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AEROSPACE STANDARD

AS 708

TOP VISUAL QUALITY (TVQ) O-RING PACKINGS AND GASKETS - SURFACE INSPECTION GUIDE AND ACCEPTANCE STANDARD

Issued 11-1-65
Revised

1. SCOPE

1.1 This standard establishes the inspection requirements and acceptance standards for optimum surface finish O-ring packings and gaskets. (This is not an O-ring specification as such.)

1.2 This standard must be used in conjunction with an O-ring drawing and/or material specification.

1.3 This standard is to be specified only where stringent performance requirements dictate.

2. APPLICABLE DOCUMENTS - The following documents, of the issue in effect on the date of this standard, form a part of this standard to the extent specified herein:

Military Specifications

MIL-P-116 Preservation, Method of
MIL-P-4861 O-Rings, Rubber, Preformed, Packing: Packaging of

Military Standards

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

Other Publications

Air Force - Navy Aeronautical Bulletin
ANA Bulletin No. 438 - Age Controls for Synthetic Rubber Parts

SAE Aerospace Material Specification
AMS 2817 Packaging and Identification, Preformed Packings

3. GENERAL REQUIREMENTS

3.1 The requirements of this standard shall take precedence over conflicting surface finish limitations contained in the detail specifications or drawings.

3.2 O-rings supplied to this standard shall be inspected for conformance to the detail requirements of paragraph 4. If receiving inspection is performed on a sample basis, then the sampling shall be in accordance with MIL-STD 105 using an AQL of 1.5%.

3.3 O-rings are to be handled with care as precision parts. In removing the O-ring from the envelope, the envelope should be torn, not cut, in order to avoid possible damage to the O-ring. O-rings must be kept dry and clean at all times and returned to their respective envelopes (if removed) to retain identification of their size, cure date, and source.

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3.4 "Bloom," the white substance that forms on the surface of rubber compounds, shall not be cause for rejection. The bloom shall be removed by thoroughly washing rings before visual inspection.

4. DETAIL REQUIREMENTS

4.1 Dimensions

4.1.1 O-rings shall conform to applicable drawings.

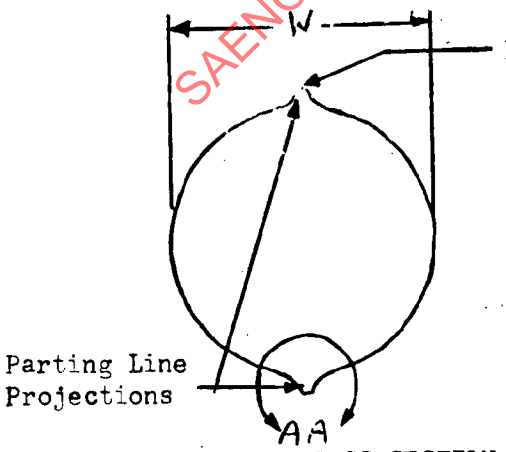
4.1.2 Mismatch (wherein one cavity half is larger than the other). The step shall not exceed .001 in.

4.1.3 Off-register (wherein one cavity half is offset from the other). The step shall not exceed the limits of Table I.

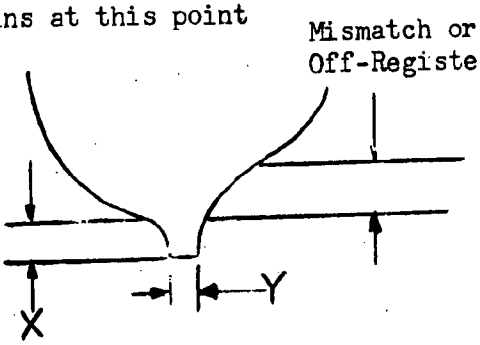
Table I

O-Ring Cross Section W (Inches)	Off-Register Limit
.040 thru .060	.002
.070 thru .275	.003

4.2 Parting Line Projection - The circumferential parting line projections, whose triangular cross-sectional shape is apparent on a slice of the O-ring cross section, may not be greater than .003 x .003 in. (X and Y).



O-RING CROSS SECTION



DETAIL AA

Showing parting line projection and mismatch or off-register

The maximum flat surface resulting from buffing to remove parting line projection shall not exceed .009 in.

4.3 Flash - Flash is not permitted on a TVQ O-ring. Any flash (which is defined herein as the excess material that begins at and extends beyond the parting line projection), whether loose or affixed, must be removed.

4.4 Quantitative Limits

4.4.1 With the exception of parting line projection and annular flat area, per 4.2, the O-ring shall have no discernible defects and be devoid of tool marks when inspected by the unaided eye.

4.4.2 For referee purposes, seals may be examined under three power (3X) magnification under 300 to 350 ft-c illumination.

4.4.3 Any surface interruption visible under 3X magnification having a dimension greater than .005 in. in any direction shall be cause for rejection.

5. INSPECTION

5.1 The entire surface of each O-ring is considered to be the sealing surface and shall be inspected for conformity to this standard.

5.2 O-rings shall be washed prior to inspection in a fluid which will remove surface contamination that obscures the surface of the ring. The fluid and method shall be such that it will not injure the O-ring.

5.3 Following inspection, individual O-rings must be repackaged, per Section 6.

6. PACKAGING

6.1 Packaging in accordance with AMS 2817, MIL-P-4861, or MIL-P-116, method 1 C-1 unit pack, 1 each, is a mandatory requirement for TVQ O-rings.

6.2 Unit pack marking shall contain the following minimal information (unless otherwise specified by the purchaser):

Part Number, followed by "TVQ"

Description ("Gasket O-ring" or "Packing O-ring" followed by "1 ea.")

Cure Date, by quarter and year (e.g. 4Q62; see 6.3)

Manufacturer

Compound Number