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

GB/T 37774-2019

Plain bearings - Pad materials for tilting pad bearings

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Table of Contents

Foreword

Introduction

1 Scope

2 Normative references

3 Technical requirements

3.1 General

3.2 Metal materials

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1 Scope

2 Normative references

3 Technical requirements

3.1 General

3.2 Metal materials

Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard uses the translation method equivalent to ISO 14287.2012 "sliding bearing tilting pad bearing pad material".

The documents of our country that have a consistent correspondence with the international documents referenced in this standard are as follows.

---GB/T 35088-2018 Sliding bearing tin-based casting alloy for multi-layer sliding bearings (ISO 4381.2011, IDT)

---GB/T 18326-2001 Metallic multilayer material for sliding bearing thin-walled sliding bearings (ISO 4383.1991, IDT)

This standard was proposed by the China Machinery Industry Federation.

This standard is under the jurisdiction of the National Sliding Bearing Standardization Technical Committee (SAC/TC236).

This standard is drafted by. China Machine Productivity Promotion Center, Hunan Chongde Industrial Technology Co., Ltd.

Participated in the drafting of this standard. Zhejiang Zhuji City Bearing Factory Co., Ltd., Zhejiang Shenke Sliding Bearing Technology Co., Ltd., Xi'an Transportation

University, Lin'an Oriental Sliding Bearing Co., Ltd.

This standard is interpreted by the National Standardization Technical Committee for Plain Bearings.

Introduction

The tilting pad bearing bears the load evenly through multiple tiles. The tile can rotate on the fulcrum of its tile back surface. This structure allows

The tile is tilted freely to help maintain the optimum oil film shape of the sliding surface while improving the bearing capacity of the bearing.

These bearings are often used as thrust bearings or radial bearings on rotating machinery and operate under load conditions with lubricating oil supply.

The application has a long history. With the continuous development of high-speed, high-performance rotating machinery, various types of tile materials have been put into practical use.

Sliding bearing tilting pad bearing pad material

1 Scope

This standard specifies the technology for manufacturing metal-based bearing materials, polymer materials, tile backing materials and tilting pad pivot materials for tilting pads.

Claim.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article.

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

ISO 4381 Sliding bearing tin-based casting alloy for multi-layer plain bearings
(Plainbearings-Tincastingalloysformul-

Tilayerplainbearings)

ISO 4383 sliding bearing thin-walled plain bearing with metal multilayer material
(Plainbearings-Multilayermaterialsfor

Thin-waledplainbearings)

3.1 General

According to the operating conditions of the bearing, the material of the sliding surface layer of the bearing is usually made of metal bearing material combined with the metal of the tile back or polymerized.

Material composition. Tin-based bearing alloys shall comply with ISO 4381 and metal multilayer materials shall comply with ISO 4383. Appendix A provides the tile axis

Guidelines for the selection of materials.

3.2.1 Typical materials

The chemical composition of some typical metal-based bearing alloy materials is shown in Table 1.

3.2.2 Tin-based Babbitt Alloy

Tin-based babies are commonly used metal-based bearing materials and are usually formed by casting. Babbitt alloy has good casting properties. but

Attention should be paid to quality issues such as bonding strength, segregation and porosity problems with tile backing materials.

In order to ensure the proper strength, hardness and hardness of the babbitt alloy, the combination of Sb and Cu alloys shown in Table 1 is often used in practical applications.

Lead-based babbitt is rarely used for environmental reasons.

3.2.3 Aluminum-based bearing alloy

Aluminum-based bearing alloys are commonly used in high-speed, heavy-duty, high-temperature operating conditions. For example. Al-Sn alloy, which is made of tin added to aluminum metal

The alloy is the most commonly used aluminum-based bearing alloy. In order to improve the sliding performance of Al-Sn alloy in high-speed operation environment, it is usually used.

AlSn40 alloy.

The aluminum-based alloy tile bearing is made by rolling the aluminum-based alloy onto the carbon steel to obtain a bimetallic strip. Made of this alloy

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