SLOVENSKI STANDARD
SIST EN 3746:2004

01-maj-2004

Aerospace series - O-rings, in fluorosilicone rubber (FVMQ) - Hardness 80 IRHD

Aerospace series - O-rings, in fluorosilicone rubber (FVMQ) - Hardness 80 IRHD

Luft- und Raumfahrt - O-Ringe aus Floursilicon-Elastomer (FVMQ) - Härte 80 IRHD

Joints toriques en élastomere fluorosilicone

Ta slovenski standard je istoveten z: **EN 3746:2003**

ICS:

49.025.40 Guma in polimerni materiali Rubber and plastics

SIST EN 3746:2004 **en**

EUROPEAN STANDARD

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ICS 49.025.40

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Aerospace series - O-rings, in fluorosilicone rubber (FVMQ) - Hardness 80 IRHD

This European Standard was approved by CEN on 2 June 2002.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Contents

page

Foreword

This document (EN 3746:2003) has been prepared by the European Association of Aerospace Manufacturers – Standardization (AECMA-STAN).

After enquiries and votes carried out in accordance with the rules of this Association, this Standard has received the approval of the National Associations and the Official Services of the member countries of AECMA, prior to its presentation to CEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by July 2003, and conflicting national standards shall be withdrawn at the latest by July 2003.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This standard specifies the characteristics of O-rings in fluorosilicone rubber (FVMQ), hardness 80 IRHD for aerospace applications.

2 Normative references

ISO 3601-1 Fluid systems - Sealing devices - O-rings - Part 1 : inside diameters, cross-sections, tolerances and size identification code

EN 3376 Aerospace series - Limits of surface imperfections of elastomeric toroidal sealing rings (O-rings) [1)]

EN 3747 Aerospace series - O-rings, in fluorosilicone rubber (FVMQ) - Technical specification [1)]

EN 3827 Aerospace series - Fluorosilicone rubber (FVMQ) - Hardness 80 IRHD [2)]

3 Application

3.1 Typical use

These O-rings are intended to be used in air, mineral and synthetic oil and fuel systems.

NOTE: Not to be used with phosphoric ester type hydraulic fluids (permanent or temporary immersion).

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1) Published as AECMA Prestandard at the date of publication of this standard

2) In preparation at the date of publication of this standard

3.2 Temperature range

- Continuous service: from -55 °C to + 150 °C ;

- Intermitent service: from -55 °C to + 200 °C.

4 Required characteristics

4.1 Configuration - Dimensions - Tolerances – Masses

Dimensions and tolerances are in millimetres.

4.1.1 Configuration code A

Section diameter d_2 = 1,8 :± 0,08 [3)]

See figure 1 and table 1

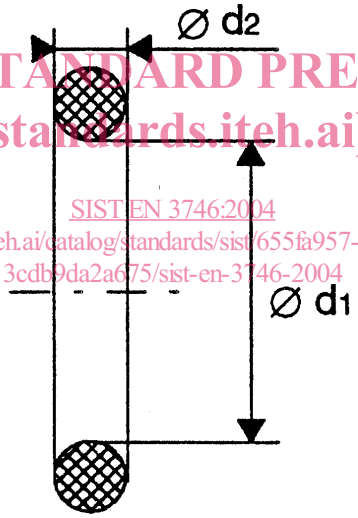

Figure 1

3) Conforms to ISO 3601-1

Table 1

d_1			Mass [1]	d_1			Mass [1]	d_1			Mass [1]
Code	Nom.	Tol ±		Code	Nom.	Tol ±		Code	Nom.	Tol ±	
0018	1,8		0,04	0100	10,0	0,15	0,135	0365	36,5	0,31	0,45
0020	2,0			0106	10,6	0,16	0,14	0375	37,5	0,32	0,46
0022	2,24			0112	11,2		0,15	0387	38,7	0,32	0,47
0025	2,5		0,05	0118	11,8	0,17	0,16	0400	40,0	0,33	0,49
0028	2,8		0,055	0125	12,5		0,165	0412	41,2	0,34	0,50
0031	3,15			0132	13,2		0,17	0425	42,5	0,35	0,51
0035	3,55		0,06	0140	14,0	0,18	0,18	0437	43,7		0,525
0037	3,75			0150	15,0		0,19	0450	45,0	0,36	0,54
0040	4,0		0,07	0160	16,0	0,19	0,20	0475	47,5	0,38	0,57
0045	4,5			0170	17,0	0,20	0,22	0500	50,0	0,39	0,60
0048	4,87	0,13		0180	18,0		0,23	0530	53,0	0,41	0,63
0050	5,0			0190	19,0	0,21	0,24	0560	56,0	0,42	0,67
0051	5,15		0,08	0200	20,0		0,25	0600	60,0	0,45	0,71
0053	5,3			0212	21,2	0,22	0,27	0630	63,0	0,46	0,75
0056	5,6		0,09	0224	22,4	0,20	0,28	0670	67,0	0,49	0,80
0060	6,0			0236	23,6	0,24	0,30	0710	71,0	0,51	0,85
0063	6,3			0250	25,0		0,31	0750	75,0	0,53	0,89
0067	6,7		0,10	0258	25,8	0,25	0,32	0800	80,0	0,56	0,95
0069	6,9		0,11	0265	26,5		0,33	0850	85,0	0,59	1,00
0071	7,1			0280	28,0	0,26	0,345	0900	90,0	0,62	1,07
0075	7,5	0,14	0,12	0300	30,0	0,27	0,37	0950	95,0	0,64	1,12
0080	8,0		0,125	0315	31,5	0,28	0,38	1000	100,0	0,67	1,18
0085	8,5			0325	32,5	0,29	0,40	1060	106,0	0,71	1,25
0087	8,75			0335	33,5		0,41	1120	112,0	0,74	1,32
0090	9,0	0,15		0345	34,5	0,30	0,42	1180	118,0	0,77	1,39
0095	9,5		0,13	0355	35,5	0,31	0,43	1250	125,0	0,81	1,47
1) Mass ≈ kg/1 000 parts											

4.1.2 Configuration code B

Section diameter d_2 = 2,65 :± 0,09 [4]

See figure 2 and table 2.

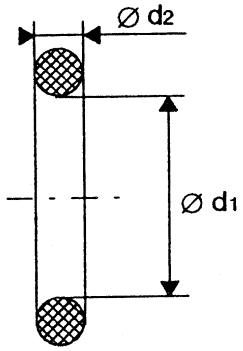

Figure 2

4) Conforms to ISO 3601-1

Table 2

*d*₁			Mass [1)]	*d*₁			Mass [1)]	*d*₁			Mass [1)]
Code	Nom.	Tol ±		Code	Nom.	Tol ±		Code	Nom.	Tol ±	
0045	4,5	0,13	0,18	0315	31,5	0,28	0,85	0710	71,0	0,51	1,85
0053	5,3		0,20	0325	32,5	0,29	0,89	0730	73,0	0,52	1,90
0060	6,0		0,22	0335	33,5		0,91	0750	75,0	0,53	1,95
0069	6,9	0,14	0,24	0345	34,5	0,30	0,93	0800	80,0	0,56	2,07
0080	8,0		0,27	0355	35,5	0,31	0,96	0850	85,0	0,59	2,20
0090	9,0		0,29	0365	36,5		0,98	0900	90,0	0,62	2,32
0095	9,5		0,31	0375	37,5	0,32	1,01	0950	95,0	0,64	2,45
0100	10,0	0,15	0,32	0387	38,7		1,03	1000	100,0	0,67	2,58
0106	10,6		0,33	0400	40,0	0,33	1,07	1060	106,0	0,71	2,73
0112	11,2	0,16	0,345	0412	41,2	0,34	1,10	1120	112,0	0,74	2,80
0118	11,8		0,36	0425	42,5	0,35	1,14	1180	118,0	0,77	3,02
0125	12,5	0,17	0,38	0437	43,7		1,16	1250	125,0	0,81	3,21
0132	13,2		0,40	0450	45,0	0,36	1,20	1320	132,0	0,85	3,38
0140	14,0		0,415	0462	46,2	0,37	1,22	1400	140,0	0,89	3,58
0150	15,0	0,18	0,45	0475	47,5	0,38	1,26	1500	150,0	0,95	3,83
0160	16,0		0,47	0487	48,7		1,28	1600	160,0	1,00	4,08
0170	17,0	0,19	0,49	0500	50,0	0,39	1,32	1700	170,0	1,06	4,33
0180	18,0	0,20	0,52	0515	51,5	0,40	1,36	1800	180,0	1,11	4,58
0190	19,0		0,54	0530	53,0	0,41	1,39	1900	190,0	1,17	4,83
0200	20,0	0,21	0,57	0545	54,5	0,42	1,43	2000	200,0	1,22	5,09
0212	21,2		0,60	0560	56,0		1,47	2120	212,0	1,29	5,38
0224	22,4	0,23	0,63	0580	58,0	0,44	1,53	2240	224,0	1,35	5,69
0236	23,6	0,24	0,66	0600	60,0	0,45	1,57	2300	230,0	1,39	5,84
0250	25,0		0,70	0615	61,5		1,61	2360	236,0	1,42	6,00
0258	225,8	0,25	0,71	0630	63,0	0,46	1,65	2430	243,0	1,46	6,17
0265	26,5		0,73	0650	65,0	0,48	1,70	2500	250,0	1,49	6,34
0280	28,0	0,26	0,77	0670	67,0	0,49	1,75				
0300	30,0	0,27	0,82	0690	69,0	0,50	1,80				
1) Mass ≈ kg/1 000 parts											

4.1.3 Configuration code C

Section diameter d_2 = 3,55 :t 0,10 [5)]

See figure 3 and table 3.

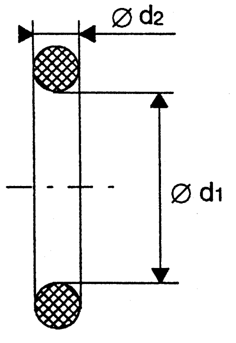

Figure 3

5) Conforms to ISO 3601-1

Table 3

d_1			Mass 1)	d_1			Mass 1)	d_1			Mass 1)
Code	Nom.	Tol ±		Code	Nom.	Tol ±		Code	Nom.	Tol ±	
0140	14,0	0,18	0,79	0515	51,5	0,40	2,48	1280	128,0	0,83	5,95
0150	15,0		0,84	0530	53,0	0,41	2,55	1320	132,0	0,85	6,13
0160	16,0	0,19	0,88	0545	54,5	0,42	2,62	1360	136,0	0,87	6,31
0170	17,0	0,20	0,93	0560	56,0		2,69	1400	140,0	0,89	6,49
0180	18,0		0,97	0580	58,0	0,44	2,78	1450	145,0	0,92	6,72
0190	19,0	0,21	1,02	0600	60,0	0,45	2,88	1500	150,0	0,95	6,94
0200	20,0		1,06	0615	61,5		2,94	1550	155,0	0,98	7,17
0212	21,2	0,22	1,12	0630	63,0	0,46	3,00	1600	160,0	1,00	7,39
0224	22,4	0,23	1,18	0650	65,0	0,48	3,10	1650	165,0	1,03	7,62
0236	23,6	0,24	1,23	0670	67,0	0,49	3,19	1700	170,0	1,06	7,85
0250	25,0		1,29	0690	69,0	0,50	3,28	1750	175,0	1,09	8,07
0258	25,8	0,25	1,32	0710	71,0	0,51	3,37	1800	180,0	1,11	8,30
0265	26,5		1,36	0730	73,0	0,52	3,46	1850	185,0	1,14	8,53
0280	28,0	0,26	1,43	0750	75,0	0,53	3,55	1900	190,0	1,17	8,75
0300	30,0	0,27	1,52	0775	77,5	0,55	3,67	1950	195,0	1,20	8,97
0315	31,5	0,28	1,58	0800	80,0	0,56	3,78	2000	200,0	1,22	9,20
0325	32,5	0,29	1,63	0825	82,5	0,57	3,89	2120	212,0	1,29	9,74
0335	33,5		1,68	0850	85,0	0,59	4,00	2180	218,0	1,32	10,00
0345	34,5	0,30	1,72	0875	87,5	0,60	4,11	2240	224,0	1,35	10,29
0355	35,5	0,31	1,76	0900	90,0	0,62	4,23	2300	230,0	1,39	10,56
0365	36,5		1,81	0925	92,5	0,63	4,34	2360	236,0	1,42	10,83
0375	37,5	0,32	1,86	0950	95,0	0,64	4,45	2500	250,0	1,49	11,47
0387	38,7		1,91	0975	97,5	0,66	4,57	2580	258,0	1,54	11,81
0400	40,0	0,33	1,97	1000	100,0	0,67	4,68	2660	266,0	1,57	12,14
0412	41,2	0,34	2,02	1030	103,0	0,69	4,82	2800	280,0	1,65	12,82
0425	42,5	0,35	2,08	1060	106,0	0,71	4,95	2900	290,0	1,71	13,28
0437	43,7		2,14	1090	109,0	0,72	5,09	3000	300,0	1,76	13,72
0450	45,0	0,36	2,19	1120	112,0	0,74	5,23	3150	315,0	1,84	14,40
0462	46,2	0,37	2,25	1150	115,0	0,76	5,36	3350	335,0	1,95	15,30
0475	47,5	0,38	2,30	1180	118,0	0,77	5,50	3550	355,0	2,06	16,21
0487	48,7		2,36	1220	122,0	0,80	5,67				
0500	50,0	0,39	2,42	1250	125,0	0,81	5,82				
1) Mass ≈ kg/1 000 parts											

4.1.4 Configuration code D

Section diameter d_2 = 5,30 :± 0,13 6)

See figure 4 and table 4.

6) Conforms to ISO 3601-1