
Aeronavtika - Drsne puge iz korozijsko odpornega jekla s samomazalno oblogo, serija za velje obremenitve - 2. del: Mere in nosilnosti - Colski tip

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

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

Série aérospatiale - Bagues en acier résistant à la corrosion à garniture autolubrifiante, charge élevée - Partie 2: Dimensions et charges - Série en inches

Ta slovenski standard je istoveten z: EN 4536-2:2009

ICS:

49.035

Sestavni deli za letalsko in
vesoljsko gradnjo

Components for aerospace
construction

SIST EN 4536-2:2009

en

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 4536-2

July 2009

ICS 49.035

English Version

**Aerospace series - Bushes, plain in corrosion resisting steel with
self-lubricating liner, elevated load - Part 2: Dimensions and
loads - Inch series**

Série aérospatiale - Bagues en acier résistant à la
corrosion à garniture autolubrifiante, charge élevée - Partie
2: Dimensions et charges - Série en inches

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

This European Standard was approved by CEN on 23 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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Foreword

This document (EN 4536-2:2009) has been prepared by the Aerospace and Defence Industries Association of Europe - Standardization (ASD-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 ASD, 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 January 2010, and conflicting national standards shall be withdrawn at the latest by January 2010.

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 4536-2:2009 (E)**1 Scope**

This standard specifies the characteristics of plain bushes in corrosion resisting steel 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 163 °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 2311, *Aerospace series — Bushes with self-lubricating liner — Technical specification*

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

EN 3161, *Aerospace series — Steel FE-PM3801 (X5CrNiCu17-4) — Air melted, solution treated and precipitation treated, bar a or $D \leq 200$ mm, $R_m \geq 930$ MPa*

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*

ISO 8075, *Aerospace — Surface treatment of hardenable stainless steel parts*

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.

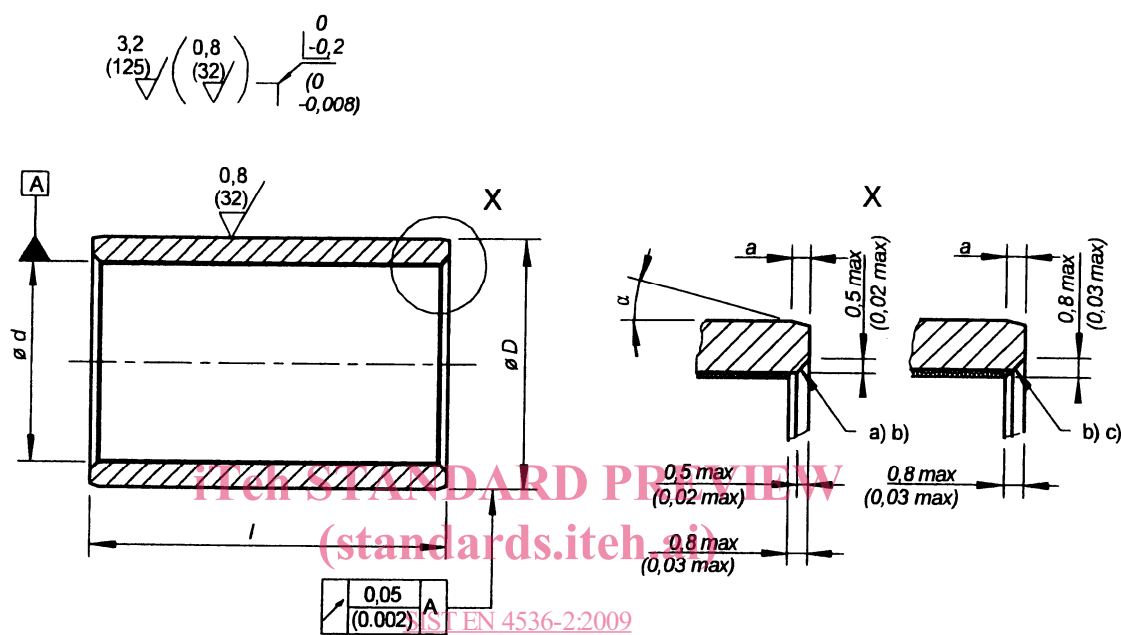
4.3 Materials

Bush: Stainless steel according to EN 3161

Liner: Self-lubricating wear resistant material consistent with the requirements of EN 2311

4.4 Surface treatment

Code T: Passivation according to ISO 8075.



Key

- a Chamfer machined before bonding
- b Chamfer or radius at manufacturers option
- c Chamfer machined after bonding

Figure 1 — Configuration

Table 1 — Dimensions and tolerances

Diameter code ^a	<i>d</i>		<i>D</i>	<i>a</i>	<i>α</i>
	Nominal diameter	0 – 0,025 (0 – 0.0010)	0 – 0,013 (0 – 0.0005)		± 2°
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 <i>d</i> 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
	$\begin{matrix} l \\ 0 \\ -0,25 \end{matrix} \begin{pmatrix} 0 \\ -0,010 \end{pmatrix}$														
	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	1,23	1,47	1,72	1,96	2,21	2,45	2,70	2,94	—	—	—	—	—	—	—
05	1,47	1,77	2,06	2,35	2,65	2,94	3,24	3,53	4,12	—	—	—	—	—	—
06	1,72	2,06	2,40	2,75	3,09	3,43	3,78	4,12	4,81	5,49	6,18	—	—	—	—
07	1,96	2,36	2,75	3,14	3,53	3,93	4,32	4,71	5,50	6,28	7,07	7,85	—	—	—
08	2,21	2,65	3,10	3,54	3,98	4,42	4,87	5,31	6,19	7,08	7,96	8,85	9,73	—	—
09	2,46	2,95	3,45	3,94	4,43	4,92	5,41	5,91	6,89	7,88	8,86	9,84	10,83	11,81	—
10	4,24	5,09	5,94	6,79	7,64	8,48	9,33	10,18	11,88	13,57	15,27	16,97	18,66	20,36	23,75
11	—	—	—	6,80	8,30	9,22	10,14	11,06	12,91	14,75	16,60	18,44	20,28	22,13	25,81
12	—	—	—	7,97	8,97	9,96	10,96	11,95	13,95	15,94	17,93	19,92	21,92	23,91	27,89
14	—	—	—	8,51	10,30	11,45	12,59	13,74	16,03	18,32	20,61	22,90	25,18	27,47	32,05
16	—	—	—	10,36	11,65	12,94	14,24	15,53	18,12	20,71	23,30	25,89	28,48	31,07	36,24
18	—	—	—	—	—	14,42	15,88	17,31	20,19	23,07	25,96	28,84	31,73	34,61	40,38
20	—	—	—	—	—	—	—	19,08	22,26	25,44	28,62	31,80	34,98	38,16	44,51
22	—	—	—	—	—	—	—	20,85	24,33	27,80	31,28	34,75	38,23	41,70	48,65
24	—	—	—	—	—	—	—	30,72	35,84	40,96	46,08	51,20	56,32	61,44	71,68
26	—	—	—	—	—	—	—	—	—	44,11	49,62	55,14	60,65	66,16	77,19
28	—	—	—	—	—	—	—	—	—	47,26	53,16	59,07	64,98	70,88	82,70
32	—	—	—	—	—	—	—	—	—	53,55	60,24	66,94	73,63	80,33	93,71

continued