



**SLOVENSKI STANDARD**  
**SIST EN 4841-2:2022**

**01-julij-2022**

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**Aeronavtika - Dušilniki vibracij z oblogami - 2. del: Tehnični pregled**

Aerospace series - Shock mount with bushes - Part 2: Technical overview

Luft- und Raumfahrt - Schwingungsdämpfer mit Buchse - Teil 2: Technische Übersicht

Série aérospatiale - Amortisseur de vibrations avec douille - Partie 2 : Présentation technique

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**ICS:**

49.035

Sestavni deli za letalsko in  
vesoljsko gradnjo

Components for aerospace  
construction

**SIST EN 4841-2:2022**

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## Aerospace series - Shock mount with bushes - Part 2: Technical overview

Série aérospatiale - Amortisseur de vibrations à bagues  
- Partie 2 : Présentation technique

Luft- und Raumfahrt - Schwingungsdämpfer mit  
Buchse - Teil 2: Technische Übersicht

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
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EUROPÄISCHES KOMITEE FÜR NORMUNG

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## European foreword

This document (EN 4841-2:2022) 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 document 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of an identical text or by endorsement, at the latest by November 2022, and conflicting national standards shall be withdrawn at the latest by November 2022.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN 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, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

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EN 4841-2:2022 (E)

## Introduction

This document is part of the series of EN mechanical standards for aerospace applications.

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## 1 Scope

This document specifies the dimensions, masses, the tolerances and the required characteristics of shock mounts with bushes for aerospace interior application and without contamination by phosphate-ester hydraulic fluids.

## 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.

EN 2424:2008, *Aerospace series — Marking of aerospace products*

EN 4693, *Aerospace series — Tie rod with integrated bolts — Assembly Code A, B and C*

EN 4694, *Aerospace series — Tie rod with integrated bolts — Assembly Code D, E and F*

EN 4695, *Aerospace series — Tie rod with integrated bolts — Assembly Code G, H and K*

EN 4841-1, *Aerospace series — Shock mount with bushes — Part 1: Technical specification*

EN 22768-1:1993, *General tolerances — Part 1: Tolerances for linear and angular dimensions without individual tolerance indications (ISO 2768-1:1989)*

EN 22768-2:1993, *General tolerances — Part 2: Geometrical tolerances for features without individual tolerance indications (ISO 2768-2:1989)*

SAE AS 5316, *Storage of Elastomer Seals and Seal Assemblies Which Include an Elastomer Element Prior to Hardware Assembly*<sup>1</sup>

SAE AS 14102E, *Bearing, Plain, Self-Lubricating, Self-Aligning, Low Speed, Wide, Chamfered Race, -65 °F to 325 °F*<sup>1</sup>

LN 9368-1, *Aerospace — Designation of surface treatments — Composition of code numbers, indications in design documents, survey*<sup>2</sup>

LN 9368-4, *Aerospace — Designation of surface treatments — Part 4: Code numbers for methods of anodic treatment*<sup>2</sup>

WL 1.4548-2, *Aerospace — Precipitation-hardening stainless chromium-nickel-copper steel with approx. 0,05C-16Cr-4Cu-4Ni — Bars and forgings*<sup>2</sup>

WL 3.1354-2, *Aerospace — Wrought aluminium alloy with approx. 4,4Cu-1,5Mg-0,6Mn — Bars*<sup>2</sup>

<sup>1</sup> Published by SAE, <https://www.sae.org/>

<sup>2</sup> Published by: Beuth Verlag GmbH, <https://www.beuth.de/de>.

**EN 4841-2:2022 (E)****3 Terms and definitions**

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

**4 Requirements****4.1 Configuration, dimensions, tolerances and masses****4.1.1 Configuration**

The configuration shall be in accordance with Figure 1, Figure 2 and Figure 3.

**4.1.2 Dimensions, tolerances and masses**

Dimensions are in millimetres, tolerances and masses in accordance to Table 8, Table 9, Table 10, Table 11, Table 12 and Table 13. General tolerances shall be in accordance to ISO 2768 – mK (EN 22768-1:1993 and EN 22768-2:1993). Missing dimensions are manufacturing options.

**4.1.3 Serviceable life**

Serviceable life after shock mount rubber vulcanization shall be minimum 19 years.

Serviceable life should be in accordance with SAE AS 5316.

**4.1.4 Storage time**

Storage time shall be maximum 5 years.

Storage time should be in accordance with SAE AS 5316.

**4.1.5 Working life**

Working life (lifetime) shall be minimum 14 years.

Working life should be in accordance with SAE AS 5316.

**4.1.6 Temperature range**

The temperature range shall be –55 °C to +85 °C.

**4.1.7 Loads**

See Table 1.



Table 1 — Loads

Assembly code	Type code	Material code	Operating loads <sup>a</sup>		Limit loads <sup>b</sup>		Ultimate loads <sup>c</sup>	
			N		N		N	
			axial	radial	axial	radial	axial	radial
A	01	A	80	320	310	1 300	1 200	4 800
		B	60	260	230	1 000	900	3 900
		C	30	150	130	600	500	2 300
		D	30	120	110	500	400	1 900
B	01	A	80	400	320	1 600	1 200	6 000
		B	60	310	230	1 200	900	4 700
		C	30	170	140	700	500	2 600
		D	30	130	110	500	400	2 000
B	02	A	10	40	40	160	130	600
		B	10	25	30	110	90	410
B	03	A	40	220	160	900	600	3 300
		B	30	160	130	700	500	2 500
		C	20	90	70	400	300	1 400
		D	10	70	60	300	200	1 100
C	01	A	80	550	340	2 200	1 300	8 200
		B	70	440	260	1 800	1 000	6 600
		C	30	220	130	900	500	3 300
		D	30	170	110	700	400	2 500
D	01	A	60	290	230	1 200	800	4 400
		B	40	220	170	900	600	3 200
		C	20	120	100	500	400	1 800
		D	20	100	80	400	300	1 500
D	02	A	80	350	310	1 400	1 200	5 300
		B	60	260	230	1 000	900	3 900
		C	30	150	130	600	500	2 300
		D	30	130	110	500	400	2 000
E	01	A	80	250	340	1 000	1 300	20 000

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Assembly code	Type code	Material code	Operating loads <sup>a</sup>		Limit loads <sup>b</sup>		Ultimate loads <sup>c</sup>	
			N		N		N	
			axial	radial	axial	radial	axial	radial
		B	70	190	270	800	1 000	20 000
		C	40	120	170	500	600	20 000
		D	30	100	140	400	500	20 000

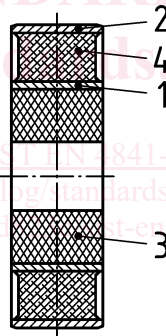
<sup>a</sup> Guide value for possible fatigue loads which can be endured over lifetime (for verification of fatigue Loads a test shall be performed).

<sup>b</sup> Maximum possible load with no deformation of metal parts and no damage of the rubber (only low fatigue loads cycles possible).

<sup>c</sup> Maximum possible load with deformation of metal parts and damage of the rubber.

## 5 Assembly code definitions

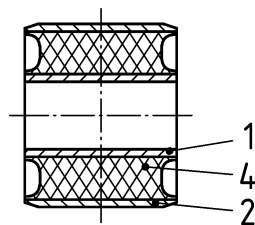
Assembly codes A, B, C, D and E are shown in Figure 1, Figure 2, Figure 3, Figure 4 and Figure 5. An informative overview of the assembly with tie rods according to EN 4693, EN 4694 and EN 4695 is given in Annex A.



### Key

1, 2, 3 and 4 The position numbers and the materials are shown in Table 2.

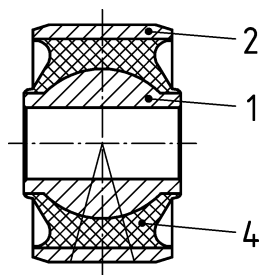
**Figure 1 — Assembly code A**



### Key

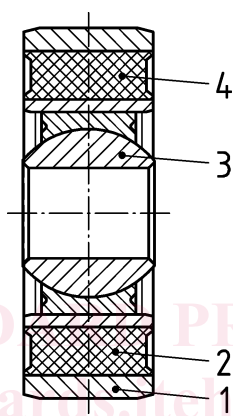
1, 2 and 4 The position numbers and the materials are shown in Table 3.

**Figure 2 — Assembly code B**

**Key**

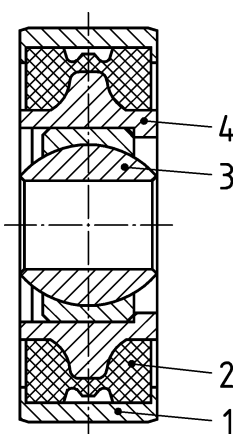
1, 2 and 4 The position numbers and the materials are shown in Table 4.

**Figure 3 — Assembly code C**

**Key**

1, 2, 3 and 4 The position numbers and the materials are shown in Table 5.

**Figure 4 — Assembly code D**

**Key**

1, 2, 3 and 4 The position numbers and the materials are shown in Table 6.

**Figure 5 — Assembly code E**

## 6 Materials

Materials shall be according to Table 2, Table 3, Table 4, Table 5, Table 6 and Table 7.