

MIL-S-47147(MI)
7 June 1974
~~SUPERSEDING~~
MIS-15736
27 December 1965

MILITARY SPECIFICATION
SEALS, RUBBER EXTRUSIONS, NON-CELLULAR

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

1. SCOPE

1.1 Scope. This specification covers the requirements for non-cellular rubber extrusions of four different shapes.

1.2 Classification. Each dash number shall represent an individual extrusion with shape and size as shown in Figure 1.

2. APPLICABLE DOCUMENTS

2.1 Government documents. The following documents of the issue in effect on the date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein.

SPECIFICATIONS

Federal

QQ-A-250/11 Aluminum Alloy 6061, Plate and Sheet

Military

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

FSC 5330

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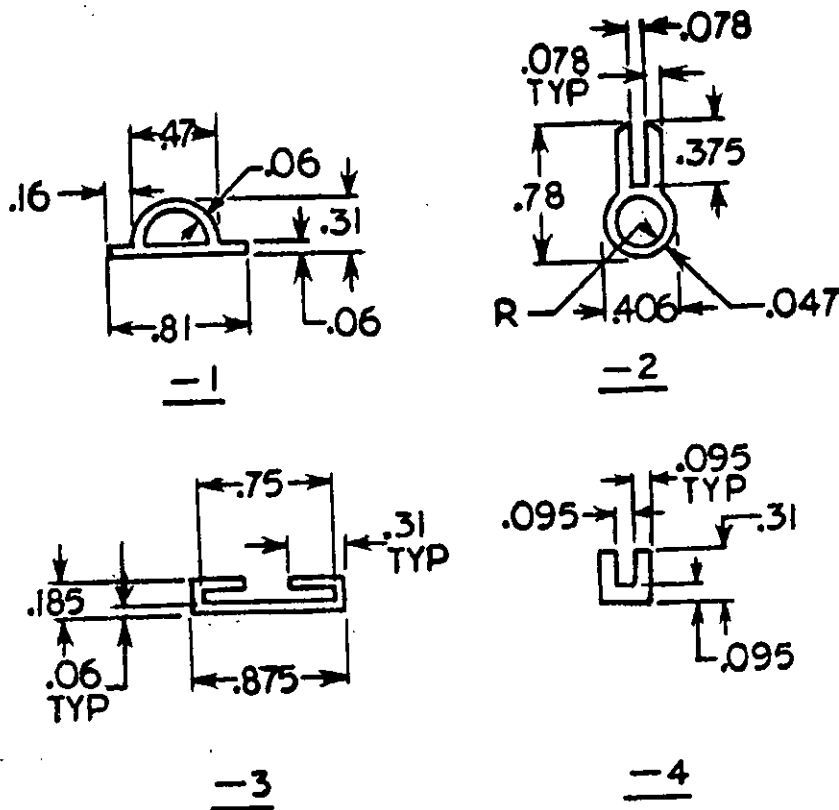


Figure 1.

MIL-R-3065

Rubber, Fabricated Products

MIL-E-5272

Environmental Testing,
Aeronautical and Associated
Equipment, General Specification
for

STANDARDS

Military

MIL-STD-105

Sampling Procedures and
Tables for Inspection by
Attributes

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MIL-STD-129 Marking for Shipment and Storage

MIL-STD-417 Rubber Compositions, Vulcanized General Purpose, Solid Symbols and Tests

(Copies of specifications, standards, drawings, and publications required by contractors in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

2.2 Other publications. The following documents form a part of this specification. Unless otherwise indicated, the issue in effect on date of invitation for bids shall apply.

American Society for Testing and Materials

ASTM D 903 Test for Peel or Stripping Strength of Adhesives

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

DRAWING

Signal Corps

SM-A-417765 Non Structural Bonding with Flexible Adhesives

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

3. REQUIREMENTS

3.1 Preproduction sample. When specified by the procuring activity (see 6.2) a preproduction sample shall be prepared using the same methods proposed for subsequent production, and shall be subjected to preproduction inspection (see 4.3).

3.2 Material property requirements.

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3.2.1 Material. The material shall conform with the requirements of MIL-R-3065 SC 510 A₁B₁C₂E₃F₂K₂Z₁Z₂Z₃ except as otherwise stated herein.

3.2.2 K₂ requirement bonding. The material shall have a minimum bond strength of 5 pounds per inch width when bonded in accordance with 4.5.1.

3.2.3 Z₁ requirement-base polymer. The material shall be made of chloroprene rubber and shall not contain any polymers inferior to chloroprene rubber in ozone resistance.

3.2.4 Z₂ requirement-surface condition. The surfaces of the material shall be free of bloom, frosting, release agents, and migrating plasticizers when examined in accordance with 4.5.3.

3.2.5 Z₃ requirement-microorganism growth. The material shall not support the growth of microorganisms when tested in accordance with 4.5.4.

3.2.6 Color. The color of the material shall be black.

3.3 Dimensions and tolerances.

3.3.1 Cross-section.

3.3.1.1 Dimensions. Cross-sectional dimensions shall be as shown in Figure 1.

3.3.1.2 Tolerances. Cross-sectional tolerances shall conform with Table I.

Table I. Tolerances

Dimension (inch)	Tolerance (inch)
Below .125	+ .015 To -.005
.125 Through .25	+.015
Over .25	±.030

3.3.2 Length. Minimum length shall be 10 feet. If greater lengths are required, they shall be specified only after prearrangement with the manufacturer. Special shorter lengths shall be as stated on the purchase order.

3.4 Product identification. (See 5.2)

3.4.1 Workmanship. The material shall be of high quality and uniformity and shall be free of unevenness, roughness, holes, tears, cuts and other defects which might limit its use or mar its appearance. Workmanship shall be such as to ensure a product which is in conformance with this specification.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the supplier 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.

4.2 Classification and tests. The testing of the material shall be classified as follows:

4.2.1 Preproduction inspection (see 4.3).

4.2.2 Quality conformance inspection (see 4.4).

4.3 Preproduction inspection. Preproduction inspection shall consist of all examinations and tests specified herein and shall be conducted only on preproduction samples. The preproduction samples shall be prepared using the same methods to be used for the manufacture of all subsequent production material.

4.4 Quality conformance inspection.

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4.4.1 Inspection. Quality conformance inspection tests shall be the examinations and tests required for each production lot. A production lot shall consist of products made from a single batch of mixed rubber and vulcanized in one chamber simultaneously.

4.4.2 Sampling. Sampling for all tests shall be performed in accordance with the provisions specified in MIL-STD-105.

4.4.3 Tests. Quality conformance tests shall include hardness as required in 3.2.1, surface condition as in 3.2.4 and 4.5.3, presence of neoprene as in 3.2.3 and 4.5.2, marking as in 3.4, cross-sectional dimensions in accordance with Figure 1 and conformance with workmanship as in 3.4.1.

4.5 Test methods.

4.5.1 Bond strength. To determine conformance with 3.2.2, the material shall be bonded to sheet alloy aluminum in accordance with QQ-A-250/11 or bonded to other unpainted aluminum sheet stock. The bonding procedure shall be as outlined in SM-A-417765. The testing procedure shall be in accordance with ASTM D 903.

4.5.2 Presence of neoprene. To indicate conformance with 3.2.3, indication of neoprene shall be determined as follows:

A stiff copper wire shall be placed in the flame of a Bunsen or other laboratory burner. When the end of the wire is red hot it shall be rubbed against the rubber to be tested. The wire shall be then placed in the cooler part of the flame. A strong bright green color will result if neoprene rubber is present.

4.5.3 Surface condition. In order to conform with 3.2.4, surface condition shall be determined visually.

4.5.4 Microorganism growth. To determine conformance with 3.2.5, the fungus resistance tests of MIL-E-5272 shall be used.

5. PREPARATION FOR DELIVERY

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5.1 Preservation, packaging, and packing. Unless otherwise specified by the contract or purchase order, preservation, packaging, and packing requirements for the specified levels of protection shall be in accordance with MIL-P-14232. Short lengths shall be packed straight when necessary to preserve the original shape and quality of the material.

5.2 Marking. Marking shall be in accordance with MIL-STD-129 and shall include but shall not necessarily be limited to the following:

- a. This specification and appropriate dash number(s).
- b. Vendor's name.
- c. Manufacturer's material designation.
- d. Date of manufacture (year and quarter).
- e. Quantity.
- f. Contract or procurement document number.

5.2.1 MIL-S-47147-4. Unless otherwise specified in the procuring document, each strip of material except MIL-S-47147-4 shall be marked by imprint at intervals of not more than 3 feet. At the discretion of the supplier, MIL-S-47147-4 may be either marked as above or identified by a tag attached to each separate strip. Marking shall show the following:

- a. MIL-S-47147 and appropriate dash number.
- b. Date of cure (quarter and year).
- c. Manufacturer's name or code.
- d. Manufacturer's compound number.

5.2.2 Quality of marking. All marking shall be clearly legible, contrasting in color and shall not be obliterated by normal handling and storage.

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6. NOTES

6.1 Intended use. These extrusions are intended for use as seals or protective strips where resistance to weathering and certain fluids is required.

6.2 Ordering data. Procurement documents should specify the following:

- a. Title, number and date of this specification.
- b. Whether preproduction samples and test reports are required.
- c. Special packaging and packing instructions, if required.
- d. Other special instructions.

6.3 Storage. It is recommended that material stored longer than 5 years past cure date be tested for hardness, elongation and ozone resistance. If the test results are within specification limits, it is recommended that the extrusion be considered satisfactory for normal use.

6.4 Supersession data. This specification includes the requirements of Missile Interim Specification, MIS-15736, dated 27 December 1965.

Custodian:
Army-MI

Preparing Activity:
Army-MI
Project No. 5330-A052

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STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

OMB Approval
No. 22-R255

INSTRUCTIONS: The purpose of this form is to solicit beneficial comments which will help achieve procurement of suitable products at reasonable cost and minimum delay, or will otherwise enhance use of the document. DoD contractors, government activities, or manufacturers/vendors who are prospective suppliers of the product are invited to submit comments to the government. Fold on lines on reverse side, staple in corner, and send to preparing activity. 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. Attach any pertinent data which may be of use in improving this document. If there are additional papers, attach to form and place both in an envelope addressed to preparing activity.

DOCUMENT IDENTIFIER AND TITLE

NAME OF ORGANIZATION AND ADDRESS

CONTRACT NUMBER

MATERIAL PROCURED UNDER A

 DIRECT GOVERNMENT CONTRACT SUBCONTRACT

1. HAS ANY PART OF THE DOCUMENT CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE?

A. GIVE PARAGRAPH NUMBER AND WORDING.

B. RECOMMENDATIONS FOR CORRECTING THE DEFICIENCIES

2. COMMENTS ON ANY DOCUMENT REQUIREMENT CONSIDERED TOO RIGID

3. IS THE DOCUMENT RESTRICTIVE?

 YES NO (If "Yes", in what way?)

4. REMARKS

SUBMITTED BY (Printed or typed name and address - Optional)

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