



ISO 7148-2

Plain bearings — Testing of the tribological behaviour of bearing materials —

Part 2:
Testing of polymer-based bearing materials

Paliers lisses — Essai du comportement tribologique des matériaux antifriction —

Partie 2: Essai des matériaux pour paliers à base de polymère

**Third edition
2026-02**



COPYRIGHT PROTECTED DOCUMENT

© ISO 2026

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Foreword	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Symbols and units	1
5 Special features for the tribological testing of polymer-based materials	3
6 Test methods	3
6.1 General.....	3
6.2 Test method A — Pin-on-disc.....	6
6.3 Test method B — Block-on-ring.....	7
6.4 Test method C — Rotation under thrust load.....	8
6.5 Test method D — Sphere-on-prism.....	9
6.6 Test method E — Plain bearing-on-shaft.....	9
6.7 Test method F— Linear guidance system.....	10
7 Test specimens	11
7.1 Data required.....	11
7.2 Polymer-based plain bearing materials.....	11
7.3 Materials of mating component.....	11
7.4 Dimensions of test specimens.....	12
7.4.1 General.....	12
7.4.2 Disc.....	12
7.4.3 Ring.....	12
7.4.4 Pin.....	12
7.4.5 Block.....	12
7.4.6 Sphere.....	13
7.4.7 Prism.....	13
7.4.8 Plain bearing.....	15
7.4.9 Shaft.....	15
7.4.10 Sleeve.....	15
7.4.11 Plate.....	16
7.4.12 Slider.....	16
7.5 Preparation of the test specimens.....	17
8 Test methods and test equipment	17
8.1 General.....	17
8.2 Test method A — Pin-on-disc.....	18
8.3 Test method B — Block-on-ring.....	18
8.4 Test method C — Rotation under thrust load.....	19
8.4.1 General.....	19
8.4.2 Test method C1.....	19
8.4.3 Test method C2.....	19
8.5 Test method D — Sphere-on-prism.....	19
8.6 Test method E — Plain bearing-on-shaft.....	20
8.6.1 General.....	20
8.6.2 Test method E1.....	20
8.6.3 Test method E2.....	20
8.6.4 Test method E3.....	20
8.7 Test method F— Linear guidance system.....	20
9 Lubrication	20
9.1 General.....	20
9.2 Dry (dr).....	21
9.3 Grease (gr).....	21
9.4 Oil (oi).....	21

This is a preview of ISO 7148-2:2026. [Click here to purchase the full version from the ANSI store.](#)

10	Designation	21
11	Test conditions	21
	11.1 Environmental conditions.....	21
	11.2 Mounting of the test specimens.....	22
	11.3 Test variables.....	22
12	Test procedure	24
	12.1 Running-in.....	24
	12.2 Carrying out the tests.....	24
13	Test report	24
	13.1 General.....	24
	13.2 Test results.....	24
	Annex A (informative) Test report	26
	Bibliography	28

This is a preview of ISO 7148-2:2026. [Click here to purchase the full version from the ANSI store.](#)

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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 document 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).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of 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 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 third edition cancels and replaces the second edition (ISO 7148-2:2012), which has been technically revised.

The main changes are as follows:

- the descriptive statement in [Clause 1](#) about matching test conditions to practical applications have been moved to [Clause 5](#);
- [Clause 2](#) "Normative references" has been updated;
- [Clause 3](#) "Terms and definitions" has been added and subsequent clauses have been renumbered;
- [Table 1](#) and [Table A.1](#) have been updated with symbols and units;
- [Clause 6](#) has been updated and a new [Table 2](#) has been added to compare test methods;
- [Clause 7](#) has been updated where example of warning messages have been added;
- [subclause 7.4.9](#) and [subclause 8.3](#) have been updated with runout tolerance requirements to make the test more accurate;
- [Clause 11](#) has been updated where the relative humidity symbol "RH" has been added;
- [Clause 13](#) "Test report" has been changed to make the reports completer; text have been moved to make the procedures clearer;
- [subclause 7.4.6](#) and [subclause 8.2](#) have been updated to include footnotes and references have been added;
- footnotes have been added to "balls for ball bearings" in [subclause 7.4.6](#) and "precision rolling bearings" in [subclause 8.2](#), and bibliographies have been added.

This is a preview of ISO 7148-2:2026. [Click here to purchase the full version from the ANSI store.](#)

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.