



# SLOVENSKI STANDARD

## SIST EN 2546:2009

01-april-2009

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SIST EN 2546:2001

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5 YfcbUj h\_U! NUý ]hbYdcX'cý\_YžfUX]Ubc'cncV'YbYž]n'\_cfcn]g\_c'cXdcfbY[ U'Y\_`Už  
dUg]j ]fUbYžnU\_cblfc'bY'dU]W'df]'\_fa ]'Yb1 '!A YfY

Aerospace series - Washers, lock with radial serrations in corrosion resisting steel  
passivated for flight control rods - Dimensions

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Luft- und Raumfahrt - Sicherungen, radialverzahnt aus korrosionsbeständigem Stahl,  
passiviert für Bediengestänge von Flugsteuerungen - Maße

SIST EN 2546:2009

Série aérospatiale - Freins à stries radiales en acier résistant à la corrosion passivés  
pour bielles de commandes de vol - Dimensions

Ta slovenski standard je istoveten z: EN 2546:2006

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### ICS:

49.030.50	Podložke in drugi blokirni elementi	Washers and other locking elements
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SIST EN 2546:2009

en,de

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EUROPEAN STANDARD

EN 2546

NORME EUROPÉENNE

EUROPÄISCHE NORM

May 2006

ICS 49.030.50

Supersedes EN 2546:1988

English Version

## Aerospace series - Washers, lock with radial serrations in corrosion resisting steel passivated for flight control rods - Dimensions

Série aéronautique - Freins à stries radiales en acier résistant à la corrosion passivés pour bielles de commandes de vol - Dimensions

Luft- und Raumfahrt - Sicherungen, radialverzahnt aus korrosionsbeständigem Stahl, passiviert für Bediengestänge von Flugsteuerungen - Maße

This European Standard was approved by CEN on 26 October 2005.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, 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 European Standard (EN 2546:2006) has been prepared by the European Association of Aerospace Manufacturers - Standardization (AECMA-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 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 November 2006, and conflicting national standards shall be withdrawn at the latest by November 2006.

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 European Standard supersedes EN 2546:1988.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, 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 2546:2006 (E)****1 Scope**

This standard specifies the characteristics of lock washers in corrosion resisting steel, with radial serrations primarily intended for flight control rods.

These lock washers are intended to immobilise the rod end in relation to the rod body, whilst allowing a precise positional adjustment.

**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 2516, *Aerospace series – Passivation of corrosion resisting steels and decontamination of nickel base alloys.*

EN 2538, *Aerospace series – Steel FE-PM3801 (X5CrNiCu17-4) – Air melted – Solution treated and precipitation treated – Sheet and strip –  $a \leq 6 \text{ mm}$  –  $R_m \geq 1\,310 \text{ MPa}$ .<sup>1)</sup>*

EN 2540, *Aerospace series – Steel FE-PM3902 (X7CrNiAl17-7) – Air Melted – Solution treated and precipitation hardened – Sheet and strip –  $a \leq 6 \text{ mm}$  –  $1\,240 \text{ MPa} \leq R_m \leq 1\,450 \text{ MPa}$ .<sup>1)</sup>*

EN 9133, *Aerospace series – Quality management systems – Qualification procedure for aerospace standard parts.*

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**3 Required characteristics**

[SIST EN 2546:2009](https://standards.iteh.ai/catalog/standards/sist/e3d0d1f4-77ed-4ed8-ae32-f8c7cfe8d8e/sist-en-2546-2009)

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**3.1 Dimensions – Mass**

Configuration shall correspond with Figures 1, 2 and 3.

The dimensions and masses shall conform with values quoted in Tables 1 and 2.

**3.2 Surface roughness**

$R_a = 3,2 \mu\text{m}$ .

**3.3 Material**

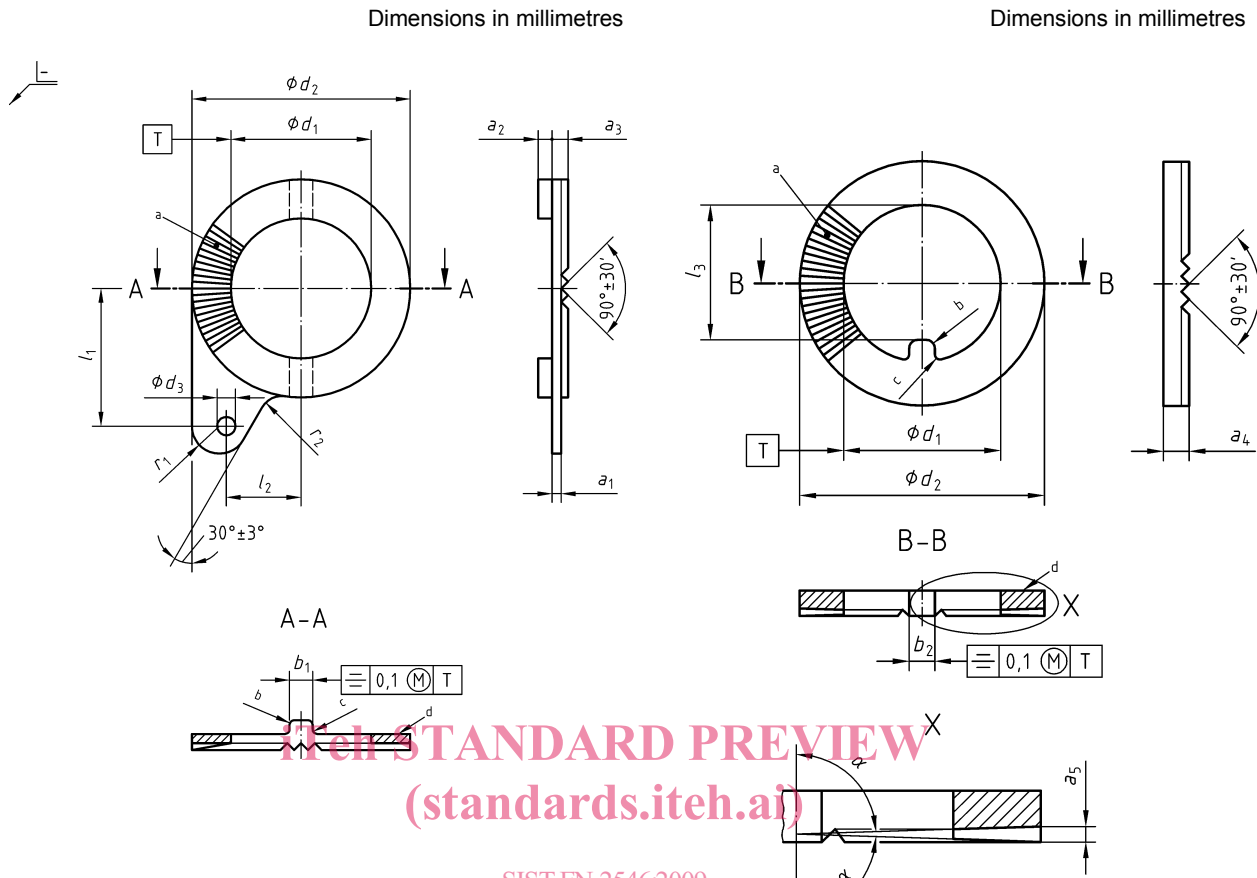
Steel according to EN 2540 or EN 2538 (inactive for new design).

**3.4 Surface treatment**

Passivation according to EN 2516.

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<sup>1)</sup> Published as AECMA Prestandard at the date of publication of this standard.



- a N equidistant serrations
- b R 0,5 to 0,8
- c R 0,3 to 0,5
- d Identification mark

- a N equidistant serrations
- b R 0,5 to 0,8
- c R 0,3 to 0,4
- d Identification mark

Figure 1 — Element for rod body side – Code A

Figure 2 — Element for rod end side – Code B

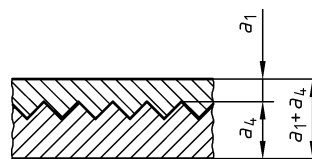


Figure 3 — Thickness of lock washer assembly

Table 1

Dimensions in millimetres

Diameter code	$d_1$	$d_2$	$d_3$	$a_1$	$a_2$	$a_3$	$a_4$	$(a_5)$	$b_1$	$b_2$	$l_1$	$l_2$	$l_3$	$r_1$	$r_2$
	$\pm 0,1$	$+0,5$ 0	$\pm 0,25$	$\pm 0,15$	$+0,15$ $-0,25$	$\pm 0,15$	$\pm 0,15$		$\pm 0,15$	$\pm 0,15$	$\pm 0,25$	$\pm 0,25$	$0$ $-0,15$	$\pm 0,15$	$\pm 0,15$
08	8,2	12,7	1,6	0,58	1,0	1,1	1,8	0,5	1,3	1,3	8,4	4,0	6,8	2,4	0,70
10	10,2	19,0		0,80		1,2	1,4	2,0	0,6	2,0	2,0	12,0	6,5		8,3
12	12,2														
14	14,2	22,0	1,8	0,86	1,5	1,6	2,3	0,7	2,9	2,9	13,0	8,8	12,5	2,7	1,45
16	16,3	25,4							3,0	3,0	14,7	10,0	14,0		

Table 2

Diameter code	N Number of serrations	$\alpha$		$a_1 + a_4$	Mass lock washer assembly
		min.	max.	mm	g
				$\pm 0,3$	$\approx$
08	42	87°21'	88°21'	2,38	1,8
10	50	87°42'	88°42'	2,80	6,0
12					4,5
14	56	89°20'	90°	3,10	5,8
16				3,16	9,6

## 4 Designation

EXAMPLE

Description block	Identity block
WASHER LOCK	EN2546A08

Number of this standard \_\_\_\_\_

Code for the lock washer (see Table 3) \_\_\_\_\_

Diameter code (see Table 1) \_\_\_\_\_

NOTE If necessary, the code I9005 shall be placed between the description block and the identity block.