SAE Aerospace
An SAE International Group

# AEROSPACE MATERIAL SPECIFICATION

SAE AMS 2817E

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Reaffirmed JUN 2007

Superseding AMS 2817D

## Packaging and Identification
## Preformed Packings

### RATIONALE

This document has been reaffirmed to comply with the SAE 5-year Review policy.

1. SCOPE:

   This specification covers procedures which will provide protection of preformed packings, primarily “O” rings of elastomeric materials, from contamination by foreign materials prior to installation and ensure positive identification by part number of each piece until it is installed.

2. APPLICABLE DOCUMENTS:

   The following publications form a part of this specification to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order.

2.1 SAE Publications:

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

| | |
|---|---|
| AS568 | Aerospace Size Standard for O-rings |
| ARP5316 | Storage of Elastomer Seals and Seal Assemblies Which Include an Elastomer Element, Prior to Hardware Assembly |





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

3. TECHNICAL REQUIREMENTS:

3.1 One piece only of the finished product 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.

3.2.2 Type II: One face as in 3.2.1 and the other of 300 gage (0.08 mm) cellophane coated with polyethylene film not less than 0.0005 inch (0.013 mm) thick.

3.2.3 Type III: Both faces U.V. resistant polyethylene film not less than 0.004 inch (0.10 mm) thick.

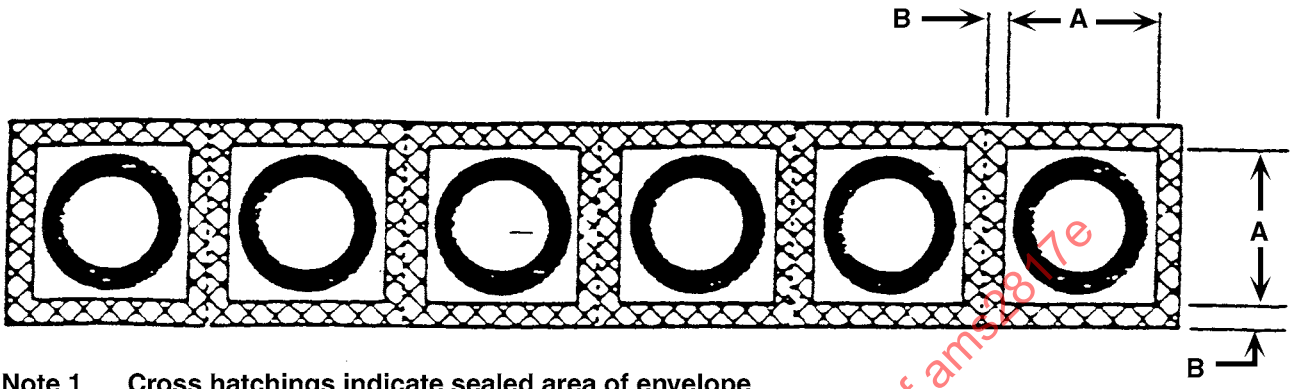
3.3 Preparation:

Parts shall be thoroughly cleaned before packaging.

3.4 Packaging:

Shall be accomplished under conditions which will ensure freedom from contamination by dust, oil, grease, and other extraneous matter. No part shall be tied or tagged. Parts shall be packaged one to an envelope. Equal size envelopes may be joined to form strips (See Figure 1). Envelopes shall be heat sealed on all edges. 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. If the geometry (cross section and ID) of a part 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 (228.6 mm ± 12.7) if the envelope is then overpacked as a single unit within a folding paperboard box or corrugated fiberboard folder not less than 1 inch (25.4 mm) thick.

3.4.1 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 Table 1.




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

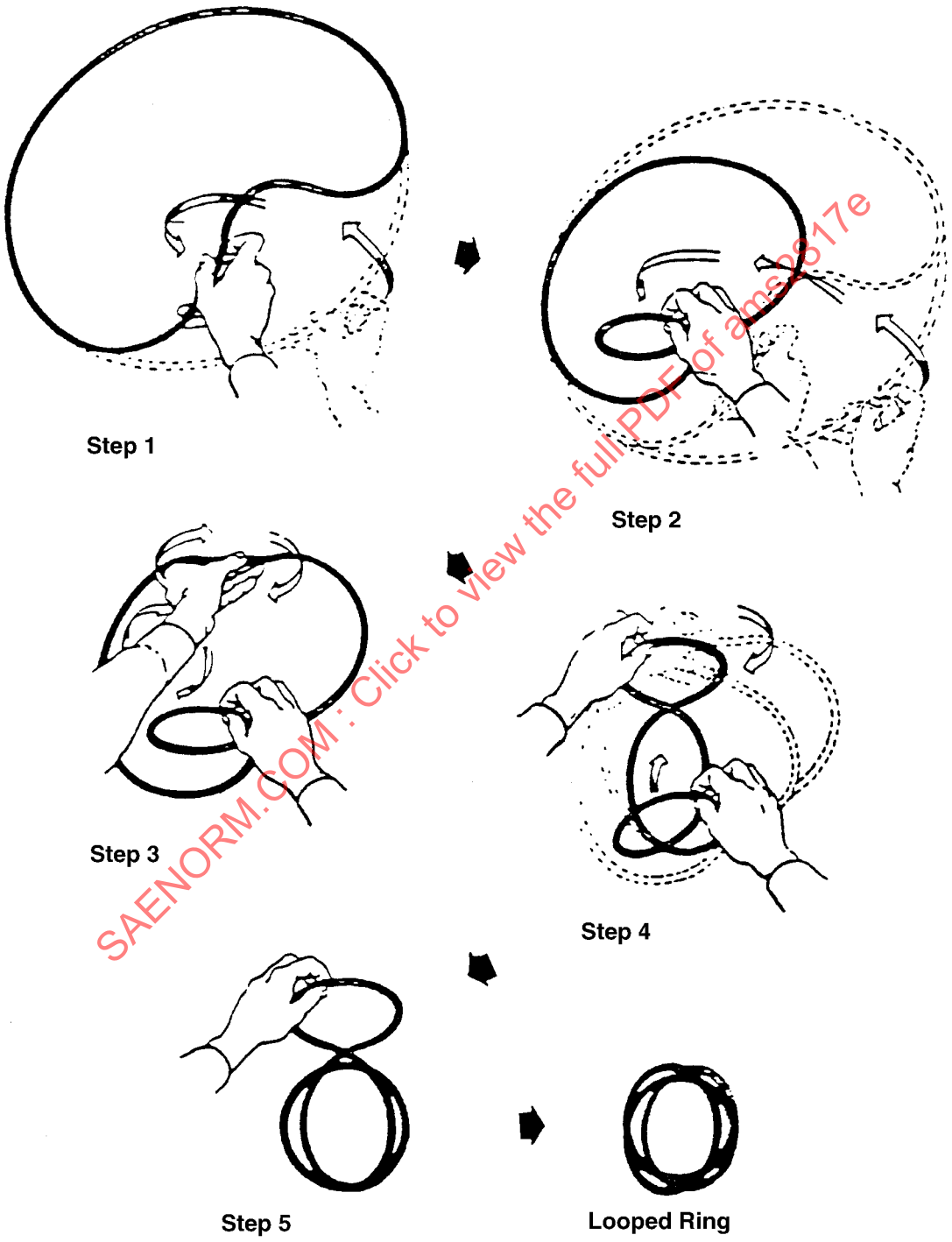





FIGURE 3 - Suggested Procedure for Looping Rings

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 |



3.4.1.1 If the space required to imprint on the envelope all the information required by 5.1, with the equipment available, 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, rings which would normally be packaged in such envelopes may be packaged in 4 x 4-inch (102 x 102-mm) envelopes.

3.5 Properties:

Sealed packages shall conform to the following requirements:

3.5.1 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.

3.6 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.

4. QUALITY ASSURANCE PROVISIONS:

4.1 Test Methods:

4.1.1 Heat Seal Bond Strength: Sections of the heat seal approximately 1 inch (25 mm) in length shall be obtained by cutting perpendicular to the line of the seal from envelopes opened for inspection and test of the contained parts. Length of legs of specimens is unimportant. Specimen shall be unfolded and clamped in jaws with the line of the heat seal perpendicular to the direction of force application and midway between jaws. A static force of 2 pounds (9 N) shall be applied slowly and uniformly without impact and allowed to act for 5 minutes ± 0.1 at 20 to 30 °C (68 to 86 °F).

5. PREPARATION FOR DELIVERY:

5.1 Envelope Marking:

Each envelope shall be legibly marked with not less than the following information in the sequence shown (See Figure 4 for marking example and acceptable abbreviations); each item, except part name and manufacturer's and/or supplier's identification, shall be identified on the package:

STOCK NUMBER (When directed by purchaser) _____
PART NAME _____
QUANTITY (Units) _____
U.S. GOVERNMENT CONTRACT NUMBER OR CUSTOMER'S PURCHASE ORDER NUMBER (When directed by purchaser) (See 5.1.1)_____
PACKAGED (Month and year) PER AMS 2817_____
CURED (Date by quarter and year)_____
PART NUMBER_____
MANUFACTURER'S AND/OR SUPPLIER'S IDENTIFICATION _____
MATERIAL SPECIFICATION NUMBER _____
MATERIAL CODE PER ASTM D 1418 _____