

**Ministry of Defence
Defence Procurement Agency, ADRP2
Abbey Wood
Bristol
BS34 8JH**

OBSOLESCENCE NOTICE

All DTD specifications were declared obsolescent from 1st April 1999. All DTD 900 series approvals also lapsed at that time. The standards will no longer be updated but will be retained as obsolescent documents to provide for the servicing of existing equipment.

Further Guidance

The aim in declaring the specifications obsolescent is to recognise that the documents are not being updated and thus should be used with care by both purchaser and supplier. For example, a specification could contain valid technical information but may also contain type approval clauses that contradict procurement policy and/or use materials that do not comply with environmental legislation. The obsolescent specification can still be used as a basis for a purchase provided that the supplier and purchaser agree suitable changes to the specification within the purchase order/contract.

For the DTD 900 system, each specification has provided an MoD approved material and process. For these items, the declaration of obsolescence will constitute the termination of both the extant MoD approval and the continuing MoD assessment that had underpinned those approvals. Again, the technical content of the document remains valid and can be used by both purchaser and supplier as a basis for a contract but an acceptable (to the parties) approval/assessment procedure would be required.

Aerospace Material Specification
BARS AND EXTRUDED SECTIONS
OF ALUMINIUM - COPPER - MAGNESIUM - NICKEL - IRON ALLOY
(Solution treated and precipitation treated)
(Suitable for use at elevated temperatures)
(Cu 2.5, Mg 1.5, Ni 1.2, Fe 1.0)

NOTE. This specification is one of a series issued by the Ministry of Defence (Aviation Supply) to meet a requirement not covered by an existing British Standard for aerospace material.

1. INSPECTION AND TESTING PROCEDURE

This specification shall be used in conjunction with the relevant sections of British Standard L.100 as follows:

Bars for machining and extruded sections	Sections 1 and 5
Bars for machining and extruded sections for highly stressed structures	Sections 1 and 6

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	Per cent	
	min	max
Copper	1.8	2.7
Magnesium	1.2	1.8
Silicon	—	0.25
Iron	0.9	1.4
* Manganese	—	0.2
Nickel	0.8	1.4
* Zinc	—	0.1
* Lead	—	0.05
* Tin	—	0.05
Titanium plus Zirconium	—	0.2
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 Bars and extruded sections. Unless otherwise agreed and stated on the order in accordance with British Standard L.100, Section 5, bars for machining and extruded sections shall be supplied solution treated, straightened and subsequently precipitation treated, but not controlled stretched.

4.2 Bars and extruded sections for highly stressed structures. Unless otherwise agreed and stated on the order in accordance with British Standard L.100, Section 6, bars for machining and extruded sections for highly stressed structures shall be supplied solution treated, controlled stretched and subsequently precipitation treated.

5. HEAT TREATMENT

The material shall be heat treated as follows:

- (1) Solution treat by heating at a temperature of $530 \pm 5^\circ\text{C}$ for 4 to 24 hours and quenching in water.
- (2) Precipitation treat by heating at a temperature of $200 \pm 5^\circ\text{C}$ for 16 to 24 hours and cooling in air.

6. MECHANICAL PROPERTIES

6.1 Tensile test. Unless they are required by British Standard L.100 to be fixed by agreement between the manufacturer and the purchaser, 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:

Diameter or minor sectional dimension of the bar or extruded section	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 10	320 340	400 420	5 7	— 8
Up to and including 10 100				

NOTE. $1 \text{ N/mm}^2 = 0.102 \text{ kgf/mm}^2 = 0.1 \text{ hbar} = 0.065 \text{ tonf/in}^2$. Information on SI units is given in BS 350, 'Conversion factors and tables', and in PD 5686, 'The use of SI units'.

6.2 Hardness test. Table showing value of X:

Tensile strength of test piece*	Value of X
N/mm ²	%
$f_t +$ to less than $f_t + 15$	5
$f_t + 15$ to less than $f_t + 30$	7.5
$f_t + 30$ to less than $f_t + 45$	10
$f_t + 45$ and over	12.5

* f_t = minimum value for the particular size of material as specified in 6.1.

Approved for issue,

E. W. RUSSELL,

Director/Materials.

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