



National Standards Authority of Ireland

IRISH STANDARD

I.S. EN 4501:2006

ICS 49.030.20

**AEROSPACE SERIES - BOLTS, NORMAL
HEXAGONAL HEAD, CLOSE TOLERANCE
NORMAL SHANK, SHORT THREAD, IN
TITANIUM ALLOY, ANODIZED, WITH
ALUMINIUM PIGMENTED COATING, METRIC
SERIES - CLASSIFICATION: 1 100 MPA (AT
AMBIENT TEMPERATURE) / 315 °C**

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 4501

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English Version

Aerospace series - Bolts, normal hexagonal head, close tolerance normal shank, short thread, in titanium alloy, anodized, with aluminium pigmented coating, metric series - Classification: 1 100 MPa (at ambient temperature) / 315 °C

Série aérospatiale - Axes à tête hexagonale basse, fût à tolérance serrée, filetage court, en alliage de titane, anodisées, avec revêtement aluminé-organique, série métrique - Classification : 1 100 MPa (à température ambiante) / 315 °C

Luft- und Raumfahrt - Sechskant-Paßschrauben, kleiner Kopf, kurzes Gewinde, aus Titanlegierung, anodisiert, mit Aluminium pigmentierte Beschichtung, metrische Reihe - Klasse: 1 100 MPa (bei Raumtemperatur) / 315 °C

This European Standard was approved by CEN on 13 January 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.

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Foreword

This European Standard (EN 4501:2006) 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.

EN 4501:2006 (E)

1 Scope

This standard specifies the characteristics of bolts, shouldered, thin hexagonal head, close tolerance shank, short thread, in titanium alloy, anodized, with aluminium pigmented coating, metric series.

Classification: 1 100 MPa ¹⁾ / 315 °C ²⁾

These bolts are intended to be used with washers EN 2414 and nuts EN 3230.

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 3353-1, *Aerospace – Lead and runout threads – Part 1: Rolled external threads.*

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

ISO 7913, *Aerospace – Bolts and screws, metric – Tolerances of form and position.*

ISO 9152, *Aerospace – Bolts, with MJ threads, in titanium alloys, strength class 1 100 MPa – Procurement specification.*

EN 2414, *Aerospace series – Washers, chamfered, with counterbore, in alloy steel, cadmium plated.* ³⁾

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

EN 3230, *Aerospace series – Nuts, hexagon, slotted / castellated, reduced height, normal across flats, in steel, cadmium plated – Classification: 900 MPa (at ambient temperature) / 235 °C*

EN 4016, *Aerospace series – Oversized bolts.* ³⁾

EN 4474, *Aerospace series – Aluminium pigmented coating – Coating methods.* ³⁾

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)*

EN 9133, *Aerospace series – Quality management systems – Qualification Procedure for aerospace standard parts.*

MIL-L-87132B, *Lubricant, Cetyl Alcohol, 1-Hexadecanol, Application to Fasteners.* ⁴⁾

TR 3775, *Aerospace series – Bolts and pins – Materials.* ⁵⁾

1) Minimum tensile strength of the material at ambient temperature

2) Maximum temperature that the bolt can withstand without continuous change in its original characteristics, after return to ambient temperature. The maximum temperature is determined by the coating.

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

4) Published by: Department of Defense (DoD), the Pentagon, Washington, D.C.20301, USA.

5) Published as AECMA Technical Report at the date of publication of this standard.

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