



# SLOVENSKI STANDARD

## SIST EN 3902:2017

01-marec-2017

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**Aeronavtika - Podložke za zakovice iz aluminijeve litine, anodizirane, v metrskih merah**

Aerospace series - Washers for rivet assemblies, in aluminium alloy, anodized, metric series

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Ta slovenski standard je istoveten z: <sup>SIST EN 3902:2017</sup> **EN 3902:2016**  
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**ICS:**

49.025.20	Aluminij	Aluminium
49.030.50	Podložke in drugi blokirni elementi	Washers and other locking elements

**SIST EN 3902:2017**

**en,fr,de**

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EUROPEAN STANDARD

EN 3902

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2016

ICS 49.030.50

English Version

## Aerospace series - Washers for rivet assemblies, in aluminium alloy, anodized, metric series

Série aérospatiale - Rondelles pour assemblages par rivets, en alliage d'aluminium, anodisées, série métrique

Luft- und Raumfahrt - Scheiben für Nietverbindungen, aus Aluminiumlegierung, anodisiert, metrische Reihe

This European Standard was approved by CEN on 12 March 2016.

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-CENELEC 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-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

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## European foreword

This document (EN 3902:2016) 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 June 2017, and conflicting national standards shall be withdrawn at the latest by June 2017.

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.

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, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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**EN 3902:2016 (E)****1 Scope**

This European Standard specifies the characteristics of washers for rivet assemblies, in aluminium alloy, anodized, metric series, for maximum operating temperature 120 °C, for aerospace applications.

**2 Normative references**

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 2090, *Aerospace series — Aluminium alloy AL-P2024- — T3 — Clad sheet and strip —  $0,3 \text{ mm} \leq a \leq 6 \text{ mm}$*

EN 2091, *Aerospace series — Aluminium alloy 2024-T4 — Clad sheet and strip —  $0,4 \leq a \leq 6 \text{ mm}$  1)*

EN 2284, *Aerospace series — Sulphuric acid anodizing of aluminium and wrought aluminium alloys*

EN 2320, *Aerospace series — Aluminium alloy 2024-T4 — Drawn bar  $a \leq 75 \text{ mm}$  1)*

EN 2321, *Aluminium alloy 2024-T3 — Bars and sections  $a \leq 150 \text{ mm}$  — Aerospace series 1)*

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

EN 9100, *Aerospace series — Quality Management Systems — Requirements for Aviation, Space and Defence Organizations*

**3 Required characteristics**

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**3.1 Configuration - Dimensions - Masses**

[792e409b595f/sist-en-3902-2017](https://standards.iteh.ai/catalog/standards/sist/bdb999cb-1048-46dd-8cfa-792e409b595f/sist-en-3902-2017)

See Figure 1 and Table 1. Dimensions and tolerances are in millimetres and apply after surface treatment.

**3.2 Materials**

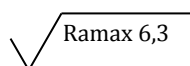
EN 2090, EN 2091, EN 2320 or EN 2321

**3.3 Surface treatment**

EN 2284B

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1) Published as ASD-STAN Standard at the date of publication of this standard by AeroSpace and Defence industries Association of Europe - Standardization (ASD-STAN) ([www.asd-stan.org](http://www.asd-stan.org))



values in micrometres apply prior to surface treatment.

Remove sharp edges 0,1 to 0,2.

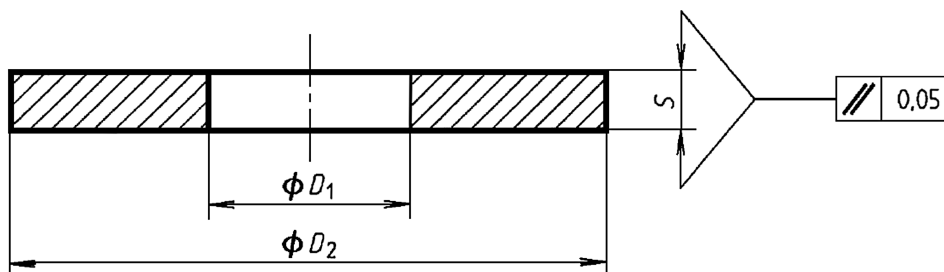


Figure 1

Table 1

Size code <sup>a</sup>	Corresponding rivet diameter for information	$\phi D_1$	$\phi D_2$	$S$	Mass <sup>c</sup>
	Nom.	H13	H14	$\pm 10\% \text{ }^b$	
015	1,6	1,8	5	0,8	0,038
020	2	2,2	6		0,055
025	2,5	2,7	8		0,100
030	3	3,2	9	1	0,156
035	3,5	3,7	10		0,190
040	4	4,2	12		0,278
050	5	5,2	15	1,6	0,696
060	6	6,2	18		0,968
080	8	8,2	24		1,789

<sup>a</sup> Corresponds to the nominal diameter.

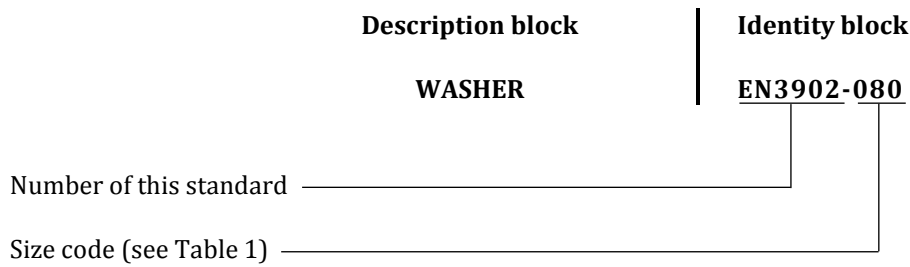
<sup>b</sup> Includes also the flatness tolerance.

<sup>c</sup> Approximate values (kg/1 000 pieces), calculated on the basis of 2,8 kg/dm<sup>3</sup>, for information purposes only.

EN 3902:2016 (E)

## 4 Designation

EXAMPLE



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

## 5 Marking

EN 2424, style G

## 6 Quality assurance

EN 9100

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