

Specification for

Ingots and castings of magnesium-cerium- zinc-zirconium alloy —

(Precipitation treated)

(Rare earth metals 3.0, Zn 2.3, Zr 0.6)

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, page 1 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.

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

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Amendments issued since publication

Amd. No.	Date	Comments

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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 BS 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.
Rare earth metals	2.5	4.0
Zinc	0.8	3.0
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.
Rare earth metals	2.5	4.0
Zinc	0.8	3.0
Zirconium	0.4	1.0
Manganese	—	0.15
Copper	—	0.03
Silicon	—	0.01
Iron	—	0.01
Nickel	—	0.005
Magnesium	—	The remainder

3 Heat treatment

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

1) Heat at a temperature not less than 170 °C nor more than 200 °C for not less than 10 hours,

or

when the order so stipulates, heat at a temperature not less than 200 °C nor more than 250 °C for not less than 6 hours nor more than 24 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 BS 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	95	140	3
Chill cast	100	155	3

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 recommendation of DGQA Technical Memorandum M.6 and shall be stated on the order.

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