute:

“4.7.10 Endurance (see 3.13). Unless otherwise specified, the contractor shall certify that the dummy load is capable of passing the endurance test as indicated in 4.7.10.1. The certification shall be in the contractor’s certified test report to the procuring activity when first article testing is invoked in a contract. When specified (see 3.1 and 6.2(f)), the test shall be in accordance with 4.7.10.1.”

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Add the following new paragraph:

4.7.10.1 Endurance test (see 3.13). Dummy loads shall be subjected to the specified peak power (when applicable) and average power for test purposes, for 10 cycles of 1 hour power on and a minimum of 1 hour off, at any frequency within the specified frequency range (see 3.1). The VSWR shall be measured as specified in 4.7.2 (and 4.7.2.1 if applicable) preceding the test, and at interval of 1 hour thereafter during the off period. Unless otherwise specified, (see 3.1), the internal pressure of the load shall be 30 psig. For liquid cooled loads, the minimum flow rate and coolant pressure specified (see 3.1) shall be used with the input temperature as specified.

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6.2: Add:

“(e) If power dissipation test is required see 4.7.9 and 4.7.9.1.

(f) If endurance test is required see 4.7.10 and 4.7.10.1.”

\* 6.3: Delete and substitute:

“6.3 First article. Invitations for bid should provide that the Government reserves the right to waive the requirement for first article samples as to those bidders offering a product which has been previously acquired or tested by the Government and that bidders offering a product which has been previously acquired or tested by the Government and that bidders offering such products who wish to rely on such production or test must furnish evidence with the bid that prior Government approval is presently appropriate for the pending acquisition.”

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\* Appendix: Delete in its entirety.

NOTE: The margin of this amendment is marked with an asterisk to indicate where changes from the previous amendment 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 material notations and relationship to the last previous amendment.

CONCLUDING MATERIAL

Custodians:

Army - CR  
Navy - EC  
Air Force - 11  
DLA - CC

Preparing activity:

DLA - CC

(Project 5985-1251)

Review activities:

Army - AR, MI  
Navy - AS, CG, MC, OS, SH  
Air Force - 19