



AEROSPACE STANDARD

AS3551™**REV. A**Issued 1994-11
Revised 2020-10

Superseding AS3551

(R) O-Ring Molded from AMS7272 Butadiene-Acrylonitrile Rubber (NBR)

RATIONALE

This standard was transferred from E-25 to A-6 and has been revised to make its format consistent with other A-6 O-ring part standards.

1. SCOPE

This standard establishes the dimensional and visual quality requirements, lot requirements and packaging and labeling requirements for O-rings molded from AMS7272 NBR rubber. It shall be used for procurement purposes.

1.1 Application

These O-rings have been used typically as sealing rings in contact with diester synthetic lubricants in service up to 275 °F (135 °C), but usage is not limited to such applications. These O-rings may not be suitable for use in high temperature stabilized, "HTS" engine oils (those conforming to MIL-PRF-23699, Class HTS), MIL-PRF-7808, Grade 4 and AS5780, (Class HPC).

2. APPLICABLE DOCUMENTS

The following publications form a part of this document 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. In the event of conflict between the text of this document and references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

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.

AMS2817	Packaging and Identification of Molded Elastomeric Seals and Sealing Components
AMS7272	Rubber: Butadiene-Acrylonitrile (NBR) Synthetic Lubricant Resistant 65 – 75 Hardness For Seals in Synthetic Lubricant Systems
AS4716	Gland Design, O-ring and Other Seals
AS5316	Storage of Elastomer Seals and Seal Assemblies Which Include an Elastomer Element Prior to Hardware Assembly
AS5780	Specification for Aero and Aero-Derived Gas Turbine Engine Lubricants

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<https://www.sae.org/standards/content/AS3551A/>

Documents

Document Sharing Hub

AS5857 Gland Design, O-ring and Other Elastomeric Seals, Static Applications

2.2 U.S. Government Publications

Copies of these documents are available online at <https://quicksearch.dla.mil>.

MIL-PRF-7808 Performance Specification, Lubricating Oil, Aircraft Turbine Engine, Synthetic Base

MIL-PRF-23699 Performance Specification, Lubricating Oil, Aircraft Turbine Engine, Synthetic Base, Nato Code Numbers: O-152, O-154, O-156, And O-167

2.3 ASQ Publications

Available from American Society for Quality, 600 North Plankinton Avenue, Milwaukee, WI 53203, Tel: 800-248-1946 (United States or Canada), 001-800-514-1564 (Mexico), or +1-414-272-8575 (all other locations), www.asq.org.

ANSI/ASQ Z1.4 Sampling Procedures and Tables for Inspection by Attributes

2.4 ISO Publications

Copies of these documents are available online at <http://webstore.ansi.org/>.

ISO 3601-1 Fluid Power Systems - O-rings - Part 1: Inside Diameters, Cross-Sections, Tolerances and Designation Codes

ISO 3601-3 Fluid Power Systems - O-rings - Part 3: Quality Acceptance Criteria

2.5 ASME Publications

Available from ASME, P.O. Box 2900, 22 Law Drive, Fairfield, NJ 07007-2900, Tel: 800-843-2763 (U.S./Canada), 001-800-843-2763 (Mexico), 973-882-1170 (outside North America), www.asme.org.

ASME Y14.5 Dimensioning and Tolerancing

3. REQUIREMENTS

3.1 Dimensional

See Figure 1 and Table 1 for dimensions of standard size O-rings and Table 2 for boss O-ring sizes for MS33649 ports. Table 3 lists the appropriate O-ring sizes for AS1300 ports.

NOTE: Dimensions and tolerancing per ASME Y14.5.

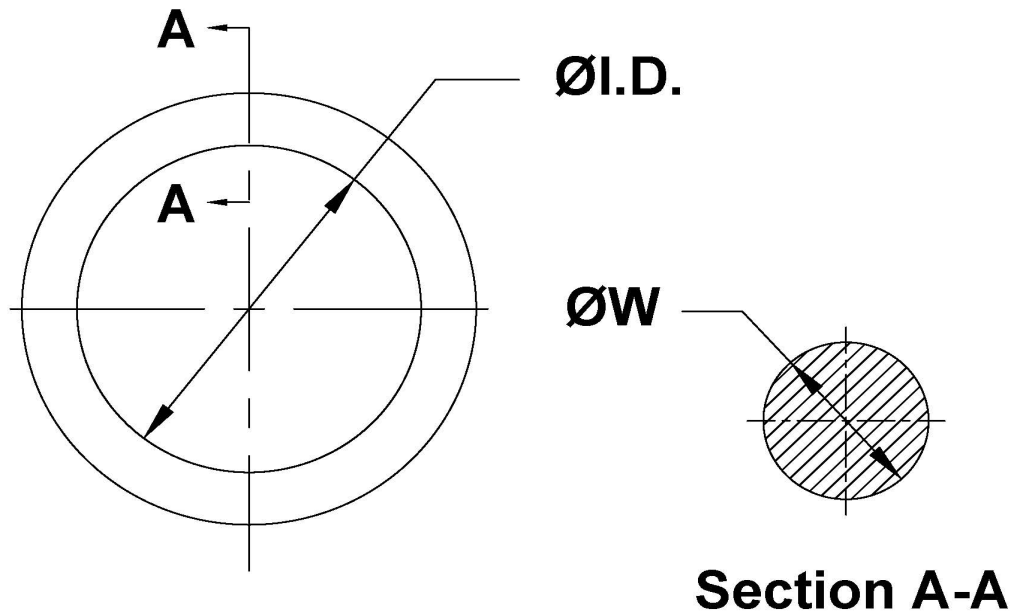


Figure 1 - O-Ring dimensions - width ($\varnothing W$) and inside diameter ($\varnothing I.D.$)

Table 1 - Part numbers and dimensions

App Note	Part Number	Ø ID	Ø ID	ØW	ØW	Approx Mass	
		(Inches)	(mm)	(Inches)	(mm)	LB/100	KG/100
	AS3551-001	0.025/0.033	0.64/ 0.84	0.037/0.043	0.94/1.09	0.0005	0.0002
	AS3551-002	0.038/0.046	0.97/ 1.17	0.047/0.053	1.19/1.35	0.0012	0.001
	AS3551-003	0.052/0.060	1.32/ 1.52	0.057/0.063	1.45/1.60	0.002	0.001
	AS3551-004	0.065/0.075	1.65/ 1.91	0.067/0.073	1.70/1.85	0.004	0.002
	AS3551-005	0.096/0.106	2.44/ 2.69	0.067/0.073	1.70/1.85	0.006	0.003
	AS3551-006	0.109/0.119	2.77/ 3.02	0.067/0.073	1.70/1.85	0.006	0.003
	AS3551-007	0.140/0.150	3.56/ 3.81	0.067/0.073	1.70/1.85	0.008	0.004
	AS3551-008	0.171/0.181	4.34/ 4.60	0.067/0.073	1.70/1.85	0.010	0.004
	AS3551-009	0.203/0.213	5.16/ 5.41	0.067/0.073	1.70/1.85	0.012	0.005
	AS3551-010	0.234/0.244	5.94/ 6.20	0.067/0.073	1.70/1.85	0.013	0.006
	AS3551-011	0.296/0.306	7.52/ 7.77	0.067/0.073	1.70/1.85	0.017	0.008
	AS3551-012	0.359/0.369	9.12/ 9.37	0.067/0.073	1.70/1.85	0.020	0.009
(a)	AS3551-013	0.421/0.431	10.69/ 10.95	0.067/0.073	1.70/1.85	0.024	0.011
	AS3551-014	0.484/0.494	12.29/ 12.55	0.067/0.073	1.70/1.85	0.027	0.012
	AS3551-015	0.544/0.558	13.82/ 14.17	0.067/0.073	1.70/1.85	0.031	0.014
	AS3551-016	0.605/0.623	15.37/ 15.82	0.067/0.073	1.70/1.85	0.034	0.016
	AS3551-017	0.667/0.685	16.94/ 17.40	0.067/0.073	1.70/1.85	0.038	0.017
	AS3551-018	0.730/0.748	18.54/ 19.00	0.067/0.073	1.70/1.85	0.041	0.019
	AS3551-019	0.792/0.810	20.12/ 20.57	0.067/0.073	1.70/1.85	0.045	0.020
	AS3551-020	0.855/0.873	21.72/ 22.17	0.067/0.073	1.70/1.85	0.048	0.022
	AS3551-021	0.917/0.935	23.29/ 23.75	0.067/0.073	1.70/1.85	0.052	0.023
	AS3551-022	0.979/0.999	24.87/ 25.37	0.067/0.073	1.70/1.85	0.055	0.025
	AS3551-023	1.041/1.061	26.44/ 26.95	0.067/0.073	1.70/1.85	0.059	0.027
	AS3551-024	1.104/1.124	28.04/ 28.55	0.067/0.073	1.70/1.85	0.062	0.028
	AS3551-025	1.165/1.187	29.59/ 30.15	0.067/0.073	1.70/1.85	0.066	0.030
	AS3551-026	1.228/1.250	31.19/ 31.75	0.067/0.073	1.70/1.85	0.069	0.031
	AS3551-027	1.290/1.312	32.77/ 33.33	0.067/0.073	1.70/1.85	0.073	0.033
(b)	AS3551-028	1.351/1.377	34.32/ 34.98	0.067/0.073	1.70/1.85	0.076	0.035
	AS3551-029	1.476/1.502	37.49/ 38.15	0.067/0.073	1.70/1.85	0.083	0.038
	AS3551-030	1.601/1.627	40.67/ 41.33	0.067/0.073	1.70/1.85	0.090	0.041
	AS3551-031	1.724/1.754	43.79/ 44.55	0.067/0.073	1.70/1.85	0.097	0.044
	AS3551-032	1.849/1.879	46.97/ 47.73	0.067/0.073	1.70/1.85	0.104	0.047
	AS3551-033	1.971/2.007	50.06/ 50.98	0.067/0.073	1.70/1.85	0.111	0.050
	AS3551-034	2.096/2.132	53.24/ 54.15	0.067/0.073	1.70/1.85	0.118	0.054
	AS3551-035	2.221/2.257	56.41/ 57.33	0.067/0.073	1.70/1.85	0.125	0.057
	AS3551-036	2.346/2.382	59.59/ 60.50	0.067/0.073	1.70/1.85	0.132	0.060
	AS3551-037	2.471/2.507	62.76/ 63.68	0.067/0.073	1.70/1.85	0.139	0.063
	AS3551-038	2.594/2.634	65.89/ 66.90	0.067/0.073	1.70/1.85	0.146	0.066
	AS3551-039	2.719/2.759	69.06/ 70.08	0.067/0.073	1.70/1.85	0.153	0.069
	AS3551-040	2.844/2.884	72.24/ 73.25	0.067/0.073	1.70/1.85	0.160	0.073
	AS3551-041	2.965/3.013	75.31/ 76.53	0.067/0.073	1.70/1.85	0.167	0.076
	AS3551-042	3.215/3.263	81.66/ 82.88	0.067/0.073	1.70/1.85	0.181	0.082
	AS3551-043	3.465/3.513	88.01/ 89.23	0.067/0.073	1.70/1.85	0.195	0.088
	AS3551-044	3.712/3.766	94.29/ 95.66	0.067/0.073	1.70/1.85	0.209	0.095
	AS3551-045	3.962/4.016	100.64/102.01	0.067/0.073	1.70/1.85	0.223	0.101
	AS3551-046	4.209/4.269	106.91/108.43	0.067/0.073	1.70/1.85	0.237	0.108
	AS3551-047	4.459/4.519	113.26/114.78	0.067/0.073	1.70/1.85	0.251	0.114
	AS3551-048	4.709/4.769	119.61/121.13	0.067/0.073	1.70/1.85	0.265	0.120
	AS3551-049	4.952/5.026	125.78/127.66	0.067/0.073	1.70/1.85	0.279	0.127
	AS3551-050	5.202/5.276	132.13/134.01	0.067/0.073	1.70/1.85	0.293	0.133
	AS3551-046	4.209/4.269	106.91/108.43	0.067/0.073	1.70/1.85	0.237	0.108
	AS3551-047	4.459/4.519	113.26/114.78	0.067/0.073	1.70/1.85	0.251	0.114
	AS3551-048	4.709/4.769	119.61/121.13	0.067/0.073	1.70/1.85	0.265	0.120
	AS3551-049	4.952/5.026	125.78/127.66	0.067/0.073	1.70/1.85	0.279	0.127
	AS3551-050	5.202/5.276	132.13/134.01	0.067/0.073	1.70/1.85	0.293	0.133