

**BS 3L 500:2011+A1:2017**



**BSI Standards Publication**

**Procedure for inspection, testing  
and acceptance of wrought  
magnesium base alloys**

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### Summary of pages

This document comprises a front cover, and inside front cover, pages i to vi, pages 1 to 47, an inside back cover and a back cover.

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# Foreword

## Publishing information

This British Standard is published by BSI Standards Limited, under licence from The British Standards Institution and came into effect on 31 December 2011. It was prepared by Panel ACE/61/-/24, *Light alloys*, under the authority of Technical Committee ACE/61, *Metallic materials for aerospace purposes*. A list of organizations represented on this committee can be obtained on request to its secretary.

## Supersession

BS 3L 500:2011 superseded BS 2L 500:1973, which has been withdrawn.

BS 3L 500:2011+A1:2017 supersedes BS 3L 500:2011, which is withdrawn.

## Information about this document

BS 3L 500:2011 was a full revision of the standard, and introduced the following principal changes.

Section 1:

- a) Information to be supplied by purchaser added.
- b) Information to be agreed by manufacturer and purchaser added.
- c) Heat treatment requirements added.
- d) Application of values requirements added.
- e) Tensile testing at ambient temperature to BS A4-1.1 replaced by BS EN 2002-1.

Section 5:

External and internal defects requirements added.

Section 6:

Position of tensile test piece requirements added.

Section 7:

Position of tensile test piece requirements added.



Appendix A: Re-identified as Annex A (Rules for application of values for chemical composition and mechanical properties given in material specifications).

Appendix B: Re-identified as Annex B (Protection against corrosion).

Appendix C: Re-identified as Annex C (Tolerances for bars and extruded sections).

Appendix D: Re-identified as Annex D (Tolerances for sheet, strip and plate).

Appendix E: Re-identified as Annex E (Tolerances for tube).

Text introduced or altered by Amendment No. 1 is indicated in the text by tags  . Minor editorial changes are not tagged.

## Hazard warnings

**WARNING.** This British Standard calls for the use of substances and/or procedures that can be injurious to health if adequate precautions are not taken. It refers only to technical suitability and does not absolve the user from legal obligations relating to health and safety at any stage.

**Use of this document**

It has been assumed in the preparation of this British Standard that the execution of its provisions will be entrusted to appropriately qualified and experienced people, for whose use it has been produced.

**Presentational conventions**

The provisions of this standard are presented in roman (i.e. upright) type. Its requirements are expressed in sentences in which the principal auxiliary verb is “shall”.

*Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.*

Where words have alternative spellings, the preferred spelling of the Shorter Oxford English Dictionary is used (e.g. “organization” rather than “organisation”).

**Contractual and legal considerations**

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

**Compliance with a British Standard cannot confer immunity from legal obligations.**





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# Section 1: General requirements

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## 1 Scope

This British Standard specifies procedures for inspection, testing and acceptance of wrought magnesium-base alloys for aerospace purposes.

The standard is applicable to material specifications in the British Standard Aerospace L series and also to other British Standard material specifications for wrought magnesium-base alloys which are suitable for aerospace use.

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## 2 Normative references

The following referenced documents are indispensable for the application 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.

BS M 93, *Protection of magnesium — Rich alloys against corrosion — Specification*

BS X 38, *Heat curing paint scheme for aerospace purposes — Specification*

BS EN 2002-1, *Metallic materials — Test methods — Part 1: Tensile testing at ambient temperature*

EN 2002-16, *Metallic materials — Test methods — Part 16: Non-destructive testing — Penetrant testing*<sup>1</sup>

EN 4050-2, *Aerospace series — Test method for metallic materials — Ultrasonic inspection of bars, plates, forging stock and forgings — Part 2: Performance of test*<sup>1</sup>

EN 4050-4, *Aerospace series — Test method for metallic materials — Ultrasonic inspection of bars, plates, forging stock and forgings — Part 4: Acceptance criteria*<sup>1</sup>

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## 3 Definitions

For the purposes of this British Standard, the following terms and definitions apply.

### 3.1 approved scrap

scrap which has been segregated and identified as being derived from material, the composition of which has been established with regard to the complete range of both alloying and impurity elements given in the material specification

### 3.2 bar

wrought material of uniformly round, half round, square, rectangular, hexagonal, octagonal or regular polygonal solid section supplied in straight lengths

### 3.3 batch

material which is of the same product form and of the same nominal dimensions; from the same cast; manufactured in the same production period; from the same heat treatment charge

*NOTE 1 In the case of solution heat treatment in a continuous furnace, material from a maximum period of 8 h is regarded as the same heat treatment charge.*

*NOTE 2 Where applicable, batch sizes for specific products are given in the relevant sections of this standard.*

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<sup>1</sup> Published as ASD Prestandard at the date of publication of this standard.