



**SLOVENSKI STANDARD**  
**SIST EN 6105:2016**

**01-november-2016**

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**Aeronavtika - Stojni vijak z ramo**

Aerospace series - Stud with shoulder

Luft- und Raumfahrt - Verschlussbolzen mit Bund

Série aérospatiale - Axe à épaulement

**Ta slovenski standard je istoveten z: EN 6105:2016**

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**ICS:**

49.030.20      Sorniki, vijaki, stebelni vijaki      Bolts, screws, studs

**SIST EN 6105:2016**

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EUROPEAN STANDARD

EN 6105

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 2016

ICS 49.030.20

English Version

## Aerospace series - Stud with shoulder

Série aérospatiale - Axe à épaulement

Luft- und Raumfahrt - Verschlussbolzen mit Bund

This European Standard was approved by CEN on 11 March 2016.

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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.

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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 6105:2016) 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of an identical text or by endorsement, at the latest by March 2017, and conflicting national standards shall be withdrawn at the latest by March 2017.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 6105:2016 (E)****1 Scope**

This European Standard specifies the dimensions, tolerances, required characteristics and mass of a stud for use in fuselage interior equipment and structural applications. This standard shall be used in conjunction with retaining washer per EN6090A01 (conform to EN 6090) and receptacles per EN 6092 or EN 6093.

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

EN 2516, *Aerospace series — Passivation of corrosion resistant steels and decontamination of nickel base alloys*

EN 4318, *Aerospace series — Heat resisting alloy FE-PA2601 (X6NiCrTiMoV26-15) — Solution treated and precipitation treated — bar and section,  $D_e \leq 100$  mm,  $R_m \geq 960$  MPa<sup>1)</sup>*

EN 6090, *Aerospace series — Washer, retaining<sup>1)</sup>*

EN 6092, *Aerospace series — Receptacle, floating, double lug<sup>1)</sup>*

EN 6093, *Aerospace series — Receptacle, floating, single lug<sup>1)</sup>*

EN 6094, *Aerospace series — Washer, spring, countersunk<sup>1)</sup>*

EN 6095, *Aerospace series — Rotary fasteners — Structural and non-structural applications — Technical specification<sup>1)</sup>*

ISO 2768-1, *General tolerances — Part 1: Tolerances for linear and angular dimensions without individual tolerance indications*

SAE-AMS 2700, *Passivation of corrosion resistant steels<sup>2)</sup>*

SAE-AMS 5629, *Steel, corrosion-resistant, bars, wire, forgings, rings and extrusions, 13Cr — 8.0Ni — 2.2Mo — 1.1Al, vacuum induction plus consumable electrode melted, solution heat treated, precipitation hardenable<sup>2)</sup>*

SAE-AMS 5737, *Steel, corrosion and heat-resistant, bars, wire, forgings and tubing 15Cr — 25.5Ni — 1.2Mo — 2.1Ti — 0.006B — 0.30V, consumable electrode melted, 1 650 °F (899 °C) solution and precipitation heat treated<sup>2)</sup>*

SAE-AS 8879, *Screw threads, UNJ profile, inch controlled radius root with increased minor diameter<sup>2)</sup>*

MIL-DTL-83488, *Coating, aluminum, high purity<sup>3)</sup>*

MIL-S-7742, *Screw threads, standard, optimum selected series: general specification for<sup>3)</sup>*

NASM 33781, *Recess, Offset cruciform, dimensions of recess, gage and driver for<sup>4)</sup>*

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

<sup>2)</sup> Published by: SAE International, 400 Commonwealth Drive, Warrendale, P.A., 15096-0001, USA

<sup>3)</sup> Published by: Department of Defense (DoD), the Pentagon, Washington, D.C., 20307, USA

<sup>4)</sup> Published by: Aerospace Industries Association of America, (AIA), 1250 Eye Street, N.W., Washington, D.C. 20005-3924, USA

### 3 Requirements

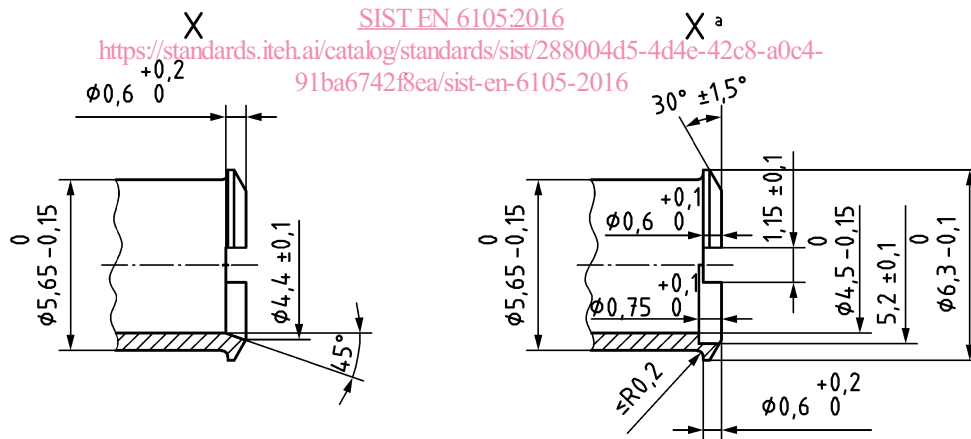
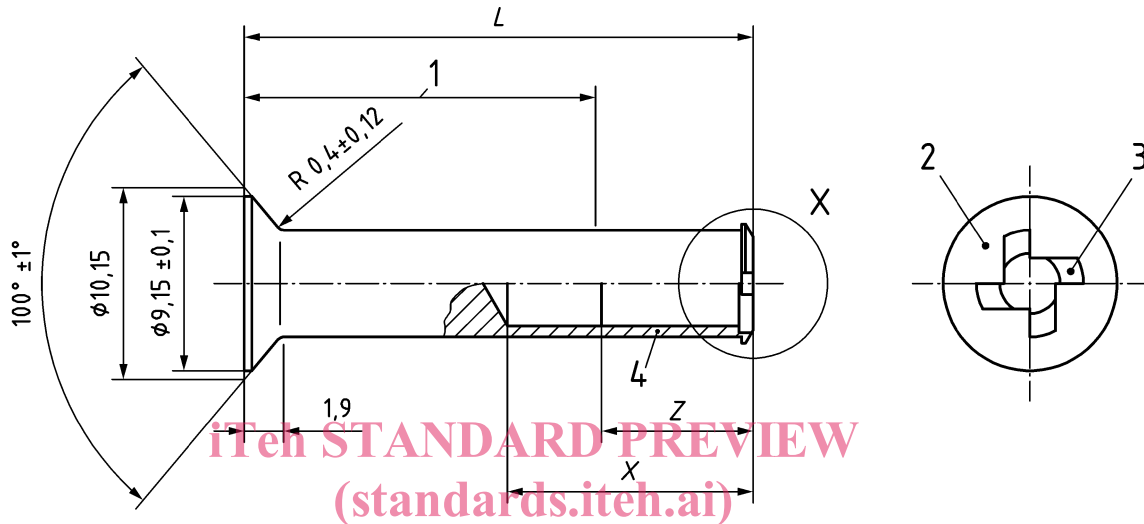
#### 3.1 Configuration, dimensions, tolerances and mass

The configuration, dimensions, tolerances and mass shall conform to Figure 1 and Table 2.

Dimensions and tolerances are expressed in millimetres.

Tolerances not specified shall be in accordance with ISO 2768-1. All dimensions and tolerances apply after surface treatment.

All burrs to be removed / sharp edges to be broken.



#### Key

- |   |                       |   |   |
|---|-----------------------|---|---|
| 1 | Grip range            | 3 | Recess no. 10 per NASM33781   |
| 2 | Marking, see Clause 5 | 4 | 0.1640-32UNJC-3B thread per SAE-AS8879, 2 lead or 0.1640-32UNC-3B thread per MIL-S-7742, 2 lead |
| a | Optional version      |   |   |

Figure 1 — Configuration, dimensions and tolerances

Table 1 — Dimensions, tolerances and mass

Size code	Grip range		L ± 0,25	X min.	Z +2,0 0	Mass (Ref) kg/1 000 pieces
	min.	max.				
010 <sup>a</sup>	3,81	4,59	10,92	8,0	5,0	1,63
015	4,60	6,39	11,71	9,0		1,70
020	6,40	7,35	12,70	9,8		1,83
030	7,36	9,15	14,48	11,4	7,0	2,04
040	9,16	10,90	16,26	12,0	13,0	2,31
050	10,91	12,70	18,03			2,55
060	12,71	14,50	19,81			2,91
070	14,51	16,25	21,59			3,26
080	16,26	18,00	23,37			3,62
090	18,01	19,80	25,15			3,97
100	19,81	21,60	26,92			4,30
110	21,61	23,38	28,70			4,66
120	23,39	25,16	30,48			5,01
130	25,17	26,93	32,26			5,37
140	26,94	28,72	34,04			5,70
150	28,71	30,50	35,82			6,06
160	30,51	32,29	37,60			6,42

<sup>a</sup> Not for new design

### 3.2 Material and surface treatment

See Table 2.

Table 2 — Material and surface treatment

Material	Surface treatment	Finish code
Corrosion resistant steel per SAE-AMS5629 H1050 or corrosion resistant steel per SAE-AMS5737 or heat resisting alloy per EN 4318 or equivalent	Passivated per SAE-AMS2700 or EN 2516	-
	IVD coating per MIL-DTL-83488 type II, class 3	V



### 3.3 Mechanical characteristics

#### 3.3.1 General

All mechanical characteristics are valid in conjunction with receptacles per EN 6092 and EN 6093 only.

#### 3.3.2 Static values

Ultimate tension load: 6 300 N.

NOTE Ultimate tension load of fastening system in combination with receptacle EN 6092 or EN 6093 is 6 000 N.

Ultimate shear load: 9 000 N.

#### 3.3.3 Installation torque

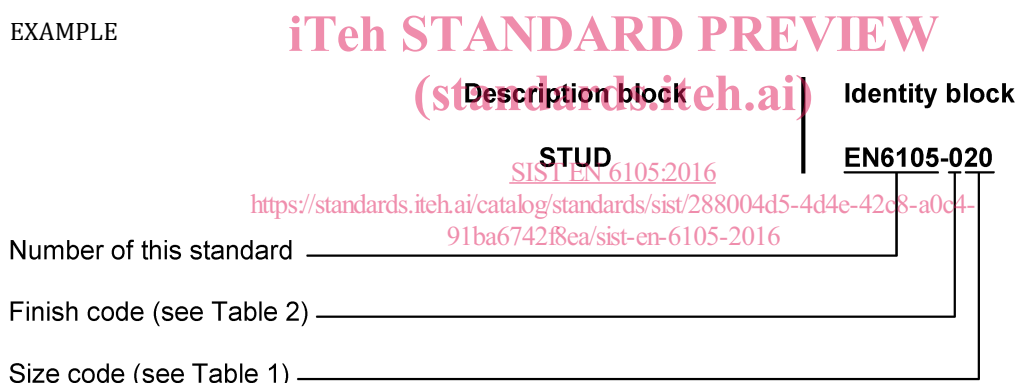
The installation torque with receptacles per EN 6092 and EN 6093 shall be 2,8 Nm to 3,2 Nm.

### 3.4 Operating temperature

This stud shall be used in the temperature range of -55 °C to 150 °C.

## 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 C.

## 6 Technical specification

EN 6095.