



SLOVENSKI STANDARD
SIST EN 4266:2014

01-februar-2014

Aeronavtika - Ležaj, krogelni, drsni, kovina na kovino, iz korozijsko odpornega jekla, kadmiran - Široki tip - Mere in obremenitve - Colske serije

Aerospace series - Bearing spherical plain, metal to metal, in corrosion resisting steel, cadmium plated - Wide series - Dimensions and loads - Inch series

Luft- und Raumfahrt - Gelenklager, Metall auf Metall, aus korrosionsbeständigem Stahl, verkadmet - Breite Reihe - Maße und Belastungen - Inch Reihe

Série aérospatiale - Rotules lisses métal à métal en acier à la corrosion, cadmiées - Série large - Dimensions et charges - Séries en inches

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Ta slovenski standard je istoveten z: EN 4266:2013

ICS:

49.035	Sestavni deli za letalsko in vesoljsko gradnjo	Components for aerospace construction
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en

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EUROPEAN STANDARD

EN 4266

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2013

ICS 49.035

English Version

Aerospace series - Bearing spherical plain, metal to metal, in
corrosion resisting steel, cadmium plated - Wide series -
Dimensions and loads - Inch series

Série aérospatiale - Rotules lisses métal à métal en acier à
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Luft- und Raumfahrt - Gelenklager, Metall auf Metall, aus
korrosionsbeständigem Stahl, verkadmet - Breite Reihe -
Maße und Belastungen - Inch Reihe

This European Standard was approved by CEN on 17 March 2011.

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.

CEN members are the national standards bodies of 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 United Kingdom.



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

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Foreword

This document (EN 4266:2013) 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 September 2013, and conflicting national standards shall be withdrawn at the latest by September 2013.

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 organisations 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.

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EN 4266:2013 (E)**1 Scope**

This European Standard specifies the characteristics of spherical plain bearings, metal to metal, in corrosion resisting steel, cadmium plated and chromated, wide series, inch series for aerospace applications.

They are intended for use in fixed or moving parts of the aircraft structure and their control mechanisms.

They shall be used in the temperature range – 54 °C to 150 °C. As they are lubricated by means of the following greases:

- Code A: Grease as per MIL-PRF-23827C, operating temperature range – 73 °C to 121 °C;
- Code B: Grease as per MIL-PRF-81322G, operating temperature range – 54 °C to 177 °C.

The range of application for bearings lubricated with grease per code A is limited to 121 °C.

In both cases the spherical surface of the outer or inner ring have to be provided with a dry-film lubricant as per MIL-PRF-46010G or equivalent (anti-seizing protection).

The slide hole treatment either at the outer ring or inner ring.

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.

prEN 2030, *Aerospace series — Steel FE-PM3501 (X105CrMo17) — Hardened and tempered — Bars D = 150 mm*

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

EN 2337, *Aerospace series — Spherical plain bearings — Technical specification*

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

EN 3161, *Aerospace series — Steel FE-PM3801 (X5CrNiCu17-4) — Air melted, solution treated and precipitation treated, bar a or D ≤ 200 mm, $R_m \geq 930$ MPa*

ISO 1132-1, *Rolling bearings — Tolerances — Part 1: Terms and definitions*

ISO 8075, *Aerospace — Surface treatment of hardenable stainless steel parts*

TR 4475, *Aerospace series — Bearings and mechanical transmissions for airframe applications — Vocabulary*¹⁾

MIL-PRF-23827C, *Grease — Aircraft and instrument — Gear and actuator screw — NATO code number G-354*²⁾

MIL-PRF-46010G, *Lubricant — Solid film — Heat cured — Corrosion inhibiting — NATO code number S-1738*²⁾

MIL-PRF-81322G, *Grease — Aircraft — General purpose — Wide temperature range — NATO code number G-395*²⁾

1) Published as ASD-STAN Technical Report at the date of publication of this standard (www.asd-stan.org).

2) Published by: Department of Defense (DoD), <http://www.defenselink.mil/>.

3 Terms and definitions

For the purposes of this document, the terms and definitions given in TR 4475 apply.

4 Symbols and abbreviations

Symbols of limit deviations are in accordance with definitions of ISO 1132-1.

α	is the maximum angle of tilt of the outer ring with respect to the inner ring, with the spherical surface of the outer ring being completely in contact with the inner ring;
C_a	is the permissible static axial load;
C_s	is the permissible static radial load;
Δ_{dmp}	is the single plane mean bore diameter deviation;
Δ_{Dmp}	is the single plane mean outside diameter deviation;
Δ_{ds}	is the deviation of a single bore diameter;
Δ_{Ds}	is the deviation of a single outside diameter.

Definitions and vocabulary according to TR 4475.

5 Requirements

5.1 Configuration, dimensions, tolerances and mass

According to Figures 1 and 2 and Table 1.

Dimensions and tolerances are expressed in millimetres (inches).

Values apply after surface treatment.

5.2 Surface roughness

In accordance with Figures 1 and 2.

Values in micrometres (micro inches), apply prior to surface treatment.

5.3 Material

- Inner ring: According to prEN 2030, hardness $55 < \text{HRC} < 62$;
- Outer ring: According to EN 3161, hardness $28 < \text{HRC} < 38$ before swaging.

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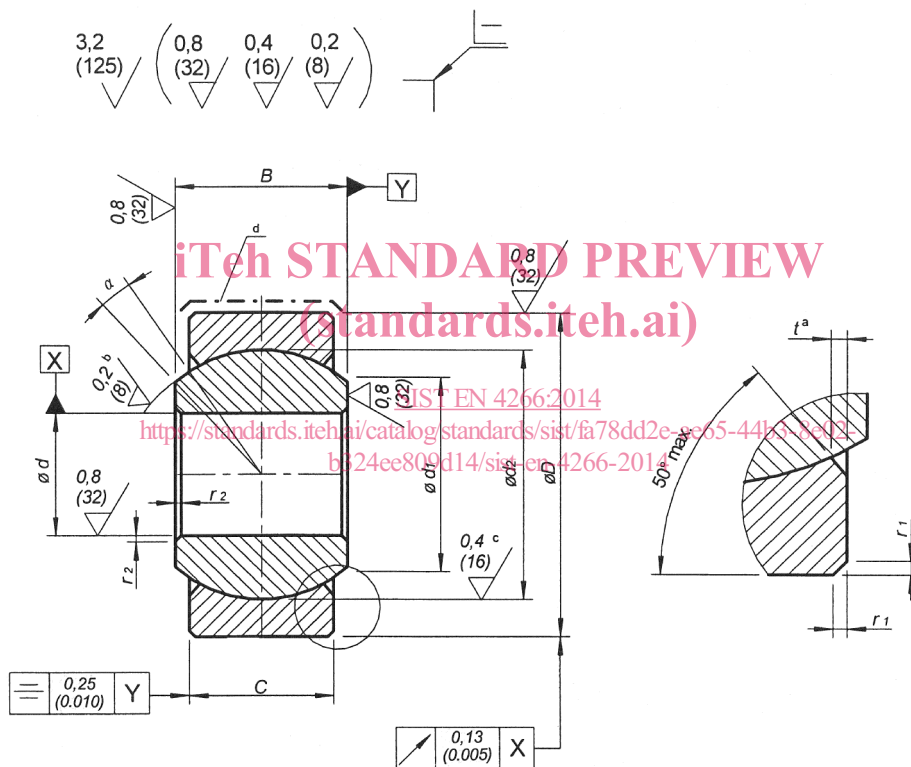
5.4 Surface treatment

Without swaging groove code S: Surface treatment according to ISO 8075 for inner ring before swaging. Cadmium plating of outer ring: 5 μm to 8 μm (0,2 μin to 0,3 μin) according to EN 2133 (cylindrical surface area and chamfers and both end surfaces at manufacture's option), followed by chromating.

With swaging groove code R: Surface treatment according to ISO 8075 for inner ring before swaging. Cadmium plating of outer ring: 5 μm to 8 μm (0,2 μin to 0,3 μin) according to EN 2133 (cylindrical surface area, broken angles and radii, respectively, as well as both end surfaces up to the swaging grooves), followed by chromating.

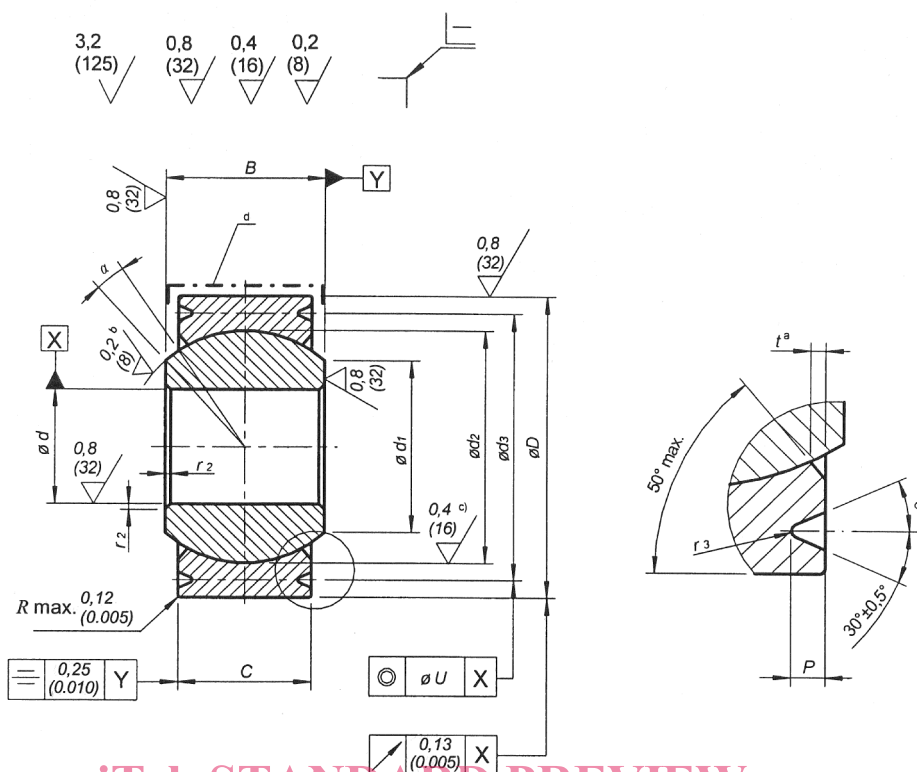
5.5 Loads and clearances

According to Tables 2 and 3.



- a set back
- b for the inner ring
- c for the outer ring
- d cadmium plated

Figure 1 — Code S — Without swaging grooves



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Figure 2 — Code R — With swaging grooves