

SPECIFICATION FOR
5% PHOSPHOR BRONZE
(COPPER-TIN-PHOSPHORUS)
RODS AND SECTIONS
(OTHER THAN FORGING STOCK)

B.S. 369 : 1963

Price 5/- net

BRITISH STANDARDS INSTITUTION

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THIS BRITISH STANDARD, having been approved by the Non-ferrous Metals Industry Standards Committee and endorsed by the Chairman of the Engineering Divisional Council, was published under the authority of the General Council on 3rd July, 1963.

First published, October, 1927.

First revision, May, 1940.

Second revision, July, 1963.

The Institution desires to call attention to the fact that this British Standard does not purport to include all the necessary provisions of a contract.

In order to keep abreast of progress in the industries concerned, British Standards are subject to periodical review. Suggestions for improvements will be recorded and in due course brought to the notice of the committees charged with the revision of the standards to which they refer.

A complete list of British Standards, numbering over 4000, indexed and cross-indexed for reference, together with an abstract of each standard, will be found in the Institution's Yearbook.

This standard makes reference to the following British Standards:

B.S. 18. Methods for tensile testing of metals.

B.S. 1420. Glossary of terms applicable to wrought products in copper, zinc, brass and other copper alloys.

B.S. 1499. Sampling non-ferrous metals.

B.S. 1748. Methods of analysis of copper alloys.

B.S. 1957. Presentation of numerical values (finesness of expression; rounding of numbers).

British Standards are revised, when necessary, by the issue either of amendment slips or of revised editions. It is important that users of British Standards should ascertain that they are in possession of the latest amendments or editions.

The following B.S.I. reference relates to the work on this standard:
Committee reference NFE/16

CONTENTS

	Page
Co-operating organizations	5
Foreword	6

SPECIFICATION

1. Scope	8
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SECTION ONE : GENERAL CLAUSES

2. General	8
3. Definitions	8
4. Freedom from defects	8
5. Dimensions and tolerances	8
6. Selection of test samples	9
7. Mechanical tests (including preparation of test pieces)	9
8. Retests	10
9. Certificate of compliance	10
10. Inspection	10
11. Independent test	11
12. Facilities for testing	11
13. The rounding of numbers rule	11

TABLES

1. Tolerances on round rod	13
2. Tolerances on square rod	14
3. Tolerances on rectangular rod	14
4. Tolerances on hexagon rod	15

SECTION TWO : SPECIFIC CLAUSES

PB102 5 PER CENT PHOSPHOR BRONZE (COPPER-TIN-PHOSPHORUS)

14. General	16
15. Chemical composition	16
16. Condition	16
17. Mechanical properties	16

	Page
APPENDICES	
A. Dimensions of tensile test pieces	18
B. Methods for the determination of permanent set stress	19

CO-OPERATING ORGANIZATIONS

The Non-ferrous Metals Industry Standards Committee, under whose supervision this British Standard was prepared, consists of representatives from the following Government departments and scientific and industrial organizations:

Admiralty
 Aluminium Federation
 Association of Bronze and Brass Founders
 Association of Consulting Engineers, Incorporated
 British Bronze and Brass Ingot Manufacturers' Association
 *British Electrical and Allied Manufacturers' Association
 British Lead Manufacturers Association
 *British Non-ferrous Metals Federation
 *British Non-ferrous Metals Research Association
 Cable Makers' Association
 *Copper Development Association
 Crown Agents for Oversea Governments and Administrations
 High Commission of India
 High Conductivity Copper Association
 Institute of British Foundrymen
 Institute of Metals
 Institution of Mechanical Engineers (Automobile Division)
 Institution of Mining and Metallurgy
 Institution of Structural Engineers
 Lead Development Association
 Light Metal Founders' Association
 London Metal Exchange
 Magnesium Industry Council
 *Ministry of Aviation
 Ministry of Transport
 National Brassfoundry Association
 *Non-ferrous Metal Stockists
 Post Office
 Royal Institute of British Architects
 Society of British Aircraft Constructors
 Society of Motor Manufacturers and Traders Ltd.
 Tin Research Institute
 *War Office
 Zinc Development Association
 Individual manufacturers

The Government departments and scientific and industrial 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:

National Association of Drop Forgers and Stampers
 National Physical Laboratory (D.S.I.R.)
 Screw Manufacturers' Association
 Individual manufacturers

BRITISH STANDARD SPECIFICATION FOR
5 PER CENT PHOSPHOR BRONZE
 (COPPER-TIN-PHOSPHORUS)
RODS AND SECTIONS
 (OTHER THAN FORGING STOCK)

FOREWORD

This British Standard, which was first issued in 1927, forms part of a series of standards for copper and copper alloy rods, sections, forging stock and forgings for general purposes, the preparation of which was authorized by the Non-ferrous Metals Industry Standards Committee.

Since that date all British Standards for copper and copper alloy rods, sections, forging stock and forgings have been reviewed, and it was decided to separate material intended for machining and general purposes from material which was to be forged. The requirements from the existing standards were therefore included in two separate schedules B.S. 2874 for rods and sections (other than forging stock) and B.S. 2872 for forging stock and forgings. The range of sizes in both schedules was extended to include material of diameter or width across flats down to $\frac{1}{16}$ in, although mechanical properties in most cases were not specified for sizes below $\frac{1}{4}$ in. Minor amendments to chemical compositions and to mechanical properties were made, and in some instances these changes were made so that the material would be acceptable to the Services in place of the corresponding STA 7 specification. Throughout B.S. 2874 the term 'rod' was used in place of 'bar' as the former term has a more general application which embraces material formerly referred to as bar.

Further changes incorporated in the schedules were a simplification of the table of tolerances for rods and sections which now quote figures applying to ranges of sizes and to facilitate international discussion of mechanical properties, the inclusion of 0.2 per cent permanent set stress values 'for information' in addition to the usual 0.1 per cent permanent set stress values.

In the present revision B.S. 369 has been redrafted in line with B.S. 2874. The standard is therefore sub-divided into two sections, the first includes general clauses applying to rods and sections and the second includes specific clauses relating to the alloy covered by the standard. The wording and general arrangement of the clauses within these sections are identical with the requirements for this material in the schedule. Other changes incorporated are the minor changes to the chemical composition and the modified mechanical properties which were included in B.S. 2874. It is hoped that with these changes the material will cover Services requirements in place of STA 7 CP2.

In addition the symbols used to designate the alloy and its condition in the schedule have been introduced into this standard. The suffix letters used to indicate the condition in which the materials are available are as follows:

O Material in the annealed condition.

$\frac{1}{2}H$ }
 H } The various harder tempers.

M Material in the 'as manufactured' condition, e.g., as hot worked or cold worked and stress relieved.