
**Aerospace series — O-ring grooves —
Dimensions**

Série aérospatiale — Gorges pour joints toriques — Dimensions

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

ISO 23748 was prepared by ACE/12/1 as EN 3748:2001 and was adopted (without modification other than those stipulated below) by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 10, *Aerospace fluid systems and components*.

The following are the modifications made in this International Standard:

- reference to ISO 3601-1 size codes in tables;
- correction in [Table 13](#) of value 90,27 to 91,27;
- addition of “static applications” in the title and scope;
- “according to European Standards” was removed in the scope;
- any reference to European Standards were removed.

Aerospace series — O-ring grooves — Dimensions

1 Scope

This International Standard specifies the dimensions of grooves for use with O-rings for aerospace in static sealing applications:

- radial sealing: rod or bore mounted O-rings;
- axial sealing: internal or external pressure source.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

There are no normative references in this document.

3 Symbols

b	O-ring groove width
d_1	O-ring inside diameter
d_2	O-ring section diameter
d_3	O-ring groove diameter, rod mounted
d_4	bore diameter, rod mounted
d_5	rod outside diameter bore mounted
d_6	O-ring groove diameter bore mounted
d_7	O-ring groove outside diameter, internal pressure
d_8	O-ring groove inside diameter, external pressure
d_9	rod outside diameter, rod mounted
d_{10}	bore diameter, bore mounted
h	groove height
R	edge radius on groove
r_1	corner radius on groove
t	housing depth
Z	lead-in chamfer length

4 Required characteristics

4.1 Configuration — Dimensions — Tolerances

4.1.1 General

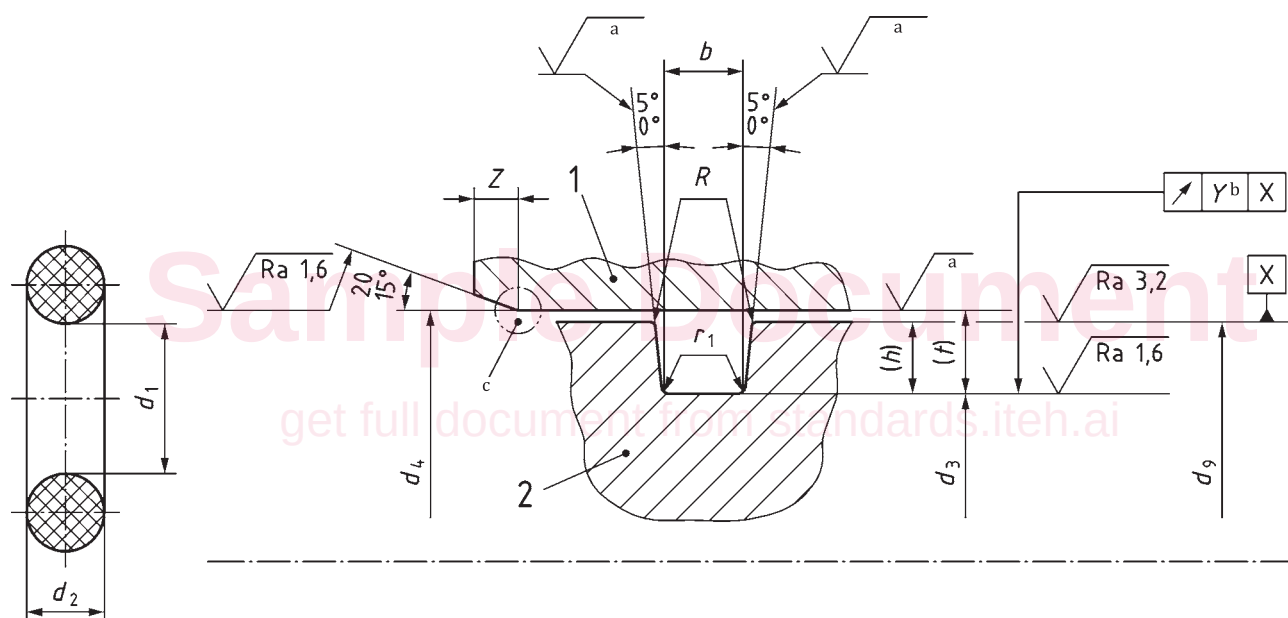
Only recommended sizes are given in the tables.

Dimensions and tolerances are in millimetres. Surface roughness values are in micrometres.

4.1.2 Radial sealing — Rod housing: Configuration code A

4.1.2.1 General

This configuration corresponds to radial grooves in static applications, rod mounted. See [Figure 1](#) and [Tables 1](#) to [7](#).



Key

- 1 bore
- 2 rod
- a See [Table 1](#).
- b Groove diameter $d_3 \leq 50$: maximum run-out tolerance $Y = 0,025$.
Groove diameter $d_3 > 50$: maximum run-out tolerance $Y = 0,05$.
- c No burrs permitted in this area.

Figure 1

Table 1

Surface		Roughness							
		R_a				$R_{\max.}$			
		continuous pressure		with pressure variation		continuous pressure		with pressure variation	
		≤5 MPa	>5 MPa	≤5MPa	>5 MPa	≤5 MPa	>5 MPa	≤5 MPa	>5 MPa
Groove	Side surfaces	3,2	1,6	1,6	1,6	12,5	6,3	6,3	6,3
	Inside diameter	1,6				6,3			
	Homologous surface					0,8			3,2

Table 2

d_2	b		Z	r_1		R	
nom.	max.	min.	min.	max.	min.	max.	min.
1,80	2,65	2,40	1,1	0,4	0,2	0,3	0,1
2,65	3,85	3,60	1,5				
3,55	5,05	4,80	1,8	0,8	0,4		
5,30	7,35	7,10	2,7				
7,00	9,45	9,20	3,6	1,2	0,8		

4.1.2.2 Section diameter $d_2 = 1,80$

Table 3

Code ^a	d_1	d_3	d_4	d_9
	nom.	0 −0,04	+0,06 0	f7 ^b
A0040	4,00	4,24	7,00	7,00
A0050	5,00	5,27	8,03	8,03
A0060	6,00	6,30	9,06	9,06
A0069	6,90	7,24	10,00	10,00
A0087	8,75	9,12	11,88	11,88
A0106	10,60	11,02	13,78	13,78
A0125	12,50	12,97	15,73	15,73
A0140	14,00	14,54	17,30	17,30
A0160	16,00	16,64	19,40	19,40
A0180	18,00	18,64	21,40	21,40
A0212	21,20	21,94	24,70	24,70
A0236	23,60	24,44	27,20	27,20
A0280	28,00	28,94	31,70	31,70
A0315	31,50	32,54	35,30	35,30
A0355	35,50	36,64	39,40	39,40
A0365	36,50	37,64	40,40	40,40
A0375	37,50	38,64	41,40	41,40
A0387	38,70	39,84	42,60	42,60
A0400	40,00	41,24	44,00	44,00
^a Size code corresponding to the codification of O-rings according to ISO 3601-1.				
^b See ISO 286-2.				

4.1.2.3 Section diameter $d_2 = 2,65$

Table 4

Code ^a	d_1	d_3	d_4	d_9
	nom.	0 −0,05	+0,07 0	f7 ^b
B0053	5,30	5,58	9,72	9,72
B0069	6,90	7,25	11,39	11,39
B0095	9,50	9,90	14,04	14,04
B0112	11,20	11,66	15,80	15,80
B0132	13,20	13,76	17,90	17,90
B0150	15,00	15,56	19,70	19,70
B0170	17,00	17,66	21,80	21,80
B0200	20,00	20,66	24,80	24,80
B0224	22,40	23,16	27,30	27,30
B0265	26,50	27,36	31,50	31,50
B0300	30,00	30,96	35,10	35,10
B0345	34,50	35,56	39,70	39,70
B0387	38,70	39,86	44,00	44,00
B0437	43,70	45,06	49,20	49,20
B0500	50,00	51,46	55,60	55,60
B0560	56,00	57,66	61,80	61,80
B0600	60,00	61,76	65,90	65,90
B0650	65,00	66,86	71,00	71,00
B0710	71,00	73,06	77,20	77,20
B0750	75,00	77,16	81,30	81,30
B0800	80,00	82,26	86,40	86,40
^a Size code corresponding to the codification of O-rings according to ISO 3601-1.				
^b See ISO 286-2.				