

Plain bearings: metric series —

Part 9: Checking the outside diameter of wrapped bushes

Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee MCE/12, Plain bearings, upon which the following bodies were represented:

- Association of Bronze and Brass Founders
- British Plastics Federation
- Copper Development Association
- Institution of Diesel and Gas Turbine Engineers
- Institution of Mechanical Engineers
- Society of Motor Manufacturers and Traders Ltd.

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National foreword

This British Standard has been prepared by Technical Committee MCE/12. It is identical with ISO 12307-1:1994, *Plain bearings — Wrapped bushes — Part 1: Checking the outside diameter*, published by the International Organization for Standardization (ISO).

Cross-reference

International Standard	Corresponding British Standard
ISO 3547:1976	BS 4480 <i>Plain bearings: Metric series</i> Part 4:1979 <i>Dimensions, tolerances and methods of checking wrapped bushes</i> (Identical)

The Technical Committee has reviewed the provisions of ISO 286-1:1988, ISO 286-2:1988 and ISO/R 1938:1971 to which normative reference is made in the text, and has decided that they are acceptable for use in conjunction with this standard.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the ISO title page, page ii, pages 1 to 14, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

INTERNATIONAL STANDARD

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12307-1

First edition
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Plain bearings — Wrapped bushes —

Part 1:

Checking the outside diameter

Paliers lisses — Bagues roulées —

Partie 1: Contrôle du diamètre extérieur



Reference number
ISO 12307-1:1994(E)



Documents

Document Sharing Hub

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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 12307-1 was prepared by Technical Committee ISO/TC 123, *Plain bearings*, Subcommittee SC 5, *Quality analysis and assurance*. ISO 12307 consists of the following parts, under the general title *Plain bearings — Wrapped bushes*:

- *Part 1: Checking the outside diameter;*
- *Part 2: Checking the inside diameter.*

Annex A, Annex B and Annex C of this part of ISO 12307 are for information only.

1 Scope

This part of ISO 12307 specifies in accordance with ISO 12301 the checking of the outside diameter of wrapped bushes (methods A and B specified in ISO 3547) and describes the necessary checking methods and measuring equipment.

Wrapped bushes in the free condition are flexible but, after insertion, they adapt largely to the shape of the housing bore due to the oversize between the outside diameter of the bush and the housing bore. For this reason, checking of the outside diameter of wrapped bushes can only be carried out under a constraining load by use of specialized measuring equipment.

NOTE 1 All dimensions in this part of ISO 12307 are given in millimetres.

NOTE 2 The dimensions and tolerances of wrapped bushes are given in ISO 3547. Checking the wall thickness is the subject of ISO 12306.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 12307. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 12307 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 286-1:1988, *ISO system of limits and fits — Part 1: Bases of tolerances, deviations and fits*.

ISO 286-2:1988, *ISO system of limits and fits — Part 2: Tables of standard tolerance grades and limit deviations for holes and shafts*.

ISO/R 1938:1971, *ISO system of limits and fits — Part II: Inspection of plain workpieces*.

ISO 3547:1976, *Plain bearings — Wrapped bushes — Dimensions, tolerances and methods of checking*.

3 Symbols and units

For the purposes of this part of ISO 12307, the symbols and units are as given in Table 1.

Table 1 — Symbols and units

Symbol	Parameter	SI unit
a_c	Distance between checking block halves	mm
B	Width of the bush	mm
$b_{c,1}$	Width of the checking block	mm
$b_{c,2}$	Width of the setting plug ($b_{c,2} = b_{c,1} + 5$)	mm
D_o	Outside diameter of the bush	mm
$d_{c,1}$	Diameter of the checking block bore (see ISO 3547)	mm
$d_{c,2}$	Diameter of the setting plug	mm
$d_{c,a,1}$	Actual diameter of the checking block	mm
$d_{c,a,2}$	Actual diameter of the setting plug	mm
E_{red}	Elastic reduction of the outside diameter under the checking load F_c	mm
F_c	Checking load	N
C	Correction factor	mm
n	Number of test pieces	
P_{zw}	Confidence level, on both sides	%
R_a	Surface roughness (in accordance with ISO 468)	μm
T	Tolerance on D_o	mm
$t_1 \dots t_6$	Tolerances of form and position	mm
u	Uncertainty of measurement ($P_{zw} = 95\%$)	mm
u_E	Uncertainty of measurement of the measuring equipment	mm
Δx	Difference in measured values between first and second readings	mm
$\overline{\Delta x}$	Arithmetic mean of Δx	mm
σ	Standard deviation	mm
$\sigma_{\Delta x}$	Standard deviation of Δx	mm