



SLOVENSKI STANDARD
SIST EN 4116:2004

01-maj-2004

Aerospace series - Nuts, hexagonal, self-locking, in heat resisting steel FE-PA92HT (A286), silver plated on thread - Classification: 1 100 MPa (at ambient temperature) / 425°C

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Ta slovenski standard je istoveten z: EN 4116:2003

ICS:

49.030.30 Matice Nuts

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 4116

January 2003

ICS 49.030.30

English version

Aerospace series - Nuts, hexagonal, self-locking, in heat
resisting steel FE-PA92HT (A286), silver plated on thread -
Classification: 1 100MPa (at ambient temperature) / 425°C

This European Standard was approved by CEN on 2 June 2002.

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 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 Management Centre has the same status as the official versions.

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

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

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Foreword

This document (EN 4116:2003) has been prepared by the European Association of Aerospace Manufacturers – Standardization (AECMA-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 AECMA, 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of an identical text or by endorsement, at the latest by July 2003, and conflicting national standards shall be withdrawn at the latest by July 2003.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This standard specifies the characteristics of self-locking hexagonal nuts in FE-PA92HT, silver plated on thread, for aerospace applications.

Classification : 1 100 MPa ¹⁾ / 425 °C ²⁾

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2 Normative references

- ISO 5855-2 Aerospace – MJ threads – Part 2: Limit dimensions for bolts and nuts
- ISO 7995 Aerospace – Nuts, hexagonal, self-locking, with MJ threads, coated or uncoated, classification 1100 MPa / 235 °C, 1100 MPa / 315 °C or 1100 MPa / 425 °C – Dimensions
- EN 2399 Heat resisting steel FE-PA92-HT - $R_m \geq 900$ MPa - Bars for forged bolts - $D \leq 25$ mm - Aerospace series ³⁾
- EN 2424 Aerospace series – Marking of aerospace products ³⁾
- EN 2786 Aerospace series - Electrolytic silver plating of fasteners ⁴⁾
- EN 3152 Aerospace series - Propulsion standard parts - Nuts, self-locking, in heat resisting steel FE-PA92HT (A286) - Classification: 1 100 MPa / 425 °C - Technical specification ⁴⁾
- EN 3638 Aerospace series – Heat resisting alloy FE-PA2601 (X6NiCrTiMoV26-15) – Consumable electrode remelted – Solution and precipitation treated – Sheet, strip and plate – $0,5 \text{ mm} \leq a \leq 10 \text{ mm}$ ⁴⁾

1) The strength class of the bolt concerned which can withstand the load at ambient temperature when tested at 100 % load without cracking or breaking of the nut.

2) Maximum test temperature of the parts

3) Published as AECMA Standard at the date of publication of this standard

4) Published as AECMA Prestandard at the date of publication of this standard

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EN 3639 Aerospace series – Heat resisting alloy FE-PA2601 – Softened and cold worked – Wires for forged fasteners – $D \leq 15 \text{ mm}$ – $900 \text{ MPa} \leq R_m \leq 1\,100 \text{ MPa}$ ⁴⁾

3 Required characteristics**3.1 Configuration - Dimensions – Tolerances – Masses**

See Figure 1 and Table 1. Dimensions and tolerances are in millimetres. They apply after silver plating for thread surface.

3.2 Materials

EN 2399, EN 3638 or EN 3639

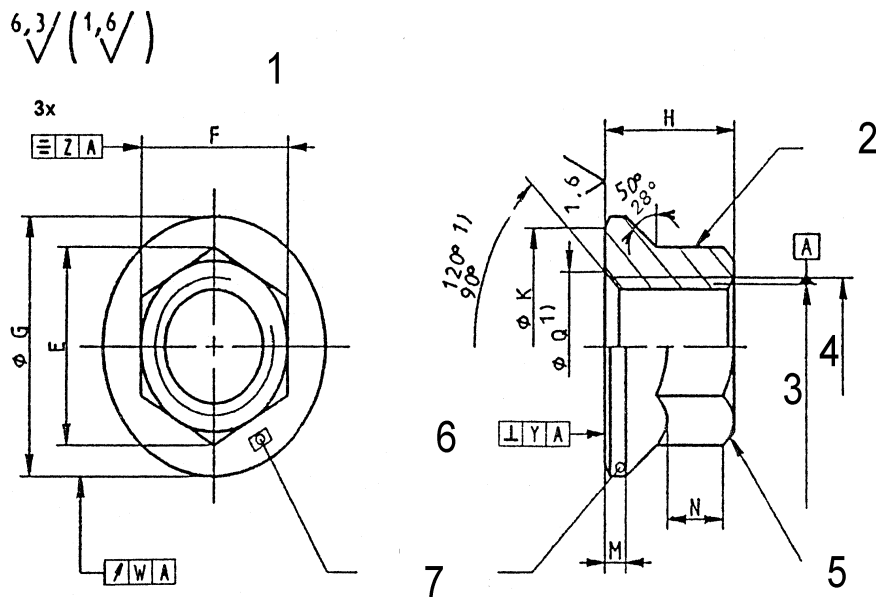
3.3 Surface treatment

EN 2786 on thread and chamfers

Thickness :

- Thread \geq MJ6 : 5 μm min. on thread flanks;
- Thread \leq MJ5 : shall show complete coverage, without thickness requirement;
- Chamfers : shall show complete coverage, without thickness requirement.

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**Key****iTeh STANDARD PREVIEW****(standards.iteh.ai)**

- 1 Thread surface will be as achieved by normal methods of manufacture (applicable before silver plating)
- 2 Form out-of-round in this area to achieve the self-locking requirement (tooling marks permissible)
- 3 Pitch diameter
- 4 Thread
- 5 Chamfer, radius or broken edge
- 6 Not convex
- 7 Marking in these areas

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Remove sharp edges 0,1 to 0,4

Details of form not stated are left to the manufacturer's discretion.

¹⁾ All forms of entry (radius or chamfer) are permissible within these limiting dimensions.

Figure 1

Table 1 *)

Thread ¹⁾		E ²⁾		F ²⁾	G	H	K	M	N ³⁾	Q		W	Y	Z ⁴⁾	Mass kg/1000 parts ≈
Code	Designation	min.	nom.	Tol.	max.	max.	min.	min.	min.	max.	min.				
030	MJ3X0,5-4H6H	4,2	4	h12	6	3	5,3	0,4	1,2	3,8	3,2	0,2	0,1	0,2	0,28
040	Mj4X0,7-4H6H	5,3	5		7,4	4	6,7	0,5	1,5	4,8	4,2				0,50
050	MJ5X0,8-4H6H	6,5	6		9,1	5	8,3	0,6	2	5,8	5,2				0,80
060	MJ6X1-4H5H	7,6	7		10,6	5,4	9,8	0,7	2,3	7,1	6,3				1,15
070	MJ7X1-4H5H	8,7	8		12,1	6,3	11,3	0,8	2,7	8,1	7,3				1,70
080	MJ8X1-4H5H	10,9	10		13,6	7,2	12,8	0,9	3,2	9,1	8,3				3,15
100	MJ10X1,25-4H5H	13,2	12	h13	16,8	9	15,8	1,1	3,8	11,1	10,3	0,3	0,13	0,4	4,75
120	MJ12X1,25-4H5H	15,5	14		19,9	10,8	18,8	1,4	4,5	13,1	12,3				10

1) In accordance with ISO 5855-2. In the self-locking zone, the tolerance apply before forming out-of-round.
2) Applicable before forming out-of-round, but finished nuts shall fit a standard socket wrench.
3) Wrench pad engagement.
4) Values apply before forming out-of-round.

4 Designation

EXAMPLE :

iTech STANDARD PREVIEW
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NUT **EN4116-050**

Number of this standard

SIST EN 4116:2004

Thread code (see table 1)

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

5 Marking

EN 2424, style see table 2 and as indicated on figure 1.

Table 2

Thread code	Style
030 and 040	N
050 to 120	C

6 Technical specification

EN 3152

*) The dimensions are in accordance with ISO 7995.