

Specification for

**Wrought magnesium
alloys for general
engineering
purposes —
Forgings and cast
forging stock**

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:

- Aluminium Federation
- Association of Bronze and Brass Founders
- Association of Consulting Engineers, Incorporated
- Board of Trade
- 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*
- Copper Development Association
- Crown Agents for Oversea Governments and Administrations
- Electric Cable Makers' Confederation
- Institute of British Foundrymen
- Institute of Metals
- Institution of Mechanical Engineers (Automobile Division)
- Institution of Mining and Metallurgy
- Institution of Production Engineers
- Institution of Structural Engineers
- Lead Development Association
- Light Metal Founders' Association
- London Metal Exchange
- Magnesium Industry Council*
- Ministry of Defence (Army Dept)
- Ministry of Defence (Navy Dept)
- National Brassfoundry Association
- Non-ferrous Metal Stockists*
- Post Office
- Royal Institute of British Architects
- Society of Motor Manufacturers and Traders Limited*
- Tin Research Institute
- Zinc Development Association
- Individual manufacturers

The 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:

- Institute of Sheet Metal Engineering
- Ministry of Technology

This British Standard, having been approved by the Non-ferrous Metals Industry Standards Committee, was published under the authority of the Executive Board on 30 October 1970

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Foreword

This standard makes reference to the following British Standards:

BS 18, *Methods for tensile testing of metals — Part 1: Non-ferrous metals*.

BS 1499, *Sampling non-ferrous metals*.

BS 1957, *Presentation of numerical values (fineness of expression; rounding of numbers)*.

BS 3907, *Methods for the analysis of magnesium and magnesium alloys*.

This British Standard is one of a series for magnesium alloys in various wrought forms, first issued in 1947 (as BS 1350–57) and revised in 1961 (as BS 3370–74).

This edition is the first revision of the standard in metric terms, the preparation of which was authorized by the Non-Ferrous Metals Industry Standards Committee.

Others in the series are:

BS 3370, *Plate, sheet and strip*.

BS 3373, *Extruded bars, sections and tubes (including extruded forging stock)*.

With the introduction of this revision the series has been reduced to three separate standards:

BS 3370 has been combined with BS 3374 which formerly covered plate.

BS 3372 covering forgings now includes provision for cast forging stock.

BS 3373 has been combined with BS 3371 which formerly covered extruded tube and now additionally includes provision for extruded forging stock.

In preparing this metric specification, regard has been paid to the recommendations of the International Organization for Standardization. Alloy compositions and properties have been brought into line with ISO Recommendations where this has been practicable. In the case of compositions, since ISO Recommendations have not yet been published for the whole range of alloys included, compositional designations which use chemical symbols and are internationally recognized have been listed following the British Standard designation for the alloy.

In the compositional designation system the basis metal symbol is first shown, followed by those for the essential alloying elements in order of diminishing content. Such elements where essential but less than 1 % have no following number; others are followed by a number indicating the percentage of the element to the nearest 0.5 %.

e.g. British Standard Alloy Designation MAG-121 (Compositional Designation Mg-Al6Zn1Mn) Magnesium base alloy containing nominally:

Aluminium	6 %
Zinc	1 %
Manganese less than	1 % and within the specified limits

The condition or temper symbols now cited are also those proposed by ISO.

The former procedure of allocating alloy numbers to each material prefixed by the letters MAG, the same alloy numbers being used throughout the series, has been retained. Between the letters MAG and the alloy number and separated by hyphens, the following symbols are now adopted to indicate form.

S = plate, sheet and strip (BS 3370).

F = forgings (BS 3372).

E = extruded bars, sections and tubes (BS 3373).

Cast forging stock is to be referred to only by the British Standard reference BS 3372 and the relevant alloy designation.

The ISO Recommendations require that proof stress values should now be specified as 0.2 % values in place of 0.1 % values in earlier editions.