



# SLOVENSKI STANDARD

## SIST EN 2856:2009

01-julij-2009

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**Aeronavtika - Zakovne matice, samovarovalne, fiksne, z zaprtim robom, skrajšana serija, z izvrtino za valjaste vijake - Klasifikacija: 1100 MPa/235 °C**

Aerospace series - Nuts, anchor, self-locking, fixed, closed corner, reduced series, with counterbore - Classification: 1100 MPa/235 °C

Luft- und Raumfahrt - Anniemuttern, selbstsichernd, einseitiger verkürzter Eck-Flansch mit zylindrischer Aussenkung - Klasse: 1100 MPa/235 °C

Série aérospatiale - Écrous à river à freinage interne fixes, angle fermé, série réduite avec chambrage - Classification: 1100 MPa/235 °C

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**Ta slovenski standard je istoveten z: EN 2856:2006**

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**ICS:**

49.030.30      Matice      Nuts

**SIST EN 2856:2009**      en,de

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EUROPEAN STANDARD

**EN 2856**

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2006

ICS 49.030.30

English Version

**Aerospace series - Nuts, anchor, self-locking, fixed, closed corner, reduced series, with counterbore - Classification: 1 100 MPa/235 °C**

Série aéronautique - Écrous à rivet à freinage interne fixes, angle fermé, série réduite avec chambrage - Classification : 1 100 MPa/235 °C

Luft- und Raumfahrt - Anniemuttern, selbstsichernd, einseitiger verkürzter Eck-Flansch mit zylindrischer Aussenkung - Klasse: 1 100 MPa/235 °C

This European Standard was approved by CEN on 9 March 2006.

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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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

**Management Centre: rue de Stassart, 36 B-1050 Brussels**

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## Foreword

This European Standard (EN 2856:2006) 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 December 2006, and conflicting national standards shall be withdrawn at the latest by December 2006.

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, 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 2856:2006 (E)

## 1 Scope

This standard specifies requirements for closed corner, counterbored, fixed, reduced series anchor nuts, with a self-locking feature achieved by forming the upper portion out-of-round.

These nuts are intended for use in aircraft assemblies, in which the fasteners are mainly objected to shear loads. The counterbore is deep enough to accommodate a bolt shank in excess of assembly thickness, as well as the incomplete threads.

They are intended to be used with threaded parts of 1 100 MPa <sup>1)</sup> tensile strength classification.

The cadmium plating restricts the application to temperature not exceeding 235 °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.

ISO 3222, *Aerospace — Nuts, anchor, self-locking, fixed, closed corner, reduced series, with counterbore, with MJ threads, classifications: 1 100 MPa (at ambient temperature)/235 °C, 1 100 MPa (at ambient temperature)/315 °C and 1 100 MPa (at ambient temperature)/425 °C — Dimensions.*

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

ISO 5858, *Aerospace — Nuts, self-locking, with maximum operating temperature less than or equal to 425 °C — Procurement specification.*

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

EN 2133, *Aerospace series — Cadmium plating of steels with specified tensile strength  $\leq 1\,450$  MPa, copper, copper alloys and nickel alloys.*

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

EN 2491, *Aerospace series — Molybdenum disulphide dry lubricants — Coating methods.*

EN 2542, *Aerospace series — Steel FE-PL43S — Annealed — Bar and wire —  $D_e \leq 40$  mm — for prevailing torque nuts.* <sup>2)</sup>

EN 2543, *Aerospace series — Steel FE-PL43S — Annealed — Sheet and strip —  $0,3 \leq a \leq 2$  mm — for prevailing torque nuts.* <sup>2)</sup>

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).*

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1) This strength class applies at room temperatures.

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

### 3 Required characteristics

#### 3.1 Configuration – Dimensions – Tolerances

The 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 cadmium plating but before MoS<sub>2</sub> lubrication.

The dimensions are in conformity with ISO 3222 and the geometrical tolerances with ISO 8788.

Details of form not defined are at the option of the manufacturer.

#### 3.2 Surface roughness

See Figure 1. Values apply prior to cadmium plating and lubrication. They do not apply to the thread, sheared edges and punched edges; the surface roughness will be as achieved by normal methods of manufacture.

#### 3.3 Materials

Steel EN 2542 or EN 2543.

#### 3.4 Surface treatment

Cadmium plating EN 2133, 5 µm minimum on the threads and all areas which can be contacted by a 20 mm diameter ball. On all other areas, a continuous deposit shall be present, but no minimum value is specified.

Lubrication by MoS<sub>2</sub> EN 2491, mandatory on threads, optional on other surfaces.

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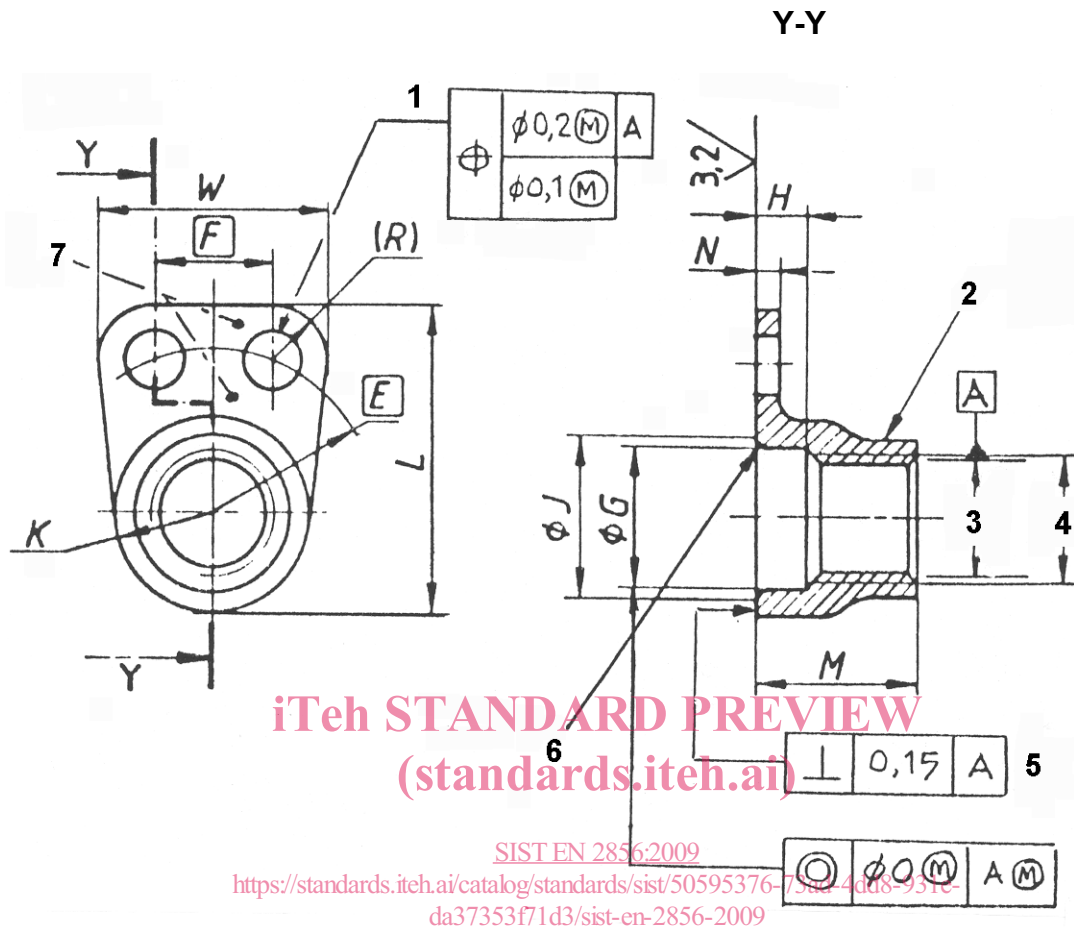
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EN 2856:2006 (E)

6,3 /

[ 3,2 / ]

Remove sharp edges 0,1 to 0,4

**Key**

- 1 Group of 2 holes  $\varnothing 2,5 \begin{smallmatrix} +0,2 \\ 0 \end{smallmatrix}$
- 2 Form out-of-round in this area to achieve the self-locking requirement (tooling marks permissible)
- 3 Pitch diameter
- 4 Thread
- 5 Applicable over a diameter equal to  $2 K$
- 6 Radius or chamfer
- 7 Part marking in these areas

**Figure 1 — Configuration**