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

**GB/T 18325.3-2009**

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**Plain bearing -- Bearing fatigue -- Part 3: Test on plain strips of  
a metallic multilayer bearing material**

滑动轴承 轴承疲劳 第3部分：金属多层轴承材料平带试验

**(English Translation)**

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### Foreword

GB/T 18325 "sliding bearings fatigue" consists of the following four components.

- Part 1. hydrodynamic lubrication conditions in the test machine and plain bearings fatigue practical application;
- Part 2. a cylindrical metal bearing material test specimens;
- Part 3. metallic multilayer bearing material flat belt test;
- Part 4. metallic multilayer bearing material pad test.

This section GB/T 18325 Part 3.

This section identical with ISO 7905-3:1995 "Sliding Bearing fatigue - Part 3. Metal multilayer bearing material flat belt test." this section is equivalent translation ISO 7905-3:1995.

For ease of use, this section made the following editorial changes.

- "This International Standard" be replaced by "this section";
- Delete international standards foreword.

This part is proposed by China Machinery Industry Federation.

Bearing this in part by the National Standardization Technical Committee (SAC/TC236) centralized.

This section is responsible for drafting unit. Productivity Promotion Center in the machine.

Participated in the drafting of this section. Changzhou Hengye Bearing Materials Co., Ltd.

This part of the National Standardization Technical Committee Secretariat slide bearing responsible for the interpretation.

This section first release.

GB/T 18325.3-2009/ISO 7905-3:1995 Sliding Bearing fatigue Part 3. The metal multilayer

bearing material flat belt test

## 1 Scope

GB/T 18325 This section provides multi-tiered approach to determine the metal bearing material fatigue limit of the flat belt. In addition, research also Hydraulic pressure and temperature changes on the strip.

## 2 Sample

The specimen shall comply with rectangular cross-section in Figure 1 size flat strip. To avoid damage to the clamp at the start, the sample should be carefully grinding down the corner Contour corner, the test section shall be as shown in Fig.

Millimeters

Total thickness

Bearing metal

and/or)

Plating layer

thickness

Ju 2 /

test

length

Supply and demand sides Consult

Figure 1 Sample Size and Shape

For multilayer bearing material, the layers of sample sizes should be representative of the manufacturing process, and the sample should be finished and finished products to the same surface quality the amount. Prior to testing and should be avoided during sample surface mechanical damage or corrosion. The disadvantage of this test method is the lack of bearing system Residual stress generated in the manufacturing process may be accompanied.

## 3 Test Method

Test principle shown in Figure 2. Sample should be clamped at one end and the other end by a force or displacement applied load. From the pull load should be on the work surface Out into the compression fluctuations. In addition, a compression or tension may be applied prestress, in order to assess the correlation between the mean stress. Test equipment

should be placed Equipped with lubricating oil tank, oil temperature fluctuation  $\pm 2\text{ }^{\circ}\text{C}$  in; or test at  $\pm 2\text{ }^{\circ}\text{C}$  in air at ambient temperature fluctuations.

Shall be measured by means of bending stress in the bearing liner near the back near the clamping gage. Thus, in the first known strain gauges and the relative position of the crack, in the case of lining thickness and elastic modulus steel back and, bending damage can be estimated at the required cross-section stress.

**Note:** The stress state plane bending under the multilayered tape may be obtained by theoretical calculation.

Test frequency should be between 50Hz ~ 80Hz. Dye penetrant method shall be used to crack or microscopic examination. By force amplitude (F) or displacement (Ju) to control.

GB/T 18325.3-2009/ISO 7905-3:1995