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AS7256™

FEDERAL SUPPLY CLASS
5331

RATIONALE

AMS7410 PROVIDES ENHANCED LOW TEMPERATURE CAPABILITY OVER EXISTING FLUOROCARBON (FKM) MATERIALS. A COMPANION DIMENSIONAL STANDARD IS REQUIRED TO ALLOW PURCHASE AND SPECIFICATION OF O-RINGS IN THIS MATERIAL. THIS DOCUMENT MEETS THE NEED.

1. SCOPE

THIS STANDARD ESTABLISHES THE DIMENSIONAL AND VISUAL QUALITY REQUIREMENTS, LOT REQUIREMENTS, AND PACKAGING AND LABELING REQUIREMENTS FOR O-RINGS MOLDED FROM AMS7410 FLUOROCARBON (FKM) RUBBER. IT SHALL BE USED FOR PROCUREMENT PURPOSES.

1.1 APPLICATION

THIS MATERIAL HAS RESISTANCE TO A VARIETY OF GAS TURBINE ENGINE OILS, INCLUDING HIGH THERMAL STABILITY (HTS) OILS, FUELS, AND HYDRAULIC FLUIDS, BUT USAGE IS NOT LIMITED TO SUCH APPLICATIONS. THIS MATERIAL HAS A TYPICAL SERVICE TEMPERATURE RANGE OF -65 TO +400 °F (-54 TO +204 °C). THE SERVICE TEMPERATURE RANGE OF THE MATERIAL IS A GENERAL TEMPERATURE RANGE, BUT THE PRESENCE OF PARTICULAR FLUIDS AND SPECIFIC DESIGN REQUIREMENTS MAY MODIFY THIS RANGE. EACH APPLICATION SHOULD BE CONSIDERED SEPARATELY. IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THAT THIS SPECIFICATION IS APPROPRIATE FOR THE ENVIRONMENTS (TEMPERATURE RANGE, FLUIDS EXPOSURE, ETC.) IN WHICH IT IS SOUGHT TO BE USED.

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, 400 COMMONWEALTH DRIVE, WARRENDALE, PA 15096-0001, TEL: 877-606-7323 (INSIDE U.S. AND CANADA) OR +1 724-776-4970 (OUTSIDE U.S.), www.sae.org.

AMS2817 PACKAGING AND IDENTIFICATION OF MOLDED ELASTOMERIC SEALS AND SEALING COMPONENTS

AMS7410 RUBBER: FLUOROCARBON ELASTOMER (FKM) AIRCRAFT ENGINE OIL, FUEL AND HYDRAULIC FLUID RESISTANT 70 TO 80 SHORE TYPE A HARDNESS LOW TEMPERATURE SEALING TG -47 °F (-43.9 °C) FOR ELASTOMERIC SEALS IN AIRCRAFT ENGINE, FUEL AND HYDRAULIC SYSTEMS

AS5316 STORAGE OF ELASTOMER SEALS AND SEAL ASSEMBLIES WHICH INCLUDE AN ELASTOMER ELEMENT PRIOR TO HARDWARE ASSEMBLY

AS5798 AEROSPACE SIZE STANDARD FOR OVERSIZE O-RINGS

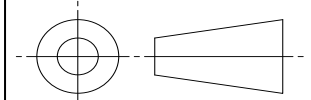
2.2 ASQ PUBLICATIONS

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

For more information on this standard, visit
<https://www.sae.org/standards/content/AS7256/>

THIRD ANGLE PROJECTION



CUSTODIAN: SAE A-6C2 SEALS PANEL

PROCUREMENT SPECIFICATION:



AEROSPACE STANDARD

O-RINGS MOLDED FROM
AMS7410 FLUOROCARBON (FKM) MATERIAL

AS7256™
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2.3 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 Y14.5-2018 DIMENSIONING AND TOLERANCING

2.4 ISO PUBLICATIONS

COPIES OF THESE DOCUMENTS ARE AVAILABLE ONLINE AT <https://webstore.ansi.org>.

OR, IF USING THE SWITZERLAND ADDRESS:

AVAILABLE FROM INTERNATIONAL ORGANIZATION FOR STANDARDIZATION, ISO CENTRAL SECRETARIAT, 1, CH. DE LA VOIE-CREUSE, CP 56, CH 1211 GENEVA 20, SWITZERLAND, TEL: +41 22 749 01 11, www.iso.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 U.S. GOVERNMENT PUBLICATIONS

COPIES OF THESE DOCUMENTS ARE AVAILABLE ONLINE AT <https://quicksearch.dla.mil>.

MIL-PRF-5606 HYDRAULIC FLUID, PETROLEUM BASES, AIRCRAFT, MISSILE, AND ORDNANCE

MIL-PRF-83282 HYDRAULIC FLUID, FIRE RESISTANT, SYNTHETIC HYDROCARBON BASE, METRIC, NATO CODE NUMBER H-537

MIL-PRF-87257 HYDRAULIC FLUID, FIRE RESISTANT, LOW TEMPERATURE, SYNTHETIC HYDROCARBON BASE AIRCRAFT AND MISSILE

MIL-PRF-26399 PERFORMANCE SPECIFICATION: LUBRICATING OIL, AIRCRAFT TURBINE ENGINE, SYNTHETIC BASE

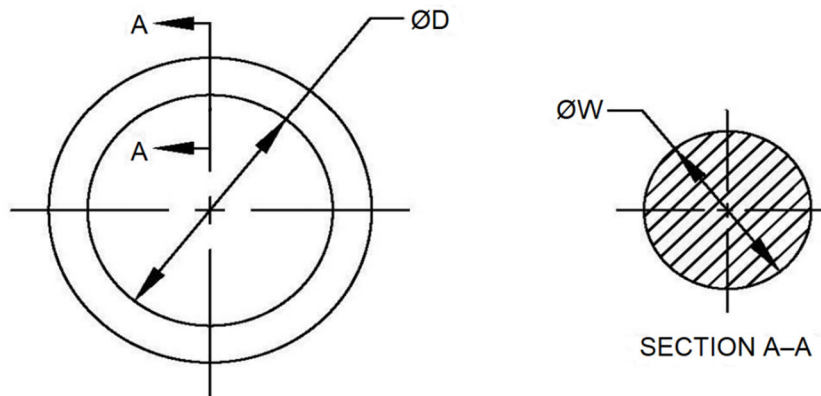
MIL-PRF-7808 LUBRICATING OIL, AIRCRAFT TURBINE ENGINE, SYNTHETIC BASE

3. O-RING PART NUMBERS, DIMENSIONS, AND MASSES

FIGURE 1 ILLUSTRATES THE O-RING DIMENSIONS THAT ARE USED IN THIS STANDARD.

TABLE 1 PROVIDES THE PART NUMBERS, DIMENSIONS, AND APPROXIMATE MASSES FOR AEROSPACE STANDARD SIZE O-RINGS.

TABLE 2 PROVIDES THE PART NUMBERS, DIMENSIONS, AND APPROXIMATE MASSES FOR STRAIGHT THREAD TUBE FITTING BOSS GASKETS.



NOTE: DIMENSIONS AND TOLERANCES AS PER ASME Y14.5-2018.

FIGURE 1 - O-RING DIMENSIONS: WIDTH (ØW) AND INSIDE DIAMETER (ØD)

	AEROSPACE STANDARD		AS7256™ SHEET 1 OF 12
	O-RINGS MOLDED FROM AMS7410 FLUOROCARBON (FKM) MATERIAL		



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TABLE 1 - AEROSPACE SIZE STANDARDS FOR O-RINGS

BASIC NO. AS7256 /1/ 2/ SIZE CODE	ØD INCH MIN	ØD INCH MAX	ØD (MM) MIN	ØD (MM) MAX	ØW INCH MIN	ØW INCH MAX	ØW (MM) MIN	ØW (MM) MAX	APPROX MASS LB/100	APPROX MASS (KG/100)
001	.025	.033	0.64	0.84	.037	.043	0.94	1.09	.002	0.001
002	.038	.046	0.97	1.17	.047	.053	1.19	1.35	.004	0.002
003	.052	.060	1.32	1.52	.057	.063	1.45	1.60	.007	0.003
004	.065	.075	1.65	1.91	.067	.073	1.70	1.85	.011	0.005
005	.096	.106	2.44	2.69	.067	.073	1.70	1.85	.013	0.006
006	.109	.119	2.77	3.02	.067	.073	1.70	1.85	.014	0.007
007	.140	.150	3.56	3.81	.067	.073	1.70	1.85	.017	0.008
008	.171	.181	4.34	4.60	.067	.073	1.70	1.85	.019	0.009
009	.203	.213	5.16	5.41	.067	.073	1.70	1.85	.022	0.010
010	.234	.244	5.94	6.20	.067	.073	1.70	1.85	.024	0.011
011	.296	.306	7.52	7.77	.067	.073	1.70	1.85	.029	0.013
012	.359	.369	9.12	9.37	.067	.073	1.70	1.85	.034	0.015
013	.421	.431	10.69	10.95	.067	.073	1.70	1.85	.039	0.018
014	.484	.494	12.29	12.55	.067	.073	1.70	1.85	.044	0.020
015	.544	.558	13.82	14.17	.067	.073	1.70	1.85	.049	0.022
016	.605	.623	15.37	15.82	.067	.073	1.70	1.85	.054	0.024
017	.667	.685	16.94	17.40	.067	.073	1.70	1.85	.058	0.027
018	.730	.748	18.54	19.00	.067	.073	1.70	1.85	.063	0.029
019	.792	.810	20.12	20.57	.067	.073	1.70	1.85	.068	0.031
020	.855	.873	21.72	22.17	.067	.073	1.70	1.85	.073	0.033
021	.917	.935	23.29	23.75	.067	.073	1.70	1.85	.078	0.035
022	.979	.999	24.87	25.37	.067	.073	1.70	1.85	.083	0.038
023	1.041	1.061	26.44	26.95	.067	.073	1.70	1.85	.088	0.040
024	1.104	1.124	28.04	28.55	.067	.073	1.70	1.85	.093	0.042
025	1.165	1.187	29.59	30.15	.067	.073	1.70	1.85	.097	0.044
026	1.228	1.250	31.19	31.75	.067	.073	1.70	1.85	.102	0.047
027	1.290	1.312	32.77	33.32	.067	.073	1.70	1.85	.107	0.049
028	1.351	1.377	34.32	34.98	.067	.073	1.70	1.85	.112	0.051
029	1.476	1.502	37.49	38.15	.067	.073	1.70	1.85	.122	0.055
030	1.601	1.627	40.67	41.33	.067	.073	1.70	1.85	.132	0.060
031	1.724	1.754	43.79	44.55	.067	.073	1.70	1.85	.141	0.064
032	1.849	1.879	46.96	47.73	.067	.073	1.70	1.85	.151	0.069
033	1.971	2.007	50.06	50.98	.067	.073	1.70	1.85	.161	0.073
034	2.096	2.132	53.24	54.15	.067	.073	1.70	1.85	.171	0.078
035	2.221	2.257	56.41	57.33	.067	.073	1.70	1.85	.181	0.082
036	2.346	2.382	59.59	60.50	.067	.073	1.70	1.85	.190	0.087
037	2.471	2.507	62.76	63.68	.067	.073	1.70	1.85	.200	0.091
038	2.594	2.634	65.89	66.90	.067	.073	1.70	1.85	.210	0.095
039	2.719	2.759	69.06	70.08	.067	.073	1.70	1.85	.220	0.100
040	2.844	2.884	72.24	73.25	.067	.073	1.70	1.85	.229	0.104
041	2.965	3.013	75.31	76.53	.067	.073	1.70	1.85	.239	0.109
042	3.215	3.263	81.66	82.88	.067	.073	1.70	1.85	.259	0.118
043	3.465	3.513	88.01	89.23	.067	.073	1.70	1.85	.278	0.127
044	3.712	3.766	94.28	95.66	.067	.073	1.70	1.85	.298	0.135
045	3.962	4.016	100.63	102.01	.067	.073	1.70	1.85	.317	0.144
046	4.209	4.269	106.91	108.43	.067	.073	1.70	1.85	.337	0.153
047	4.459	4.519	113.26	114.78	.067	.073	1.70	1.85	.357	0.162
048	4.709	4.769	119.61	121.13	.067	.073	1.70	1.85	.376	0.171
049	4.952	5.026	125.78	127.66	.067	.073	1.70	1.85	.396	0.180
050	5.202	5.276	132.13	134.01	.067	.073	1.70	1.85	.415	0.189



AEROSPACE STANDARD

O-RINGS MOLDED FROM
AMST410 FLUOROCARBON (FKM) MATERIAL

AS7256™

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TABLE 1 - AEROSPACE SIZE STANDARDS FOR O-RINGS (CONTINUED)

BASIC NO. AS7256 /1/ /2/ SIZE CODE	ØD INCH MIN	ØD INCH MAX	ØD (MM) MIN	ØD (MM) MAX	ØW INCH MIN	ØW INCH MAX	ØW (MM) MIN	ØW (MM) MAX	APPROX MASS LB/100	APPROX MASS (KG/100)
102	.044	.054	1.12	1.37	.100	.106	2.54	2.69	.026	0.012
103	.076	.086	1.93	2.18	.100	.106	2.54	2.69	.031	0.014
104	.107	.117	2.72	2.97	.100	.106	2.54	2.69	.036	0.017
105	.138	.148	3.51	3.76	.100	.106	2.54	2.69	.042	0.019
106	.169	.179	4.29	4.55	.100	.106	2.54	2.69	.047	0.021
107	.201	.211	5.11	5.36	.100	.106	2.54	2.69	.052	0.024
108	.232	.242	5.89	6.15	.100	.106	2.54	2.69	.058	0.026
109	.294	.304	7.47	7.72	.100	.106	2.54	2.69	.068	0.031
110	.357	.367	9.07	9.32	.100	.106	2.54	2.69	.079	0.036
111	.419	.429	10.64	10.90	.100	.106	2.54	2.69	.089	0.041
112	.482	.492	12.24	12.50	.100	.106	2.54	2.69	.100	0.045
113	.542	.556	13.77	14.12	.100	.106	2.54	2.69	.110	0.050
114	.603	.621	15.32	15.77	.100	.106	2.54	2.69	.121	0.055
115	.665	.683	16.89	17.35	.100	.106	2.54	2.69	.132	0.060
116	.728	.746	18.49	18.95	.100	.106	2.54	2.69	.142	0.065
117	.789	.809	20.04	20.55	.100	.106	2.54	2.69	.153	0.069
118	.852	.872	21.64	22.15	.100	.106	2.54	2.69	.163	0.074
119	.914	.934	23.22	23.72	.100	.106	2.54	2.69	.174	0.079
120	.977	.997	24.82	25.32	.100	.106	2.54	2.69	.185	0.084
121	1.039	1.059	26.39	26.90	.100	.106	2.54	2.69	.195	0.089
122	1.102	1.122	27.99	28.50	.100	.106	2.54	2.69	.206	0.094
123	1.162	1.186	29.51	30.12	.100	.106	2.54	2.69	.216	0.098
124	1.225	1.249	31.12	31.72	.100	.106	2.54	2.69	.227	0.103
125	1.287	1.311	32.69	33.30	.100	.106	2.54	2.69	.238	0.108
126	1.350	1.374	34.29	34.90	.100	.106	2.54	2.69	.248	0.113
127	1.412	1.436	35.86	36.47	.100	.106	2.54	2.69	.259	0.118
128	1.475	1.499	37.46	38.07	.100	.106	2.54	2.69	.269	0.122
129	1.534	1.564	38.96	39.73	.100	.106	2.54	2.69	.280	0.127
130	1.597	1.627	40.56	41.33	.100	.106	2.54	2.69	.291	0.132
131	1.659	1.689	42.14	42.90	.100	.106	2.54	2.69	.301	0.137
132	1.722	1.752	43.74	44.50	.100	.106	2.54	2.69	.312	0.142
133	1.784	1.814	45.31	46.08	.100	.106	2.54	2.69	.322	0.146
134	1.847	1.877	46.91	47.68	.100	.106	2.54	2.69	.333	0.151
135	1.908	1.942	48.46	49.33	.100	.106	2.54	2.69	.344	0.156
136	1.970	2.004	50.04	50.90	.100	.106	2.54	2.69	.354	0.161
137	2.033	2.067	51.64	52.50	.100	.106	2.54	2.69	.365	0.166
138	2.095	2.129	53.21	54.08	.100	.106	2.54	2.69	.375	0.171
139	2.158	2.192	54.81	55.68	.100	.106	2.54	2.69	.386	0.175
140	2.220	2.254	56.39	57.25	.100	.106	2.54	2.69	.396	0.180
141	2.280	2.320	57.91	58.93	.100	.106	2.54	2.69	.407	0.185
142	2.342	2.382	59.49	60.50	.100	.106	2.54	2.69	.418	0.190
143	2.405	2.445	61.09	62.10	.100	.106	2.54	2.69	.428	0.195
144	2.467	2.507	62.66	63.68	.100	.106	2.54	2.69	.439	0.199
145	2.530	2.570	64.26	65.28	.100	.106	2.54	2.69	.449	0.204
146	2.592	2.632	65.84	66.85	.100	.106	2.54	2.69	.460	0.209
147	2.653	2.697	67.39	68.50	.100	.106	2.54	2.69	.471	0.214
148	2.715	2.759	68.96	70.08	.100	.106	2.54	2.69	.481	0.219
149	2.778	2.822	70.56	71.68	.100	.106	2.54	2.69	.492	0.224



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O-RINGS MOLDED FROM
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