SLOVENSKI STANDARD
SIST EN 3058:2001

01-januar-2001

Aerospace series - Bearings, airframe rolling - Rigid double row ball bearings in corrosion resisting steel - Dimensions and loads

Aerospace series - Bearings, airframe rolling - Rigid double row ball bearings in corrosion resisting steel - Dimensions and loads

Luft- und Raumfahrt - Flugwerklager - Zweireihige Rillenkugellager aus korrosionsbeständigem Stahl - Maße und Belastungen

Série aérospatiale - Roulements pour structures d'aéronefs - Roulements en acier résistant a la corrosion, rigides, a deux rangées de billes - Dimensions et charges

Ta slovenski standard je istoveten z: **EN 3058:1994**

ICS:

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

SIST EN 3058:2001 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 3058

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Descriptors: Aircraft industry, airframe bearings, ball bearings corrosion resisting steel, dimensions, static loads

English version

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CEN

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

Central Secretariat: rue de Stassart,36 B-1050 Brussels

Foreword

This European Standard has been prepared by the European Association of Aerospace Manufacturers (AECMA).

After inquiries and votes carried out in accordance with the rules of this Association, this Standard has successively received the approval of the National Associations and the Official Services of the member countries of AECMA, prior to its presentation to CEN.

This standard was submitted for Formal Vote, and the result was positive.

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of an identical text or by endorsement, at the latest by October 1994, and conflicting national standards shall be withdrawn at the latest by October 1994.

According to the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom.

1 Scope

This standard specifies the characteristics of rigid double row ball bearings in corrosion resisting steel designed to withstand only slow rotations and oscillations under load.

They are intended for use in the hubs of bell crank levers fitted with a single bearing.

The airframe rolling bearings defined in this standard are used from – 54 °C to + 150 °C.

However, being lubricated with the following greases :

- very high pressure grease, ester type (code A), operational range – 73 °C to + 121 °C or
- very high pressure grease, synthetic hydrocarbons, general purpose (code B), operational range – 54 °C to + 177 °C (see EN 3280),

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

2 Normative references

This European Standard incorporates by dated or undated reference provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

ISO 1132	Rolling bearings - Tolerances - Definitions
EN 2030	Steel FE-PM43 - Hardened and tempered - Bars D ≤ 150 mm - Aerospace series [1]
EN 2226	Steel FE-PM43 - Hardened and tempered - Hand and die forgings D_e ≤ 150 mm - Aerospace series [1]
EN 3280	Aerospace series - Bearings, airframe rolling, rigid or self-aligning - Technical specification

3 Definition

For the purposes of this standard, the following definition applies :

Bearing : full complement of balls (without cage), with filling slot.

4 Symbols

The definitions of tolerances and clearances are given in ISO 1132.

Δ_{dmp} = single plane mean bore diameter deviation

Δ_{Dmp} = single plane mean outside diameter deviation

Δ_{Ds} = deviation of a single outside diameter

G_d = diagonal internal clerance

S_{ia} = assembled bearing inner ring face runout with raceway

S_{ea} = assembled bearing outer ring face runout with raceway

K_{ia} = radial runout of assembled bearing inner ring

K_{ea} = radial runout of assembled bearing outer ring

F_a max. = permissible static axial load

C_s = permissible static radial load.

1) Published as AECMA Standard at the date of publication of this standard.

5 Required characteristics

5.1 Dimensions - Tolerances - Clearances - Loads - Mass

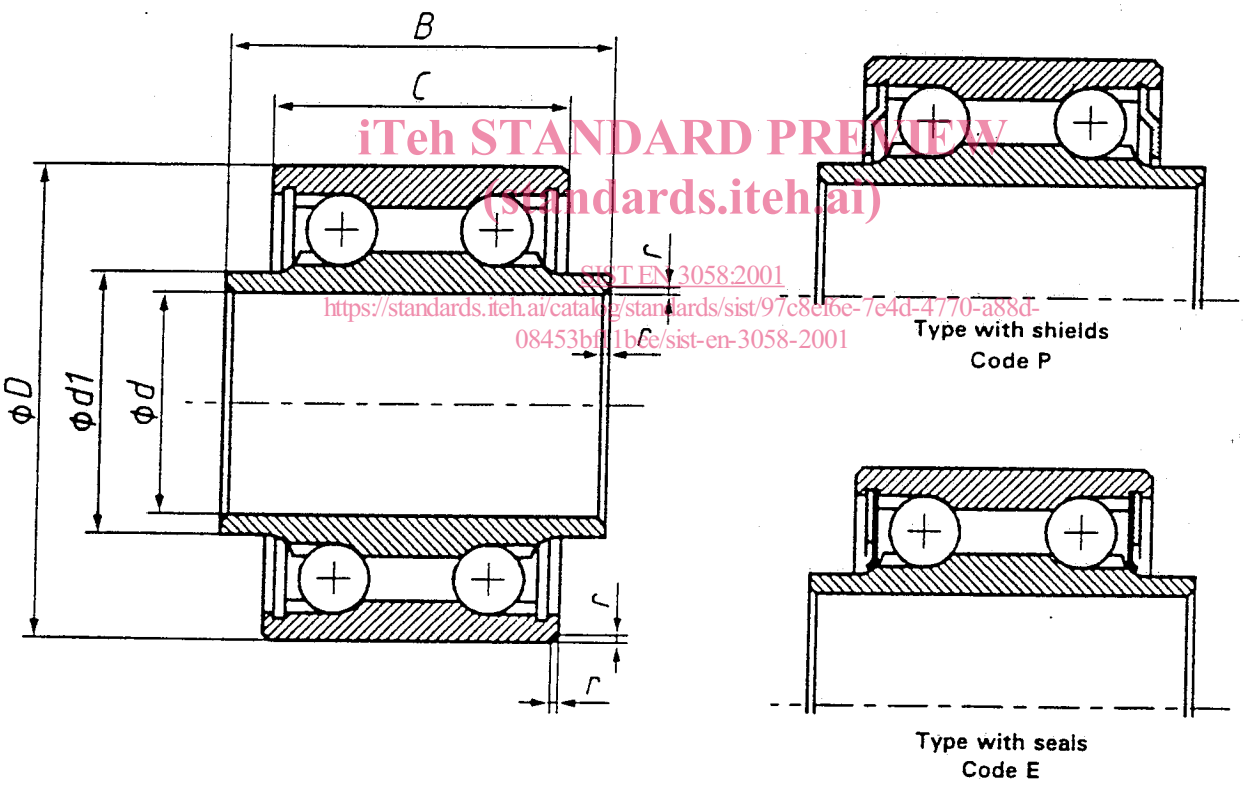
Configuration : see figure 1 ; the bearings are fitted with either seals or shields.
Values : see table 1.

5.2 Surface roughness

Raceways and rolling elements : R_a = 0,2 µm
Bore, side faces and cylindrical outer surface : R_a = 0,8 µm.

5.3 Materials

Inner ring : EN 2030 or EN 2226, ≥ 58 HRC
Outer ring : EN 2030 or EN 2226, ≥ 58 HRC
Balls : EN 2030, ≥ 58 HRC
Shields : Corrosion resisting material
Seals : Polytetrafluoroethylene (PTFE) or polytetrafluoroethylene (PTFE) reinforced with fibreglass.



NOTE 1 : The installation of seals and shields is at the manufacturer's option.
NOTE 2 : The shields shall not extend beyond « C ».

Figure 1

Table 1

Dimensions in millimetres

d		B	C	D	d1	Tolerances µm			r	Mass kg/1000 parts ≈
Code	Nominal	0 − 0,12	0 − 0,12		min.	Δ_{dmp}	Δ_{Dmp}	Δ_{Ds}		
08	8	22	17	22	10,6	J7	0 −8	+ 2 −11	0,3 to 0,8	30
10	10	24	18	26	12,6					52
12	12			28	14,7					60
15	15	26	20	32	17,7		0 −9	+ 3 −14		80
17	17	28	22	35	20,2					100
20	20	32	26	42	23,5					165

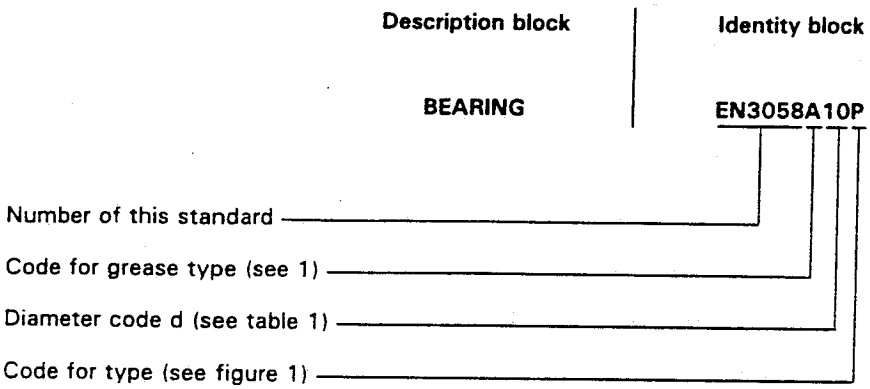
d Code	Diagonal internal clearance G_d µm	Runout tolerances max. µm				Starting torque 1) in mN.m		Permissible static loads 2) kN	
		Axial		Radial		Code	Code	Axial	Radial
		S_{ia}	S_{ea}	K_{ia}	K_{ea}	P	E	F_a max.	C_s
08	50 to 250	40	40	25	40	4	6	10,9	24
10						6	9	15,6	34,4
12						7	11	18,4	40,4
15						9	14	21,4	47
17						11	17	24,5	53,8
20						15	23	37,7	83

1) Definition, see EN 3280.

2) Axial and radial loads may be applied simultaneously.
For ultimate static loads, see EN 3280.

6 Designation

EXAMPLE :



NOTE : If necessary, the code I9005 shall be placed between the description block and the identity block.

7 Marking

In addition to the manufacturer's own marking, each bearing shall be marked, on one side face only, using the identity block, see 6.

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

8 Technical specification

See EN 3280.