

METRIC UNITS

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BRITISH STANDARDS INSTITUTION

British Standards House, 2 Park Street, London, W1Y 4AA

2L. 127, March, 1970

(Superseding British Standard L. 127)

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BRITISH STANDARD : AEROSPACE SERIES

SPECIFICATION FOR

INGOTS AND CASTINGS OF

MAGNESIUM-ZINC-ZIRCONIUM ALLOY

(Precipitation treated)

(Zn 4.5, Zr 0.7)

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1. INSPECTION AND TESTING PROCEDURE

The ingots and castings shall be inspected and tested in accordance with the relevant requirements of British Standard L. 101 as follows:

Ingots	Sections 1 and 2
Castings not subject to cut-up testing	Sections 1 and 3
Castings subject to cut-up testing	Sections 1 and 4

2. CHEMICAL COMPOSITION

2.1 Ingots. The chemical composition of the ingots shall be:

Element	Per cent	
	min.	max.
Zinc	3.5	5.5
Zirconium	0.1	1.0
Manganese	-	0.15
Copper	-	0.03
Silicon	-	0.01
Iron	-	0.01
Nickel	-	0.005
Magnesium	-	The remainder

2.2 Castings. The chemical composition of the castings shall be:

Element	Per cent	
	min.	max.
Zinc	3.5	5.5
Zirconium	0.4	1.0
Manganese	-	0.15
Copper	-	0.03
Silicon	-	0.01
Iron	-	0.01
Nickel	-	0.005
Magnesium	-	The remainder

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Price 4s. (20p) net

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3. HEAT TREATMENT

3.1 The castings and test samples shall be heat-treated together as follows:

- (1) Heat at a temperature not exceeding 350 °C for not less than 2 hours.
- (2) Cool in air or quench in oil or water, at the option of the manufacturer.

4. MECHANICAL PROPERTIES

NOTE. The tensile test values specified for test pieces machined from separately cast test samples may not be realized in certain portions of castings.

The mechanical properties obtained from separately cast test samples, selected and prepared in accordance with the relevant requirements of British Standard L. 101, shall be not less than the following values:

Test sample	0.2% proof stress	Tensile strength	Elongation
	MN/m ²	MN/m ²	%
Sand cast	145	230	5
Chill cast	145	245	7

NOTE. 1 MN/m² = 0.102 kgf/mm² = 0.1 hbar = 0.065 tonf/in². Information on SI units is given in BS 350, 'Conversion factors and tables', and PD 5686, 'The use of SI units'.

5. PROTECTION AGAINST CORROSION

The material shall be protected before despatch by one of the methods given in Ministry of Technology aircraft process specification D.T.D. 911.

The method to be used shall be selected by the purchaser in accordance with the recommendations of DGQA Technical Memorandum M.6 and shall be stated on the order.

This British Standard, having been approved by the Aerospace Industry Standards Committee, was published under the authority of the Executive Board of the Institution on 26 March, 1970.

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.

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 BSI references relate to the work on this standard:
Committee reference ACE/27 Draft for comment 69/20612

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