2TA 11 : May 1974
(Superseding British Standard TA 11)
UDC 629.7.02:669.295.5'71'292–422.2

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

ISBN: 0 580 08185 0

The following BSI references relate to the work on this standard:
Committee reference ACE/49 Draft for comment 72/31805 DC

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