This is a free page sample. Access the full version online.

NSAI Standards

Irish Standard
I.S. EN 3229:2009

# Aerospace series - Nuts, hexagonal, plain, reduced height, normal across flats, in steel, cadmium plated, left hand thread - Classification: 900 MPa (at ambient temperature) / 235 °C

© NSAI 2009 No copying without NSAI permission except as permitted by copyright law.

This is a free page sample. Access the full version online.

I.S. EN 3229:2009

*Incorporating amendments/corrigenda issued since publication:*

| *This document replaces:* | *This document is based on:* EN 3229:2009 | *Published:* 2 December, 2009 |
|---|---|---|

| | |
|---|---|
| This document was published under the authority of the NSAI and comes into effect on: 29 December, 2009 | ICS number: 49.030.30 |

NSAI
1 Swift Square,
Northwood, Santry
Dublin 9

T +353 1 807 3800
F +353 1 807 3838
E standards@nsai.ie
W NSAI.ie

Sales:
T +353 1 857 6730
F +353 1 857 6729
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

This is a free page sample. Access the full version online.

I.S. EN 3229:2009

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

# EN 3229

December 2009

ICS 49.030.30

English Version

# Aerospace series - Nuts, hexagonal, plain, reduced height, normal across flats, in steel, cadmium plated, left hand thread - Classification: 900 MPa (at ambient temperature) / 235 °C

Série aérospatiale - Écrous hexagonaux ordinaires, hauteur réduite, surplats normaux, en acier, cadmiés, filetage à gauche - Classification : 900 MPa (à température ambiante) / 235 °C

Luft- und Raumfahrt - Flache Sechskantmuttern, mit normaler Schlüsselweite, aus Stahl, verkadmet, Linksgewinde - Klasse: 900 MPa (bei Raumtemperatur) / 235 °C

This European Standard was approved by CEN on 29 September 2009.

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: Avenue Marnix 17, B-1000 Brussels**

© 2009 CEN All rights of exploitation in any form and by any means reserved worldwide for CEN national Members.

Ref. No. EN 3229:2009: E

This is a free page sample. Access the full version online.



# Contents

Page

**Foreword** ..... 3

**1 Scope** ..... 4

**2 Normative references** ..... 4

**3 Required characteristics** ..... 5

**4 Designation** ..... 7

**5 Marking** ..... 8

**6 Technical specification** ..... 8

This is a free page sample. Access the full version online.



# Foreword

This document (EN 3229:2009) 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 June 2010, and conflicting national standards shall be withdrawn at the latest by June 2010.

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.

This is a free page sample. Access the full version online.



## 1 Scope

This European Standard specifies the characteristics of plain, hexagonal nuts, reduced height, normal across flats, with left hand thread, in steel, cadmium plated.

Classification: 900 MPa [1] / 235 °C. [2]

## 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.

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

EN 2205, *Aerospace series — Steel FE-PL1502 (25CrMo4) — 900 MPa ≤ $R_m$ ≤ 1 100 MPa — Bars — $D_e$ ≤ 40 mm*

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

EN 2438, *Aerospace series — Steel FE-PL2102 (35NiCr6) — 900 MPa ≤ $R_m$ ≤ 1 100 MPa — Bars — $D_e$ ≤ 40 mm*

EN 2444, *Steel FE-PL711 — 900 MPa ≤ $R_m$ ≤ 1 100 MPa — Bars and wires — $D_e$ ≤ 45 mm* [3]

EN 2448, *Aerospace series — Steel FE-PL1503 (35CrMo4) — 900 MPa ≤ $R_m$ ≤ 1 100 MPa — Bars — $D_e$ ≤ 40 mm*

EN 3513, *Aerospace series — Steel FE-PL711 — Hardened and tempered — 900 ≤ $R_m$ ≤ 1 100 MPa — Bar and wire — $D_e$ ≤ 45 mm* [4]

EN 9100, *Quality Management Systems — Requirements for Aviation, Space and Defense Organizations*

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

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

ISO 9139, *Aerospace — Nuts, plain or slotted (castellated) — Procurement specification*

ISO 9609, *Aerospace — Nuts, hexagonal, plain, reduced height, normal across flats, with MJ threads, classifications: 450 MPa (at ambient temperature) /120 °C, 450 MPa (at ambient temperature) /235 °C, 600 MPa (at ambient temperature) /425 °C, 900 MPa (at ambient temperature) /235 °C, 900 MPa (at ambient temperature) /315 °C, 900 MPa (at ambient temperature) /650 °C, 1 100 MPa (at ambient temperature) / 235 °C, 1 100 MPa (at ambient temperature) /730 °C and 1 250 MPa (at ambient temperature)/600 °C — Dimensions*

---

1) Corresponds to strength class of the associated bolt, the 100 % load of which it is able to withstand, when tested at ambient temperature, without breaking or cracking.

2) Maximum temperature that the nut is able to withstand, without permanent alteration to its original characteristics, after ambient temperature has been restored. The maximum temperature is conditioned by the surface treatment.

3) Inactive for new design. See EN 3513.

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

SAI GLOBAL

This is a free preview.  Purchase the entire publication at the link below:

Product Page

Looking for additional Standards? Visit Intertek Inform Infostore

Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation