
Aeronavtika - Drsne puše iz aluminijeve zlitine s samomazalno oblogo, serija za večje obremenitve - 2. del: Mere in nosilnosti - Colski tip

Aerospace series - Bushes, plain in aluminium alloy with self-lubricating liner, elevated load - Part 2: Dimensions and loads - Inch series

Luft- und Raumfahrt - Buchsen aus Aluminiumlegierung, mit selbstschmierender Beschichtung, erhöhte Belastung - Teil 2: Maße und Belastungen - Inch Reihe

Série aérospatiale - Bagues en alliage d'aluminium à garniture autolubrifiante, charge élevée - Partie 2 : Dimensions et charges - Série en inches

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Ta slovenski standard je istoveten z: EN 4534-2:2009

ICS:

49.025.20	Aluminij	Aluminium
49.035	Sestavni deli za letalsko in vesoljsko gradnjo	Components for aerospace construction

SIST EN 4534-2:2009**en**

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EUROPEAN STANDARD

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June 2009

ICS 49.035

English Version

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This European Standard was approved by CEN on 24 April 2009.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.

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Contents

Page

Foreword.....	3
1 Scope	4
2 Normative references	4
3 Terms and definitions	4
4 Requirements	4
4.1 Configuration, dimensions, tolerances and mass	4
4.2 Surface roughness	4
4.3 Materials	5
4.4 Surface treatment	5
5 Designation	12
6 Marking	13
7 Technical specification	13
8 Design recommendation.....	13

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Foreword

This document (EN 4534-2:2009) has been prepared by the Aerospace and Defence Industries Association of Europe - Standardization (ASD-STAN).

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 December 2009, and conflicting national standards shall be withdrawn at the latest by December 2009.

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 ASD, prior to its presentation to CEN.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

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

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EN 4534-2:2009 (E)**1 Scope**

This standard specifies the characteristics of plain bushes in aluminium alloy with self-lubricating liner, elevated load for aerospace applications.

The bushes are intended for use in fixed or moving parts of the aircraft structure and control mechanisms.

They shall be used in the temperature range – 55 °C to 121 °C.

2 Normative references

The following referenced documents are indispensable for the application 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.

EN 2101, *Aerospace series — Chromic acid anodizing of aluminium and wrought aluminium alloys*

EN 2284, *Aerospace series — Sulphuric acid anodizing of aluminium and wrought aluminium alloys*

EN 2311, *Aerospace series — Bushes with self-lubricating liner — Technical specification*

EN 2318, *Aerospace series — Aluminium alloy AL-P2024- T3511 — Extruded bars and sections — 1,2 mm ≤ a or D ≤ 150 mm*

EN 2424, *Aerospace series — Marking of aerospace products*

TR 4475, *Aerospace series — Bearings and mechanical transmissions for airframe applications — Vocabulary*¹⁾

ISO 2768-1, *General tolerances — Part 1: Tolerances for linear and angular dimensions without individual tolerance indications*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in TR 4475 apply.

4 Requirements**4.1 Configuration, dimensions, tolerances and mass**

According to Figure 1 and Tables 1 and 2. Dimensions apply after surface treatment. Dimensions and tolerances are expressed in millimetres (inches).

General tolerances shall be ISO 2768-m in accordance with ISO 2768-1.

4.2 Surface roughness

According to Figure 1.

1) Published as ASD Technical Report at the date of publication of this standard.

Table 1 — Dimensions and tolerances

Diameter code ^a	<i>d</i>		<i>D</i>	<i>a</i>	α
	Nominal diameter	$\begin{matrix} 0 \\ -0,025 \\ (0 \\ -0.0010) \end{matrix}$	$\begin{matrix} \pm 0,013 \\ (\pm 0.0005) \end{matrix}$		
04	6,350 (0.2500)	6,388 (0.2515)	9,550 (0.3760)	0,50 to 0,75 (0.020 to 0.030)	15°
05	7,938 (0.3125)	7,976 (0.3140)	11,140 (0.4386)		
06	9,525 (0.3750)	9,563 (0.3765)	12,730 (0.5012)		
07	11,113 (0.4375)	11,151 (0.4390)	14,321 (0.5638)		
08	12,700 (0.5000)	12,738 (0.5015)	15,913 (0.6265)		
09	14,288 (0.5625)	14,326 (0.5640)	17,506 (0.6892)		
10	15,875 (0.6250)	15,913 (0.6265)	20,681 (0.8142)		
11	17,463 (0.6875)	17,501 (0.6890)	22,268 (0.8767)		
12	19,050 (0.7500)	19,088 (0.7515)	23,858 (0.9393)		
14	22,225 (0.8750)	22,263 (0.8765)	27,038 (1.0645)		
16	25,400 (1.0000)	25,438 (1.0015)	30,221 (1.1898)		
18	28,575 (1.1250)	28,613 (1.1265)	33,396 (1.3148)		
20	31,750 (1.2500)	31,788 (1.2515)	36,571 (1.4398)		
22	34,925 (1.3750)	34,963 (1.3765)	39,746 (1.5648)		
24	38,100 (1.5000)	38,138 (1.5015)	44,508 (1.7523)		
26	41,275 (1.6250)	41,313 (1.6265)	47,683 (1.8773)		
28	44,450 (1.7500)	44,488 (1.7515)	50,858 (2.0023)		
32	50,800 (2.0000)	50,838 (2.0015)	57,208 (2.2523)		

^a Diameter code corresponds to nominal diameter *d* in 1/16 inch.

Table 2 — Mass

Dia- meter code ^a	Length code ^b														
	005	006	007	008	009	010	011	012	014	016	018	020	022	024	028
	l $\begin{matrix} 0 & 0 \\ -0,25 & (-0.010) \end{matrix}$														
	3,97 (0.156)	4,76 (0.188)	5,56 (0.219)	6,35 (0.250)	7,14 (0.281)	7,94 (0.313)	8,73 (0.344)	9,53 (0.375)	11,11 (0.438)	12,70 (0.500)	14,29 (0.563)	15,88 (0.625)	17,46 (0.688)	19,05 (0.750)	22,23 (0.875)
Mass in kg/1 000 pieces ≈															
04	0,44	0,53	0,62	0,70	0,79	0,88	0,97	1,06	1,23	—	—	—	—	—	—
05	0,53	0,63	0,74	0,84	0,95	1,06	1,16	1,27	1,48	1,69	1,90	—	—	—	—
06	0,62	0,74	0,86	0,99	1,11	1,23	1,36	1,48	1,73	1,97	2,22	2,47	2,71	—	—
07	0,70	0,85	0,99	1,13	1,27	1,41	1,55	1,69	1,97	2,26	2,54	2,82	3,10	3,38	3,95
08	0,79	0,95	1,11	1,27	1,43	1,59	1,75	1,91	2,22	2,54	2,86	3,18	3,49	3,81	4,45
09	0,88	1,06	1,24	1,41	1,59	1,77	1,94	2,12	2,47	2,83	3,18	3,53	3,89	4,24	4,95
10	1,52	1,83	2,13	2,44	2,74	3,05	3,35	3,65	4,26	4,87	5,48	6,09	6,70	7,31	8,53
11	—	—	—	2,65	2,98	3,31	3,64	3,97	4,63	5,30	5,96	6,62	7,28	7,94	9,27
12	—	—	—	2,86	3,22	3,58	3,93	4,29	5,01	5,72	6,44	7,15	7,87	8,58	10,01
14	—	—	—	3,29	3,70	4,11	4,52	4,93	5,75	6,58	7,40	8,22	9,04	9,86	11,51
16	—	—	—	3,72	4,18	4,65	5,11	5,58	6,51	7,43	8,36	9,29	10,22	11,15	13,01
18	—	—	—	—	—	5,18	5,69	6,21	7,25	8,28	9,32	10,35	11,39	12,42	14,50
20	—	—	—	—	—	—	—	6,85	7,99	9,13	10,27	11,41	12,56	13,70	15,98
22	—	—	—	—	—	—	—	7,48	8,73	9,98	11,23	12,47	13,72	14,97	17,46
24	—	—	—	—	—	—	—	—	11,03	12,87	14,70	16,54	18,38	20,22	25,73
26	—	—	—	—	—	—	—	—	—	15,83	17,81	19,79	21,77	23,75	27,71
28	—	—	—	—	—	—	—	—	—	16,96	19,08	21,20	23,32	25,45	29,69
32	—	—	—	—	—	—	—	—	—	19,22	21,63	24,03	26,43	28,83	33,64

continued