NSAI Standards

Irish Standard
I.S. EN 2648:2013

Aerospace series - Washers, concave, in alloy steel, cadmium plated

I.S. EN 2648:2013

Incorporating amendments/corrigenda/National Annexes issued since publication:

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Údarás um Chaighdeáin Náisiúnta na hÉireann

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 2648

December 2013

ICS 49.030.50

Supersedes EN 2648:1995

English Version

Aerospace series - Washers, concave, in alloy steel, cadmium plated

Série aérospatiale - Rondelles concaves, en acier allié, cadmiées

Luft- und Raumfahrt - Scheiben, für Neigungsausgleich, aus legiertem Stahl, verkadmet

This European Standard was approved by CEN on 28 September 2013.

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-CENELEC 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-CENELEC Management Centre has the same status as the official versions.

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Foreword

This document (EN 2648:2013) 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of an identical text or by endorsement, at the latest by June 2014, and conflicting national standards shall be withdrawn at the latest by June 2014.

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.

This document supersedes EN 2648:1995.

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, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This standard specifies the characteristics of concave washers, in alloy steel, cadmium plated, maximum operating temperature 235 °C.

They are intended to be used with nuts to EN 2647.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 2424, *Aerospace series — Marking of aerospace products*

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

EN 2542, *Aerospace series — Steel FE-PL1502 (25CrMo4) — Annealed — Bar and wire — D_e ≤ 40 mm — for prevailing torque nuts*

EN 2647, *Aerospace series — Nuts, hexagonal, self-locking, ball seat, in alloy steel, cadmium plated, MoS_2 lubricated — Classification: 900 MPa (at ambient temperature) / 235 °C*

EN 3330, *Aerospace series — Steel FE-PL1503 (35CrMo4) — Annealed — Bar and wire — D_e ≤ 40 mm — for prevailing torque nuts*

3 Required characteristics

3.1 Configuration – Dimensions – Masses

See Figure 1 and Table 1. Dimensions and tolerances are expressed in millimetres and apply after surface treatment.

3.2 Materials

Steel FE-PL1502 (25CrMo4), chemical composition in conformity with EN 2542, characteristics after manufacture: 1 250 MPa ≤ R_m ≤ 1 400 MPa, 40 ≤ HRC ≤ 43.

Or steel FE-PL1503 (35CrMo4), chemical composition in conformity with EN 3330 or EN 2448 or equivalent, characteristics after manufacture: 1 250 MPa ≤ R_m ≤ 1 400 MPa, 40 ≤ HRC ≤ 43.

3.3 Surface treatment

EN 2133, 8 µm to 14 µm.