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**Plain bearings — Quality assurance  
of sample types — Definitions,  
applications and testing**

*Paliers lisses — Assurance de la qualité des types d'échantillons —  
Définitions, utilisation et essais*

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# Contents

	Page
Foreword .....	iv
<b>1 Scope .....</b>	<b>1</b>
<b>2 Normative references .....</b>	<b>1</b>
<b>3 Terms and definitions .....</b>	<b>1</b>
<b>4 Inspection and test report for samples .....</b>	<b>1</b>
<b>5 Marking .....</b>	<b>2</b>
<b>6 Types of plain bearing samples, definition and manufacturing process, application and testing .....</b>	<b>2</b>
<b>7 Designation .....</b>	<b>2</b>
<b>Bibliography .....</b>	<b>4</b>

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## Foreword

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 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](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

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

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](http://www.iso.org/iso/foreword.html). (standards.iteh.ai)

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This second edition cancels and replaces the first edition (ISO 12308:1994), which has been technically revised.

# Plain bearings — Quality assurance of sample types — Definitions, applications and testing

## 1 Scope

This document defines the types of plain bearing samples exchanged between purchaser and manufacturer.

In the field of internal combustion engines and other series production, it is necessary to work with different types of samples depending on the purpose.

Types of samples are as follows.

- Samples used for tests and examinations which are carried out in the experimental stage and pilot lot stage. These include fitting samples, prototype samples and intermediate samples.
- Samples used to prove that the quality is in accordance with the quality requirements (dimensions, material and performance specification). These include initial samples and reference samples and, if necessary, intermediate samples.

NOTE See ISO 3534 (all parts) and ISO 9000 for further information.

- Samples which give selective information about particular quality characteristics of a plain bearing, relating to their conformity with the specifications. These involve reference and characteristic modification samples.

## 2 Normative references

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The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 12301, *Plain bearings — Quality control techniques and inspection of geometrical and material quality characteristics*

## 3 Terms and definitions

No terms and definitions are listed in this document.

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 <http://www.iso.org/obp>

## 4 Inspection and test report for samples

Together with the samples, the manufacturer shall supply a completed test report to the purchaser with data on dimensions, material and/or performance, as appropriate. In the fields of application listed in [Clause 1](#), the “Initial Sample Test Report” is used for the initial samples and the characteristic modification samples. The purchaser shall share the result of inspection with the manufacturer.

The test results shall be kept by the manufacturer subject to agreement between the manufacturer and purchaser.

## 5 Marking

All sample supplies shall be clearly marked as samples by the manufacturer in agreement with the customer.

## 6 Types of plain bearing samples, definition and manufacturing process, application and testing

As described in [Table 1](#).

## 7 Designation

EXAMPLE Designation of an initial sample (S4) with test report:

**Sample ISO 12308 — S4**

**Table 1 — Types of plain bearing samples, definitions and manufacturing process, application and testing**

Type of sample	Symbol	Definition and manufacturing process	Application	Testing (by manufacturer)
Fitting sample	S1	Plain bearing applied to fitting tests only	Fitting tests on stationary machines, internal combustion engines, etc.	Fitting dimensions only Complete data of each fitting dimension for each bearing Recording of these individual test results in the test report
Prototype sample	S2	Plain bearing, destined for functional tests, inspection or tests by the purchaser  NOTE These samples are manufactured using available equipment.	Technical developments at the purchaser — functional tests, e.g. experimental run-in machines, internal combustion engines, gear boxes, etc. — performance in test rig, e.g. wear resistance — for establishing the specification of quality characteristics (dimensions, materials, etc.)	Agreed specified quality characteristics Complete quality testing of all specified quality characteristics carried out on the quantity agreed Recording of these individual test results in the test report The number of samples should not exceed 200.
Intermediate sample	S3	Plain bearing which corresponds to a large degree to the “initial sample”, but has only partially been manufactured by means of the equipment and processes used for series production	Pilot lot and initial series NOTE Use to be agreed between manufacturer and purchaser. Intermediate sample shall be substituted by the “initial sample” later on.	Quality characteristics in accordance with ISO 12301 Quantity tested should be 20 max. Recording of these individual test results in the test report The “non-series” process cycles and sequences shall clearly be indicated by the manufacturer in the report

Table 1 (continued)

Type of sample	Symbol	Definition and manufacturing process	Application	Testing (by manufacturer)
Initial sample	S4	<p>Plain bearing, completely manufactured by means of the equipment and processes used for series production under the appropriate control conditions</p> <p>NOTE The initial sample is to furnish the proof that the manufacturer is in a position to comply with the quality requirements (dimensions, material, function, etc.) requested by the purchaser.</p>	Series assembly after approval	<p>Quality characteristics in accordance with ISO 12301</p> <p>Quantity tested should be 20 max.</p> <p>Recording of these individual test results in the test report</p> <p>It is advisable to keep one of the accepted samples available at the manufacturer's and/or purchaser's premises for a period to be agreed.</p> <p>NOTE Performance testing is carried out by the purchaser only.</p>
Reference sample	S5	<p>Plain bearing representing the desired value of a quality characteristic</p> <p>NOTE These samples are taken by the manufacturer from the series production or from the delivery ready for despatch and tested as agreed upon with the purchaser.</p>	The reference samples are delivered to the purchaser for the control test, together with the determined actual values of all quality characteristics designated for the test, in order to check, for example, the comparability of the test methods/equipment used.	<p>Dimensional and material testing of all quality characteristics agreed between manufacturer and purchaser (e.g. nip, bearing material composition)</p> <p>Test data to be given by the manufacturer</p> <p>The reported test values may substitute a receiving inspection carried out at the purchaser's premises.</p>
Characteristic modification sample	S6	Plain bearing manufacturer after the execution of a specification modification	Series assembly after approval	<p>Only those quality characteristics concerned by the modification need be tested.</p> <p>Quantity tested should be 20 max.</p> <p>Recording of these individual test results in the test report</p>

## Bibliography

- [1] ISO 3534 (all parts), *Statistics — Vocabulary and symbols*
- [2] ISO 9000, *Quality management systems — Fundamentals and vocabulary*

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