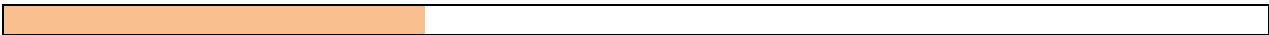


Ti6Al4V ELI (GRADE 23)

GENERAL INFORMATION

THIS TITANIUM ALLOY OFFERS EXCELLENT MECHANICAL PROPERTIES AND CORROSION RESISTANCE IN MANY MEDIA. THE EXTRA LOW INTERSTITIAL (ELI) VARIANT GRANTS HIGHER TOUGHNESS AND RESILIENCE COMPARED TO STANDARD Ti6Al4V GRADE 5. WITH ITS LOW DENSITY (4.42 KG/DM^3) THIS MATERIAL IS SUITABLE FOR MANY APPLICATIONS, LIKE AEROSPACE EQUIPMENT, HIGH PERFORMANCE AUTOMOTIVE COMPONENTS, AND OFFSHORE OIL EQUIPMENT. ITS BIO-COMPATIBILITY MAKES IT IDEAL FOR PROSTHETIC APPLICATIONS.

DENSITY 4.42 KG/DM³



BIO-COMPATIBILITY  EXCELLENT



MACHINABILITY FAIR



WELDABILITY FAIR



CORROSION RESISTANCE EXCELLENT



CHEMICAL COMPOSITION (ACCORDING TO ASTM E2594-09)

TI	AL	V	O	FE	H	C	N
BALANCE	6.5%	4.1 %	0.13 %	0.2 %	0.0054 %	0.019 %	0.02 %

MECHANICAL PROPERTIES (AS BUILT)

YIELD STRENGTH ¹	UP TO 1100 MPa
TENSILE STRENGTH ¹	UP TO 1300 MPa
ELONGATION A ¹	5 %
NECKING Z ¹	10%
YOUNG'S MODULUS ¹	106 GPa
HARDNESS ²	384 HV
RELATIVE DENSITY ³	OVER 99.8 %

¹ TESTED ACCORDING TO EN 6892-1:2009

² MEASURED ACCORDING TO EN ISO 6507-1

³ MEASURED ACCORDING TO ASTM E1245

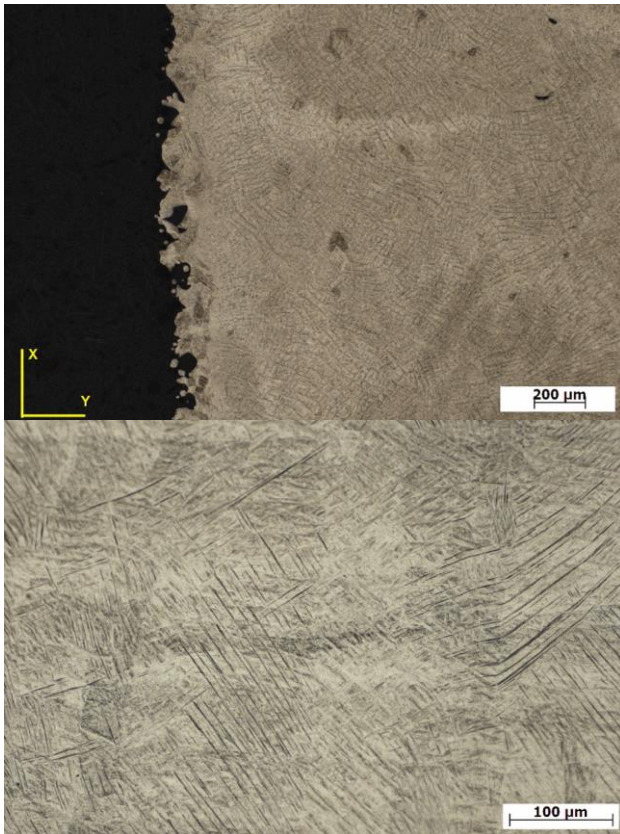
SURFACE QUALITY

RA	20 ÷ 30 μM
Rz	130 ÷ 190 μM

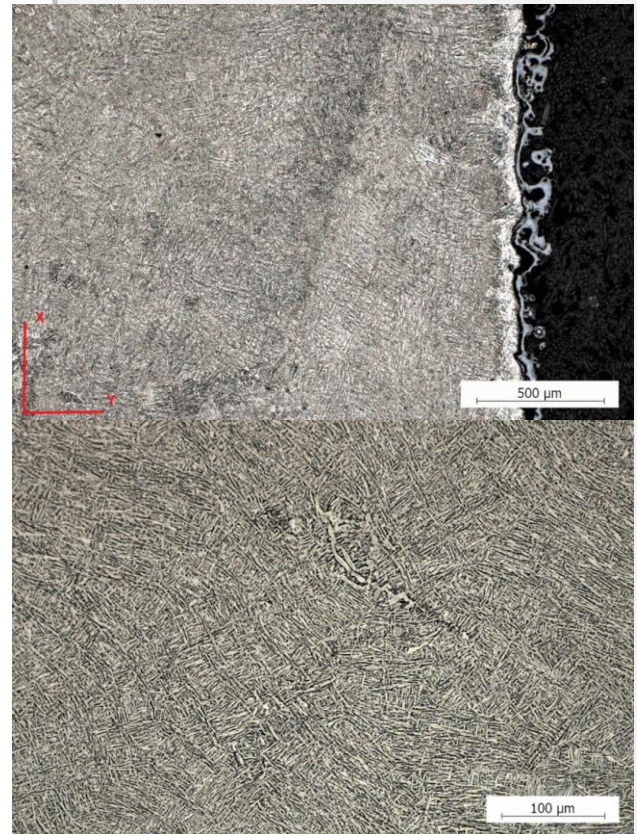
MEASURED IN COMPLIANCE WITH ISO 4287-1997. RESULTS STRONGLY DEPEND ON SAMPLE GEOMETRICAL COMPLEXITY AND ORIENTATION.

MICROSTRUCTURE (ACCORDING TO ASTM E112)

WITHOUT HEAT TREATMENT



WITH HEAT TREATMENT



HEAT TREATMENT: IN ARGON ATMOSPHERE, RUMP UP TO 870°C @ 10K/MIN, PLATEAU @870°C FOR 3H, FREE COOLING IN CLOSED OVEN DOWN TO 500°C, THEN FREE COOLING IN OPEN OVEN. BETTER ELONGATION AND NECKING VALUES CAN BE ACHIEVED WITH SPECIAL HEAT TREATMENT.

NOTES

ALL THE VALUES IN THIS DOCUMENT REFER TO A COMBINATION OF GEOMETRIES, POWDERS AND PARAMETERS DEVELOPED BY SISMA, THEREFORE THEY MUST BE INTENDED FOR INFORMATION ONLY. INFORMATIONS WRITTEN IN THIS FORM ARE SUBJECTED TO SUDDEN MODIFICATION WITHOUT PRIOR NOTICE, AND DO NOT GRANT FINAL RESULT.