

Specification for

Plain bearings: metric series —

Part 5: Dimensions, tolerances and methods of checking thin-walled half bearings

[ISO title: Plain bearings — Thin-walled half bearings — Dimensions, tolerances and methods of checking]

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British Compressed Air Society	Health and Safety Executive
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	Water-tube Boilermakers' Association

The organizations marked with an asterisk in the above list, together with the following, were directly represented on the committee entrusted with the preparation of this British Standard:

Association of Bronze and Brass Founders	Motor Cycle Association of Great Britain
British Plastics Federation	Plastics and Rubber Institute
Copper Development Association	Individual experts
International Tin Research Institute	

This British Standard, having been prepared under the direction of the Mechanical Engineering Standards Committee, was published under the authority of the Executive Board and comes into effect on 31 October 1979

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National foreword

This Part of this British Standard has been prepared under the direction of the Mechanical Engineering Standards Committee and is identical with ISO 3548 “*Plain bearings — Thin-walled half bearings — Dimensions, tolerances and methods of checking*” published by the International Organization for Standardization (ISO).

The list of standards in this metric series is as follows:

BS 4480 *Plain bearings: metric series*

- *Part 1: Sintered bronze bushes;*
- *Part 2: Solid plastic bushes;*
- *Part 3: Dimensions and tolerances of solid copper alloy bushes;*
- *Part 4: Dimensions, tolerances and methods of checking wrapped bushes;*
- *Part 5: Dimensions, tolerances and methods of checking thin-walled half bearings.*

Further Parts will be issued when they become available, subject to approval by the United Kingdom of the corresponding International Standards.

Terminology and conventions. The text of the International Standard has been approved as suitable for publication, without deviation, as a British Standard. Some terminology and certain conventions are not identical with those used in British Standards; attention is especially drawn to the following.

The comma has been used as a decimal marker. In British Standards it is current practice to use a full point on the baseline as the decimal marker.

Wherever the words “International Standard” appear, referring to this standard, they should be read as “British Standard”.

Cross-references

International Standard	Corresponding British Standard
ISO 497:1973	BS 2045:1965 <i>Preferred numbers</i> (Technically equivalent)
ISO/R 1101:1969	BS 308 <i>Engineering drawing practice</i> Part 3:1972 <i>Geometrical tolerancing</i> (Technically equivalent)
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)

NOTE *Textural error.* When adopting the text of ISO 3458, the following printing error was noticed. In the heading of Table 11 “bach” should read “back”.

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, pages 1 to 10, 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.

1 Scope

This International Standard lays down the main dimensions and tolerances for a range of thin-walled half bearings. It is not expected that all the sizes listed will be available from stock, but adoption of standard sizes should lead to economies in tooling costs.

For each housing size to be used, this International Standard recommends a range of wall thicknesses in order to permit a choice of a shaft size that can accommodate the detailed design features necessary for the application under consideration.

As certain dimensions and tolerances of thin-walled half bearings cannot, because of the very nature of these parts, be directly measured, it was considered necessary to specify the methods for checking these dimensions and tolerances in clause 6.

2 Field of application

This International Standard applies to thin-walled half bearings used in reciprocating machinery and suitable for housings having inside diameters from 20 to 500 mm.

Features which are defined are commonly incorporated in thin-walled half bearings, but the introduction of such features into a particular design is a decision that must be made by the user in the light of his knowledge of the application.

NOTE All the dimensions and tolerances are expressed in millimetres, unless otherwise indicated.

3 Reference

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

4 Dimensions and tolerances

4.1 Dimensions

The basic nominal dimensions — housing (internal) diameter, inside diameter and wall thickness — are given in Table 1.

4.2 Housing diameter tolerance

Ferrous housings should be manufactured to ISO H6 limits, but in the case of housings made from materials having a high coefficient of expansion, or where other factors such as housing dimensional stability are involved, then the housing size may depart from H6 limits but should always be produced in accordance with a grade 6 tolerance.

4.3 Tolerance on peripheral length

The bearings that are the subject of this International Standard are thin and flexible and their outside diameters cannot be measured by conventional means. The peripheral length is therefore usually measured by use of the checking method given in clause 6.

It is not possible to specify the actual size of peripheral length in this International Standard since it will be dependent upon the precise application (for example factors such as housing rigidity and material, and operating temperatures, have to be taken into account).

However, for machined bearings the manufacturing tolerances on peripheral length should be in accordance with the values of the tolerance on measured nip, S_N , (see Figure 8) given in Table 2.