



Perryman company

213 Vandale Drive Houston, PA 15342 USA

phone: 724-746-9390 fax: 724-746-9392

Certified Test Report

Heat No: PVD7433
Melting Source: Perryman Company, USA
Work Order No: 149984

Date: 10/23/2020
Quantity: 151 KGS

Customer Order No: DEU - 1001 - KF

Product: Ti 6Al-4V ELI 4mm h6 (.1571/.1574") Dia. Precision CG Bar X 3000mm - 3100mm R/L

Specification: ASTM F136-13, ISO 5832-3 (2016), EN 10204 3.1 (2004), EN 2002-001 (2005), EN 4267 (2002)

Condition: Annealed 1300 F - 2 Hours

Chemistry	Wt %	ASTM E 1447:	Post processing Hydrogen Determination	H: .0011
Metallographic Examination:		ASTM E407:	Microstructure - Equiax alpha-beta	ASTM E 407: Surface Contamination - No alpha case 500x
Etchant: PER1 & PER2				
ASTM E 112: Grain Size: ASTM#	10	ETTC2/ISO 20160: Photo Micrograph		Transverse: A1
Mechanical Properties		Tensile	.2% Yield	Reduction
ASTM E8/E8M 2002-001:2005E		Strength	4D	of Area
Condition	ksi	ksi	%	%
As Shipped	150.9	131.1	24	43

No weld repair performed at Perryman Company. Conforms to EN 10204 type 3.1 (2004)

Eddy current Inspection - Passed

Ultrasonic Inspection of 100% of the material to AMS 2632 rev A Class A1 - Pass

This is to certify that all test results conform to the specifications listed above and that all tests required were performed by Perryman Company.

The material did not come in contact with Mercury or radioactive contamination at Perryman.

Attached is a copy of the Ingot Chemistry. All testing performed at room temperature unless otherwise noted.

The test results relate only to the lots tested and are contained in the records of Perryman Company. The Certified Test Report cannot be reproduced except in full, without written approval. Made in USA.

10/23/2020

Earl W. Julius
Certification Technician



Materials Testing Laboratory

TI 91.00.2021
QA
113



Perryman company
 625 Technology Dr., Coal Center, PA 15423
 phone: 724-746-9390 fax: 724-746-9392

SHIP TO
Perryman Company
 213 Vandale Drive
 Houston, PA 15342

CERTIFICATE OF TEST
For TITANIUM INGOT

WORK ORDER
040713

HEAT NUMBER
PVD7433

QUANTITY		PCS										
12410 Lbs		1										
DESCRIPTION	FORM: Ingot, Grade: Ti6Al4V Eli, Size: 30											
SPECIFICATION CAPABILITY P-104 Rev 3												
Chemistry (WT%) Top												
O	N	C	Fe	Al	V	Si	Cu	Pd	Y	H	B	Ru
.11	.007	.012	.19	6.18	3.93	.017	<.008	<.002	<.002	.0006	<.002	<.003
Chemistry (WT%) Bottom												
O	N	C	Fe	Al	V	Si	Cu	Pd	Y	H	B	Ru
.11	.006	.012	.17	6.43	3.96	.013	<.008	<.002	<.002	.0003	<.002	<.003
Comments												
<p>Melting Process: EBCHR-VAR</p> <p>Calculated Beta Transus T/B: 1799F/1807F</p> <p>Calculated Beta Transus T/B C: 982C/986C</p> <p>Residual Elements, each < .05% Residual Elements, total < .20% Balance Titanium. Melted in the United States of America. The material is free of radioactive and mercury contamination. Oxygen/Nitrogen tested in accordance with ASTM E1409. Carbon tested in accordance with ASTM E1941. Hydrogen tested in accordance with ASTM E1447. H tested in accordance with ASTM E2994. Metallics Tested By XRF in accordance with ASTM E539. Elements not required by specification are included in Others(each) and Others(Total)</p>												

Nadcap
 Materials Testing Laboratory

This material conforms to the chemistry and quality system requirements of the specifications and/or Purchase Order referenced. The results relate only to the lot tested and the results are contained in the records of Perryman Company.

The certificate of test cannot be reproduced except in full without the written approval of the laboratory, and the recording of false, fictitious, or fraudulent statements or entries on this document may be punished as a felony under federal law.

Terrance J. Marth
Terrance J. Marth
 Laboratory Supervisor

TI 21.01.002
 QA 113
 JK.