

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

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 3228:2022 sisaldab Euroopa standardi EN 3228:2022 ingliskeelset teksti.	This Estonian standard EVS-EN 3228:2022 consists of the English text of the European standard EN 3228:2022.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
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English Version

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

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

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

This European Standard was approved by CEN on 17 January 2022.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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European Foreword

This document (EN 3228:2022) 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 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of an identical text or by endorsement, at the latest by September 2022 and conflicting national standards shall be withdrawn at the latest by September 2022.

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1 Scope

This document specifies the characteristics of plain hexagonal nuts, reduced height, normal across flats, in steel, cadmium plated, for aerospace applications.

Classification: 900 MPa/235 °C¹.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 $\leq 1\,450$ MPa, copper, copper alloys and nickel alloys*

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

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

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

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

EN 3513, *Steel FE-PL711 — Hardened and tempered — $900 \leq R_m \leq 1\,100\text{ MPa}$ — Bar and wire — $D_e \leq 45\text{ mm}$ ²*

TR 3823, *Aerospace series — Materials for plain, slotted and self-locking by plastic ring hexagonal nuts*³

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 degrees C, 450 MPa (at ambient temperature)/235 degrees C, 600 MPa (at ambient temperature)/425 degrees C, 900 MPa (at ambient temperature)/235 degrees C, 900 MPa (at ambient temperature)/315 degrees C, 900 MPa (at ambient temperature)/650 degrees C, 1 100 MPa (at ambient temperature)/235 degrees C, 1 100 MPa (at ambient temperature)/730 degrees C and 1 250 MPa (at ambient temperature)/600 degrees C — Dimensions*

¹ 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.

² Published as ASD-STAN Standard at the date of publication of this document by AeroSpace and Defence Industries Association of Europe – Standardization (ASD-STAN), <http://www.asd-stan.org>.

³ Published as ASD STAN Technical Report at the date of publication of this document by AeroSpace and Defence Industries Association of Europe – Standardization (ASD STAN), <http://www.asd-stan.org>.