



SLOVENSKI STANDARD
SIST EN 2811:2017
01-marec-2017

Aeronavtika - Matice, šestrobe, kronske, jeklene, kadmirane - Klasifikacija: 1100 MPa/235 °C

Aerospace series - Nuts, hexagon, slotted/ castellated in steel cadmium plated - Classification: 1 100 MPa/235 °C

Luft- und Raumfahrt - Flache Kronenmuttern aus Stahl, verkadmet - Klasse: 1 100 MPa/235 °C

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Série aérospatiale - Écrous hexagonaux à créneaux en acier cadmié - Classification: 1 100 MPa/235 °C

[SIST EN 2811:2017](https://standards.iteh.ai/catalog/standards/sist/9a433894-3c96-4915-8ab9-c00abc045a3d/sist-en-2811-2017)

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Ta slovenski standard je istoveten z: EN 2811:2016

ICS:

49.030.30 Matice

Nuts

SIST EN 2811:2017

en,fr,de

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EUROPEAN STANDARD

EN 2811

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2016

ICS 49.030.30

English Version

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This European Standard was approved by CEN on 4 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.

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

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European foreword

This document (EN 2811:2016) 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 2811:2016 (E)**1 Scope**

This European Standard specifies the characteristics of steel, cadmium plated hexagonal nuts, with an upper portion slotted or castellated normal height, normal across flats.

These nuts are intended for use in aircraft assemblies subjected principally to shear loading.

They are intended to be used with threaded parts of 1 100 MPa ¹⁾ tensile strength classification and split pins to EN 2367.

The cadmium plating restricts the application to temperatures not exceeding 235 °C.

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 2133, *Aerospace series — Cadmium plating of steels with specified tensile strength $\leq 1\,450$ MPa, copper, copper alloys and nickel alloys*

EN 2205, *Aerospace series — Steel FE-PL 1502 (25CrMo4) — $900\text{ MPa} \leq R_m \leq 1\,100\text{ MPa}$ — Bars — $D_e \leq 40\text{ mm}$*

EN 2367, *Aerospace series — Split pins in steel EN 2573*

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

EN 2438, *Aerospace series — Steel FE-PL2102 (35NiCr6) — $900\text{ MPa} \leq R_m \leq 1\,100\text{ MPa}$ — Bars — $D_e \leq 40\text{ mm}$*

EN 2444, *Steel FE-PL 711 — $900\text{ MPa} \leq R_m \leq 1\,100\text{ MPa}$ — Bars and wires $D_e \leq 45\text{ mm}$ — Aerospace series ²⁾*

EN 2448, *Aerospace series — Steel FE-PL1503 (35CrMo4) — $900\text{ MPa} \leq R_m \leq 1\,100\text{ MPa}$ — Bars — $D_e \leq 40\text{ mm}$*

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

EN 9133, *Aerospace series — Quality Management Systems — Qualification Procedure for Aerospace Standard Products*

ISO 7313, *Aircraft — High temperature convoluted hose assemblies in polytetrafluoroethylene (PTFE)*

1) This strength level applies at ambient temperature.

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

ISO 4147, Aerospace — Nuts, hexagonal, slotted (castellated), normal height, normal across flats, with MJ threads, classifications: 600 MPa (at ambient temperature)/120 degrees C, 600 MPa (at ambient temperature)/235 degrees C, 900 MPa (at ambient temperature)/425 degrees C, 1 100 MPa (at ambient temperature)/235 degrees C, 1 100 MPa (at ambient temperature)/315 degrees C, 1 100 MPa (at ambient temperature)/650 degrees C, 1 210 MPa (at ambient temperature)/730 degrees C, 1 250 MPa (at ambient temperature)/235 degrees C and 1 550 MPa (at ambient temperature)/600 degrees C — Dimensions

ISO 5855-1, Aerospace — MJ threads — Part 1: General requirements

ISO 5855-2, Aerospace — MJ threads — Part 2: Limit dimensions for bolts and nuts

ISO 8788, Aerospace — Nuts, metric — Tolerances of form and position

ISO 9139, Aerospace — Nuts, plain or slotted (castellated) — Procurement specification

3 Required characteristics

3.1 Configuration - Dimensions - Masses

Configuration shall be in accordance to the Figure 1 the dimensions ³⁾ and tolerances shall conform to the Figure 1 and Table 1 and are applicable after cadmium plating. Tolerances of form and position are in conformity with ISO 8788.

3.2 Surface roughness

See Figure 1. The values apply prior to cadmium plating. They do not apply to the thread where the surface roughness will be as achieved by normal methods of manufacture.

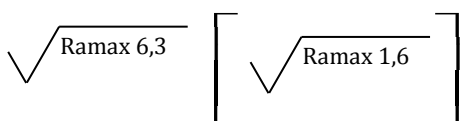
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3.3 Materials <https://standards.iteh.ai/catalog/standards/sist/9a433894-3c96-4915-8ab9-c00abc045a3d/sist-en-2811-2017>

Steel EN 2205 or EN 2438 or EN 2444 or EN 2448.

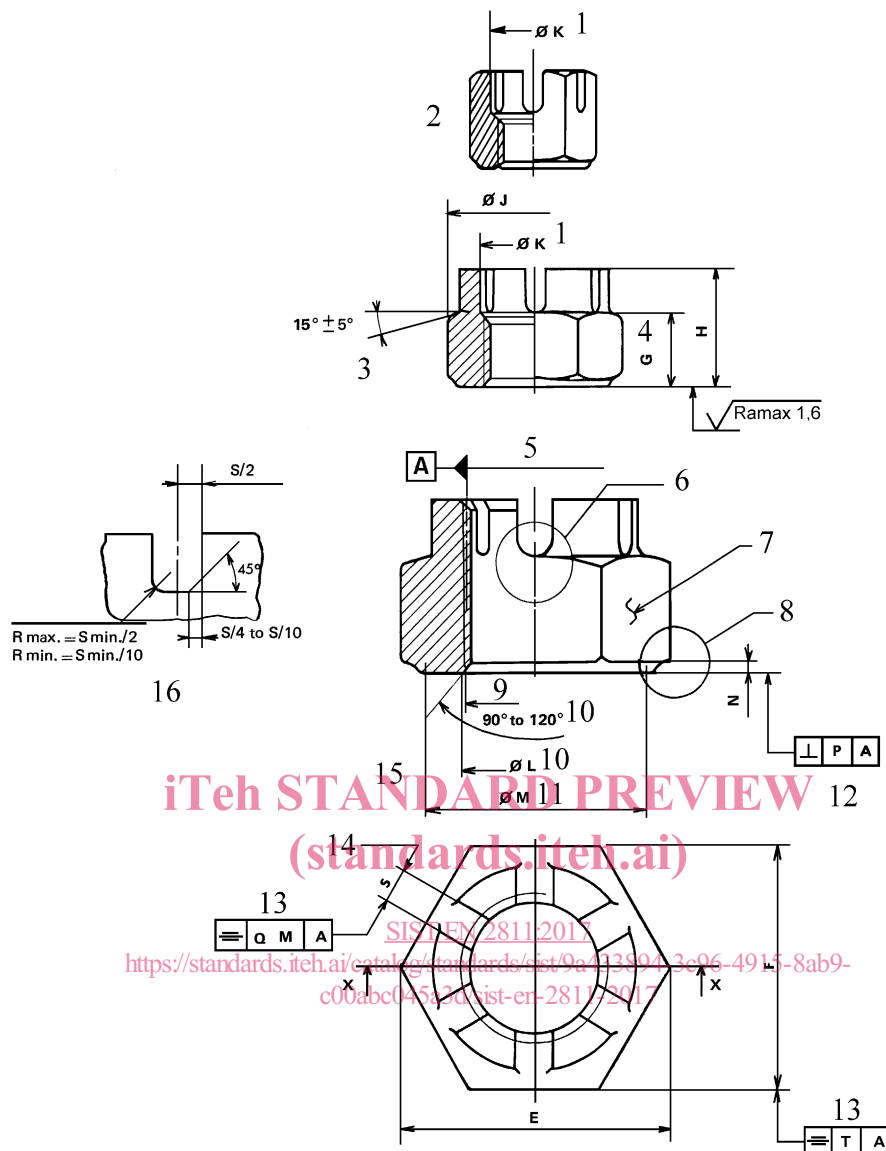
3.4 Surface treatment

Cadmium plating EN 2133, 5 µm minimum on the threads on all areas which can be contacted by a 20 mm diameter ball. On all other areas, a continuous deposit shall be present but no minimum value is specified.



Break sharp edges 0,1 mm to 0,4 mm.

3) Conform to ISO 4147.



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Key

- | | | | |
|---|--|----|--|
| 1 | Tooling marks are permissible in this areas | 9 | Thread |
| 2 | Half section XX: form for diameter code 040, 050 | 10 | This dimension also applies to the upper chamfer. All forms of entry (chamfer or radius) optional within these limiting dimensions |
| 3 | Half section XX: form for diameter code 060, 070 | 11 | Diameter M may be tangential to, but shall not intrude on the flats |
| 4 | Dimension G applies to: <ul style="list-style-type: none"> - height below slots (diameter codes 040 to 200) - height of flats (diameter codes 060 to 200) - bottom of counterbore (diameter codes 040 to 070) | 12 | Bearing surface may be flat to concave, but shall not be convex |
| 5 | Pitch diameter | 13 | Three (3) places |
| 6 | See detail Y | 14 | Six (6) slots |
| 7 | Part marking in this zone | 15 | Half section XX: form for diameter code 080, 200 |
| 8 | Form of contour within limiting dimensions at manufacturer's option | 16 | Detail Y: Form (radius or chamfer) at bottom of slot at manufacturer's option |

Figure 1

Table 1 — Dimensions and mass

Dimensions in millimetres

Diameter code	Thread ^a	E min.	F		G ± 0,25	H ± 0,25	J ± 0,25	K H15
			Nom.	Tol.				
040	MJ 4 x 0,7 – 4H6H	7,6	7	h12	3,0	5	–	4
050	MJ 5 x 0,8 – 4H6H	8,7	8		3,75	6,2	–	5
060	MJ 6 x 1 – 4H5H	10,9	10	h13	4,5	6,9	9	6
070	MJ 7 x 1 – 4H5H	12,0	11		5,25	8,1	10	7
080	MJ 8 x 1 – 4H5H	14,3	13		6,0	8,8	11	–
100	MJ10 x 1,25 – 4H5H	18,9	17		7,5	11,1	13	–
120	MJ12 x 1,25 – 4H5H	21,1	19		9,0	12,6	16	–
140	MJ14 x 1,5 – 4H5H	24,5	22		10,5	14,9	18	–
160	MJ16 x 1,5 – 4H5H	26,8	24		12,0	16,4	22	–
180	MJ18 x 1,5 – 4H5H	30,2	27		13,5	18,7	25	–
200	MJ20 x 1,5 – 4H5H	33,6	30		15,0	20,2	28	–

^a In conformity with ISO 5855 - Parts 1 and 2.

L		M	N	P	Q	S	T	Mass kg/ 1 000 pieces max.	max. diameter of split pin. Reference
max.	min.	min.	0 – 0,3			H14			
4,8	4,2	6,4	0,5	0,10	0,2	1,3	0,3	1,3	1,0
5,8	5,2	7,4	0,5	0,10	0,2	1,7		1,8	1,4
7,1	6,3	9,3	0,5	0,10	0,2	1,7		2,8	1,4
8,1	7,3	10,2	0,5	0,10	0,2	2,1	0,36	3,8	1,8
9,1	8,3	12,2	0,5	0,10	0,2	2,1		5,6	1,8
11,1	10,3	16,0	0,6	0,13	0,25	2,6		11,5	2,3
13,1	12,3	18,0	0,6	0,13	0,25	2,6	0,43	16	2,3
15,2	14,4	21,0	0,6	0,15	0,25	3,2		24,5	2,9
17,2	16,4	23,0	0,6	0,18	0,3	3,2		33,5	2,9
19,2	18,4	26,0	0,6	0,18	0,3	4,0		48,5	3,7
21,2	20,4	29,0	0,6	0,18	0,3	4,0	0,52	66	3,7