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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 307.3-2017

Rolling bearings - General technical regulations

滚动轴承 通用技术规则

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Foreword

GB/T 307 Rolling bearings consists of the following four parts. - GB/T 307.1-2005, Rolling bearings - Radial bearings - Tolerances; - GB/T 307.2-2005, Rolling bearings - Measuring and gauging principles and methods; - GB/T 307.3-2017, Rolling bearings - General technical regulations; - GB/T 307.4-2012, Rolling bearings - Tolerances - Part 4. Tolerances for thrust bearings. This Part is the third part of GB/T 307. This Part was drafted in accordance with the rules given in GB/T 1.1-2009. This Part replaces GB/T 307.3-2005 Rolling bearings - General technical regulations. Compared with GB/T 307.3-2005, the main technical changes in this Part are. - modified the level, number and name of some reference standards (see Clause 2 of this Edition, Clause 2 of Edition 2005); - subdivided the surface roughness value for nominal diameter of 80mm ~ 500mm and modified some surface roughness values (see Table 1 of this Edition; Table 1 of Edition 2005); - added the clearances of four-point-contact ball bearings and double, four-row tapered roller bearings as well as measurement methods (see 5.6,

5.16.3 of this Edition); - added the sealing, cleanliness and appearance quality requirements of bearing (see 5.11~

5.13 of this Edition); - added the calculation method for rated thermal speed of bearing (see

5.15.3 of this Edition); - added the measurement method for bearing surface roughness (see

5.16.4 of this Edition); - added the bearing cleanliness, inspection method for appearance quality as well as test and evaluation of service life (see 5.16.8~

5.16.10 of this Edition); - added the rolling body (ceramic ball, tapered roller), cage, seal

and dust cover requirements (see 6.1~

6.3 of this Edition); Rolling bearings - General technical regulations

1 Scope

China's national general technical rules for rolling bearings, and the current edition of GB/T 307.3, replacing the 2005 edition. It specifies the general technical requirements applying to rolling bearings, and it applies to bearings for general purposes; additional technical conditions may be established for special-purpose bearings. It is the document that sits behind the whole Chinese rolling bearing standards estate: where the tolerance standards say how accurately a bearing must be made and the dimension plans say how large it must be, this part says what a bearing must be - the surface finish of its raceways and bores, its internal clearance, its sealing, its cleanliness, its appearance quality, its permissible speed, the requirements on its rolling elements, cage, seals and shields, and the methods by which each of those is measured. The 2017 revision is substantial and reflects how much the sector had changed since 2005. It subdivides the surface roughness values for nominal diameters from 80 to 500 mm and revises several of them; it adds clearance values and measurement methods for four-point contact ball bearings and for double-row and four-row tapered roller bearings; it adds requirements for bearing sealing, cleanliness and appearance quality, none of which the 2005 edition covered; it adds a calculation method for the rated thermal speed; it adds measurement methods for surface roughness and inspection methods for cleanliness and appearance quality, together with the testing and evaluation of service life; and it adds requirements for rolling elements including ceramic balls and tapered rollers, and for cages, seals and shields. Issued on 12 May 2017 and in force since 1 December 2017.

This Part of GB/T 307 specifies the general technical regulations for rolling bearings. This Part is applicable to rolling bearings of general purpose. For special-purpose bearings, additional technical conditions may be formulated.

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.

GB/T 271, Rolling bearings - Classification

GB/T 272, Rolling bearing - Identification code

GB/T 273.1, Rolling bearings - Tapered roller bearing - Plan of boundary dimensions

GB/T 273.2, Rolling bearings - Thrust bearings - Boundary dimensions, general plan

GB/T 273.3, Rolling bearings - Boundary dimensions, general plan - Part 3. Radial bearings

GB/T 274, Rolling bearings - Chamfer dimension - Maximum values

GB/T 275, Rolling bearings - Fits

GB/T 305, Rolling bearings - Snap ring groove and snap ring on outer ring - Dimensions and tolerances

GB/T 307.1, Rolling bearings - Radial bearings - Tolerances

GB/T 307.2, Rolling bearings - Measuring and gauging principles and methods

GB/T 307.4, Rolling bearings - Tolerances - Part 4. Tolerances for thrust bearings

GB/T 308.1, Rolling bearings - Balls - Part 1. Steel balls

GB/T 308.2, Rolling bearings - Balls - Part 2. Ceramic balls

3 Terms and definitions

For the purposes of this document, the terms and definitions defined in GB/T 6930 apply.

4 Symbols

The symbols provided in GB/T 7811 apply to this document.

5 Bearings

5.1 Classification The classification for bearings shall comply with the provisions of GB/T 271.

5.2 Code The code for bearings shall comply with the provisions of GB/T 272.

5.3 Dimensions The bearing dimensions shall comply with the provisions of GB/T 273.1, GB/T 273.2, GB/T 273.3.

5.4 Tolerance grade and tolerance The bearing shall be graded according to size tolerance and rotation accuracy. The tolerance grades are arranged in descending order. Its tolerance shall comply with the provisions of GB/T 307.1, GB/T 307.4. Radial bearing (except tapered roller bearing) is divided into five grades. ordinary, 6, 5, 4, 2.

5.14 Interchangeability

5.14.1 For separate angular contact ball bearings (S70000 type) of ordinary grade tolerance, tapered roller bearings of ordinary grade, 6X grade tolerances, their subparts shall be interchangeable.

5.14.2 For cylindrical roller bearings of ordinary grade tolerance, needle roller bearings with inner and outer rings and cage, when user has requirements for interchangeability, it shall be submitted by interchange.