



SLOVENSKI STANDARD

SIST EN 2015:2001

01-januar-2001

Bearings, airframe rolling, double row, self aligning ball bearings in steel, diameter series 2 - Dimensions and loads - Aerospace series

Bearings, airframe rolling, double row, self aligning ball bearings in steel, diameter series 2 - Dimensions and loads - Aerospace series

Luft- und Raumfahrt - Flugwerkklager, zweireihige Pendelkugellager aus Stahl, Durchmesserreihe 2 - Maße und Belastungen

Roulements pour structures d'aéronefs, roulements en acier, a rotule sur deux rangées de billes, série de diametres 2 - Dimensions et charges - Série aérospatiale

<https://standards.iteh.ai/catalog/standards/sist/5abf4c15-f2d1-4bfa-800b-230fdfe95b80/sist-en-2015-2001>

Ta slovenski standard je istoveten z: EN 2015:1984

ICS:

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

SIST EN 2015:2001

en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 2015:2001](#)

<https://standards.iteh.ai/catalog/standards/sist/5abf4c15-f2d1-4bfa-800b-230fdfe95b80/sist-en-2015-2001>

EUROPEAN STANDARD
 NORME EUROPÉENNE
 EUROPÄISCHE NORM

EN2015

June 1984

UDC 629.7.02 : 681.822.7.004.1 : 681.828 : 669.14

Key words : Aircraft industry, airframe bearings, self aligning bearings, ball bearings, steel, dimensions, static loads

English version

Bearings-airframe rolling
 double row, self aligning ball bearings in steel
 diameter series 2
 Dimensions and loads
 Aerospace series

Roulements pour structures d'aéronefs
 roulements en acier, à rotule sur deux rangées de billes
 série de diamètres 2
 Dimensions et charges
 Série aéronautique

Luft- und Raumfahrt
 Flugwerkklager
 zweireihige Pendelkugellager aus Stahl
 Durchmesserreihe 2
 Masze und Belastungen

iTeh STANDARD PREVIEW

This European Standard was accepted by CEN on 1984-06-21. CEN members are bound to comply with the requirements of CEN Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

SIST EN 2015:2001

<https://standards.iteh.ai/catalog/standards/sist/5ab4c15-f2d1-4bfa-800b-2941e3603826/en-2015-2001>

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN 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 CEN Central Secretariat has the same status as the official versions.

CEN members are the national standards organizations of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
 Comité Européen de Normalisation
 Europäisches Komitee für Normung

Central Secretariat : Rue Bréderode 2, B-1000 Brussels

BRIEF HISTORY

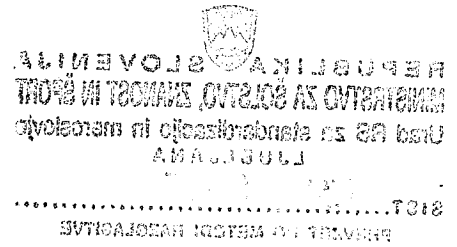
This European Standard has been prepared by the European Association of Aerospace Constructors (AECMA). This Standard has been accepted by the European Committee for Standardization (CEN) after inquiries and votes carried out in accordance with the rules of this Committee.

CONTENTS

- 1 SCOPE
- 2 FIELDS OF APPLICATION
- 3 REFERENCES
- 4 DEFINITIONS
- 5 SYMBOLS
- 6 MATERIALS
- 7 REQUIRED CHARACTERISTICS
- 8 DESIGNATION
- 9 MARKING
- 10 TECHNICAL SPECIFICATION

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 2015:2001
<https://standards.iteh.ai/catalog/standards/sist/5ab14c15-f2d1-4bfa-800b-730f1695b80/sist-en-2015-2001>



1 SCOPE

The standard specifies the characteristics, of double row self aligning ball bearings of diameter series 2¹⁾ designed to withstand only slow rotations and oscillations under load. They are intended for use between fixed and moving parts of the aircraft structure and their control mechanisms.

2 FIELDS OF APPLICATION

The airframe roller bearings defined in the present standard shall be used from -54 to $+150$ °C.

However, being lubricated with the following greases :

- very high pressure grease, ester type (code A), operational range -73 to $+121$ °C or
- very high pressure grease, synthetic hydrocarbons, general purpose (code B), operational range -54 to $+177$ °C (refer to EN2063),

their field of application when lubricated with code A grease shall be limited to $+121$ °C.

3 REFERENCES

ISO 15 - 1981, Rolling bearings - Radial bearings - Boundary dimensions - General plan

ISO/R 201 - 1961, Rolling bearings - Radial internal clearance in unloaded radial groove type ball bearings with cylindrical bore - Values

EN2031, Steel FE-PL31, Hardened and tempered, Bars.

EN2063, Bearings, airframe rolling - Technical Specification.

4 DEFINITIONS

Self aligning ball bearings, full complement (without cage), double row.

5 SYMBOLS

Δds	= the deviation of a single bore diameter
ΔDs	= the deviation of a single outside diameter
Δdmp	= single plane mean bore diameter deviation
ΔDmp	= single plane mean outside diameter deviation
C_s	= permissible static radial load.
F_a	= bearing axial load = axial component of actual bearing load
$F_{a \text{ max.}}$	= permissible static axial load
F_r	= static radial load
P_{or}	= static equivalent radial load
Y_s	= coefficient of axial load.

6 MATERIALS

Inner ring : Steel EN2031²⁾, 59 to 64 HRC

Outer ring : Steel EN2031²⁾, 59 to 64 HRC

Balls : Steel EN2031²⁾, 59 to 64 HRC

Shields : Corrosion resisting material

Seals : Polytetrafluoroethylene (PTFE);
or polytetrafluoroethylene (PTFE) - glass fibre reinforced plastic material.

1) See ISO 15.

2). For new designs, bearings in corrosion resisting steel should be used for preference, see EN2017.

7 REQUIRED CHARACTERISTICS

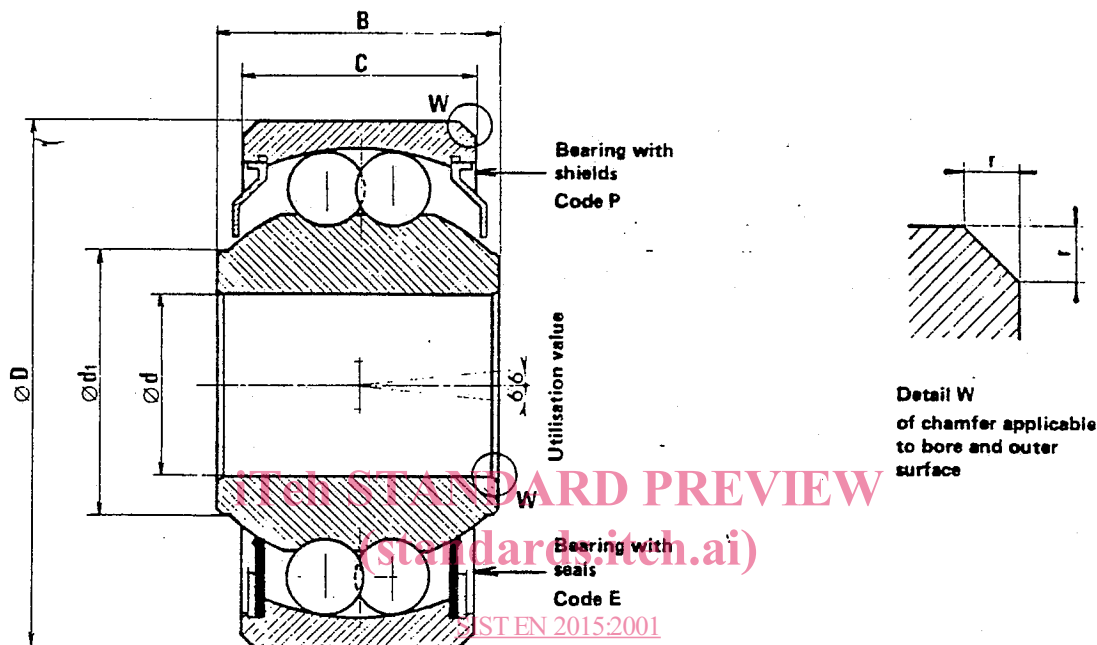
7.1 - Dimensions - Tolerances - Clearances - Loads - Mass.

Configuration shall correspond with the figure. Dimensions shall correspond with the table. Bearings can be assembled with either seals or shields.

7.2 - Surface roughness.

$R_a = 0,2 \mu\text{m}$ for the raceway and rolling elements.

$R_a = 0,8 \mu\text{m}$ for the bore, side faces and cylindrical outer surface



ST EN 2015:2001
<https://standards.tech.ai/catalog/standards/sist/5abf4c15-f2d1-4bfa-800b-230fdfe95b80/sist-en-2015-2001>

FIGURE

TABLE

Dimensions in millimetres

Code	Nominal	D	C 0 - 0,12	B 0 - 0,12	d_1 nom.	Tolerances μm				r	Radial internal clearance		Permissible static radial load C_s kN	Mass kg/1000 parts \approx
						Δd_{mp}	ΔD_{mp}	Δd_s	ΔD_s		normal group μm 1)	group 3 μm 1)		
05	5	16	8	12	7,6		0 - 8		+ 2 - 10	0,3 to 0,8	2 to 13 10 to 20	3,7	9	
06	6	19	10	14	8,6		0 - 9	+ 2 - 10	+ 2 - 11			5,7	14	
08	8	24	14	20	11,1	0 - 8						9,1	30	
10	10	30	16	22	13,6							14,1	57	
12	12	32	18	24	15,4							16,1	62	
15	15	35	20	26	18,5		0 - 11	+ 3 - 11	+ 3 - 14		3 to 18 13 to 23	18,8	75	
17	17	40	22	28	21,2			+ 3 - 13				24,3	110	
20	20	47	28	34	23,6	0 - 10					5 to 20 15 to 25	32,6	170	

$$F_a \text{ max.} = \frac{C_s}{Y_s} \text{ where } Y_s = 3,2$$

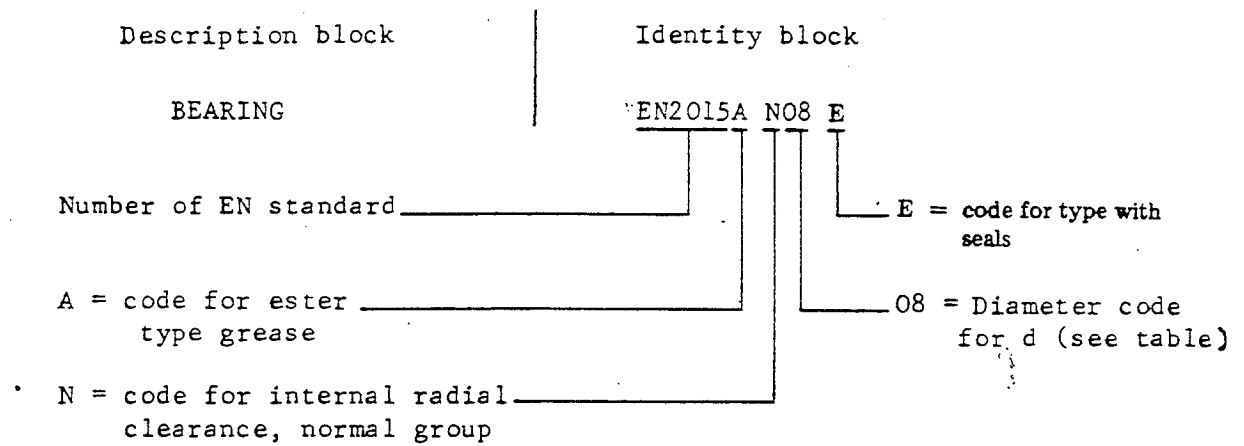
Equivalent static radial load P_{Or} . Load P_{Or} resulting from radial and axial loads is calculated according to formula $P_{Or} = F_r + 3,2 F_a$ and shall be less than or equal to load C_s given in the table, see EN2063.

For ultimate static loads, see EN2063.

1) See ISO/R 201.

8 DESIGNATION

Each bearing shall only be designated as in the following example :



where the following codes are applied :

Greases : A = ester type grease

B = synthetic hydrocarbon type grease

Types : E = with seals

P = with shields

Clearances: L = internal radial clearance, group 3

N = internal radial clearance, normal group

Note : If necessary, the originator code S 9005 may be introduced between the description block and the identity block.

9 MARKING

In addition to the manufacturers' own marking, each bearing shall be marked, on one side face only using the identity block as defined in clause 8 of this standard.

Marking position and method are at the manufacturer's option.

10 TECHNICAL SPECIFICATION

Bearings supplied to this standard shall conform with the requirements of EN2063