INTERNATIONAL STANDARD

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Plain bearings — Metallic thin-walled half bearings — Determination of the $\sigma_{0,01}$*-limit

*Paliers lisses — Demi-coussinets minces métalliques — Détermination de la limite élastique $\sigma_{0,01}$**

Contents

Page

Foreword

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 123, *plain bearings*, Subcommittee SC 2, *Materials and lubricants, their properties, characteristics, test methods and testing conditions*.

This second edition cancels and replaces the first edition (ISO 6282:1983), which has been technically revised. The main changes compared to the previous edition are as follows:

— The Scope has been revised.

— Clauses 3, 4, 5, and 6 have been revised.

— Figure 1 has been revised.

Plain bearings — Metallic thin-walled half bearings — Determination of the $\sigma_{0,01}$*-limit

1 Scope

This document specifies a method of determining the $\sigma_{0,01}$*-limit for the steel backing of thin-walled multilayer half bearings for bearing diameters up to 80 mm. It can also be used for bearing diameters up to 160 mm.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at https://www.iso.org/obp

3.1
$\sigma_{0,01}$*-limit
compressive hoop stress in a half bearing which creates a permanent set of 0,01 %

Note 1 to entry: The $\sigma_{0,01}$*-limit is different from the usual $\sigma_{0,01}$-limit as a result of the geometry of the test specimen and the method of application of the test load. In order to make the distinction, the $\sigma_{0,01}$-limit of half bearings is marked with an asterisk (*).

3.2
compressive hoop stress of a half bearing
F/S
quotient of the normal load, *F*, applied to an area of cross-section, *S*, which is determined mathematically

Note 1 to entry: *F* is expressed in newtons (N), *S* is in square millimetres (mm²) and *F/S* is in megapascals (MPa), which equals newtons per square millimetre.

Note 2 to entry: The area of cross-section, *S*, is calculated as follows for the most common material combinations:

$S = L \cdot e_1$ for steel/lead alloys or steel/tin alloys

$$S = L\left(e_1 + \frac{e_2}{2}\right)$$ for steel/copper alloys

$$S = L\left(e_1 + \frac{e_2}{3}\right)$$ for steel/aluminium alloys

where

L is the bearing width, in millimetres (mm);

e_1 is the thickness of the steel backing, in millimetres (mm);

e_2 is the thickness of the bearing metal layer, in millimetres (mm).