



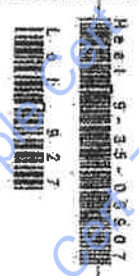
VSMPO-AVISMA Corporation



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INSPECTION
CERTIFICATE

EN 12045-1 AS PROCESSED ISO 9001 CERT. No. 01 117 042012



6264.3

CERTIFICATE: 22614Y14

Purchaser: TMS International SA, Switzerland

Quality/lot: T1-6A1-4V

Condition of delivery: Hot Rolled, Annealed, Machined, Ground, Pickled.

Terms of delivery: AMS 4928U, AMS-T-9047A, AMS 6931C, ASTM B 348-13, ASTM B 381-13, ASTM F 1472-08

Bars # Units Weight, (kg)

378 1094

Object Bar

Dimensions (mm) or Drawing #

dia 15.875 x 3048-3658

Heat #

6-35-06907

Lot #

927

Contract: 840641081NG Annex 26

Purchaser order: 14-001304/130287 RM

Chemical Composition, %

Ti-remainder

AMS 4928U, AMS-T-9047A, AMS 6931C, ASTM B 381-13, ASTM F 1472-08, ASTM B 348-13

Requirement	Al	V	Fe	O	C	N	Y	Residuals, %	in the Part, %
5.50 - 6.75	3.50 - 4.50	max 0.30	max 0.20	max 0.08	max 0.05	max 0.005	max 0.10	each	total
6.85	4.13	0.18	0.180	0.023	0.004	<0.801	0.10	0.40	0.853
6.12	4.11	0.15	0.177	0.023	0.004	<0.001	0.10	0.078	0.078

Requirement:

0.20% proof stress	Tensile strength	Elongation	Reduction	Heat Treatment conditions	Batch-transus
MPa	MPa	%	%	T, C	T, C
TIIN	TIIN	TIIN	TIIN		1/2R actual
862	931	10	25		

Longitudinal:

1-1	959	1034	19.2	51.8	730°	1 h	Top
3-1	978	1057	17.9	50.6	air cooling		1013
5-1	955	1032	20.0	52.0			Bottom
7-1	946	1033	18.8	51.5			Bottom
9-1	967	1031	18.8	50.4			
10-2	966	1043	18.5	50.2			
12-1	952	1039	20.0	52.7			
14-2	988	1038	20.0	52.1			

Ingot (soil melting+VAR)

Radiation free, Mercury free.

Nominal diameter after rolling 19 mm.

Approved by: Alexeeva O.M.

Signature: *[Handwritten Signature]*



Macrostructure testing: As per AMS 6931C per 3.5.1.4, AMS 4928U per 3.6, AMS-T-9047A per 3.9; Microstructure testing: As per AMS 6931C, AMS 4928U per 3.5.1.2.2, 3.5.1.3; AMS-T-9047A per 3.8, 3.9, ASTM F 1472-08 par.9.1.9.3

Ultrasonic inspection: As per AMS-STD-2154A CL A, Longitudinal wave, Immersion method. Focused transducer.

Melting date: 23.10.2014
Ingot melted by VSMPO, Verkhnyaya Saida, Russia
Production start-up date: 25.10.2014



VSMPO-Trus, US
Pittsburgh, PA

INSPECTION REPORT

Form# V036
Rev. 1
3 Jan 2011

Alloy:	6-4	VSMPO P.O.#:	30287-RM	Inspected By:		Date:	8-31-15
Form:	Bar	Length Tol:		QA Approval:	AK	Date:	9/23/15
Size:	0.625"	Width / 2 Tol:	+ .005" / -.003"	Thickness (A Tol):	AK	Invoice #:	756 1527

Package#	Heat#	Qty	ID #	Test ID	1/0-1	1/0-2	Width	Length	A/R
308552	9-35-06907	189		3	.027	.027		123 1/2	A
				3	.027	.027		128 3/8	A
				4	.028	.027		129 1/4	A
				5	.026	.026		142 1/8	A
				11	.027	.027		120	A
				14	.028	.028		137 1/8	A
				9	.028	.028		123	A
				12	.027	.026		139 1/4	A
				1	.028	.027		132 1/8	A
				13	.028	.028		123	A

Stencil Markings:
AMS 4928 VAMS 0931 t AMS-T-9047 AASTM B 348-13 ASTM B
Visual Inspection:
381-13 ASTM F1472-08 e1 HTF TFLAK4VI VSMPO

Tool ID: 0m:2-7
Tool ID: Tm:20

OK

