



TECHNICAL DATASHEET

Ti6Al4V ELI – Grade 23 FT 001 – Version 0

TA6V ELI, also known by its name of Grade 23, is a titanium alloy with aluminium and vanadium. It is a purer version of the standard TA6V alloy. Interstitial element (iron, oxygen and carbon) content in this alpha + beta alloy is strictly controlled and limited during the fusion process.

This purity grants the metal improved mechanical properties and greater resistance to fatigue.

The TA6V ELI is especially popular due to its ductility at cryogenic temperatures and its excellent biocompatibility with the human body, making it an essential material in the manufacture of medical implants (surgical, dental, etc.). It is also widely used in the aeronautic and industrial sectors, such as jewellery and watch-making.

APPLICATIONS	ADVANTAGES
Medical Aeronautic Industrial	Biocompatibility Fatigue resistance Corrosion resistance
STANDARDS	SHAPES
ASTM F136 ISO 5832-3 ASTM B348 ASTM B265	BAR Diameter 1-110 mm Length 2800-3500 mm Tolerance Ø≤18 mm: h7-h9 – Ø>18 mm: h8-h11
	SHEET/ PLATE Thickness 0.5-120 mm Typical dimensions 914 x 2438 mm / 1215 x 3048 mm 1000 x 2000 mm / 1250 x 2500 mm

➤ CHEMICAL COMPOSITION

%	O	Fe	C	H	N	Al	V	Ti
min						5.5	3.5	residue
max	0.13	0.25	0.08	0.012	0.05	6.5	4.5	



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➤ MECHANICAL PROPERTIES

In accordance with ASTM F136

Dimension diameter or thickness (x)	Rm Tensile strength (min MPa)	Rp0.2 Yield strength (min MPa)	Elongation (% min)	Necking (% min)
<4.75 mm	860	795	10	-
4.75 ≤ x < 44.45 mm	860	795	10	25
44.45 ≤ x < 63.5 mm	825	760	8	20
63.5 ≤ x < 101.6 mm	825	760	8	15

In accordance with ISO 5832-3

Product	Rm Tensile strength (min MPa)	Rp0.2 Yield strength (min MPa)	Elongation (% min)	Necking (% min)
Sheet/plate thickness 75 max	860	780	8	-
Bar Ø75 max	860	780	10	-

➤ PHYSICAL PROPERTIES

Density (g/cm³)	4.43
Hardness (HV)	310
Modulus of elasticity at 20 °C (N/mm²)	112.4 x10³
Thermal conductivity at 20 °C (W/m °C)	6.7
Mean coefficient of thermal expansion at 20-200 °C (mm °C)	9 x10 ⁻⁶
Beta transus (°C)	980
Fusion temperature (°C)	1650

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