



SLOVENSKI STANDARD
oSIST prEN 4114:2022

01-september-2022

Aeronavtika - Objemke v obliki zanke (P-oblika) iz aluminijeve zlitine z zaščitno prevleko iz gume - Mere, mase

Aerospace series - Clamps, loop ("P" type) in aluminium alloy, with rubber cushioning - Dimensions, masses

Luft- und Raumfahrt - Schellen in Schlaufenform (P-Form) aus Aluminiumlegierung mit Profilgummi - Maße, Massen

Série aérospatiale - Colliers en "P" en alliage d'aluminium avec profilé en élastomère - Dimensions, masses

Ta slovenski standard je istoveten z: prEN 4114

ICS:

49.025.20	Aluminij	Aluminium
49.025.40	Guma in polimerni materiali	Rubber and plastics
49.030.99	Drugi vezni elementi	Other fasteners

oSIST prEN 4114:2022

en,fr,de

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

DRAFT
prEN 4114

June 2022

ICS 49.030.99

Will supersede EN 4114:2009

English Version

Aerospace series - Clamps, loop ("P" type) in aluminium alloy, with rubber cushioning - Dimensions, masses

Série aérospatiale - Colliers en "P" en alliage
d'aluminium avec profilé en élastomère - Dimensions,
masses

Luft- und Raumfahrt - Schellen in Schlaufenform (P-
Form) aus Aluminiumlegierung mit Profilgummi -
Maße, Massen

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee ASD-STAN.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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-CENELEC Management Centre has the same status as the official versions.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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Contents	Page
European foreword	3
1 Scope	4
2 Normative references	4
3 Terms and definitions	4
4 Required characteristics	4
4.1 Materials	4
4.2 Surface treatment	5
4.3 Configuration – Dimensions – Masses	5
5 Designation	10
6 Marking	10
7 Technical specification	10
Bibliography	11

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European foreword

This document (prEN 4114:2022) 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-STAN, prior to its presentation to CEN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 4114:2009.

prEN 4114:2022 includes the following significant technical changes with respect to EN 4114:2009:

- Normative references were updated;
- Abbreviation “FPM” was changed to “FKM” throughout the document.

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[oSIST prEN 4114:2022
https://standards.iteh.ai/catalog/standards/sist/c09fd275-4e2d-41f6-a767-31ec8f23871e/osist-pren-4114-2022](https://standards.iteh.ai/catalog/standards/sist/c09fd275-4e2d-41f6-a767-31ec8f23871e/osist-pren-4114-2022)

prEN 4114:2022 (E)**1 Scope**

This document specifies the required characteristics of loop style clamps ("P" type) in aluminium alloy with various cushion materials.

These clamps are used for supporting aerospace pipe assemblies and electrical cable bundles.

They are used up to 80 °C max.

Usage at a higher temperature is at the option of the user.

For temperature range and environmental considerations, see the various cushion material standards.

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 2261, *Aerospace series - Silicone rubber (VMQ) - Hardness 70 IRHD*

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

EN 2437, *Aerospace series - Chromate conversion coatings (yellow) for aluminium and aluminium alloys*

EN 2566, *Aerospace series - Fluorocarbon rubber (FKM) - Hardness 70 IRHD*

EN 2693, *Aerospace series - Aluminium alloy AL-P5086-H111 - Sheet and strip - 0,3 mm <a <6 mm*

prEN 3078, *Aerospace series - P,Q and saddle clamps with rubber cushion - Technical specification¹*

EN 3826, *Aerospace series - Fluorosilicone rubber (FVMQ) - Hardness 70 IRHD*

EN 4115, *Aerospace series - Cushion, rubber for clamps - Dimensions, masses*

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 Required characteristics**4.1 Materials**

According to Table 1.

Clamp: according to EN 2693.

Cushion: according to EN 4115.

¹ Published as ASD-STAN Prestandard at the date of publication of this standard by AeroSpace and Defence Industries Association of Europe – Standardization (ASD-STAN) (www.asd-stan.org).

Table 1 — Cushion materials

Cushion material code	Elastomer	Colour
S	Silicone VMQ EN 2261	Rust
F	Fluorosilicone FVMQ EN 3826 ^a	Blue
V	Fluorocarbon FKM EN 2566 ^b	Brown

^a Alternative EN 3825.
^b Alternative Fluorocarbon rubber (FKM) – Hardness 75 IRHD.

4.2 Surface treatment

According to Table 2.

Table 2 — Surface treatment

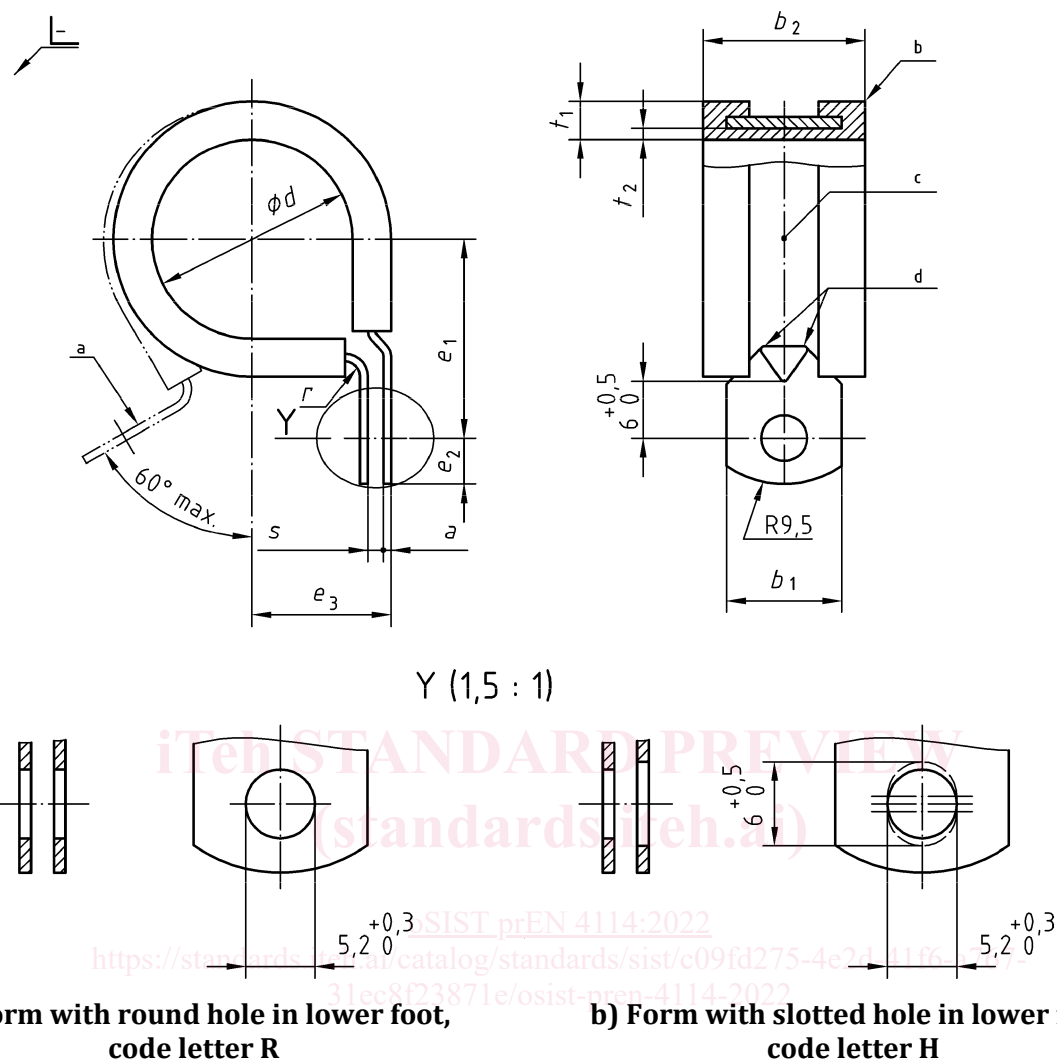
Treatment	Code
None	0
Yellow chromating as per EN 2437	1

4.3 Configuration – Dimensions – Masses

See Figure 1, Figure 2 and Table 3.

Rubber cushion dimensions, see EN 4115.

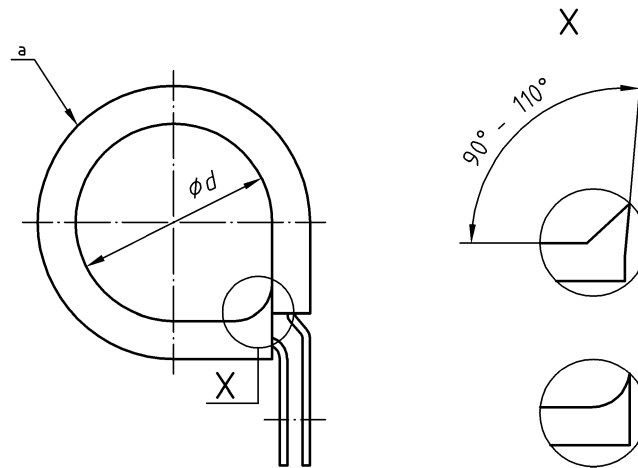
Dimensions in millimetres



Key

- a Delivery position
- b Rubber cushion and t_1 and t_2 according to EN 4115
- c Area for marking
- d Stiffening deformation on both sides as drawn, or central at the manufacturer's option

Figure 1 — Configuration of clamp with rubber cushion



Key

a Rubber cushion according to EN 4115

NOTE Possible forms of cushion with alternative wedge according to EN 4115 (at manufacturer's option).

Figure 2 — Configuration of clamp with rubber cushion, wedge version (Form W)

Table 3 — Dimensions, masses

Diameter code	b_1	b_2^b	d^a	e_1	e_2	e_3	r	s	a^c	Mass kg/ 1 000 parts	Cushion type according to EN 4115									
	±0,25	max.	±0,4	±0,4	±0,4	max.					Without wedge	With wedge								
03	12,7	18	03	11,5	4,7	5,7	1,6	1,6 to 2	0,8	2,40	2N	2K								
04			04	12,0		6,2				3,04										
05			05	12,5		6,7				3,20										
06			06	13,0		7,2				3,68										
07			07	13,5		7,7				4,00										
08			08	14,0		8,2				4,32										
09			09	14,5		8,7				4,64										
10			10	15,0		9,2				4,96										
11			11	15,5		9,7				5,28										
12			12	16,0		10,2				5,60										
13			12,7	18		13				16,5			5,5	10,7	2,5	1,6 to 2	1	6,88	3N	3L
14						14				18,7				11,2				8,80		
15	15	19,2			11,7	9,44														
16	16	19,7			12,2	9,76														
17	17	20,2			12,7	10,08														
18	18	20,7			13,2	10,40														
19	19	21,2			13,7	10,88														
20	20	21,7			14,2	11,36														

prEN 4114:2022 (E)

Diameter code	b_1	b_2^b	d^a	e_1	e_2	e_3	r	s	a^c	Mass max. kg/ 1 000 parts	Cushion type according to EN 4115	
	$\pm 0,25$	max.	$\pm 0,4$	$\pm 0,4$	$\pm 0,4$	$\pm 0,4$	max.				Without wedge	With wedge
21			21	22,2		14,7				11,68		
22	12,7	18	22	22,7	5,5	15,2	2,5	1,6 to 2	1	12,16	3N	3L
23			23	23,2		15,7				12,64		
24			24	23,9		16,2				12,96		
25			25	24,2		16,7				13,60		
26			26	24,9		17,2				13,76		
27			27	25,7		17,7				14,24		
28			28	26,2		18,5				20,64		
29			29	26,9		19,0	21,12					
30			30	27,2		19,5	21,76					
31			31	27,9		20,0	22,40					
32			32	28,2		20,5	22,88					
33			33	28,9		21,0	23,36					
34			34	29,2		21,5	24,32					
35			35	29,9		22,0	24,64					
36			36	30,2		22,5	25,12					
37			37	30,9		23,0	25,60					
38			38	31,2		23,5	26,08					
40			40	32,2		24,5	27,36					
41			41	32,9		25,0	28,00					
43			43	33,7		26,0	29,12					
45	45	34,9	27,0	30,24								
46	46	35,2	27,5	31,84								
48	48	36,4	28,7	32,80								
49	49	36,9	29,2	33,60								
50	50	37,2	29,7	34,40								
51	51	37,9	30,2	34,88								
52	52	38,4	30,7	35,20								
54	54	39,4	31,7	35,68								
55	55	39,7	32,2	36,48								
56	56	40,4	32,7	36,80								
57	57	40,9	33,2	37,60								
58	58	41,4	33,7	38,40								
59	59	41,9	34,2	39,20								
60	60	42,4	34,7	40,00								