

**Aerospace series - Shaft-nuts and threaded rings, self-locking, right- or left-hand MJ threads, in heat resisting steel FE-PA2601 (A286), silver plated - Technical specification**

Aerospace series - Shaft-nuts and threaded rings, self-locking, right- or left-hand MJ threads, in heat resisting steel FE-PA2601 (A286), silver plated - Technical specification

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 3299:2007 sisaldab Euroopa standardi EN 3299:2007 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 14.09.2007 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 3299:2007 consists of the English text of the European standard EN 3299:2007.</p> <p>This document is endorsed on 14.09.2007 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
--	---

<p><b>Käsitlusala:</b></p> <p>This standard specifies the characteristics, qualification and acceptance requirements for self-locking shaft-nuts and threaded rings, with right- or left-hand MJ threads, in FE-PA2601, silver-plated, for aerospace applications Temperature class: 450 °C 1) It is applicable whenever referenced.</p>	<p><b>Scope:</b></p> <p>This standard specifies the characteristics, qualification and acceptance requirements for self-locking shaft-nuts and threaded rings, with right- or left-hand MJ threads, in FE-PA2601, silver-plated, for aerospace applications Temperature class: 450 °C 1) It is applicable whenever referenced.</p>
--	--

**ICS** 49.030.30, 49.030.50

**Võtmesõnad:**

ICS 49.030.30; 49.030.50

English Version

**Aerospace series - Shaft-nuts and threaded rings, self-locking,  
right- or left-hand MJ threads, in heat resisting steel FE-PA2601  
(A286), silver plated - Technical specification**

Série aérospatiale - Écrous d'arbres et bagues filetés, à  
freinage interne, filetage MJ à droite ou à gauche, en acier  
résistant à chaud FE-PA2601 (A286), argentés -  
Spécification technique

Luft- und Raumfahrt - Wellenmuttern und Gewinderinge,  
selbstsichernd, Rechts- oder Links-MJ-Gewinde, aus  
hochwarmfestem Stahl FE-PA2601 (A286), versilbert -  
Technische Lieferbedingungen

This European Standard was approved by CEN on 28 August 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 CEN 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 CEN Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, 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.



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

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

## Contents

Page

Foreword.....	3
1 Scope .....	4
2 Normative references .....	4
3 Terms and definitions .....	4
4 Quality assurance .....	6
4.1 Qualification .....	6
4.2 Acceptance .....	6
4.2.1 Purpose .....	6
4.2.2 Conditions .....	6
4.2.3 Responsibility .....	7
4.2.4 Inspection and test report .....	7
5 Requirements .....	7
Annex A (normative) Checking bearing surface perpendicularity .....	13
A.1 Inspection device .....	13
A.2 Procedure .....	13
A.3 Results to be obtained .....	13
Annex B (normative) Method of checking locking torque .....	16
B.1 Inspection device .....	16
B.2 Procedure .....	16
B.3 Results to be obtained .....	16
Annex C (normative) Hardness test .....	18
C.1 Choice of method .....	18
C.2 Procedure .....	18

## Foreword

This document (EN 3299:2007) 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 January 2008, and conflicting national standards shall be withdrawn at the latest by January 2008.

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, Bulgaria, 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.

## 1 Scope

This standard specifies the characteristics, qualification and acceptance requirements for self-locking shaft-nuts and threaded rings, with right- or left-hand MJ threads, in FE-PA2601, silver-plated, for aerospace applications.

Temperature class: 450 °C <sup>1)</sup>

It is applicable whenever referenced.

## 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 3452, *Non-destructive testing — Penetrant inspection — General principles*.

ISO 3534:1977, *Statistics — Vocabulary and symbols*.

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

EN ISO 4288, *Geometrical Product Specifications (GPS) — Surface texture: Profile method — Rules and procedures for the assessment of surface texture (ISO 4288:1996)*.

EN ISO 6507-1, *Metallic materials — Vickers hardness test — Part 1: Test method (ISO 6507-1:2005)*.

EN ISO 6508-1, *Metallic materials — Rockwell hardness test — Part 1: Test method (scales A, B, C, D, E, F, G, H, K, N, T) (ISO 6508-1:2005)*.

EN 2786, *Aerospace series — Electrolytic silver plating of fasteners*. <sup>2)</sup>

EN 9133, *Aerospace series — Quality management systems — Qualification procedure for aerospace standard parts*.

ASTM E 112-88, *Standard Test Methods for Determining Average Grain Size*. <sup>3)</sup>

## 3 Terms and definitions

For the purposes of this standard, the following terms and definitions apply.

### 3.1

#### **finished nut or ring**

a nut or ring ready for use, inclusive of any possible treatments and/or surface coatings, as specified in the product standard or definition document

---

1) Maximum test temperature of the parts.

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

3) Published by: American Society for Testing and Materials (ASTM), 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, USA.