



"VSMPO-AVISMA Corporation"

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INSPECTION CERTIFICATE

EN 10204-3.1 AS 9100/EN ISO 9001 CERT. № 01 117 048312



CERTIFICATE: 13461Y14

Date: 15.08.2014

Contract: 84054219TRD Annex 8

Purchaser: TIRUS INTERNATIONAL SA, Switzerland.

Purchaser order: 14-0012826 / 30182-RM;

Quality/alloy: CP-3

Condition of delivery: Annealed

Terms of delivery: AMS 4902 K, AMS-T-9046 B, D1-4426

Sheet #	Units	Weight, (kg)	Object	Dimensions (mm/inch) or Drawing #	Heat #	Lot #
25 - 28	4	32	SHEET Sample enclosed to Certificate 13284Y14	0,813 x 914,4 x 2438,4 (.032" x 36" x 96")	8-36-07623	8978-1

Requirement:	Chemical Composition, %						Ti-remainder										Residuals, %	
	C	Fe	O	N	H		-	-	-	-	-	-	-	-	-	-	each	total
	max	max	max	max	In the Part, %												max	max
AMS 4902 K	0,08	0,30	0,20	0,05	sample	max											0,10	0,30
AMST 9046 B	0,004	0,076	0,126	0,002	#	0,015											<0,10	0,085
TOP	0,003	0,075	0,115	0,002	20	0,0018											<0,10	0,086
BOTTOM					30	0,0022												

Requirement:	0,20% proof stress ksi	Tensile strength ksi	Elonga- tion %	Heat treatment conditions		Sample #	Bend test Angle
				T° C	time		
AMS 4902 K	40-	min	min				105°
AMST 9046 B	65	50	20				Transverse
	Longitudinal						
20	52,1	68,0	31,0			20	105°
30	54,2	69,3	30,7	660	20 min air cooling	30	105°
	Transverse						
20	56,0	68,2	29,5				
30	56,6	68,6	28,8				

Microstructure testing As per AMST 9046 B par. 3.5.4, 3.5.3;

AMS 4902 K par. 3.8, 3.11;

Grain size # 9,0;

material without surface contamination.

Ultrasonic inspection N/A

We certify that, subject to exceptions or concessions listed hereafter, the supplies detailed here were manufactured in accordance with the technical specifications of the contract, order or sub-order and that, all inspections operations and tests, having been completed, the supplies comply in every respect with the relevant particular specifications, drawings, and relevant standards and regulations in force.
Information particular to the supplies delivered:
specify the reference of concessions granted:

Ingot melted by VSMPO, Verkhnyaya Salda, Russia
Production start-up date: 24.01.2014

Approved by Mitrokhina O.K.

Signature

Stamp

