



SLOVENSKI STANDARD
SIST EN 3226:2009

01-oktober-2009

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Nuts, hexagon, plain, normal height, normal across flats, steel, cadmium plated -
Classification 1100 MPa/235 degrees C

Sechskantmuttern mit normaler Schlüsselweite, aus Stahl, verkadmet; Klasse: 1100
MPa/235 °C

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Ecrous hexagonaux, ordinaires, hauteur normale, à surplat normal, en acier, cadmiés -
Classification 1100 MPA/235 degrés C

<https://standards.iteh.ai/catalog/standards/sist/7d86f985-73dd-4509-82cd-6e7c7d50f7ff/sist-en-3226-2009>

Ta slovenski standard je istoveten z: EN 3226:2009

ICS:

49.030.30 Matice Nuts

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EUROPEAN STANDARD

EN 3226

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 2009

ICS 49.030.30

English Version

Nuts, hexagon, plain, normal height, normal across flats, steel, cadmium plated - Classification 1 100 MPa/235 °C

Ecrous hexagonaux, ordinaires, hauteur normale, à surplat
normal, en acier, cadmiés - Classification 1 100 MPa/235
°C

Luft- und Raumfahrt - Sechskantmuttern mit normaler
Schlüsselweite, aus Stahl, verkadmet; Klasse: 1 100
MPa/235 °C

This European Standard was approved by CEN on 27 June 2009.

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 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 Management Centre has the same status as the official versions.

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

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Foreword

This document (EN 3226:2009) 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 February 2010, and conflicting national standards shall be withdrawn at the latest by February 2010.

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

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EN 3226:2009 (E)**1 Scope**

This standard specifies the characteristics of plain, hexagonal nuts, normal height, normal across flats, in steel, cadmium plated.

Classification: 1 100 MPa ¹⁾ / 235 °C ²⁾

2 Normative references

The following referenced documents are indispensable for the application 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 2133, *Aerospace series — Cadmium plating of steels with specified tensile strength $\leq 1\,450$ MPa, copper, copper alloys and nickel alloys.*

EN 2205, *Steel FE-PL43S — $900\text{ MPa} \leq R_m \leq 1\,100\text{ MPa}$ — Bars $D_e \leq 40\text{ mm}$ — Aerospace series.* ³⁾

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 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 3513, *Aerospace series — Steel FE-PL711 — Hardened and tempered — $900 \leq R_m \leq 1\,100\text{ MPa}$ — Bar and wire — $D_e \leq 45\text{ mm}$.* ⁴⁾

EN 9100, *Aerospace series — Quality management systems — Requirements (based on ISO 9001:2000) and Quality systems — Model for quality assurance in design, development, production, installation and servicing (based on ISO 9001:1994).*

TR 3823, *Aerospace series — Materials for plain, slotted and self-locking by plastic ring hexagonal nuts.* ⁵⁾

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

ISO 8279, *Aerospace — Nuts, hexagonal, plain, normal height, normal across flats, with MJ threads, classifications: 600 MPa (at ambient temperature)/120 °C, 600 MPa (at ambient temperature)/235 °C, 900 MPa (at ambient temperature)/425 °C, 1 100 MPa (at ambient temperature)/235 °C, 1 100 MPa (at ambient temperature)/315 °C, 1 100 MPa (at ambient temperature)/650 °C, 1 210 MPa (at ambient temperature)/730 °C, 1 250 MPa (at ambient temperature)/235 °C and 1 550 MPa (at ambient temperature)/600 °C — Dimensions.*

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

1) Corresponds to strength class of the associated bolt, the 100 per cent load of which it is able to withstand, when tested at ambient temperature, without breaking or cracking.

2) Maximum temperature that the nut can withstand without continuous change in its original characteristics, after return to ambient temperature. The maximum temperature is determined by the surface treatment.

3) Published as ASD Prestandard at the date of publication of this standard.

4) Published as ASD Standard at the date of publication of this standard.

5) Published as ASD Technical Report at the date of publication of this standard.

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

3 Configuration — Dimensions — Masses

See Figure 1 and Table 1.

Dimensions and tolerances are: in conformity with ISO 8279, expressed in millimetres and apply after surface treatment.

3.1 Materials

EN 2205, EN 2438, EN 2448, EN 3513 or TR 3823

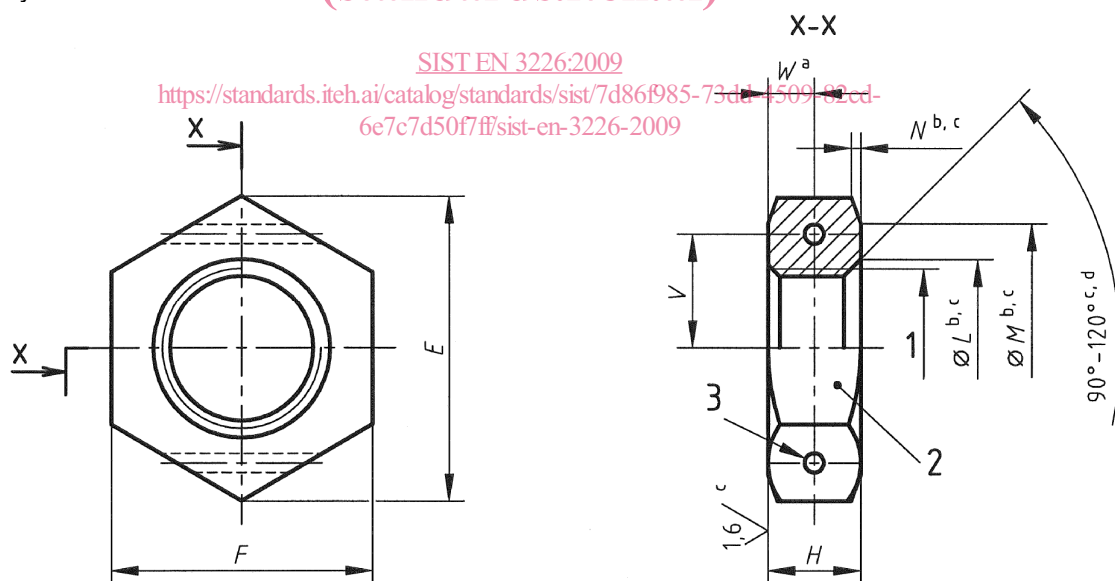
3.2 Surface treatment

EN 2133, 5 μm minimum on threads and all surfaces which can be contacted by a 20 mm diameter ball. On all other surfaces, a continuous cadmium plating shall be present.

$\sqrt{6,3}$ $\left[\sqrt{1,6} \right]$ These values in micrometres apply before surface treatment. They do not apply to threads and sheared edges the surface texture of which will be as achieved by usual manufacturing methods.

Break sharp edges 0,1 to 0,4.

Details of form not stated are at the manufacturer's option. Tolerances of form and position shall be in conformity with ISO 8788.



Key

- 1 Thread
 - 2 Marking
 - 3 2 holes $\varnothing U$ optional
- a From either face
 b Diameter M may be tangential to, but shall not intrude on the flats.
 c Applicable to both faces
 d All forms of entry (chamfer or radius) optional within these limiting dimensions

Figure 1

Table 1

Diameter code	Thread ^a	<i>E</i>	<i>F</i>		<i>H</i>	<i>L</i>		<i>M</i>	<i>N</i>		<i>U</i>	<i>V</i>	<i>W</i>	Mass kg/1 000 pieces approx.	
		min.	Nom.	Tol.	h14	Nom.	Tol.	min.	max.	min.	H13	± 0,2	min.		
020	MJ2×0,4-4H6H	4,2	4	h12	1,6	2,2	+0,6 0	3,4	0,4	0,2	b	b	b	0,15	
025	MJ2,5×0,45-4H6H	5,3	5		2	2,7		4,4						0,3	
030	MJ3×0,5-4H6H	6,5	6		2,4	3,2		5,4						0,5	
040	MJ4×0,7-4H6H	7,6	7		3,2	4,2		6,4	0,85						
050	MJ5×0,8-4H6H	8,7	8		4	5,2		7,4	1,3						
060	MJ6×1-4H5H	10,9	10	h13	4,8	6,3	+0,8 0	9,3	0,5	0,3	1,5	1	3,9	2	2,4
070	MJ7×1-4H5H	12	11		5,6	7,3		10,2							3,2
080	MJ8×1-4H5H	14,3	13		6,4	8,3		12,2							5,2
100	MJ10×1,25-4H5H	18,9	17		8	10,3		16	11,5						
120	MJ12×1,25-4H5H	21,1	19		9,6	12,3		18	16,1						
140	MJ14×1,5-4H5H	24,5	22		11,2	14,4		21	25						
160	MJ16×1,5-4H5H	26,8	24		12,8	16,4		23	33						
180	MJ18×1,5-4H5H	30,2	27		14,4	18,4		26	46						
200	MJ20×1,5-4H5H	33,6	30		16	20,4		29	62						
220	MJ22×1,5-4H5H	35,8	32		17,6	22,4		30,9	75						
240	MJ24×2-4H5H	40,4	36	19,2	24,5	34,9	108								

^a In accordance with ISO 5855-2. <https://standards.iteh.ai/catalog/standards/sist/7d86f985-73dd-4509-82cd-6e7c7d50f7ff/sist-en-3226-2009>

^b Lockwire holes not provided for these diameters.

4 Designation

EXAMPLE

Description block

NUT

Identity block

EN3226H060

Number of this standard _____

Hole code (see Table 2) _____

Diameter code (see Table 1) _____

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

Table 2

Option	Code
Lockwire holes	H
No hole	— (hyphen)