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

GB/T 35083.1-2018

**Plain bearings -- Testing of the tribological behaviour of bearing
materials -- Part 1: Testing of bearing metals**

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Foreword

GB/T 35083 "Sliding Bearing Materials Tribological Characteristics Test" consists of the following two parts.

--- Part 1. Metal bearing material test;

--- Part 2. Testing of polymeric bearing materials.

This part is the first part of GB/T 35083.

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

This section uses the translation method equivalent to the use of ISO 7148-1.2012 "sliding bearing bearing material tribology test Part 1.

Metal bearing material test".

The Chinese documents that are consistent with the normatively quoted international documents in this section are as follows.

---GB/T 16748-1997 Compression test of plain bearing metal bearing materials (idt ISO 4385.1981)

This part is proposed by China Machinery Industry Federation.

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

This section is responsible for drafting. China Machine Productivity Promotion Center, Hefei Bolin New Material Co., Ltd., Hunan Chongde Industrial Technology Co., Ltd.

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This part is explained by the National Sliding Bearing Standardization Technical Committee.

Sliding bearing bearing material tribological characteristics test

Part 1. Metal bearing material test

1 Scope

This part of GB/T 35083 specifies the tribological tests of plain bearing metal bearing materials under boundary lubrication conditions.

The purpose of the test procedure described in this section is to compare the friction and wear characteristics of various types of bearing materials/partner/lubricant combinations so that

Bearing materials are selected for bearings that operate repeatedly or long-term under boundary lubrication, low speed continuous operating conditions. Due to the different test conditions,

Scuffing wear values may vary from test device to device.

Only when all parameters that are influential are the same, can the test results be practical for practical applications. Test conditions deviate from actual application

The more cases there are, the higher the uncertainty of the test results.

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 version (including all amendments) applies to this document.

ISO 4385 Plain Bearings-Compression testing of metallic

Bearingmaterials)

3 symbols and units

See Table 1.

Table 1 Symbols and Units

Symbol definition unit

A, B, C test methods -

a sliding distance km

A5 elongation after breaking%

f friction factor; ratio of friction to positive pressure (normal pressure). $f = F_f/F_n$ -

F_f friction force N

F_n positive pressure N

KA overlap ratio (ratio of contact area to wear track area) -

K_w

Wear factor, volumetric wear rate associated with positive pressure.

$K_w = V_w / (F_n x a) = w_v / F_n$

$Mm^3 / (N.km)$

L_w line wear amount mm

M_w wear material weight g

R_a Surface roughness μm