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BRITISH STANDARD : AEROSPACE SERIES
SPECIFICATION FOR
ALUMINIUM-ZINC-MAGNESIUM-COPPER-
CHROMIUM ALLOY PLATE
(Solution treated, controlled stretched
and precipitation treated)
(Zn 5.8, Mg 2.5, Cu 1.6, Cr 0.15)



NOTE 1. This British Standard covers plate, including that which has been forged as an intermediate operation, which is finished by hot or cold rolling. It does not cover forged plate.

NOTE 2. If material to this British Standard is re-solution treated but not again controlled stretched, it must be regarded as being in the solution treated and precipitation treated, but not controlled stretched, condition, even though the specified mechanical properties are obtained. Plate of this composition in that condition is covered by British Standard L.96.

NOTE 3. The specified chemical composition and mechanical properties meet the requirements of A.I.C.M.A. Recommendation AL.P42.

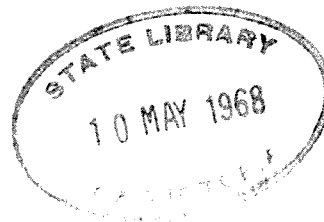
NOTE 4. Where British equivalents are stated, the figures in metric units are to be regarded as the standard. The conversions are approximate. More accurate conversions should be based on the tables in BS 350 'Conversion factors and tables'.

1. INSPECTION AND TESTING PROCEDURE

This British Standard shall be used in conjunction with Sections One and Fourteen of British Standard L.100.

2. QUALITY OF MATERIAL

The material shall be made from aluminium complying with the requirements of British Standards L.31, L.48 or L.49 and alloying constituents, with or without approved scrap, at the discretion of the manufacturer.



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Price 3/- net.

3. CHEMICAL COMPOSITION

The chemical composition of the material shall be:

Element	Per cent	
	min.	max.
Copper	1.2	2.0
Magnesium	2.1	2.9
Silicon	—	0.40
Iron	—	0.50
Manganese	—	0.30
*Nickel	—	0.05
Zinc	5.1	6.4
*Lead	—	0.05
*Tin	—	0.05
*Titanium plus Zirconium	—	0.20
Chromium	0.10	0.25
Aluminium	—	The remainder

*Subject to the discretion of the Inspecting Authority, determination of these elements need be made on a small proportion only of the samples analysed.

4. CONDITION

4.1 Except as provided in Clause 4.2, the material shall be supplied solution treated, controlled stretched to a permanent extension of not less than 1½% nor more than 2½%, and precipitation treated.

4.2 If agreed between the manufacturer and the purchaser and stated on the order, the material shall be supplied solution treated and controlled stretched to a permanent extension of not less than 1½% nor more than 2½%. No other alternative condition of supply is permissible.

5. HEAT TREATMENT

The material shall be heat treated as follows:

- (1) Solution treat by heating at $460 \pm 10^\circ\text{C}$. Quench in water at a temperature not exceeding 40°C .
- (2) Precipitation treat by heating uniformly at a temperature of $135 \pm 5^\circ\text{C}$ for not less than 12 hours.

6. MECHANICAL PROPERTIES

Tensile test. The mechanical properties obtained from test pieces selected and prepared in accordance with the relevant requirements of British Standard L.100 shall be not less than the following values:

Nominal thickness	Direction	0.2% proof stress		Tensile strength		Elongation
		kgf/mm ²	tonf/in ²	kgf/mm ²	tonf/in ²	%
6 mm (0.24 in) up to and including 12 mm (0.47 in)	Long transverse	46	29.2	54	34.3	8
	Over 12 mm up to and including 25 mm (0.98 in)	46	29.2	54	34.3	6
Over 25 mm up to and including 40 mm (1.57 in)	Longitudinal	47	29.8	54	34.3	6
	Long transverse	46	29.2	54	34.3	5
	Short transverse	43	27.3	50	31.7	2.5
Over 40 mm up to and including 63 mm (2.48 in)	Longitudinal	47	29.8	54	34.3	6
	Long transverse	45	28.6	52	33.0	5
	Short transverse	43	27.3	50	31.7	2.5
Over 63 mm up to and including 90 mm (3.54 in)	Longitudinal	44	27.9	52	33.0	5
	Long transverse	42	26.7	51	32.4	5
	Short transverse	40	25.4	49	31.1	2.5

This British Standard, having been approved by the Aerospace Industry Standards Committee and endorsed by the Chairman of the Engineering Divisional Council, was published under the authority of the General Council of the Institution on 22nd February 1968.

The Institution desires to call attention to the fact that this British Standard does not purport to comprise 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/24. Draft for comment 67/8971.

SBN: 580 00061 3