

REV.
B

AS29512

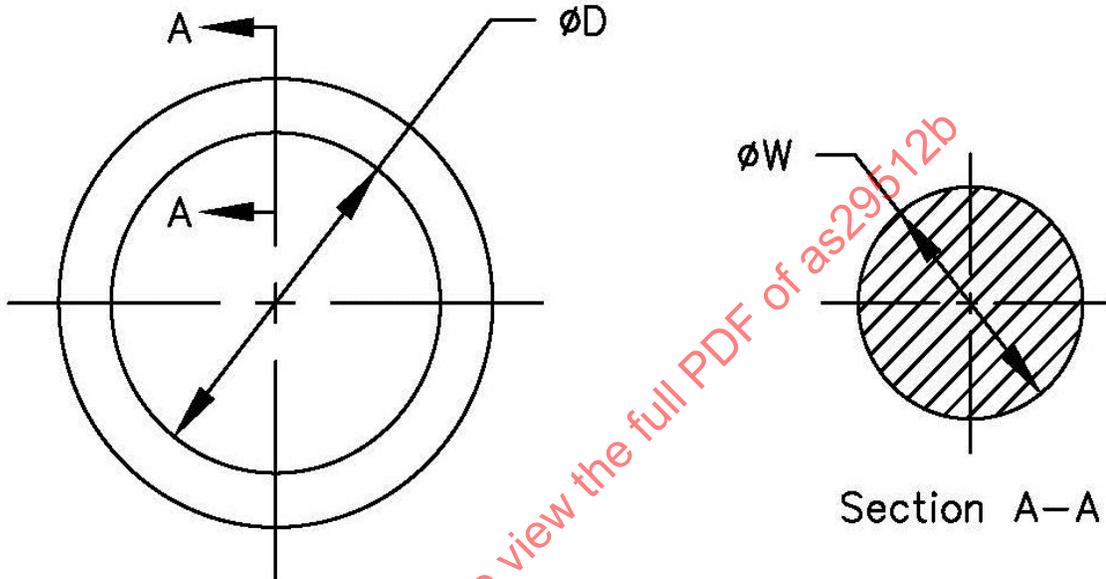
FEDERAL SUPPLY CLASS
5331

RATIONALE

THIS STANDARD HAS BEEN REVISED TO UPDATE THE INSPECTION CRITERIA AND INCLUDES SOME EDITORIAL CHANGES.

FOREWORD

THIS STANDARD ESTABLISHES THE DIMENSIONAL AND VISUAL QUALITY REQUIREMENTS, LOT REQUIREMENTS AND PACKAGING AND LABELING REQUIREMENTS FOR O-RINGS MOLDED FROM AMS-P-5315 RUBBER. IT SHALL BE USED FOR PROCUREMENT PURPOSES.



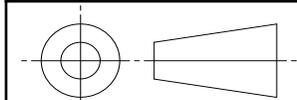
NOTE: DIMENSION AND TOLERANCING PER ASME Y14.5

FIGURE 1 - O-RING: WIDTH (W) AND INSIDE (D) DIAMETERS

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THIRD ANGLE PROJECTION



CUSTODIAN: A-6/A-6C2



AEROSPACE STANDARD

(R) HYDROCARBON FUEL RESISTANT, TUBE FITTING, O-RING MOLDED FROM AMS-P-5315 RUBBER

AS29512
SHEET 1 OF 4

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ISSUED 2001-03 REVISED 2015-06

TABLE 1 - PART NUMBERS AND DIMENSIONS

| PART NUMBER | NOMINAL TUBE OUTSIDE DIAMETER | | ØD | | ØW | | APPROX. MASS | |
|-------------|-------------------------------|--------|-------------|---------------|-----------|-------------|--------------|--------|
| | IN | MM | IN | (MM) | IN | (MM) | LB/100 | KG/100 |
| MS29512-01 | .094 | 2.381 | .180/.190 | 4.572/4.826 | .053/.059 | 1.346/1.499 | .009 | 0.004 |
| MS29512-02 | .125 | 3.175 | .234/.244 | 5.944/6.198 | .061/.067 | 1.549/1.702 | .014 | 0.007 |
| MS29512-03 | .188 | 4.775 | .295/.306 | 7.493/7.772 | .061/.067 | 1.549/1.702 | .017 | 0.009 |
| MS29512-04 | .250 | 6.350 | .346/.356 | 8.788/9.042 | .069/.075 | 1.753/1.905 | .025 | 0.011 |
| MS29512-05 | .313 | 7.950 | .409/.419 | 10.389/10.643 | .069/.075 | 1.753/1.905 | .029 | 0.013 |
| | | | | | | | | |
| MS29512-06 | .375 | 9.525 | .463/.473 | 11.760/12.014 | .075/.081 | 1.905/2.057 | .038 | 0.017 |
| MS29512-07 | .438 | 11.113 | .525/.535 | 13.335/13.589 | .079/.085 | 2.007/2.159 | .047 | 0.021 |
| MS29512-08 | .500 | 12.700 | .639/.649 | 16.231/16.485 | .084/.090 | 2.134/2.286 | .063 | 0.028 |
| MS29512-09 | .563 | 14.288 | .701/.711 | 17.805/18.059 | .094/.100 | 2.388/2.540 | .086 | 0.039 |
| MS29512-10 | .625 | 15.875 | .750/.760 | 19.050/19.304 | .094/.100 | 2.388/2.540 | .091 | 0.041 |
| | | | | | | | | |
| MS29512-11 | .688 | 17.463 | .858/.868 | 21.793/22.047 | .112/.120 | 2.845/3.048 | .150 | 0.068 |
| MS29512-12 | .750 | 19.050 | .918/.930 | 23.317/23.622 | .112/.120 | 2.845/3.048 | .158 | 0.076 |
| MS29512-13 | .813 | 20.638 | .980/.992 | 24.892/25.197 | .112/.120 | 2.845/3.048 | .168 | 0.080 |
| MS29512-14 | .875 | 22.225 | 1.041/1.053 | 26.441/26.746 | .112/.120 | 2.845/3.048 | .178 | 0.080 |
| MS29512-16 | 1.000 | 25.400 | 1.165/1.177 | 29.591/29.896 | .112/.120 | 2.845/3.048 | .196 | 0.088 |
| | | | | | | | | |
| MS29512-18 | 1.125 | 28.575 | 1.349/1.361 | 34.265/34.569 | .112/.120 | 2.845/3.048 | .225 | 0.101 |
| MS29512-20 | 1.250 | 31.750 | 1.465/1.485 | 37.211/37.719 | .114/.122 | 2.896/3.099 | .252 | 0.113 |
| MS29512-24 | 1.500 | 38.100 | 1.710/1.730 | 43.434/43.942 | .114/.122 | 2.896/3.099 | .290 | 0.131 |
| MS29512-28 | 1.750 | 44.450 | 2.080/2.100 | 52.832/53.340 | .114/.122 | 2.896/3.099 | .349 | 0.157 |
| MS29512-32 | 2.000 | 50.800 | 2.327/2.347 | 59.106/59.614 | .114/.122 | 2.896/3.099 | .388 | 0.175 |

APPLICATION:

THESE O-RINGS TYPICALLY HAVE BEEN USED WHERE RESISTANCE TO FUEL IS REQUIRED, BUT USAGE IS NOT LIMITED TO SUCH APPLICATIONS. EACH APPLICATION SHOULD BE CONSIDERED SEPARATELY. THESE O-RINGS HAVE A SERVICE TEMPERATURE RANGE OF -65 TO +180 °F (-54 TO +82 °C).

APPLICABLE REFERENCES:

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.

AMS-P-5315 ACRYLONITRILE-BUTADIENE (NBR) RUBBER FOR FUEL-RESISTANT SEALS 60 TO 70

AMS2817 PACKAGING AND IDENTIFICATION, PREFORMED PACKINGS

ARP5316 STORAGE OF ELASTOMER SEALS AND SEAL ASSEMBLIES WHICH INCLUDE AN ELASTOMER ELEMENT PRIOR TO HARDWARE ASSEMBLY

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

| | | | |
|---|--|--------------------------------|-------------------------|
|  | AEROSPACE STANDARD | AS29512 SHEET 2 OF 4 | REV. B |
| | (R) HYDROCARBON FUEL RESISTANT, TUBE FITTING, O-RING MOLDED FROM AMS-P-5315 RUBBER | | |

ASME AND ISO PUBLICATIONS

AVAILABLE FROM AMERICAN NATIONAL STANDARDS INSTITUTE, 25 WEST 43RD STREET, 4TH FLOOR, NEW YORK, NY 10036, TEL: 212-642-4900, www.ansi.org.

ASME Y14.5-2009 DIMENSIONING AND TOLERANCING

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

REQUIREMENTS:

1. MATERIAL: THE MATERIAL SHALL BE IN ACCORDANCE WITH AMS-P-5315.
2. DIMENSIONAL AND VISUAL INSPECTION: PRIOR TO INSPECTION, MOLD FLASH SHALL BE REMOVED FROM THE O-RINGS IN SUCH A MANNER THAT THEY CONFORM TO THE REQUIREMENTS SPECIFIED HEREIN. FOR END OF PROCESS INSPECTION, EACH INDIVIDUAL O-RING (100%) SHALL BE VISUALLY INSPECTED AT 1X MAGNIFICATION FOR MOLD FLASH, BACKRIND, PARTING LINE PROJECTION, NON-FILLS, FLOW LINES AND OTHER SIGNIFICANT DEFECTS. THE ENTIRE O-RING SURFACE SHALL BE INSPECTED.
3. FOR FINAL INSPECTION, THE SAMPLE SIZE SHALL BE IN ACCORDANCE WITH ANSI/ASQ Z1.4 SINGLE SAMPLING PLAN INSPECTION LEVEL II WITH AN AQL 1.0 EXCEPT THAT THE ACCEPTANCE NUMBER SHALL BE ZERO.

THE SAMPLE UNIT SHALL BE ONE O-RING. INSPECTION SHALL BE ACCORDING TO ISO 3601-3, GRADE CS REQUIREMENTS UNDER 2X MAGNIFICATION. IN CASE OF DISAGREEMENT, THE VISUAL INSPECTION AT 2X MAGNIFICATION SHALL GOVERN. THE ENTIRE O-RING SURFACE SHALL BE MANUALLY INSPECTED. THE PROCEDURES OUTLINED IN ANNEX B OF ISO 3601-1 SHALL BE FOLLOWED FOR DIMENSIONAL INSPECTION. IF THE PURCHASER REQUIRES A DIFFERENT SAMPLING PLAN OR VISUAL INSPECTION CRITERIA, MANUFACTURER SHALL BE INFORMED PRIOR TO TIME OF ORDER.
4. THE MANUFACTURER OF THE O-RINGS SHALL BE RESPONSIBLE FOR THE REQUIRED INSPECTIONS. PURCHASER RESERVES THE RIGHT TO SAMPLE AND PERFORM ANY CONFIRMATORY INSPECTION DEEMED NECESSARY TO ENSURE THAT THE O-RINGS CONFORM TO THE SPECIFIED REQUIREMENTS.
5. LOT ACCEPTANCE: THE REQUIREMENTS ARE LISTED IN AMS-P-5315. THE LOT CERTIFICATION REPORT SHALL BE FURNISHED TO THE PURCHASER WHEN THE PRODUCT IS SHIPPED. THE MANUFACTURER OF THE O-RINGS SHALL BE RESPONSIBLE FOR THE REQUIRED INSPECTIONS AND LOT ACCEPTANCE TESTS. PURCHASER RESERVES THE RIGHT TO SAMPLE AND PERFORM ANY CONFIRMATORY INSPECTION DEEMED NECESSARY TO ENSURE THAT THE O-RINGS CONFORM TO THE SPECIFIED REQUIREMENTS.
6. PART NUMBER: THE O-RING PART NUMBERS ARE DESIGNATED MS29512-XX, WHERE XX INDICATES THE DASH SIZE.
7. IDENTIFICATION AND PACKAGING: PACKAGING SHALL BE IN ACCORDANCE WITH AMS2817 WITH THE EXCEPTION THAT, IF REQUESTED BY CONTRACT, EACH PACKAGE SHALL ALSO BEAR THE FOLLOWING IDENTIFICATION OF A RECOGNIZABLE SIZE:
 - NATIONAL STOCK NUMBER
8. SHELF LIFE REQUIREMENTS OF ARP5316 APPLY TO THESE O-RINGS.
9. PURCHASE DOCUMENTS SHOULD SPECIFY NOT LESS THAN THE FOLLOWING:
 - AMS-P-5315 MATERIAL
 - PART NUMBER OF O-RING PER AS29512
 - QUANTITY OF O-RINGS DESIRED
 - SPECIAL PACKAGING, LABELING AND INSPECTION REQUIREMENTS, IF REQUIRED
10. DO NOT USE UNASSIGNED PART NUMBERS.

| | | | |
|---|--|--------------------------------|-------------------------|
|  | AEROSPACE STANDARD | AS29512 SHEET 3 OF 4 | REV. B |
| | (R) HYDROCARBON FUEL RESISTANT, TUBE FITTING, O-RING MOLDED FROM AMS-P-5315 RUBBER | | |