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**Aeronavtika - Sidrne/utrdilne matice, samoblokirne, nazobčane, iz toplotnoodpornega jekla FE-PA2601 (A286) - Klasifikacija: 1100 MPa (pri okoljski temperaturi)/650 °C**

Aerospace series - Shank nuts, self-locking, serrated, in heat resisting steel FE-PA2601 (A286) - Classification: 1 100 MPa (at ambient temperature) / 650 °C

Luft- und Raumfahrt - Einnietmuttern, selbstsichernd, verzahnt, aus hochwarmfestem Stahl FE-PA2601 (A286) - Klasse: 1 100 MPa (bei Raumtemperatur) / 650 °C

Série aérospatiale - Écrous à sertir, dentelés, à freinage interne, en acier résistant à chaud FE-PA2601 (A286) - Classification : 1 100 MPa (à température ambiante)/650 °C

**Ta slovenski standard je istoveten z: prEN 3014**

**ICS:**

49.025.10	Jekla	Steels
49.030.30	Matice	Nuts

**oSIST prEN 3014:2022**

**en,fr,de**



EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**DRAFT**  
**prEN 3014**

June 2022

ICS 49.030.30

Will supersede EN 3014:2015

English Version

**Aerospace series - Shank nuts, self-locking, serrated, in  
heat resisting steel FE-PA2601 (A286) - Classification: 1  
100 MPa (at ambient temperature) / 650 °C**

Série aérospatiale - Écrous à sertir, dentelés, à freinage  
interne, en acier résistant à chaud FE-PA2601 (A286) -  
Classification : 1 100 MPa (à température  
ambiante)/650 °C

Luft- und Raumfahrt - Einnietmuttern, selbstsichernd,  
verzahnt, aus hochwarmfestem Stahl FE-PA2601  
(A286) - Klasse: 1 100 MPa (bei Raumtemperatur) /  
650 °C

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee ASD-STAN.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

**Warning** : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.



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

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

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## European foreword

This document (prEN 3014:2022) 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 document has received the approval of the National Associations and the Official Services of the member countries of ASD-STAN, prior to its presentation to CEN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 3014:2015.

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**prEN 3014:2022 (E)****1 Scope**

This document specifies the characteristics of self-locking serrated shank nuts in FE-PA2601, for aerospace applications.

Classification: 1 100 MPa<sup>1</sup> / 650 °C<sup>2</sup>.

NOTE FE-PA2601 is the new designation for FE-PA92HT, see TR 3900.

**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 2399, *Aerospace series - Heat resisting steel FE-PA2601 (X4NiCrTiMoV26-15) - Rm ≥ 900 MPa - Bars for forged bolts - D ≤ 25 mm*

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

EN 3004, *Aerospace series - Nuts, self-locking, MJ threads, in heat resisting steel FE-PA2601 (A286) - Classification: 1 100 MPa (at ambient temperature)/650°C - Technical specification*

EN 3064, *Aerospace series - Shank nuts, self-locking, serrated - Installation procedure*

EN 3065, *Aerospace series - Installation holes for self-locking, serrated shank nuts - Design standard*

EN 3639, *Aerospace series - Heat resisting alloy X6NiCrTiMoV26-15 (1.4980) - Softened and cold worked - Wires for forged fasteners - D ≤ 15 mm - 900 MPa ≤ Rm ≤ 1 100 MPa<sup>3</sup>*

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

**3 Terms and definitions**

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

**4 Required characteristics****4.1 Configuration — Dimensions — Tolerances — Masses**

Figure 1 and Table 1.

Dimensions and tolerances are in millimetres.

<sup>1</sup> Corresponds 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.

<sup>2</sup> Maximum test temperature of the parts.

<sup>3</sup> Published as ASD-STAN Prestandard at the date of publication of this standard (<http://www.asd-stan.org/>).

### 4.2 Materials

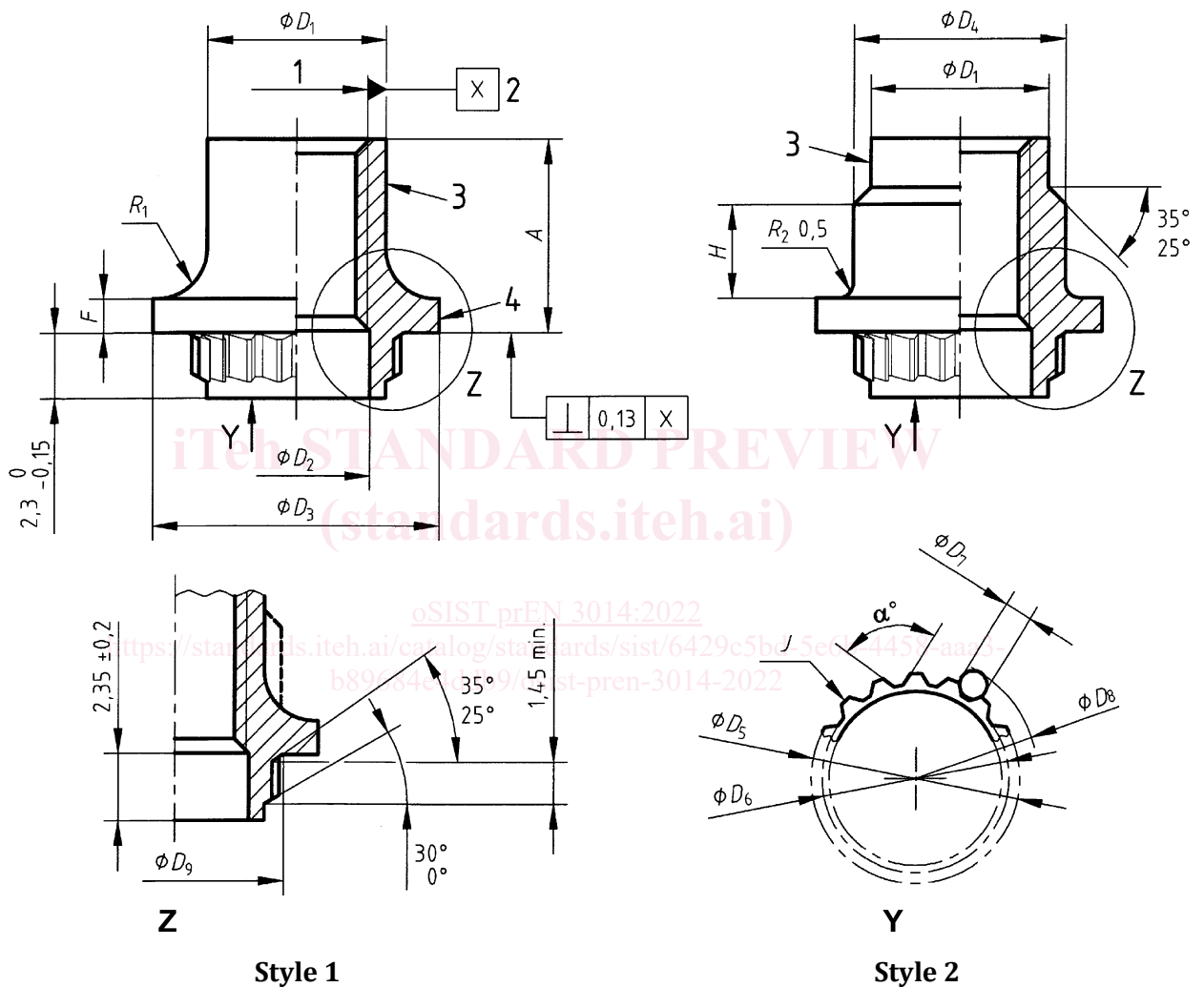
Shall be according to EN 2399 or EN 3639.

3,2

✓ Thread surface will be as achieved by normal methods of manufacture.

Remove sharp edges 0,1 to 0,4.

Details of form not stated as well as style 1 or style 2, are at the manufacturer's discretion.



**Key**

- 1 Thread
- 2 Form out-of-round in this area to achieve the self-locking requirement (tooling marks permissible)
- 3 Marking
- 4 Pitch diameter

**Figure 1**

Table 1

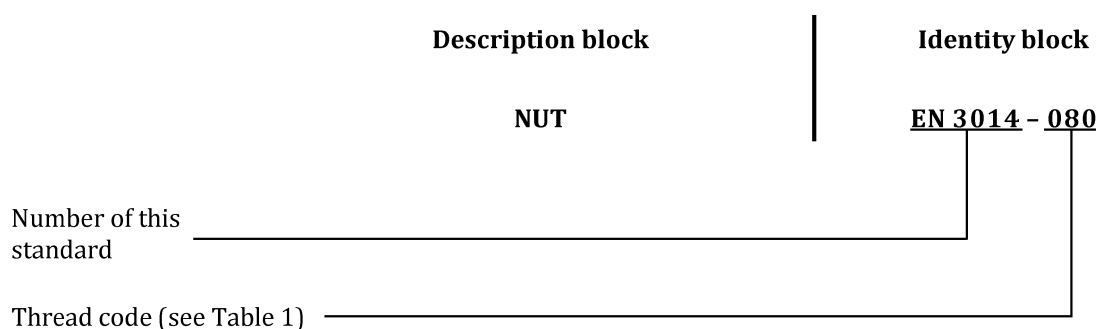
Code	Thread <sup>a</sup> Designation	A	D <sub>1</sub> <sup>b</sup>	D <sub>2</sub>	D <sub>3</sub>	D <sub>4</sub>	D <sub>5</sub>	D <sub>6</sub>	Wire	
		0 -0,7	min.	min.	0 -0,3	max.	0 -0,23	+0,26 0	No.	D <sub>7</sub>
050	MJ5 × 0,8- 4H6H	6,8	6,3	5,12	10,1	7,7	7,38	6,36	3	1,0
060	MJ6 × 1- 4H5H	8,6	7,7	6,56	11,5	8,7	8,98	7,91	2	1,2
070	MJ7 × 1- 4H5H	9,7	8,4	8,10	12,7	9,8	10,28	9,18	3	1,5
080	MJ8 × 1- 4H5H	10	9,5			10,9				

Thread code	D <sub>8</sub>		D <sub>9</sub>	F	H	J	R <sub>1</sub>	α°	Mass	
	max.	min.	max.	min.	max.	Number of teeth	±0,4	±1°	kg/1 000 parts max.	min.
050	8,730	8,639	7,75	0,9	3,3	17	2,0	86°30'	1,97	1,71
060	10,638	10,547	9,15	1,4	3,6	20		102°	3,02	2,73
070	12,536	12,445	10,4		5	23	2,5		3,84	3,46
080				4,21	3,58					

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

## 5 Designation

### EXAMPLE



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

## 6 Marking

Shall be according to EN 2424, style A, as indicated on Figure 1.



## 7 Technical specification

Shall be according to EN 3004.

## 8 Installation

The nuts shall be installed according to the procedure specified in EN 3064 in installation holes to EN 3065. Careful attention shall be paid to notch sensitivity of the materials in which they are to be installed.

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**Annex A**  
(informative)

**Standard evolution form**

MODIFICATION	REASON AND VALIDATION
Figure 1 Before: $D_2$ is external diameter of the shank After: $D_2$ is internal diameter of the shank	Error during EN 3014 transforming
Figure 1 Before: Length of serration = 14,5 min. After: Length of serration = 1,45 min.	The previous value is not compatible with the length of the shank (2,3)
Figure 1 Before: Length of nut = $D$ After: Length of nut = $A$	Error during EN 3014 transforming
Table 1 Before: $D_2$ max. After: $D_2$ min.	Error during EN 3014 transforming
Table 1 Before: "Number" + all values except for code 080. After: "Number of teeth" + values for all codes.	Error during EN 3014 transforming
Table 1 Before: $\alpha^\circ = \pm 0,1^\circ$ After: $\alpha^\circ = \pm 1^\circ$	Error during EN 3014 transforming