

Specification for

**Plate of aluminium-
zinc-magnesium-
copper-chromium
alloy —**

**(Solution treated, controlled stretched
and precipitation treated)
(Zn 5.8, Mg 2.5, Cu 1.6, Cr 0.15)**

UDC 629.7:669.715'5'721'3'26-41

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 and 2 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.

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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 BS L 96.

NOTE 3 Aluminium-alloy-coated sheet and strip of the same basic composition are covered by BS L 88.

NOTE 4 The specified chemical composition and mechanical properties meet the requirements of A.I.C.M.A. Recommendation AL..P42.

1 Inspection and testing procedure

This British Standard shall be used in conjunction with Sections 1 and 14 of BS L 100.

2 Quality of material

The material shall be made from aluminium and alloying constituents, with or without approved scrap, at the discretion of the manufacturer.

3 Chemical composition

The chemical composition of the material shall be:

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

^a 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 4.2, the material shall be supplied solution treated, controlled stretched, to a permanent extension of not less than 1½ % nor more than 3 %, 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 3 %. 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 a temperature of 460 ± 10 °C and quenching in water at a temperature not exceeding 40 °C.
- 2) Precipitation treat by heating at a temperature of 135 ± 5 °C for not less than 12 hours.

6 Mechanical properties

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

Nominal thickness		Direction	0.2 % proof stress	Tensile strength	Elongation on gauge length of	
					50 mm	$5.65 \sqrt{S_0}$
mm			N/mm ²	N/mm ²	%	%
Over	Up to and including					
6	12.5	Long transverse	450	530	8	—
12.5	25	Long transverse	450	530	—	6
25	40	{ Longitudinal	460	530	—	6
		{ Long transverse	450	530	—	5
		{ Short transverse	420	490	—	2.5
40	63	{ Longitudinal	460	530	—	6
		{ Long transverse	440	510	—	5
		{ Short transverse	420	490	—	2.5
63	90	{ Longitudinal	430	510	—	5
		{ Long transverse	410	500	—	5
		{ Short transverse	390	480	—	2.5

NOTE 1 N/mm² = 1 MN/m² = 0.102 kgf/mm² = 0.1 hbar = 0.065 tonf/in². Information on SI units is given in BS 3763, "The International System of units (SI)", and in PD 5686, "The use of SI units". See also BS 350, "Conversion factors and tables".

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