

TIFAST S.R.L.
Zona industriale San Liberato - 05035 NARNI (TR) ITALY
Tel: +39 0744 7361 Fax: +39 0744 742 260

TIFAST ORDER
REFERENCE
PO

HEAT NUMBER C011638 ALLOY TITANIUM GRADE 23, TI 6Al 4V ELI
MATERIAL BARS SPECIFICATION ASTM B348-13, ASTM F136-13, ISO 5832-3:2016

CHARACTERISTICS OF THE SUPPLY (NOMINAL)

Diameter	Length	Weight Kg	Surface Finish	Tolerance	Surface roughness
20,000 mm	2800 - 3200 mm	693.0	Peeled, Polished	h9	Ra<1,6 µm

HEAT CHEMICAL COMPOSITION

		Al %	C %	Fe %	H %	N %	O %	V %	RES. MAX %	Ti %
STD limits	min	5,50	0,00	0,00	0,000	0,00	0,00	3,50		
	max	6,50	0,08	0,25	0,0120	0,03	0,13	4,50		
C011638	top	5,55	0,023	0,090	0,003	0,008	0,109	3,72	<0,1	<0,4
	bottom	5,56	0,023	0,090	0,003	0,009	0,111	3,74	<0,1	<0,4

MECHANICAL / PHYSICAL PROPERTIES AT ROOM TEMPERATURE OF THE SUPPLIED PRODUCTS

IDENTIFICATION	REFERENCE STANDARD	Tensile Strength MPa	Yield Strength 0.2% Offset MPa	Reduction of Area %	Elongation %	Gage Length diameter (mm)	R.L.* Rupture Location
		min 860	795		10		
		max N.A.	N.A.	N.A.	N.A.		
C011638-0/B	ASTM E8/E8M-16A, ELONG. ON 4D	946	877	51,9	17,4	12,55	I
C011638-0/B	UNI EN ISO 6892-1:2016, EL ON 5D	946	877	51,9	16	12,55	I

Heat Treatment: ANNEALED 705°C 1 H + AIR COOLING
US Test: 100%AMS 2631E CL AA
B-Transus Temp: 965°C±5°C
Maximum Camber: 1 mm/m
Microstructure: A1 as per ETTC2 & ISO 20160
Eddy Current Test: No defect, 100% Inspected

Radioactive contamination - free material

Others

Material melted and manufactured by TiFast, Narni, Italy. Hot rolled, annealed and cold finished bars. Bars 100% visually inspected. No alpha-case on bar surface.

We hereby certify that the relevant material was produced, sampled, inspected and tested in accordance with the customer purchase order and referenced specifications, and conforms to the requirements. The present document is in compliance with EN ISO 9001:2008 inspection certificate "Type 3.1". The first seven characters in the IDENTIFICATION give the heat number of the lot. Certified Hydrogen analysis was performed on the supplied product. The present document can be reproduced only in full and upon authorization by TiFast. *R.L.: I=Rupture inside the two inner quarters of the gage length E=Rupture outside the two inner quarters of the gage length

Laboratory Manager
ING. A. PALAZZI

COMPANY WITH
QUALITY SYSTEM
CERTIFIED BY DNV
= AS/EN/JISQ 9100 =

COMPANY WITH
QUALITY SYSTEM
CERTIFIED BY DNV
= ISO 9001 =

ING. M. COSTANZI
ÖRNEKTİR