AEROSPACE MATERIAL SPECIFICATION

AMS2817™	REV. G

Issued 1959-01
Revised 2016-11
Reaffirmed 2022-05

Superseding AMS2817F

(R) Packaging and Identification of Molded Elastomeric Seals and Sealing Components

RATIONALE

Document was updated for Five-Year Review and labeling requirements were clarified.

AMS2817G has been reaffirmed to comply with the SAE Five-Year Review policy.

1. SCOPE

This specification covers procedures which will provide protection of elastomeric seals and seal assemblies such as O-rings, cap seal assemblies, and other designs from contamination by foreign materials and handling / transportation / storage damage prior to installation and ensure positive identification by part number of each piece until it is installed.

2. APPLICABLE DOCUMENTS

The issue of the following documents in effect on the date of the purchase order forms a part of this specification to the extent specified herein. The supplier may work to a subsequent revision of a document unless a specific document issue is specified. When the referenced document has been cancelled and no superseding document has been specified, the last published issue of that document shall apply.

2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

AS568 Aerospace Size Standard for O-Rings

ARP5316 Storage of Elastomer Seals and Seal Assemblies Which Include an Elastomer Element Prior to Hardware Assembly

2.2 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM D1418 Standard Practice for Rubber and Rubber Lattices – Nomenclature

TO PLACE A DOCUMENT ORDER: **Tel: 877-606-7323 (inside USA and Canada)**
Tel: +1 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: CustomerService@sae.org
SAE WEB ADDRESS: **http://www.sae.org**

For more information on this standard, visit
https://www.sae.org/standards/content/AMS2817G/

3. TECHNICAL REQUIREMENTS

3.1 Each individual seal or seal assembly will be packaged in the manner described below.

3.2 Packaging Material

Shall be sheets or strips of one of the following constructions, heat sealed on the edges, before or during packaging, to form envelopes. Each packaging type is equally acceptable unless a specific type is specified by purchaser.

3.2.1 Type I

Both faces of natural kraft paper of 30 pounds (13.6 kg) minimum weight per ream, lined with polyethylene film not less than 0.0005 inch (0.013 mm) thick.

Note: Type I packaging may generate loose fibers upon cutting or tearing. Type III packaging is recommended for applications sensitive to this.

3.2.2 Type II

One face as in 3.2.1 and the other of nominal 300 gage (nominal 0.08 mm or larger) cellophane coated with UV resistant polyethylene film not less than 0.0005 inch (0.013 mm) thick. The UV resistance shall be certified by the manufacturer of the packaging material and the certification should be retained with customer's Purchase Order documentation.

Note: Polyethylene film can dissolve in certain chemicals and solvents, including phosphate ester hydraulic fluids. Packages should be protected from chemical exposure. See ARP 5316 for specific recommendations on protecting seals and packages from chemical exposure.

3.2.3 Type III

Both faces U.V. resistant polyethylene film not less than 0.004 inch (0.10 mm) thick. The UV resistance shall be certified by the manufacturer of the packaging material and the certification should be retained with customer's Purchase order documentation.

Note: Polyethylene film can dissolve in certain chemicals and solvents, including phosphate ester hydraulic fluids. Packages should be protected from chemical exposure. See ARP 5316 for specific recommendations on protecting seals and packages from chemical exposure.

3.3 Preparation

Parts shall be thoroughly cleaned before packaging.

3.4 Packaging

Packaging shall be performed under the following conditions to ensure freedom from contamination by dust, oil, grease, and other extraneous matter.

3.4.1 No part shall be tied or tagged.

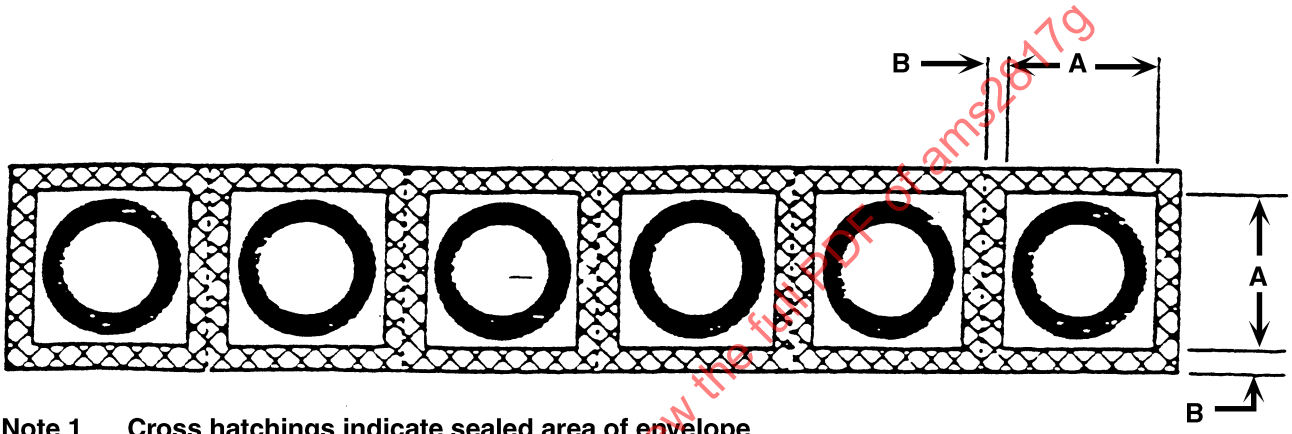
3.4.2 Parts shall be packaged one seal or one seal assembly to an envelope.

3.4.3 Equal size envelopes may be joined to form strips (see Figure 1).

3.4.4 Envelopes shall be heat sealed on all edges.

3.4.5 Parts larger in OD than can be packaged flat in 18 x 18 inch (457 x 457 mm) envelopes shall be coiled into not more than three coils as shown in Figure 2 or into three loops as shown in Figure 3 for convenience in packaging. When parts are coiled or looped, care shall be exercised to avoid possible cold crease effects. When parts are looped, the looping shall be performed in such a manner that the looped packing cross section is not twisted along its length when in the flat and packaged condition.

3.4.6 If the geometry (cross section and ID) of a seal is such that the part is subject to settling to the bottom of the envelope in uncontrolled shape, parts shall be coiled as in Figure 2 or looped as in Figure 3 and packaged in suitable smaller size envelopes or shall be packaged with sufficient filler packing or cardboard preforms to prevent such uncontrolled settling. Alternatively, unless otherwise specified by part drawing, parts larger than 6.375 inches (161.92 mm) OD may be looped in an odd number of loops as required to suit an envelope size of 9 inches ± 0.5 inch (228.6 mm ± 12.7 mm) if the envelope is then over packed as a single unit within a folding paperboard box or corrugated fiberboard folder not less than 1 inch (25.4 mm) thick or as otherwise agreed upon between purchaser and supplier. Applicable O-ring sizes are noted in Table 2.



Note 1 **Cross hatchings indicate sealed area of envelope**

Note 2 **Dash lines indicate perforations for tear off**

Figure 1 - Strip-type package

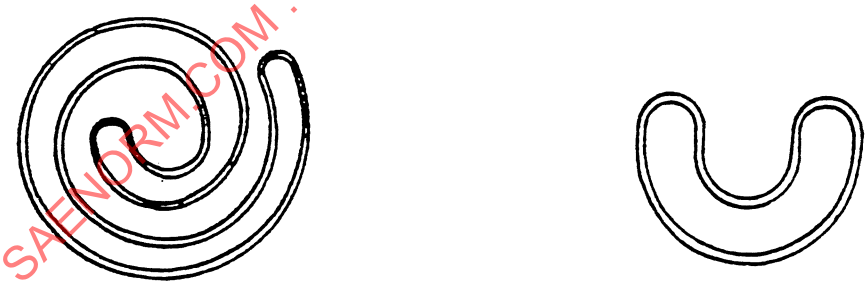


Figure 2 - Method of coiling rings

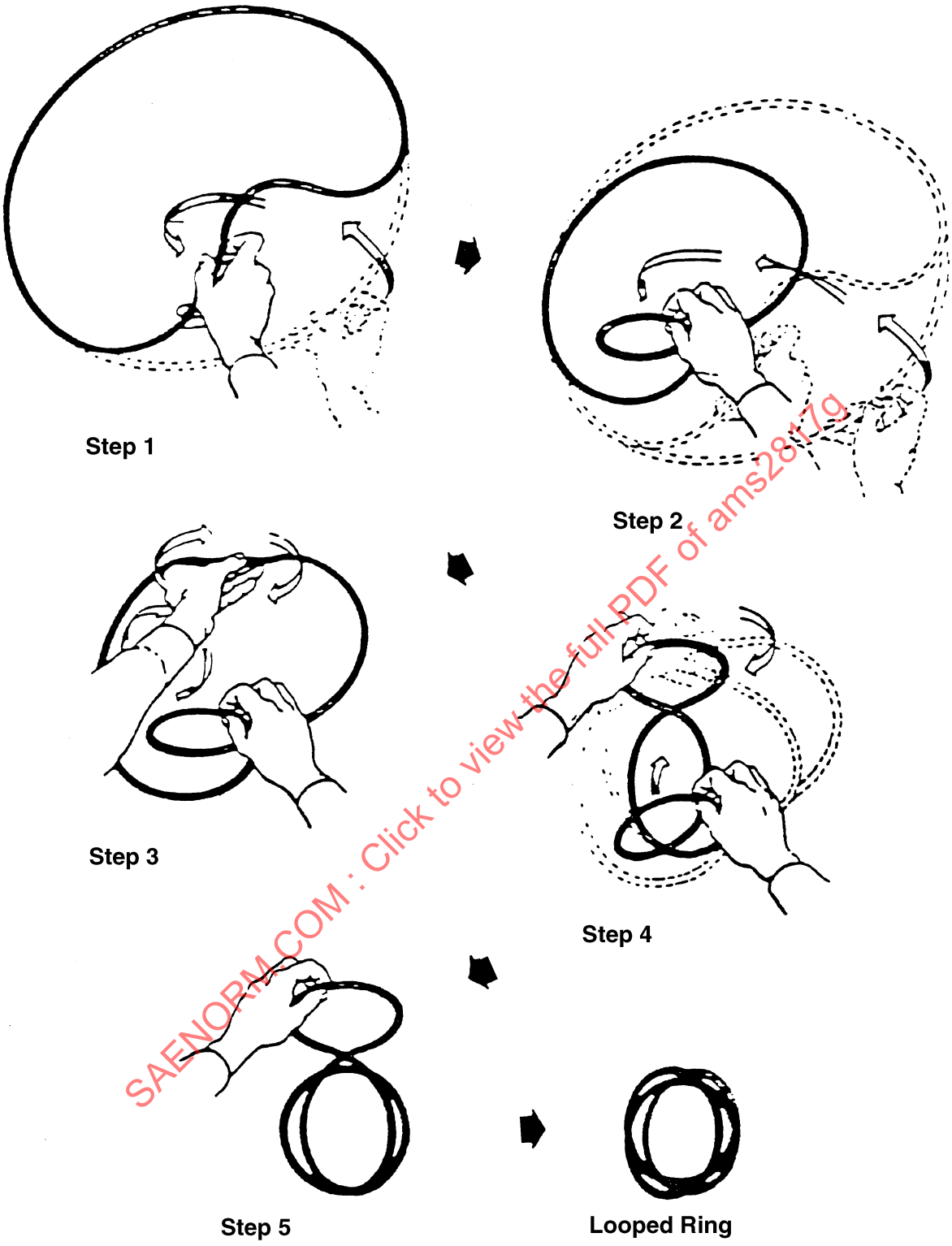


Figure 3 - Method of looping o-rings

3.5 Envelope Sizes

The envelope used for each part number should be not larger than necessary to enclose the part to be packaged without causing deformation or crowding of the part in the envelope. The inside dimension “A” and the width of heat seal dimension “B” (see Figure 1) of envelopes, the maximum ring OD for each envelope size, and the standard size rings to be packed in each without coiling or looping shall be as shown in Tables 1A and 1B.

Table 1A - Packaging requirements, inch/pound units

Dimension A Inches	Dimension B Inch, max	Max Ring OD Inches	Standard Ring Sizes (from AS568)
2 ± 1/4	3/8	1-1/2	-001 thru -028, -102 thru -126, -201 thru -217, -309 thru -321, -901 thru -916
3 ± 1/2	1/2	2-1/4	-029 thru -033, -127 thru -137, -218 thru -224, -322 thru -327, -918 thru -924
4 ± 1/2	1/2	3	-034 thru -039, -138 thru -148, -225 thru -231, -328 thru -333, -928 thru -932
6 ± 1/2	1/2	5	-040 thru -048, -149 thru -158, -232 thru -247, -334 thru -349
8 ± 1/2	1/2	7	-049 thru -050, -159 thru -166, -248 thru -260, -350 thru -363, -428 thru -438
12 ± 1/2	1/2	10-1/2	-167 thru -178, -261 thru -274, -364 thru -377, -439 thru -448
16 ± 1/2	1/2	14-1/2	-275 thru -280, -378 thru -383, -449 thru -456
18 ± 1/2	1/2	16-1/2	-281 thru -282, -384 thru -385, -457 thru -461

Table 1B - Packaging requirements, SI units

Dimension A Millimeters	Dimension B Millimeters, Max.	Max Ring OD Millimeters	Standard Ring Sizes (from AS568)
50 ± 5	10	40	-001 thru -028, -102 thru -126, -201 thru -217, -309 thru -321, -901 thru -916
75 ± 10	15	60	-029 thru -033, -127 thru -137, -218 thru -224, -322 thru -327, -918 thru -924
100 ± 10	15	75	-034 thru -039, -138 thru -148, -225 thru -231, -328 thru -333, -928 thru -932
150 ± 10	15	125	-040 thru -048, -149 thru -158, -232 thru -247, -334 thru -349
200 ± 10	15	180	-049 thru -050, -159 thru -166, -248 thru -260, -350 thru -363, -428 thru -438
300 ± 10	15	270	-167 thru -178, -261 thru -274, -364 thru -377, -439 thru -448
400 ± 10	15	370	-275 thru -280, -378 thru -383, -449 thru -456
450 ± 10	15	420	-281 thru -282, -384 thru -385, -457 thru -461

Table 2 - Packaging requirements for looped o-rings

Dimension A Inches	Dimension A Millimeters	Min Ring OD Inches (mm)	Standard Ring Sizes (from AS568)
9 ± 0.5	225 ± 10	6.375 (160)	-164 thru -178, -259 thru -284, -361 thru -395, -436 thru -475

3.5.1 If the space required to print all the information required by 5.1 is too large to permit use of 2 x 2 inch (51 x 51 mm) or 3 x 3 inch (76 x 76 mm) envelopes, seals or seal assemblies which would normally be packaged in such envelopes may be packaged in 4 x 4 inch (102 x 102 mm) envelopes.

3.6 Properties

Sealed packages shall conform to the following requirements:

3.6.1 Heat Seal Bond Strength

There shall be not more than 25% separation of the width of the seam and no delamination of laminated envelope material under a static force of 2 pounds (9 N), determined in accordance with 4.1.1.

3.7 Workmanship

Packages shall be fabricated in a neat and workmanlike manner. Particular attention shall be given to cleanliness of the packaged parts, thoroughness of heat sealed seams, and legibility of marking.