

# METRIC UNITS

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## BRITISH STANDARDS INSTITUTION

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

TA. 34, July, 1969

(Superseding, in part, D.T.D. 5153)

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### BRITISH STANDARD : AEROSPACE SERIES SPECIFICATION FOR TITANIUM - ALUMINIUM - MOLYBDENUM - TIN - SILICON ALLOY FORGINGS (Tensile strength 105-127 hbar) (Limiting ruling section 75 mm (3 in))



NOTE 1. Other forms of material of this composition and strength are covered by the following British Standards:

TA.32. Bars for machining.

TA.33. Forging stock.

NOTE 2. Where imperial equivalents are stated, the figures in SI 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'. Information concerning SI units is given in BS 350 and PD 5686, 'The use of SI units'.

#### 1. INSPECTION AND TESTING PROCEDURE

This British Standard shall be used in conjunction with Sections 1 and 4 of British Standard TA.100.

#### 2. MANUFACTURE

The forgings shall be made from forging stock complying with the requirements of British Standard TA.33.

#### 3. CHEMICAL COMPOSITION

The chemical composition of the forgings shall be:

Element	Per cent	
	min.	max.
Aluminium	3.0	5.0
Molybdenum	3.0	5.0
Tin	1.5	2.5
Silicon	0.3	0.7
Iron	-	0.20
Hydrogen	-	0.015
Titanium	-	The remainder

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## 4. CONDITION

Unless otherwise stated on the order or drawing, the forgings shall be supplied heat treated and subsequently descaled and pickled.

## 5. HEAT TREATMENT

The forgings and test samples shall be heat treated as follows:

- (1) Heat at a temperature of  $900 \pm 10^\circ\text{C}$  and hold for one hour per 25 mm of section, with a minimum of 20 minutes.
- (2) Cool in air.
- (3) Heat at a temperature of  $500 \pm 5^\circ\text{C}$  and hold for 24 hours.
- (4) Cool in air.

## 6. MECHANICAL PROPERTIES

**6.1 Tensile test.** Unless they are required by British Standard TA.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 TA.100 shall be:

0.2% proof stress		Tensile strength				Elongation	Reduction of area
min.		min.		max.		min.	min.
hbar	tonf/in <sup>2</sup>	hbar	tonf/in <sup>2</sup>	hbar	tonf/in <sup>2</sup>	%	%
91	58.9	105	68.0	127	82.2	9	20

NOTE. 1 hbar =  $10^7$  N/m<sup>2</sup>.

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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 31 July, 1969.

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/49      Draft for comment 67/14017

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