



SLOVENSKI STANDARD

SIST EN 4420:2004

01-maj-2004

Aerospace series - Clips, spring tension, in alloy steel FE-PA3903

Aerospace series - Clips, spring tension, in alloy steel FE-PA3903

Luft- und Raumfahrt - Federklammern aus legiertem Stahl FE-PA3903

Série aérospatiale - Colliers lyre, en acier allié FE-PA3903

Ta slovenski standard je istoveten z: EN 4420:2003

[SIST EN 4420:2004](https://standards.iteh.ai/catalog/standards/sist/4560f74a-a61c-441d-a1a0-c7b53f97f2da/sist-en-4420-2004)

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ICS:

49.030.50	Podložke in drugi blokirni elementi	Washers and other locking elements
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en

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EUROPEAN STANDARD

EN 4420

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 2003

ICS 49.030.50

English version

Aerospace series - Clips, spring tension, in alloy steel FE-PA3903

This European Standard was approved by CEN on 14 September 2002.

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovak Republic, Spain, Sweden, Switzerland and United Kingdom.

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

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Foreword

This document EN 4420:2003 has been prepared by the European Association of Aerospace Manufacturers (AECMA).

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 AECMA, 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 August 2003, and conflicting national standards shall be withdrawn at the latest by August 2003.

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

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1 Scope

This standard specifies the characteristics of spring tension clips for the support of electrical harnesses, in FE-PA3903 for aerospace applications.

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Maximum operating temperature: 250 °C [c7b53f97f2da/sist-en-4420-2004](#)

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

- | | |
|---------|---|
| EN 2424 | <i>Aerospace series - Marking of aerospace products.</i> |
| EN 4528 | <i>Aerospace series - Steel FE-PA3903 (X12CrNi18-10) - Cold rolled - Strip for springs - $a \leq 3 \text{ mm}$ - $1250 \text{ MPa} \leq R_m \leq 1640 \text{ MPa}$ ¹⁾.</i> |
| EN 4585 | <i>Aerospace series - Clips, spring tension, in alloy steel FE-PA3903 - Technical specification.</i> |
| TR 4586 | <i>Aerospace series - Clips, spring tension - Design recommendations ¹⁾.</i> |
| TR 4587 | <i>Aerospace series - Clips, spring tension - Assembly procedure ¹⁾.</i> |

1) In preparation at the date of publication of this standard

EN 4420:2003 (E)**3 Required characteristics****3.1 Configuration – Dimensions – Tolerances – Masses**

See Figures 1 and 2 and Tables 1 and 2. Dimensions and tolerances are in millimetres.

Details of form not stated are left to the manufacturer's discretion.

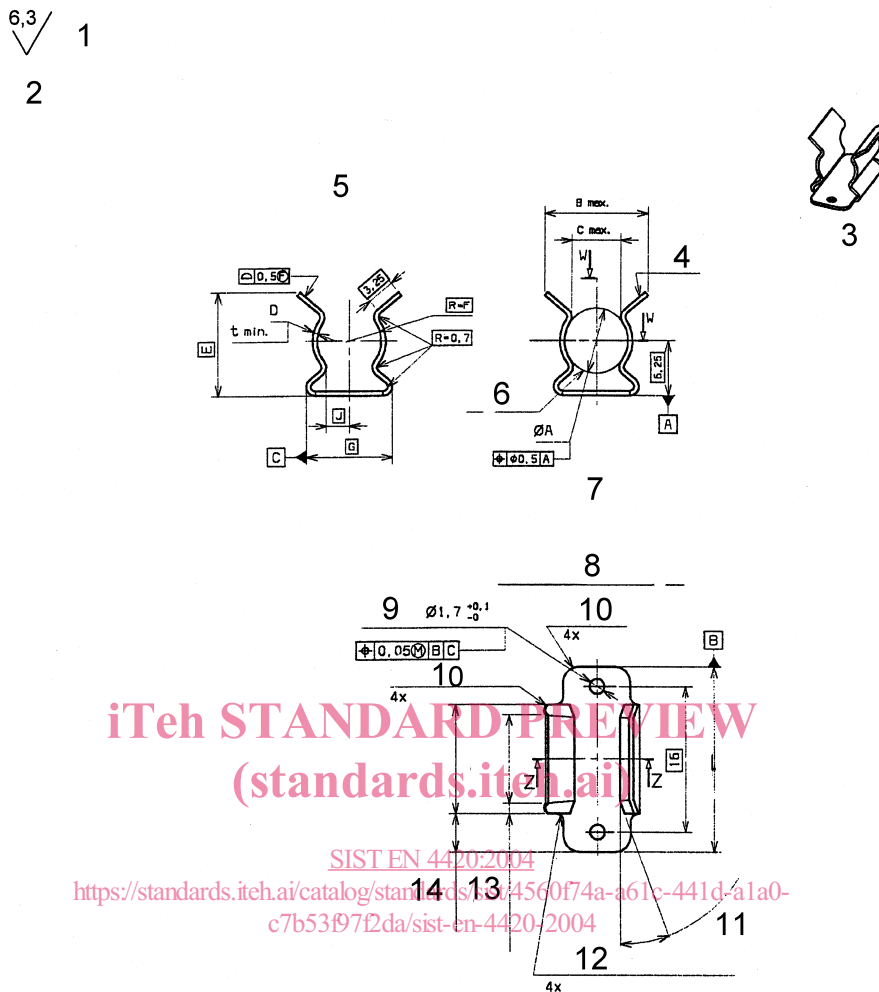
3.2 Material

EN 4528

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Key

- 1 Cut areas
- 2 Remove sharp edges (barrel deburring)
- 3 3 D view
- 4 Marking (on both insertion wing tapes)
- 5 Section Z-Z
- 6 Mandrel
- 7 Clip defined on a flat surface
- 8 Half section W-W
- 9 2 holes
- 10 R 1,5 to 2
- 11 12° to 25°
- 12 R 0,8 to 1,5 before bending
- 13 1,1 to 2,2
- 14 4 to 4,3

NOTE Stress condition : When surface referenced A is flat and when a $\varnothing A$ mandrel is maintained by the clip

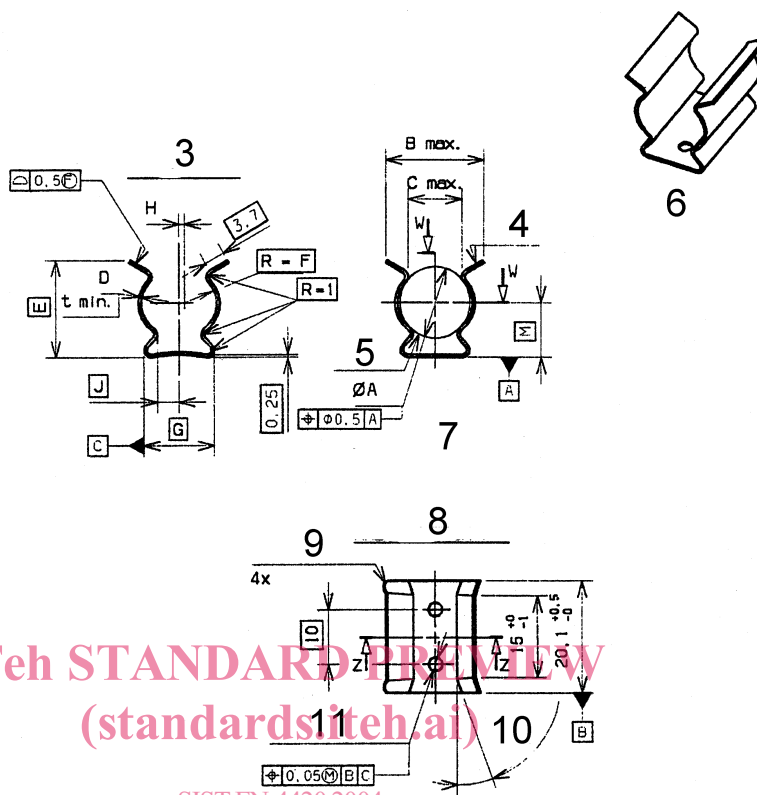
Figure 1 – Spring tension clip : style A

Table 1 – Spring tensions clip : style A

Diameter code	Tightening range	A	B ^a	C ^a	D	E	F	G	J	t	Mass kg/1000 parts ≈
		h6	max.	max.	± 0,05					min.	
040	4 to 5	4	10,5	3,5	0,5	10,7	1,55	8,65	1,45	0,45	1,7
050	5 to 6	5	11	4,5			2,05				
060	6 to 7	6	11,5	5			2,55		2		

^a In stress condition : when surface referenced A is flat and when a diameter A mandrel is maintained by the clip.

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Key

- 1 Cut areas
- 2 Remove sharp edges (barrel deburring)
- 3 Section Z-Z
- 4 Marking (on both insertion wing tapes)
- 5 Mandrel
- 6 3 D view
- 7 Clip in stress condition
- 8 Half section W-W
- 9 R 2,5 to 3
- 10 12° to 25°
- 11 2 holes Ø N

NOTE Stress condition : When surface referenced A is flat and when a ØA mandrel is maintained by the clip

Figure 2 – Spring tension clip : style B

Table 2 – Spring tension clip : style B

Diameter code	Tightening range	A	B ^a	C ^a	D	E	F	G	H	J	M ^a	N ^a		t	Mass kg/ 1000 parts
												max.	min.		
070	7 to 8	7	14	6,15	± 0,05	12,8	3	8,75	Theo	2,9	6,3	2,6	2,5	0,45	3,1
080	8 to 9	8		6,3		14,5	3,5	9		3,3	6,9				3,4
090	9 to 10	9		6,7		15,5	4	10,5		3,7	7,5				3,65
100	10 to 12	10		7,5		16	4,5			3,9	7,75				3,75
120	12 to 14	12		8,7		19	5,5	12,5		4	9,5				4,5
140	14 to 16	14		9		20	6	14		4,9	9,9				5
160	16 to 18	16		11,5		0,6	22	6,5		16,5	1,5				5,7
180	18 to 21	18	12	24,6	7,5	19	1,4		13,2	7,7					
210	21 to 24	21	14,5	0,8	31	9,5	22,6	0	6,8	17	3,5	3,3	0,75	12,2	
240	24 to 27	24	16,8	33	11	25,4	0	7,4	18	13,1					

^a In stress condition : when surface referenced A is flat and when a diameter A mandrel is maintained by the clip.