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Plain bearings — Testing of bearing metals — Resistance to corrosion by lubricants under static conditions

Paliers lisses — Essai des matériaux antifriction — Résistance à la corrosion par des lubrifiants dans des conditions statiques

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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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 10129:2006), which has been technically revised.

Introduction

It is essential that certain properties of bearing materials combined within the tribological system remain unchanged or change only within a permissible range over a long period of time. It is on account of these properties that the materials are regarded as being especially suitable for the tribological system. As to the tribological system "plain bearing", the compatibility between the bearing materials and lubricant is of special interest and is dependent on chemical and mechanical actions.

The test established in this document determines the behaviour of plain bearing materials with respect to corrosion by lubricants (lubricating oils) under static conditions, i.e. without any mechanical action taking place simultaneously.

In order for such corrosion tests to be evaluated and compared, it is necessary that they be carried out in accordance with the conditions laid down in this document. Other conditions are to be indicated in detail.

Plain bearings — Testing of bearing metals — Resistance to corrosion by lubricants under static conditions

1 Scope

This document establishes a test of the corrosion-resistance of bearing materials to lubricants. It also specifies the most important general principles for carrying out such corrosion testing.

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:

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

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

3.1
corrosion
reaction of a bearing material to its environment, causing a measurable change in the material and which can result in corrosion damage

Note 1 to entry: In most cases, this reaction is of a chemical nature. It can, however, also involve chemical or mechanical processes. Material changes solely caused by or found only in combination with mechanical influences are not dealt with in this document. For a detailed explanation of the various causes of damage to plain bearings, see ISO 7146-1.

4 Health and safety

Resources, test pieces, test materials, test equipment and test procedures shall comply with the current health and safety regulations/laws of the country in which the test is carried out. Where equipment, materials and/or reagents that may be hazardous to health are specified, appropriate precautions in conformity with local regulations/laws shall be taken.

5 General principles

5.1 In general, corrosion tests are carried out as comparison tests, i.e. several materials and lubricants are compared with one another. However, it is also possible to include already known behaviour in the test reference materials or reference lubricants.

5.2 The duration of the test shall be chosen, and, if necessary, extended, so that at the end of the test, definite information on the corrosion behaviour of the material tested and, possibly, of the reference material can be obtained under the specified test conditions.