



SLOVENSKI STANDARD
oSIST prEN 6050:2023

01-maj-2023

Aeronavtika - Zatič, ozka toleranca, pritrdilni, 100° ugrezna glava, strižni tip, iz aluminijeve zlitine 7050, prevleke - Palčne mere

Aerospace series - Pin, close tolerance, swage locking, 100° countersunk reduced head, shear type, in aluminium alloy 7050, conversion coating - Inch series

Luft- und Raumfahrt - Passniete für Quetschverriegelung mit reduziertem Senkkopf 100°, für Scherbeanspruchung, aus Aluminiumlegierung 7050, Schmierfilm behandelt - Zoll-Reihe

Série aérospatiale - Rivets de précision, boulon serti, à tête fraisée 100° réduite, cisaillement-type, en alliage d'aluminium 7050, film sec - Série en inches

Ta slovenski standard je istoveten z: prEN 6050

ICS:

49.025.20	Aluminij	Aluminium
49.030.40	Zatiči, žblji	Pins, nails

oSIST prEN 6050:2023

en,fr,de

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

DRAFT
prEN 6050

March 2023

ICS 49.060

English Version

**Aerospace series - Pin, close tolerance, swage locking, 100°
countersunk reduced head, shear type, in aluminium alloy
7050, conversion coating - Inch series**

Série aérospatiale - Rivets de précision, boulon serti, à
tête fraisée 100° réduite, cisaillement-type, en alliage
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This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee ASD-STAN.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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<https://standards.iteh.ai/catalog/standards/sist/759624d0-9b32-4833-97ac-f54bc3c8fadf/osist-pren-6050-2023>

European foreword

This document (prEN 6050:2023) 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 document has received the approval of the National Associations and the Official Services of the member countries of ASD-STAN, prior to its presentation to CEN.

This document is currently submitted to the CEN Enquiry.

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prEN 6050:2023(E)**1 Scope**

This document specifies the characteristics of close tolerance pins, swage locking, 100° countersunk reduced head, shear type, in aluminium alloy 7050-T73 with chemical film, inch series, with a maximum operating temperature of 80 °C for aerospace application.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 2424, *Aerospace series - Marking of aerospace products*

EN 6051,¹ *Aerospace series — Collar, swage locking, shear type, in aluminium alloy 3003, conversion coating — Inch series*

EN 6052¹, *Aerospace series - Rivet-collar-system, aluminium alloy, shear type, inch series - Technical Specification*

EN 6054¹, *Aerospace series — Collar, swage locking, shear type, in aluminium alloy 6061, conversion coating — Inch series*

MIL-C-5541E,² *Chemical Conversion Coatings on Aluminium and Aluminium Alloys*

MIL-L-87132B², *Lubricant, CETYL Alcohol, 1-Hexadecanol, Application to Fasteners*

FED-SPEC QQ-A-430,³ *Aluminium Alloy Rod and Wire; for Rivets and Cold Heading*

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <http://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

4 Requirements**4.1 Configuration, dimensions, tolerances and mass**

The configuration, dimensions, tolerances and mass shall conform to Figure 1 and Table 1, Table 2 and Table 5. Dimensions and tolerances are expressed in millimetres.

Pins with diameter code 040 shall be used in combination with collars as per EN 6051 only.

Pins with diameter code 050 shall be used in combination with collars as per EN 6054 only.

Values apply before lubrication.

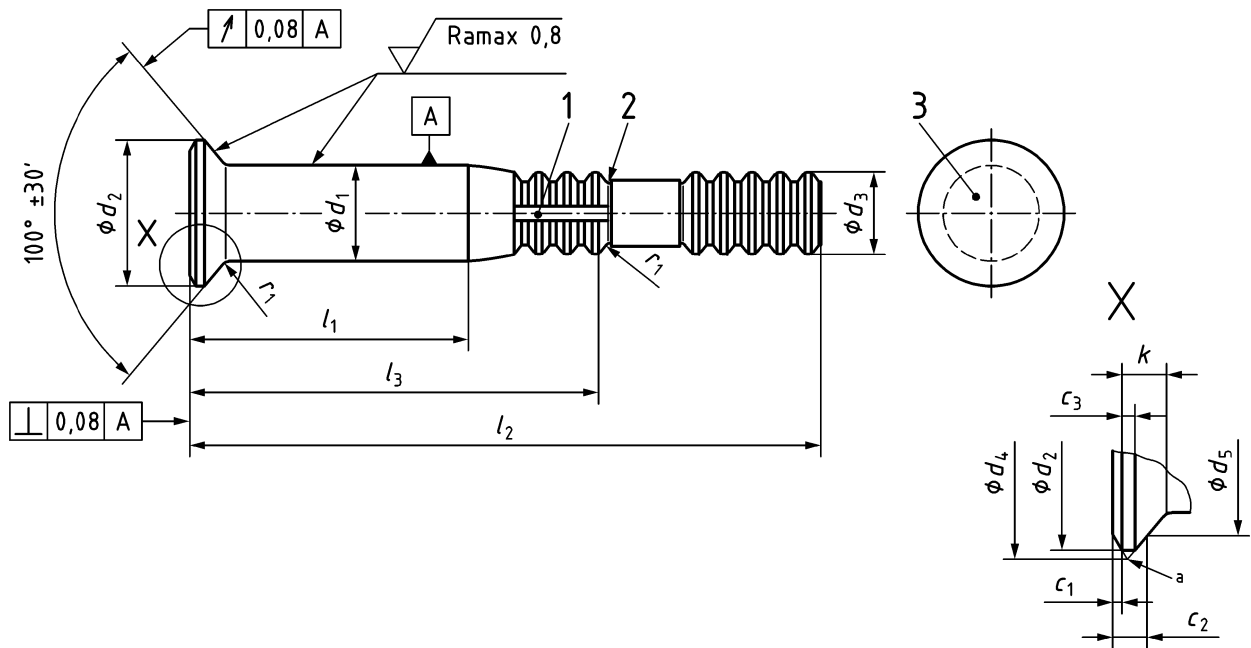
¹ Published as ASD-STAN-Standard at the date of publication of this standard by AeroSpace and Defence Industries Association of Europe – Standardization (ASD-STAN) (www.asd-stan.org).

² Published by: Department of Defense (DoD), the Pentagon, Washington, D.C., 20301, USA.

³ Published by: Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402, USA

Underhead and shank Ramax 0,8.

All other surfaces Ramax 3,2.



Key

- 1 Sealant escape groove: Code letter G. Form of sealant escape groove straight or diagonal at manufacturer's option
- 2 Predetermined breaking point
- 3 Marking, see Clause 5.
- a Theoretical intersection of crown radius and head angle

Figure 1 — Configuration, dimensions and tolerances

Table 1 — Dimensions, tolerances and mass

Diameter code	$d_{1^{a,b}}$	d_2	d_3	d_4	d_5	c_1	c_2		c_3	k	r_1		r_2
	f7 ^c	min.	max.	Nominal	±0,003	Ref.	max.	min.	max.	Nominal	max.	min.	max.
040	4,140	5,718	3,962	6,226	5,149	0,089	0,577	0,505	0,279	0,874	0,635	0,381	1,981
	4,153												
050	4,801	6,982	4,674	7,541	6,198	0,114	0,719	0,638	0,330	1,148	0,762	0,508	2,337
	4,813												

^a Underfill permissible, but shall be within ϕd_1 when measured with a standard 6,35 mm diameter micrometer.
^b Requirement for shank straightness: Maximum deviation of 0,004 mm/mm of pin length.
^c ANSI B32.100

Table 2 — Dimensions, tolerances and mass

Grip length code	Grip length		$l_1^{a,b}$ $\pm 0,12$ 7	Diameter code 040			Diameter code 050		
	min.	max.		l_2^b +1,5 -0	l_3^b $\pm 0,25$ 4	Mass ^c kg/1 000 pieces	l_2^b +1,5 -0	l_3^b $\pm 0,254$	Mass ^c kg/1 000 pieces
020	1,60	3,18	3,18	24,69	7,49	0,290	26,54	7,54	0,419
030	3,18	4,78	4,78	26,29	9,09	0,350	28,65	9,14	0,500
040	4,78	6,35	6,35	29,46	10,67	0,411	31,83	10,72	0,582
050	6,35	7,92	7,92	32,64	12,24	0,471	35,00	12,29	0,663
060	7,92	9,53	9,53	35,81	13,84	0,532	38,18	13,89	0,744
070	9,53	11,13	11,13	38,99	15,44	0,592	41,35	15,49	0,826
080	11,13	12,70	12,70	42,16	17,02	0,653	44,53	17,07	0,907
090	12,70	14,27	14,27	45,34	18,59	0,713	47,70	18,64	0,988
100	14,27	15,88	15,88	48,51	20,19	0,774	50,88	20,24	1,070

a Dimension l_1 is measured up to the end of full cylindrical portion of shank.
b Dimensions l_1 , l_2 and l_3 are measured from the theoretical intersection of the crown radius and head angle.
c Installed mass without collar.

4.2 Material and surface treatment

According to Table 3.

Table 3 — Material and surface treatment

Code	Material	Shear strength	Surface treatment	Lubricant
A	Aluminium alloy 7050-T73 as per QQ-A-430	283 MPa to 324 MPa	Chemical film per MIL-C-5541E class 1A (gold chromate)	Cetyl alcohol lubrication per MIL-L-87132B, grade B

4.3 Mechanical properties

Mechanical properties shall be according to Table 4.

Table 4 — Mechanical properties

Diameter code	Minimum double shear kN	Collar part number	Minimum ultimate tensile strength with listed collar kN	Minimum preload kN
040	7,62	EN 6051-040A	2,20	1,00
050	10,25	EN 6054-050A	3,34	1,45

4.4 Pin version

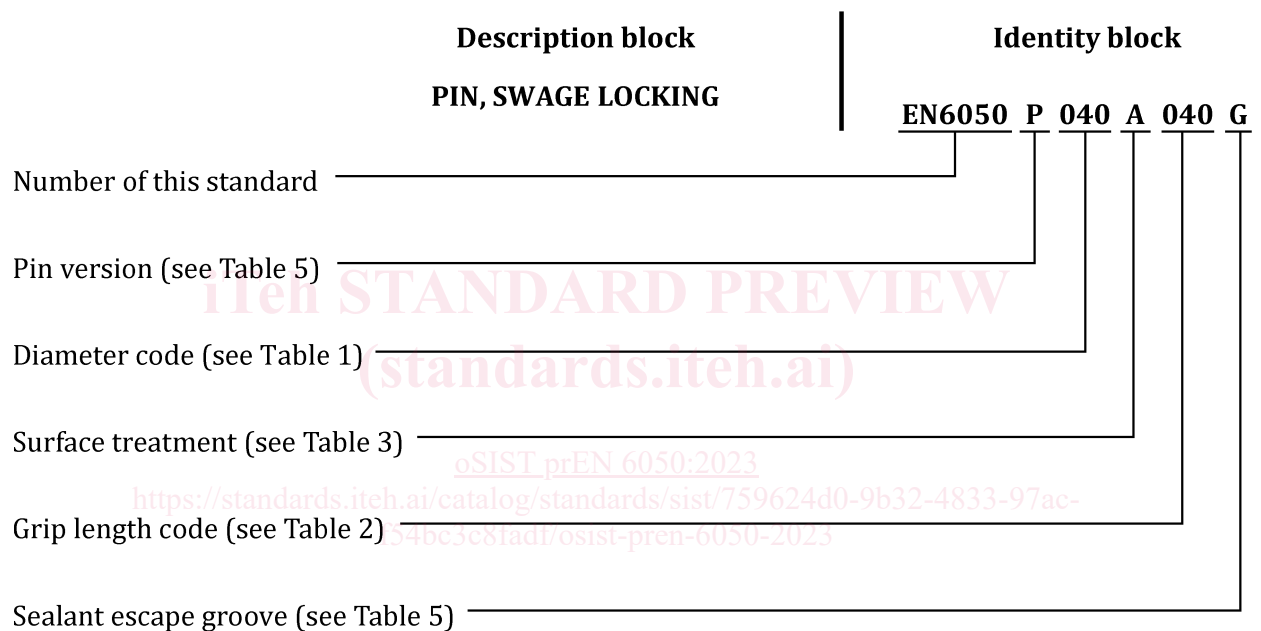
Pin versions shall be according to Table 5.

Table 5 — Pin version

Code	Pin version
G	With sealant escape groove (see Figure 1)
P	With pintail, “Pull-type” (see Figure 1)

5 Designation

EXAMPLE



If necessary, the code I9005 shall be placed between the description block and the identity block.
Example of part numbering in accordance with ATA iSpec 2200 (15 character rule).

6 Marking

Shall be according to EN 2424, style F or P, depressed 0,15 mm max. depth.

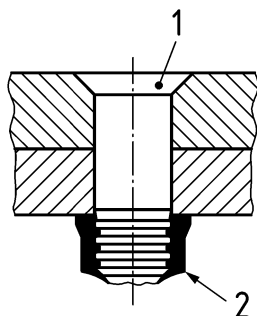
7 Technical specification

Shall be according to EN 6052.

8 Example of installation

See Figure 2.

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**Key**

- 1 Pin EN 6050 (installed condition)
- 2 Collar EN 6051 or EN 6054 (installed condition)

Figure 2 — Example of installation

9 Quality Management System

Product Standard: The manufacturer's operations shall be an approved production organization for aerospace products and shall demonstrate that it has implemented and is able to maintain a quality management system (e.g. according to EN 9100 or an equivalent aerospace accepted and established quality management system).

Specification: The qualification procedure for aerospace standard products (e.g. according to EN 9133 or an equivalent aerospace accepted and established qualification procedure) shall be used and documented according to the specified tests if not otherwise agreed between customer and supplier.

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