BS EN 2852:2010

Aerospace series — nuts, hexagonal, plain, normal height, normal across flats, heat resisting steel passivated — Classification: 1100 MPa/650 °C

ICS 49.030.30

National foreword

This British Standard is the UK implementation of EN 2852:2010.

The UK participation in its preparation was entrusted to Technical Committee ACE/12, Aerospace fasteners and fastening systems.

A list of organizations represented on this committee can be obtained on request to its secretary.

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 April 2010.

ISBN 978 0 580 71029 2

Amendments/corrigenda issued since publication

Date	Comments

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 2852

March 2010

ICS 49.030.30

English Version

Aerospace series - Nuts, hexagonal, plain, normal height, normal across flats, heat resisting steel passivated - Classification: 1 100 MPa/650 °C

Série aérospatiale - Écrous hexagonaux, simples hauteur normale, surplats normaux en acier résistant à chaud passivé - Classification : 1 100 MPa/650 °C

Luft- und Raumfahrt - Sechskantmuttern, normale Höhe, normale Schlüsselweite, aus hochwarmfestem Stahl, passiviert - Klasse: 1 100 MPa/650 °C

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. EN 2852:2010: E

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Foreword

This document (EN 2852:2010) 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of an identical text or by endorsement, at the latest by September 2010, and conflicting national standards shall be withdrawn at the latest by September 2010.

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1 Scope

This standard specifies the characteristics of plain hexagonal nuts in passivated heat resisting steel, with or without locking holes, the dimensions of which are in conformity with ISO 8279.

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

They are intended to be used with bolts of 1 100 MPa [1)] tensile strength classification, at temperatures up to 650 °C.

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 2171 [2)], *Heat resisting steel FE-PA92-HT — $R_m \geq 900$ MPa — Bars — Aerospace series* [3)]

EN 2398, *Aerospace series — Heat resisting steel FE-PA2601 (X6NiCrTiMoV26-15) — $R_m \geq 900$ MPa — Bars for machined bolts — $D \leq 25$ mm*

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

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

EN 4317, *Aerospace series — Heat resisting alloy FE-PA2601 (X6NiCrTiMoV26-15) — Non heat treated — Forging stock — a or $D \leq 200$ mm*

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*

EN 9100, *Quality Management Systems — Requirements for Aviation, Space and Defense Organizations*

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 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*

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

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1) This strength level applies at ambient temperature.

2) Inactive for new designation, see EN 4317 and EN 4318.

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

3 Required characteristics

3.1 Configuration — Dimensions — Tolerances

See Figure 1 and Table 1.

Configuration shall be in accordance with Figure 1; the dimensions and tolerances shall conform to the values shown in Figure 1 and Table 1 after passivation. The tolerances of form and position are in accordance with ISO 8788.

3.2 Surface roughness

See Figure 1. The values apply before passivation. They do not apply to the thread; the surface roughness will be as achieved by normal methods of manufacture.

3.3 Materials

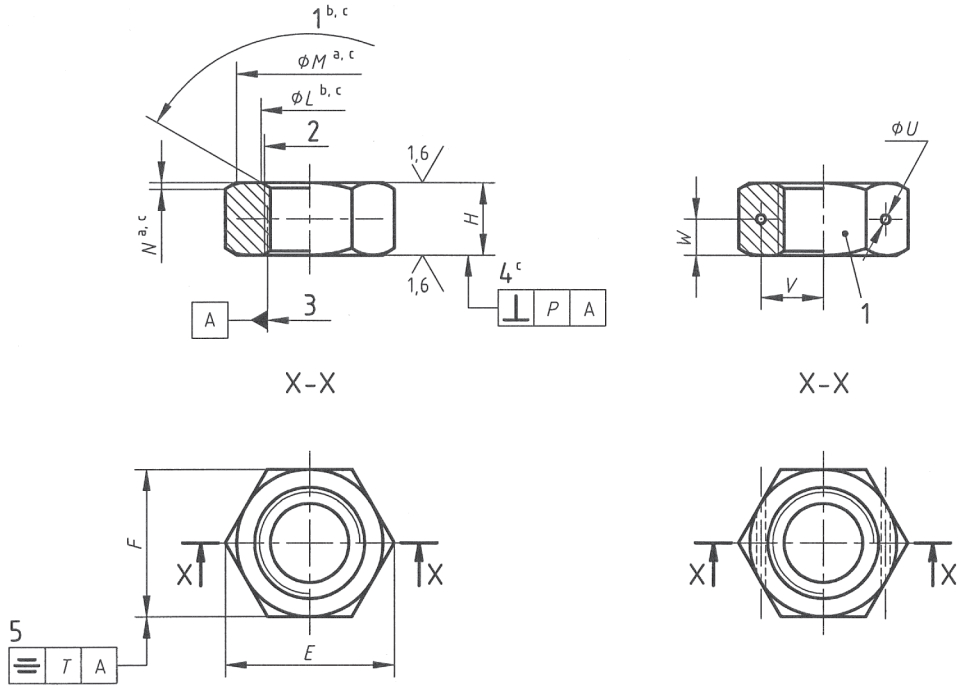
Steel EN 2171 or EN 2398.

3.4 Surface treatment

Passivation EN 2516.

6,3 [ ]

Break sharp edges 0,1 to 0,4.



a) Form without lockwire holes

b) Form with lockwire holes
(Dimensions otherwise as form without lockwire holes)

Key

1 90° to 120°
2 Thread
3 Pitch diameter
4 Bearing surface may be flat to concave but shall not be convex
5 At three positions

a Form of contour, within limiting dimensions, at manufacturer's option. Flat may be tangential to but shall not intrude on Ø M min.
b All forms of entry (chamfer or radius) optional within these limiting dimensions.
c Applicable to both faces.

Key

1 Marking

Figure 1 — Configuration

Table 1 — Dimensions and masses

Dimensions in millimetres

Thread [a]		*E*	*F*		*H*	*L*		*M*	*N*		*P*	*T*	*U*	*V*	*W* [b]	**Mass** [c] kg/1 000 pieces approx.
Code	Designation	min.			h14	max.	min.	min.	max.	min.			H13	± 0,2		
020	MJ2×0,4-4H6H	4,2	4	h12	1,6	2,8	2,2	3,4	0,4	0,2	0,08	0,25	d	d	d	0,15
025	MJ2,5×0,45-4H6H	5,3	5		2,0	3,3	2,7	4,4								0,3
030	MJ3×0,5-4H6H	6,5	6		2,4	3,8	3,2	5,4			0,10					0,5
040	MJ4×0,7-4H6H	7,6	7		3,2	4,8	4,2	6,4	0,5	0,2		0,3				0,85
050	MJ5×0,8-4H6H	8,7	8		4,0	5,8	5,2	7,4								1,3
060	MJ6×1-4H5H	10,9	10	h13	4,8	7,1	6,3	9,3					1,0	3,9	2,0	2,4
070	MJ7×1-4H5H	12,0	11		5,6	8,1	7,3	10,2				0,36		4,4	2,4	3,2
080	MJ8×1-4H5H	14,3	13		6,4	9,1	8,3	12,2						5,0	2,8	5,2
100	MJ10×1,25-4H5H	18,9	17		8,0	11,1	10,3	16,0	0,6	0,3	0,13		1,5	6,9	3,6	11,5
120	MJ12×1,25-4H5H	21,1	19		9,6	13,1	12,3	18,0				0,43		8,0	4,4	16,1
140	MJ14×1,5-4H5H	24,5	22		11,2	15,2	14,4	21,0			0,15			9,6	5,2	25
160	MJ16×1,5-4H5H	26,8	24		12,8	17,2	16,4	23,0			0,18			10,7	6,0	33
180	MJ18×1,5-4H5H	30,2	27		14,4	19,2	18,4	26,0						12,0	6,8	46
200	MJ20×1,5-4H5H	33,6	30		16,0	21,2	20,4	29,0				0,52		13,4	7,6	62

a In accordance with ISO 5855-1 and ISO 5855-2.

b From either face.

c Calculated on the basis of 7,85 kg/dm^3.

d Lockwire hole not provided for these diameters.

4 Designation

EXAMPLE

Description block	**Identity block**
NUT	**EN2852–100**

Number of this standard

Locking hole code (see Table 2)

Thread code (see Table 1)

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

Table 2

Locking hole	Code
with	H
without	— (hyphen)

5 Marking

Each nut shall be marked in the position shown on the Figure 1 in accordance with EN 2424 according to the marking styles defined in Table 3.

Table 3

Thread code	Marking style
020 to 040	G
050 to 070	E
080 to 160	C
180 to 200	A

6 Technical specification

Conforming to ISO 9139, except for quality assurance requirements, see EN 9100.

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BSI Group
Headquarters 389
Chiswick High Road,
London, W4 4AL, UK
Tel +44 (0)20 8996 9001
Fax +44 (0)20 8996 7001
www.bsigroup.com/
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