



SLOVENSKI STANDARD

SIST EN 6080:2016

01-november-2016

Aeronavtika - Kovice, 100° ugrezna glava, ozka toleranca - Colska izvedba

Aerospace series - Rivet, 100° normal flush head, close tolerance - Inch series

Luft- und Raumfahrt - Vollniet, 100° Normaler Senkkopf, enge Toleranz - Zoll-Reihe

Série aérospatiale - Rivets de précision, 100° tête fraisée normale - Série en inches

Ta slovenski standard je istoveten z: EN 6080:2016

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ICS:

49.030.60 Kovice Rivets

SIST EN 6080:2016 **en,fr,de**

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EUROPEAN STANDARD

EN 6080

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 2016

ICS 49.030.60

English Version

Aerospace series - Rivet, 100° normal flush head, close tolerance - Inch series

Série aérospatiale - Rivets de précision, 100° tête
fraisée normale - Série en inches

Luft- und Raumfahrt - Vollniet, 100° Normaler
Senkkopf, enge Toleranz - Zoll-Reihe

This European Standard was approved by CEN on 2 January 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 6080:2016) 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 European 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of an identical text or by endorsement, at the latest by March 2017, and conflicting national standards shall be withdrawn at the latest by March 2017.

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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 6080:2016 (E)

1 Scope

This European Standard specifies the dimensions, tolerances and masses of rivets with 100° normal flush head, close tolerance, inch series, for aerospace application.

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 2115, *Aerospace series — Aluminium alloy 2117-T42 — Wire for solid rivets — $D \leq 10$ mm* ¹⁾

EN 2116, *Aerospace series — Aluminium alloy 2017A-T42 — Wire for solid rivets — $D \leq 10$ mm* ²⁾

EN 2117, *Aerospace series — Aluminium alloy AL-P5056A (5056A)-H32 — Wire for solid rivets — $D \leq 10$ mm* ²⁾

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

EN 2941, *Aerospace series — Nickel alloy rivets — Technical specification* ³⁾

EN 3115, *Aerospace series — Aluminium alloy 7050-T73 — Wire for solid rivets — $D \leq 10$ mm* ³⁾

EN 4372, *Aerospace series — Heat resisting nickel alloy with copper NI-PD9001 (NiCu31) — Wire for solid rivets — $D \leq 10$ mm* ³⁾

EN 6101, *Aerospace series — Rivet, 100° medium flush head, close tolerance — Inch series* ³⁾

EN 6104, *Aerospace series — Rivets, solid, in aluminium or aluminium alloy — Inch series — Technical specification* ³⁾

EN 6118, *Aerospace series — Process specification — Aluminium base protection for fasteners* ¹⁾

ISO 8080, *Aerospace — Anodic treatment of titanium and titanium alloys — Sulfuric acid process*

SAE AMS 4982, *Titanium alloy wire 44.5 Cb* ⁴⁾

MIL-A-8625, *Anodic coatings for aluminum and aluminum alloys* ⁵⁾

MIL-C-5541, *Chemical conversion coatings on aluminium and aluminium alloys* ⁵⁾

NAS 527, *Inspection procedure for flush fasteners* ⁶⁾

NASM 5674, *Rivets, structural, aluminium alloy, titanium columbium alloy, general specification for* ⁶⁾

¹⁾ In preparation at the date of publication of this European Standard.

²⁾ Published as ASD-STAN standard at the date of publication of this European Standard.

³⁾ Published as ASD-STAN Prestandard at the date of publication of this European Standard.

⁴⁾ Published by: Society of Automotive Engineers (SAE), 400 Commonwealth Drive, Warrendale, PA 15096-0001.

⁵⁾ Published by: Department of Defense (DoD), the Pentagon, Washington, D.C. 20301.

⁶⁾ Published by: Aerospace Industries Association of America, Inc. (AIA), 1250 Eye Street, N.W., Washington, D.C. 20005-3924, USA

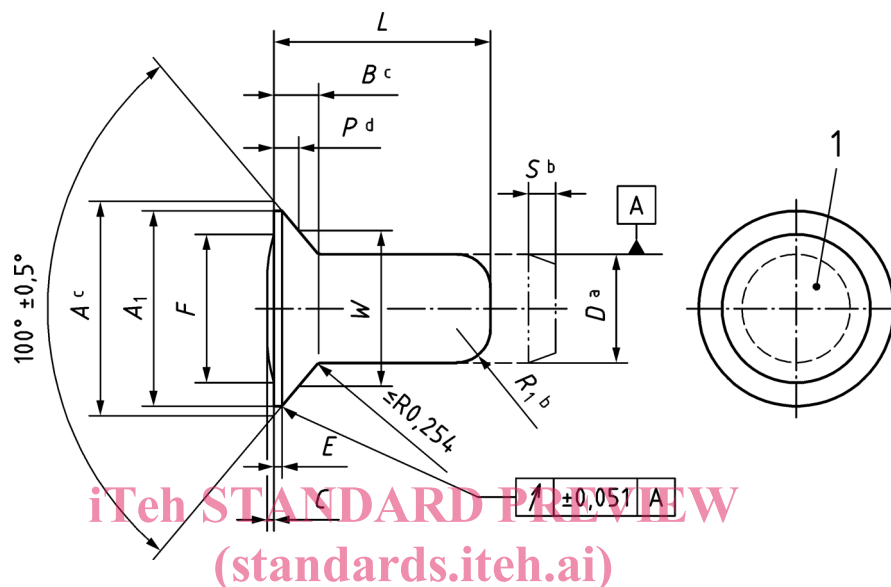
3 Requirements

3.1 Configuration, dimensions, tolerances and masses

The configuration shall conform with Figure 1.

The dimensions, tolerances and masses shall conform with Figure 1 and Tables 1, 2 and 3.

Dimensions and tolerances are expressed in millimetres.



Key

- 1 marking (see Clause 5)
- a 0,025 mm increase of shank diameter is permissible within 2,54 mm of the base of the head.
- b Chamfered ends with radius R_1 dimensions or a 20° chamfer to dimensions S .
- c Maximum head diameters are to theoretical sharp corners as measured by projection.
- d Head protrusion shall be tested in accordance with NAS 527.

Figure 1 — Configuration

3.2 Material and surface treatment

See Table 4.

Table 1 — Dimensions and tolerances

Diameter code	D	A		A ₁	B	C	E	F	P		R ₁	S	W	
	+0,03 -0,03	max.	min.	min.	Ref.	+0,05 0		±0,13	max.	min.	±0,25	±0,25	max.	min.
2	Use rivets according to EN 6101													
3														
4														
5	3,97	7,25	7,15	6,79	1,35	0,08	0,08 to 0,15	5,29	0,706	0,650	1,24	0,99	5,588	5,583
6	4,76	8,95	8,85	8,49	1,74	0,10		6,55	0,899	0,839	1,50	1,19	6,833	6,827
7	5,56	10,55	10,45	10,09	2,07			7,73	1,068	1,005	1,75	1,37	8,033	8,027
8	6,36	12,10	12,00	11,64	2,39			8,88	1,227	1,161	1,98	1,57	9,208	9,202
10	7,93	14,35	14,25	13,89	2,67			10,54	1,371	1,302	2,49	1,98	11,119	11,111
12	9,53	17,65	17,55	17,19	3,39			13,05	1,682	1,608	2,97	2,39	13,684	13,676

Table 2 — Length code and masses

Length ^{a,b}		Diameter code							
		2	3	4	5 ^c	6	7	8	10
code	L ± 0,254	Mass ^d kg/ 1 000 parts							
03	4,76	-	-	-	-	-	-	-	-
04	6,35	-	-	-	-	-	-	-	-
05	7,94	0,32	0,47	-	-	-	-	-	-
06	9,53	0,37	0,55	0,77	-	-	-	-	-
07	11,11	0,43	0,63	0,88	1,17	-	-	-	-
08	12,70	0,49	0,71	0,99	1,32	-	-	-	-
09	14,29	0,54	0,79	1,10	1,46	2,31	-	-	-
10	15,88	0,60	0,87	1,21	1,60	2,53	3,82	-	-
12	19,05	0,71	1,03	1,42	1,88	2,98	4,46	-	-
14	22,23	0,82	1,19	1,64	2,17	3,42	5,10	-	-
16	25,40	0,93	1,35	1,86	2,45	3,86	5,74	-	-
18	28,58	1,04	1,51	2,08	2,74	4,30	6,38	-	-
20	31,75	1,15	1,67	2,29	3,02	4,74	7,02	-	-
22	34,93	1,26	1,83	2,51	3,30	5,18	7,66	-	-
24	38,10	1,38	1,99	2,73	3,59	5,62	8,30	-	-
28	44,45	1,60	2,31	3,16	4,16	6,50	9,58	-	-
32	50,80	1,82	2,63	3,60	4,72	7,38	10,86	-	-
40	63,50	-	-	4,47	5,86	9,16	13,42	-	-
48	76,20	-	-	-	7,00	10,91	15,98	-	-

Use rivets according to EN 6101

^a Intermediate lengths can be created, e.g. 11/16 inch (11,2 mm) corresponds to length code 11.
^b Additional 0,8 mm (1/32 inch) length increments may be obtained by adding code 5 after last digit of part number.
^c Valid also for 5X
^d Mass based on aluminium alloy with a density of 2,79 kg/dm³, refer to Table 3 for conversion factors.

Table 3 — Oversize

Diameter code ^a	D Nominal diameter +0,03 -0,03	A		A ₁	B	C	E	F	P		R ₁	S	W	
		max.	min.	min.	Ref.	+0,05 0	Ref.	±0,13	max.	min.	±0,25	±0,25	max.	min.
5X	4,37	7,25	7,15	6,79	1,19	0,8	0,08 to 0,15	5,29	0,706	0,650	1,24	0,99	5,588	5,583

^a (.015625 inch oversize shank 0,396 mm)

Table 4 — Material code

Diameter code										Surface treatment (Code see Clause 4)	Density kg/dm ³	Multiplier of mass (see Table 2)	Material code		
2	3	4	5	6	7	8	10	12	Material						
Use rivets according to EN 6101	Aluminium alloy 2117-T4 per EN 2115				-						Yellow chromated per MIL-C-5541, class 1A	Anodized per MIL-A-8625, type II, class 1, clear	2,75	0,98	AD
	Aluminium alloy 2017A-H13 per EN 2116												2,79	1	D
	Aluminium alloy 5056A-H32 per EN 2117											2,64	0,95	B ^a	
	Aluminium alloy AL-P7050 per EN 3115											2,82	1,01	KE	
	Heat resisting alloy NI-PD9001 (NiCu31) per EN 4372, annealed at T ≥ 860 °C, for ≥ 10 min / air										none	8,85	3,17	N	
	Titanium alloy 44.5 Cb heat treat: annealed per AMS 4982										anodized per ISO 8080	5,8	2,08	T	
										IVD per EN 6118	V				

^a Not for new design.