



SLOVENSKI STANDARD

SIST EN 4114:2010

01-januar-2010

Nadomešča:

SIST EN 4114:2002

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

<https://standards.iteh.ai/catalog/standards/sist/af346145-8697-445b-8b78-dcce028fd84f/sist-en-4114-2010>

Ta slovenski standard je istoveten z: EN 4114:2009

ICS:

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

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en

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EUROPEAN STANDARD

EN 4114

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2009

ICS 49.030.99

Supersedes EN 4114:2001

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 European Standard was approved by CEN on 5 October 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.

CEN members are the national standards bodies of 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 United Kingdom.

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Foreword

This document (EN 4114:2009) 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 April 2010, and conflicting national standards shall be withdrawn at the latest by April 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.

This document supersedes EN 4114:2001.

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 4114:2009 (E)**1 Scope**

This European Standard 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 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 2261, *Aerospace series — Silicone rubber (VMQ) — Hardness 70 IRHD*

EN 2424:2008, *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 <FPM> — Hardness 70 — Characteristics¹⁾*

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

EN 3078, *Aerospace series — P.Q and saddle clamps with rubber cushion — Technical specification¹⁾*

EN 3825, *Aerospace series — Fluorosilicone rubber (FVMQ) — Hardness 60 IRHD¹⁾*

EN 3826, *Aerospace series — Fluorosilicone rubber (FVMQ) — Hardness 70 IRHD¹⁾*

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

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

3 Required characteristics

3.1 Materials

According to Table 1.

Clamp: according to EN 2693.

Cushion: according to EN 4115.

Table 1 — Cushion materials

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

^a Alternative EN 3825.

^b Alternative Fluorocarbon rubber (FPM) – Hardness 75 IRHD.

3.2 Surface treatment

According to Table 2.

Table 2 — Surface treatment

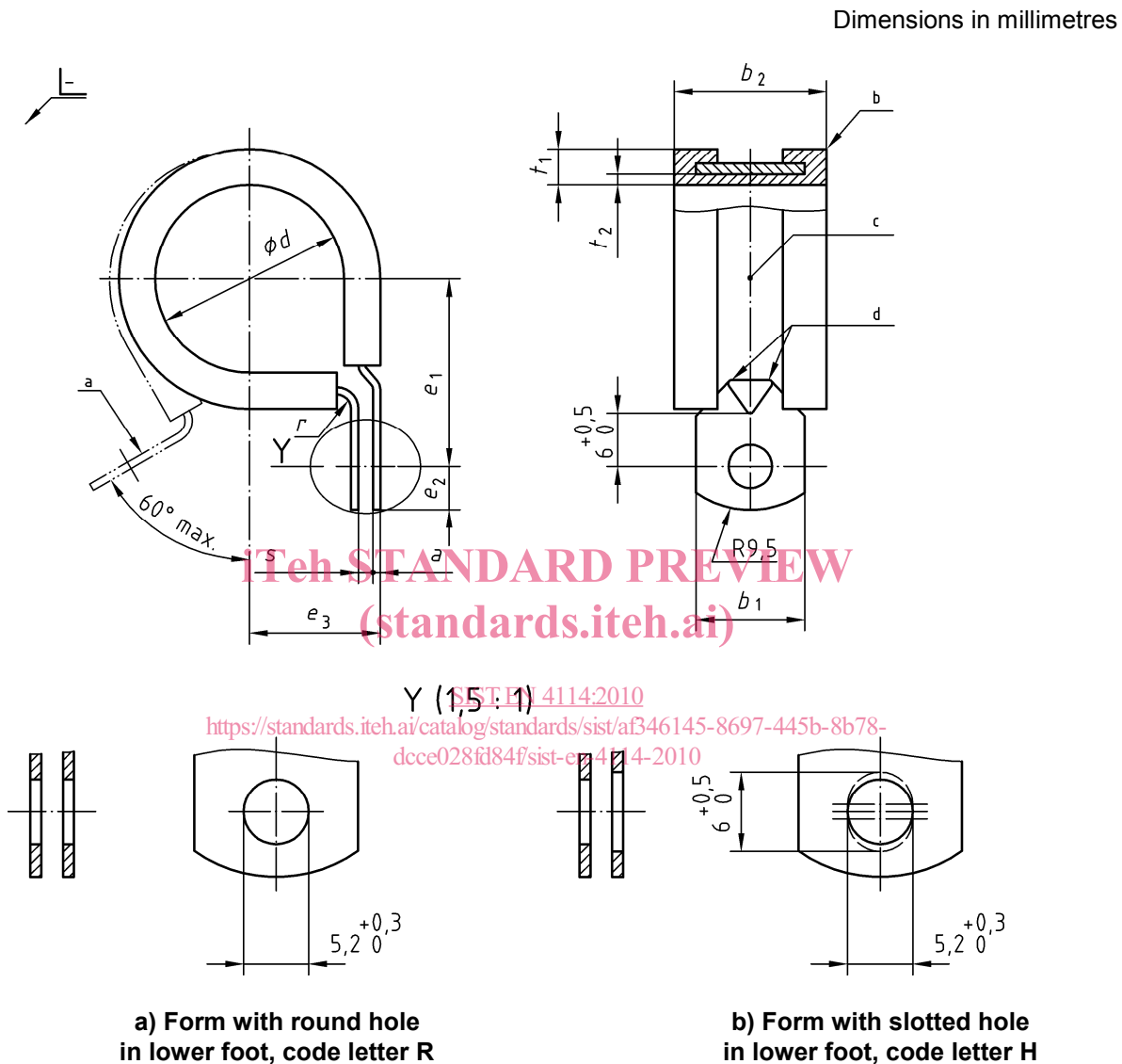
Treatment	Code
None	0
Yellow chromating as per EN 2437	1

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3.3 Configuration – Dimensions – Masses

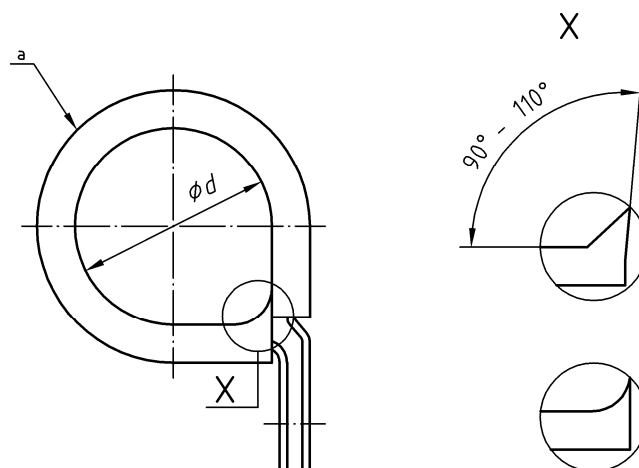
See Figures 1 to 2 and Table 3.

Rubber cushion dimensions, see EN 4115.



- 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



^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 pieces kg/1 000 max.	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
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		

continued