



# SLOVENSKI STANDARD

## SIST EN 2948:2001

01-januar-2001

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**Aerospace series - Washers, tab, in heat resisting steel, passivated**

Aerospace series - Washers, tab, in heat resisting steel, passivated

Luft- und Raumfahrt - Sicherungsbleche mit Lappen, aus hochwarmfestem Stahl, passiviert

Série aérospatiale - Freins d'écrous, en acier résistant a chaud, passivés

**STANDARD PREVIEW**  
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**Ta slovenski standard je istoveten z: EN 2948:1996**

<https://standards.iteh.ai/catalog/standards/sist/00268fe7-088f-4fa5-b2c8-549c3dac06cc/sist-en-2948-2001>

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**ICS:**

49.030.50	Podložke in drugi blokirni elementi	Washers and other locking elements
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**SIST EN 2948:2001**

**en**

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EUROPEAN STANDARD

EN 2948

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 1996

ICS 49.040.20

Descriptors: aircraft industry, lock washer, heat resistant steel, specification, dimension, dimensional tolerance, designation, inspection, test

English version

### Aerospace series - Washers, tab, in heat resisting steel, passivated

Série aérospatiale - Freins d'écrous, en acier  
résistant à chaud, passivés

Luft- und Raumfahrt - Sicherungsbleche mit  
Lappen, aus hochwarmfestem Stahl, passiviert

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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.

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## CEN

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

**Foreword**

This European Standard has been prepared by the European Association of Aerospace Manufacturers (AECMA).

After inquiries 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of an identical text or by endorsement, at the latest by April 1997, and conflicting national standards shall be withdrawn at the latest by April 1997.

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

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Division of Standards  
ANALJQUJ

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-10- IDENTIFICATION NUMBER OF TURKISH



## 1 Scope

This standard specifies the characteristics of tab washers, in heat resisting steel, passivated, for maximum operating temperature 650 °C, for aerospace applications.

Their use under hexagon head bolts is conditional upon the user accepting the possibility of some interference.

## 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.

- EN 2000 Aerospace series - Quality assurance - EN aerospace products - Approval of the quality system of manufacturers
- EN 2175 Heat resisting steel FE-PA93-HT - Solution treated and precipitation treated - Sheets and strips  $a \leq 3$  mm - Aerospace series <sup>1)</sup>
- EN 2424 Aerospace series - Marking of aerospace products
- EN 2516 Aerospace series - Passivation of corrosion resistant steels and decontamination of nickel base alloys <sup>1)</sup>

[SIST EN 2948:2001](#)

- 3 Required characteristics** [itih.ai/catalog/standards/sist/00268fe7-088f-4fa5-b2c8-549c3dac06cc/sist-en-2948-2001](#)

### 3.1 Configuration - Dimensions - Masses

See figure 1 and table 1. Dimensions and tolerances are expressed in millimetres and apply after surface treatment.

### 3.2 Material

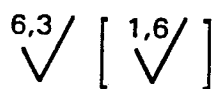
EN 2175

### 3.3 Surface treatment

EN 2516

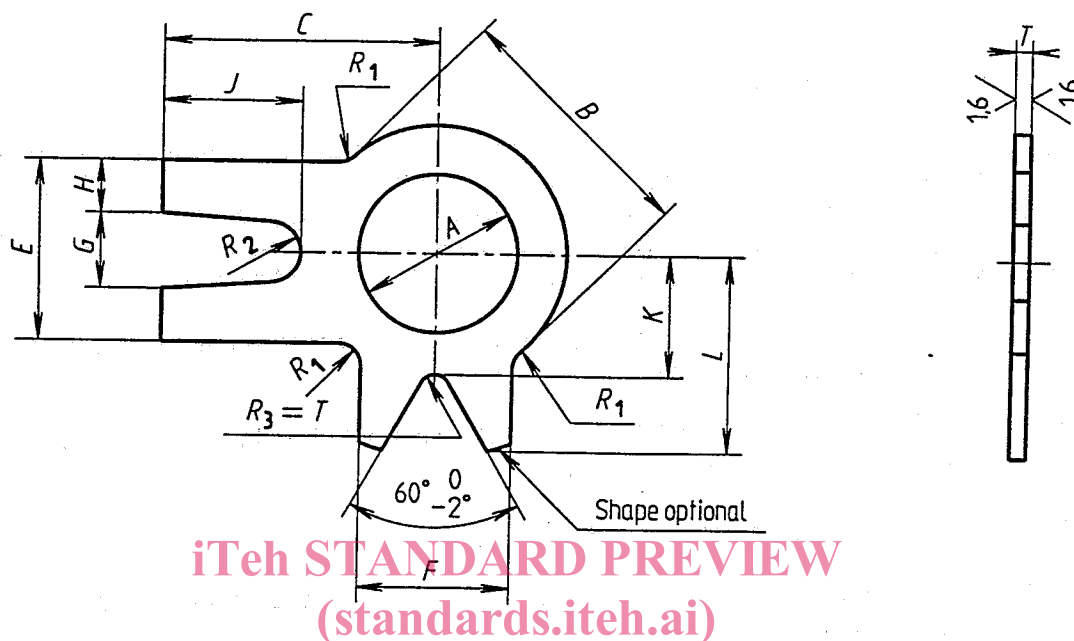
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1) Published as AECMA Standard at the date of publication of this standard



Values in micrometres apply prior to surface treatment.

Remove sharp edges 0,1 to 0,2



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Figure 1

SIST EN 2948:2001

<https://standards.iteh.ai/catalog/standards/sist/00268fe7-088f-4fa5-b2c8-549c3dac> Table 1 en-2948-2001

Diameter code	A H13	B	C	E	F	G	H13	J	K	L	R <sub>1</sub>	R <sub>2</sub>	T		Mass <sup>1)</sup>
													nom.	Tol.	
040	4,2	7	8	4	4,4	—	—	—	3,4	6	1	—	0,5	± 0,05	0,2
050	5,2	8	10	5	5	—	—	—	4	7		—			0,27
060	6,2	10	12	6	6	—	—	—	5	8	1,5	—	0,8	± 0,1	0,68
070	7,2	11		9											4,4
080	8,3	14	16	10	8	4,4	2,8	8	6,5	10,5	1,5	1,7	0,8	± 0,1	1,15
100	10,5	17	18	12	10		5	3,5	9	8					13
120	12,5	20	20	13	11	5	4	10	9	16	3	2	1	± 0,1	2,47
140	14,5	22	24	15	12		6	4,5	12	10,5					17
160	16,5	24	26		13	6			4,5	13	11,5	19	4	2,5	1
180	18,5	27	30	16	15		6	4,5		15	12,5	21	5		
200	21	30	32	18	16	7			5,5	16	14	23		6	3

<sup>1)</sup> Approximate values (kg: 1000 pieces), calculated on the basis of 7,85 kg/dm<sup>3</sup>, given for information purposes only

#### 4 Designation

EXAMPLE :

Description block	Identity block
TAB WASHER	EN2948-080
Number of this standard _____	
Diameter code (see table 1) _____	

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

#### 5 Marking

EN 2424, style G

#### 6 Inspections and tests

##### 6.1 Appearance

On visual examination, a number of tab washers, as given in table 2, shall be free from burrs, scratches and cracks.

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Table 2

Delivered quantity	Minimum quantity to be checked
< 1 000	1 % with three pieces min.
≥ 1 000 < 2 000	15
≥ 2 000 < 5 000	20
≥ 5 000	30

##### 6.2 Bend test

This test shall be carried out on 0,1 % of tab washers to be inspected, with a minimum of three parts.

Assemble the tab washers under normal operating conditions.

After the locking tabs have been folded and straightened twice, they shall be free from cracks.

#### 7 Quality assurance

EN 2000