



# SLOVENSKI STANDARD

## SIST EN 4011:2005

01-junij-2005

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SIST EN 4011:2004

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**Aerospace series - Nuts, bihexagonal, self-locking, in heat resisting nickel base alloy NI-PH2601 (Inconel 718), silver plated - Classification: 1 550 MPa (at ambient temperature) / 600 °C**

Aerospace series - Nuts, bihexagonal, self-locking, in heat resisting nickel base alloy NI-PH2601 (Inconel 718), silver plated - Classification: 1 550 MPa (at ambient temperature) / 600 °C  
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Luft- und Raumfahrt - Zwölfkantmutter, selbstsichernd, aus hochwarmfester Nickelbasislegierung NI-PH2601 (Inconel 718), versilbert - Klasse: 1 550 MPa (bei Raumtemperatur) / 600 °C

Série aérospatiale - Écrous bihexagonaux, a freinage interne, en alliage résistant a chaud a base de nickel NI-PH2601 (Inconel 718), argentés - Classification : 1 550 MPa (a température ambiante ) / 600 °C

**Ta slovenski standard je istoveten z: EN 4011:2004**

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**ICS:**

49.030.30      Matice      Nuts

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 4011**

November 2004

ICS 49.030.30

Supersedes EN 4011:2003

English version

**Aerospace series - Nuts, bihexagonal, self-locking, in heat  
resisting nickel base alloy NI-PH2601 (Inconel 718), silver plated  
- Classification: 1 550 MPa (at ambient temperature) / 600° C**

Série aérospatiale - Écrous bihexagonaux, à freinage interne, en alliage résistant à chaud à base de nickel NI-PH2601 (Inconel 718), argentés - Classification : 1 550 MPa (à température ambiante) / 600° C

Luft- und Raumfahrt - Zwölfkantmuttern, selbstsichernd, aus hochwarmfester Nickelbasislegierung NI-PH2601 (Inconel 718), versilbert - Klasse: 1 550 MPa (bei Raumtemperatur) / 600° C

This European Standard was approved by CEN on 11 September 2003.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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



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<b>Contents</b>		<b>Page</b>
Foreword.....		<b>3</b>
<b>1</b> <b>Scope .....</b>		<b>4</b>
<b>2</b> <b>Normative references .....</b>		<b>4</b>
<b>3</b> <b>Required characteristics .....</b>		<b>4</b>
<b>4</b> <b>Designation .....</b>		<b>6</b>
<b>5</b> <b>Marking .....</b>		<b>6</b>
<b>6</b> <b>Technical specification .....</b>		<b>6</b>

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## Foreword

This document (EN 4011:2004) 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 May 2005, and conflicting national standards shall be withdrawn at the latest by May 2005.

This document supersedes EN 4011:2003.

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

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EN 4011:2004 (E)

## 1 Scope

This standard specifies the characteristics of self-locking bihexagonal nuts in NI-PH2601, silver plated, for aerospace applications.

Classification: 1 550 MPa <sup>1)</sup> / 600 °C <sup>2)</sup>

## 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.

ISO 4095, *Aerospace – Bihexagonal drives – Wrenching configuration – Metric series*

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

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

EN 2786, *Aerospace series – Electrolytic silver plating of fasteners* <sup>3)</sup>

EN 2952, *Aerospace series – Heat resisting alloy NI-PH2601 – Solution treated and cold worked – Bar for forged fasteners –  $D \leq 50$  mm –  $1\ 270$  MPa  $\leq R_m \leq 1\ 550$  MPa* <sup>3)</sup>

EN 4047, *Aerospace series – Nuts, self-locking, MJ threads, in heat resisting nickel base alloy NI-PH2601 (Inconel 718), silver plated – Classification: 1 550 MPa (at ambient temperature) / 600 °C – Technical specification*

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## 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.

### 3.2 Material

EN 2952

### 3.3 Surface treatment

EN 2786

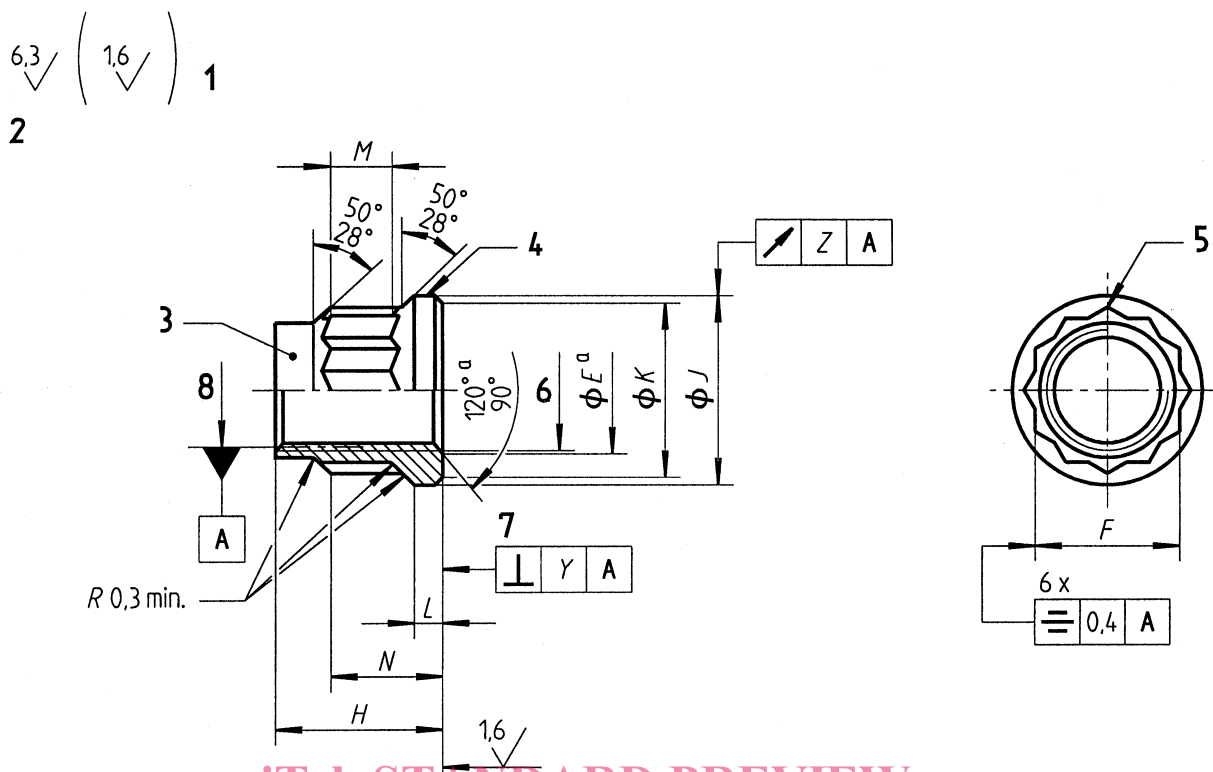
Thickness:

- external surfaces: 5  $\mu$ m to 15  $\mu$ m;
- thread  $\geq$  MJ6: 5  $\mu$ m min., shall be measured at the pitch diameter;
- thread MJ5: shall show complete coverage, without thickness requirement.

1) Correspond to the minimum tensile stress which the nut is able to withstand at ambient temperature without breaking or cracking when tested with a bolt of a higher strength class.

2) Maximum test temperature of the parts

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



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**Key**

- 1 values applicable before silver plating. Thread surface will be as achieved by normal methods of manufacture.
- 2 remove sharp edges 0,1 to 0,4.
- 3 form out-of-round in this area to achieve the self-locking requirement (tooling marks permissible)
- 4 marking
- 5 bihexagonal configuration in accordance with ISO 4095 over length *M*
- 6 thread
- 7 not convex
- 8 pitch diameter

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

<sup>a</sup> All forms of entry (radius or chamfer) are permissible within these limiting dimensions.

**Figure 1****Table 1**

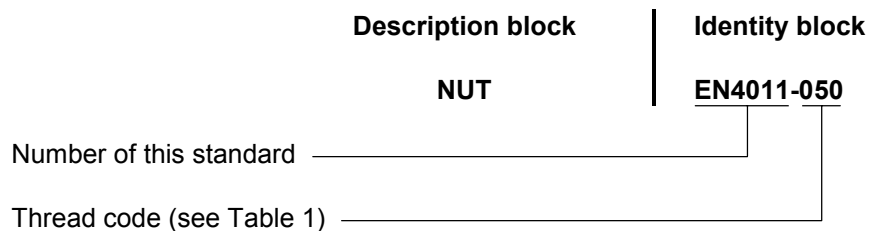
Code	Thread <sup>a</sup> Designation	<i>E</i>		<i>F</i>	<i>H</i>	<i>J</i>	<i>K</i>	<i>L</i>	<i>M</i>	<i>N</i>	<i>Y</i>	<i>Z</i>	Mass kg/1 000 parts ≈
		max.	min.										
050	MJ5×0,8-4H6H	5,8	5,2	7	7	9,1	8,3	1,2	2	4,9	0,1	0,2	1,68
060	MJ6×1-4H5H	7,1	6,3	8	8,1	10,6	9,8		2,3	5,5			2,4
070	MJ7×1-4H5H	8,1	7,3	9	9,1	12,1	11,3		2,6	6,1			3,29
080	MJ8×1-4H5H	9,1	8,3	10	10,4	13,6	12,8		2,8	6,9			4,47
100	MJ10×1,25-4H5H	11,1	10,3	12	13	16,8	15,8	1,4	3,1	8,8	0,13	0,3	7,92
120	MJ12×1,25-4H5H	13,1	12,3	14	15	19,9	18,8		3,5	10,1			15,02
140	MJ14×1,5-4H5H	15,2	14,4	17	17,5	23	21,9		1,7	4			12,6

<sup>a</sup> In accordance with ISO 5855-2. In the self-locking zone, the tolerances apply before forming out-of-round.

EN 4011:2004 (E)

## 4 Designation

EXAMPLE



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

## 5 Marking

EN 2424, style A, as indicated on Figure 1.

## 6 Technical specification

EN 4047

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