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

GB/T 18326-2022

Replacing GB/T 18326-2001

**Plain bearings - Multilayer materials for thin-walled plain
bearings**

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Table of Contents

foreword

3.3 and Appendix A of the.2001 edition);

1 Scope

2 Normative references

3 Terms and Definitions

4 Technical Requirements

4.1 Steel back

4.2 Layers of bearing material

foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1. Structure and Drafting Rules for Standardization Documents" drafting.

This document replaces GB/T 18326-2001 "Metal Multilayer Materials for Sliding Bearings and Thin-walled Sliding Bearings", and GB/T 18326-

Compared with.2001, the main technical changes are as follows.

--- A description of the chemical composition of the material has been added (see Chapter 1);

--- Change "bearing alloy layer" to "bearing material layer" to cover metal-polymer materials (see 4.2, 3.1 of the.2001 edition);

--- Change "coating" to "coating" to cover sputtering and polymer coating, and supplement the relevant technical requirements (see 4.3 and Appendix A,

3.3 and Appendix A of the.2001 edition);

---Change "characteristics of bearing alloy" to "hardness of bearing strip alloy layer" to clarify the object of the characteristics (see 4.4,.2001 edition

3.4);

--- The lead-based alloy material has been deleted to meet the current environmental protection requirements, and AlSn12Si2.5Pb1.7, which is no longer used, has been deleted (see

---Changed the content requirements of the chemical composition Sb in the copper-based alloy material, and changed the material name of the aluminum-based alloy material "AlSn6Cu"

method and Ni, Mn content requirements, changed the content requirements of the chemical composition Sn in AlSn20Cu, in order to meet the requirements of thin-walled sliding bearings

Market material selection requirements (see Table 2 and Table 3, Table 2 and Table 3 of the.2001 edition);

---Added the content requirements of the chemical composition Cd in tin-based alloy materials and the technical requirements of tin-based alloys, and added copper-based alloy materials

CuPb22Sn3, CuNi2Sn and CuSn8Ni, adding aluminum-based alloy materials AlSn12SiCu and AlSn6Si2.5MnNi, adding

Added the content requirement of chemical composition Pb in sintered bronze material CuSn10, sintered bronze material QFQSn8-3 and polymer material

According to the material technical requirements, the electroplating layer material SnCu3 is added, and the sputtering layer material AlSn35Cu is added to meet the thin-walled sliding

Material selection requirements for dynamic bearing market (see Table 1~Table 6).

This document is modified to adopt ISO 4383.2012 "Multilayer materials for sliding bearings and thin-walled sliding bearings".

Compared with ISO 4383.2012, this document has made the following structural adjustments.

--- The chapter "Terms and Definitions" has been added;

--- Deleted 3.1 "Chemical Composition" in ISO 4383.2012, and the relevant requirements are respectively in "4.2 Bearing Material Layer" and "4.3 Covering"

given in;

--- Added "5.1 Marking method".

The technical differences between this document and ISO 4383.2012 and their reasons are as follows.

--- Adjust the chemical composition test description of the material to "Note" (see Chapter 1) to clarify its explanatory role;

--- Deleted the ISO 6280 referenced in 3.2 of ISO 4383.2012, because the technical requirements for thick-walled multi-layer bearing backing are not suitable

For thin-walled bearings;

---Delete the backing technical requirements that are not applicable to thin-walled bearings (see 4.1), because the technical requirements for thick-walled multilayer bearings are not applicable to

thin-walled bearings;

--- ISO 6691 was replaced by GB/T 23893 (see Table 4) and GB/T 35088 was replaced by ISO 4381 (see

Table 1) to adapt to my country's technical conditions;

---Changed the material designation and Ni and Mn content requirements of the aluminum-based alloy material "AlSn6Cu", as well as the chemical composition of AlSn20Cu

Sn content requirements (see Table 3) to meet the material selection requirements of the domestic market;

--- Added copper-based alloy materials, added aluminum-based alloy materials AlSn6Si2.5MnNi, added sintered bronze materials QFQSn8-3,

The electroplating layer material SnCu3 and the sputtering layer material AlSn35Cu are added to comply with the thin-wall sliding bearing market materials

Selection requirements (see Table 2~Table 6) to meet the requirements for material selection in the domestic market.

The following editorial changes were made to this document.

---Changed the single value representation method of chemical composition content (see Table 1~Table 6);

--- Deleted the note of 3.3 in ISO 4383.2012;

--- Changed the hardness value of CuPb24Sn4, CuPb24Sn, CuPb30 in Table A.1, and increased the hardness value of CuPb17Sn5 (see

Table A.1);

--- Added bearing alloy material grades CuPb22Sn3, CuNi2Sn, CuSn8Ni, AlSn6Si2.5MnNi, and corresponding shafts

The hardness value of the alloy layer of the bearing strip (see Table A.1), the material properties, the main application in the high-speed engine and the minimum value of the matching journal material

Hardness value (see Table A.2); added coating material grades SnCu3 (electroplating) and AlSn35Cu (sputtering), and corresponding materials

Characteristics and main uses in high-speed engines (see Table A.2).

Please note that some contents of this document may refer to patents. The issuing agency of this document assumes no responsibility for identifying patents.

1 Scope

This document specifies the technical requirements for multilayer materials used in the manufacture of thin-walled plain bearings (bearing bushes, bushings, thrust washers). multi-layer material from

Steel backing, layers of bearing material (cast, sintered, rolled clad) and may also include cladding.

This document applies to the selection of materials for thin-walled sliding bearings.

NOTE. The chemical composition in this document is that of the unprocessed raw material, tested on a representative sample. Sampling on finished bearings

Due to the influence of the processing process, the chemical composition test is not comparable with the data given in this document.

2 Normative references

The contents of the following documents constitute the essential provisions of this document through normative references in the text. Among them, dated references

For documents, only the version corresponding to the date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to

this document.

GB/T 23893 Classification and marking of thermoplastic polymers for sliding bearings (GB/T 23893-2009, ISO 6691.2000,

IDT)

GB/T 35088 Tin-based casting alloys for sliding bearings multilayer sliding bearings (GB/T 35088-2018, ISO 4381.2011,

IDT)

ISO 4382-1 Copper alloys for plain bearings - Part 1.Cast copper alloys for single-layer and multi-layer thick-walled plain bearings (Plainbear-

3 Terms and Definitions

This document does not have terms and definitions that need to be defined.