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HEAT NUMBER C012043 ALLOY TITANIUM GRADE 23, TI 6Al 4V ELI  
MATERIAL BARS SPECIFICATION ASTM B348-13, ASTM F136-13, ISO 5832-3:2016

TIFAST ORDER 1474-17-07-2019  
REFERENCE 219053 date: 21.05.2018  
PO 2005380

CHARACTERISTICS OF THE SUPPLY (NOMINAL)

Diameter	Length	Weight Kg	Surface Finish	Tolerance	Surface roughness
14,000 mm	2800 - 3200 mm	1289.6	Ground	h8	Ra<1,6 µm

HEAT CHEMICAL COMPOSITION

STD limits		Al %	C %	Fe %	H %	N %	O %	V %	RES. MAX %	Ti %
		Each	Total	BALANCE			BALANCE			
min		5,50	0,00	0,00	0,000	0,00	0,00	3,50	< 0,1	< 0,4
max		6,50	0,08	0,25	0,0120	0,03	0,13	4,50	< 0,1	< 0,4
	top	6,04	0,018	0,090	0,004	0,006	0,110	3,97	< 0,1	< 0,4
	bottom	6,02	0,022	0,100	0,004	0,005	0,107	3,98	< 0,1	< 0,4

MECHANICAL / PHYSICAL PROPERTIES AT ROOM TEMPERATURE OF THE SUPPLIED PRODUCTS

IDENTIFICATION	REFERENCE STANDARD	Tensile Strength MPa	Yield Str0.2% offset MPa	Reduction of Area %	Elongation %	Gage Length diameter (mm)	R.L.* Rupture Location
	STD limits	min 860	795	25	10		
		max N.A.	N.A.	N.A.	N.A.		
C012043	ASTM E8/E8M-16A, ELONG. ON 4D	984	920	48,2	16,7	9,02	I
C012043	UNI EN ISO 6892-1:2016, EL.ON 5D	984	920	48,2	14,9	9,02	I

Heat Treatment: ANNEALED 705°C 1 H + AIR COOLING

US Test: 100% AMS 2631E CL AA

B-Transus Temp: 965±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. Bars both ends chamfered. 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 reference specifications, and conforms to the requirements. The present document is in compliance with UNI EN 10 04: 01 inspection certificate "Type 3.1". The first seven characters in the IDENTIFICATION code is the 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 =

Technology Director  
ING. M. COSTANZI