

British Standard: Aerospace Series  
 Specification for  
**Bar and section for machining of  
 titanium-aluminium-vanadium alloy**

(Tensile strength 900-1160 MPa)  
 (Limiting ruling section 150 mm)

NOTE. Other forms of material of similar composition are covered by British Standards as listed in Appendix A.

### 1. Inspection and testing procedure

This British Standard shall be used in conjunction with Sections 1 and 2 of British Standard TA 100.

### 2. Manufacture

The material shall be made from ingots produced, by consumable electrode melting, from materials having a total carbon content of not more than 0.08 %.

### 3. Chemical composition

The chemical composition of the material shall be:

Element	%	
	min.	max.
Aluminium	5.5	6.75
Vanadium	3.5	4.5
Iron	—	0.30
Oxygen	—	0.20
Nitrogen	—	0.05
Hydrogen	—	0.0125
Titanium	—	Remainder



### 4. Condition

4.1 The material shall be supplied annealed.

4.2 Unless otherwise stated on the drawing, order or Inspection Schedule, the material shall be supplied either centreless ground or machined.

### 5. Heat treatment

Unless otherwise agreed between the manufacturer and the purchaser and stated on the drawing, order or Inspection Schedule, the material and test samples shall be annealed as follows:

- (1) heat to a temperature between 700 °C and 800 °C;
- (2) hold, at the selected temperature  $\pm 10$  °C, for a time dependent on the cross section, with a minimum of 1 h;
- (3) cool in air or the furnace.

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## 6. Mechanical properties

**6.1 Tensile test at room temperature.** The mechanical properties obtained from test pieces selected, prepared and tested in accordance with the relevant requirements of British Standard TA 100 shall be:

0.2 % proof stress	Tensile strength		Elongation	Reduction of area
	min.	max.		
MPa (= N/mm <sup>2</sup> )	MPa (= N/mm <sup>2</sup> )	MPa (= N/mm <sup>2</sup> )	%	%
830	900	1160	8	25

NOTE. Information on SI units is given in BS 3763, 'The International System of units (SI)', and BS 350, 'Conversion factors and tables'.

## Appendix A

### British Standards covering other forms of material of similar composition

Tensile strength (MPa = N/mm <sup>2</sup> )	min.	895	900	960	1100
	max.	1150	1160	1270	1300
Limiting ruling section (mm)			150		20
Maximum thickness (mm)	100				
Form	British Standard				
Sheet and strip			TA 12	TA 10	
Forging stock			TA 13		TA 28*
Forging stock and wire					
Forgings					
Plate	TA 56				

\*Primarily intended for the manufacture of fasteners complying with the requirements of the 'A' series of British Standards.

This British Standard, having been approved by the Aerospace Industry Standards Committee, was published under the authority of the Executive Board on 30 May, 1974.

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#### Contract requirements

Attention is drawn to the fact that this British Standard does not purport to include all the necessary provisions of a contract.

#### Revision of British Standards

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 72/31805 DC