

MIL-G-47197B(MI)
27 April 1987
SUPERSEDING
MIL-G-47197A(MI)
19 July 1985

MILITARY SPECIFICATION

GASKET, SHIELDING, ELECTRONIC-ORIENTED WIRES EMBEDDED IN SILICONE RUBBER, PRESSURE SEAL

This specification is approved for use within the U.S. Army Missile Command, 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 covers the requirements for a gasket material employed as a radio frequency energy shield and as an air and fluid seal. The radio frequency energy shield is embedded in the air and fluid seal.

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications and Standards. The following specifications and standards form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of these documents shall be those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation.

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 35898-5276, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) at the end of this document or by letter.

AMSC N/A

FSC 5999

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SPECIFICATIONS

FEDERAL

QQ-N-281 Nickel-copper Alloy Bar, Rod, Plate, Sheet, Strip, Wire, Forgings and Structural and Special Shaped Sections

ZZ-R-765 Rubber, Silicone

MILITARY

MIL-P-14232 Parts, Equipment and Tools for Army Materiel, Packaging

STANDARDS

MILITARY

MIL-STD-105 Sampling Procedures and Tables for Inspection by Attributes

MIL-STD-129 Marking for Shipment and Storage

MIL-STD-130 Identification Marking of U.S. Military Property

(Copies of specifications and standards and other Government documents required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting activity.)

2.2 Other publications. The following document forms a part of this specification to the extent specified herein. Unless otherwise specified, the issues of the documents which are DOD adopted shall be those listed in the issue of the DODISS specified in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS shall be the issue of the nongovernment document which is current on the date of the solicitation.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 3951 Commercial Packaging, Practice for

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

(Industry association specifications and standards are generally available for reference from libraries. They are also distributed among technical groups and using Federal agencies.)

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2.3 Order of precedence. In the event of a conflict between the text of this specification and the reference cited herein, (except for associated detail specifications, specification sheets or MS standards), the text of this specification shall take precedence. Nothing in this specification, however, shall supersede applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 First Article. When specified in the contract or purchase order, a sample shall be subjected to first article inspection (see 4.2.1 and 6.2).

3.2 Design and construction.

3.2.1 Width. The width of the material shall be .500 plus or minus .031 inch.

3.2.2 Thickness. The thickness of the material shall be .125 plus or minus .015 inch.

3.2.3 Length. The length shall be as specified by the procuring activity.

3.3 Electrical conductivity. The conductivity of the gasket material shall be a minimum of 0.2 SIEMENS per square inch when tested in accordance with 4.3.1.1.3.

3.3.1 Material. The gasket material shall consist of 32 gauge electrically conductive wires of QQ-N-281 monel metal, the majority of which are oriented approximately parallel to each other, embedded in a matrix of silicone rubber specified in ZZ-R-765.

3.3.2 Direction. The average direction of the wires shall be approximately perpendicular to two opposite exterior surfaces of the silicone rubber matrix.

3.3.3 Intersections. At least 75 percent of the intersections of wire with exterior surfaces of the matrix shall be cut ends (not smooth knuckles.)

3.3.4 Minimum. There shall be a minimum of 400 wires per square inch of contact surface area.

3.3.5 Monel. The wire (monel) shall conform to the requirements of QQ-N-281, class A.

3.3.6 Rubber. The silicone rubber shall conform to the requirements of ZZ-R-765, class 3b, grade 30.

3.4 Identification and marking. The gasket material shall be identified as MIL-G-47197 and marked in accordance with MIL-STD-130.

3.5 Workmanship. Workmanship shall be such as to enable the gasket material to meet all applicable requirements of this specification, when inspected in accordance with Section 4.

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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 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 the specification where such inspections are deemed necessary to assure 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 assuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling in quality conformance 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 Classification of inspections. The inspection requirements specified herein are classified as follows:

- a. First article inspection (see 4.2.1).
- b. Quality conformance inspection (see 4.2.2 and 6.2).

4.2.1 First article inspection. First article inspection shall be performed only on the first article and shall consist of all the examinations and tests specified herein.

4.2.2 Quality conformance inspection. The inspection and testing of the gasket material shall be classified as quality conformance inspections. The quality conformance inspections for acceptance shall consist of the examinations and tests specified below.

4.2.2.1 Sampling. Sampling shall be in accordance with MIL-STD-105.

4.3 Test methods.

4.3.1 Test procedures.

4.3.1.1 Electrical conductivity.

4.3.1.1.1 Size. Two, two-inch long specimens of gasket shall be placed between two iridited aluminum sheet electrodes. The specimens shall be placed in parallel with the exposed wire ends adjacent to the sheet electrodes.

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4.3.1.1.2 Load. A ten pound load shall be applied to the electrodes in such a manner that the load is evenly distributed on the specimens.

4.3.1.1.3 Conductivity. The conductivity per square inch of loaded specimens shall be determined by any suitable method accurate to plus or minus 10 percent. The resistance of the aluminum electrodes must be accounted for. One example method--determine the resistance between the electrodes; from this, calculate the conductivity, and then the conductivity can be divided by the area of gaskets contacting one electrode to obtain the value for one square inch of gasket.

5. PACKAGING

5.1 Preservation, packing, unitization and marking. Level A, B, or C (see 6.2).

5.1.1 Packaging and packing. Level A and B shall be in accordance with ZZ-R-765.

5.1.2 Level C. Packaging and packing shall be in accordance with requirements of ASTM D 3951.

5.2 Marking.

5.2.1 Level A, B or C. Marking shall be in accordance with MIL-STD-129.

6. NOTES

6.1 Intended use. This gasket material is intended for use where a minimum of space is available for accomplishing both the radio frequency energy shield and the fluid seal functions.

6.2 Ordering data. Procurement documents should specify the following:

- a. Title, number and date of this specification.
- b. Whether a first article inspection is required and, if so, pertinent details (see 3.1 and 4.2).
- c. Length required.
- d. Levels of preservation - packaging and packing (see 5.1).

6.3 Subject term (key word) listing.

Gasket
Gasket, Shielding
Rubber, Silicone
Wires, Electronic Oriented

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