SLOVENSKI STANDARD
SIST EN 3355:2012

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Aeronavtika - Titanova zlitina TI-P64001 (Ti-6Al-4V) - Žarjeno - Ekstrudirani profili - De ≤ 150 mm - 900 MPa ≤ Rm ≤ 1160 MPa

Aerospace series - Titanium alloy TI-P64001 (Ti-6Al-4V) - Annealed - Extruded section - De ≤ 150 mm - 900 MPa ≤ Rm ≤ 1 160 MPa

Luft- und Raumfahrt - Titanlegierung TI-P64001 (Ti-6Al-4V) - Geglüht - Strangpreßprofile - De ≤ 150 mm - 900 MPa ≤ Rm ≤ 1 160 MPa

Série aérospatiale - Alliage de titane TI-P64001 (Ti-6Al-4V) - Recuit - Profilés filés - De ≤ 150 mm - 900 MPa ≤ Rm ≤ 1 160 MPa

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English Version

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN 3355:2012) has been prepared by the Aerospace and Defence Industries Association of Europe - Standardization (ASD-STAN).

After enquiries and votes carried out in accordance with the rules of this Association, this Standard has received the approval of the National Associations and the Official Services of the member countries of ASD, prior to its presentation to CEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2012, and conflicting national standards shall be withdrawn at the latest by September 2012.

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Introduction

This European Standard is part of the series of EN metallic material standards for aerospace applications. The general organization of this series is described in EN 4258.

This European Standard has been prepared in accordance with EN 4500-4.

1 Scope

This European Standard specifies the requirements relating to:

Titanium alloy TI-P64001 (Ti-6Al-4V)
Annealed
Extruded section
$D_e \leq 150$ mm
900 MPa $\leq R_m \leq$ 1 160 MPa

for aerospace applications.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 2032-2, *Aerospace series — Metallic materials — Part 2: Coding of metallurgical condition in delivery condition*

EN 4258, *Aerospace series — Metallic materials — General organization of standardization — Links between types of EN standards and their use*

EN 4500-4, *Aerospace series — Metallic materials — Rules for drafting and presentation of material standards — Part 4: Specific rules for titanium and titanium alloys*[1]

EN 4800-002, *Aerospace series — Titanium and titanium alloys — Technical specification — Part 002: Bar and section*

[1] Published as ASD-STAN Standard at the date of publication of this standard by Aerospace and Defence Industries Association of Europe-Standardization (ASD-STAN), (www.asd-stan.org).

1	Material designation		Titanium alloy TI-P64001(Ti-6Al-4V)											
2	Chemical composition %	Element	Al	V	O	N	O + 2N	H	Fe	C	Y	Others		Ti
												Each	Total	
		min.	5,50	3,50	–	–	–	–	–		–	–	–	Base
		max.	6,75	4,50	0,20	0,03	0,25	0,012 5	0,30	0,08	0,005 0	0,10	0,40	
3	Method of melting		See EN 4800-002.											
4.1	Form		Extruded section											
4.2	Method of production		Extruded ($\alpha + \beta$ or β processed)											
4.3	Limit dimension(s)	mm	$D_e \leq 150$											
5	Technical specification		EN 4800-002											

6.1	Delivery condition	Annealed
	Heat treatment	690 °C ≤ θ ≤ 840 °C / t ≥ 30 min AC or cooled in inert atmosphere [a]
6.2	Delivery condition code	U [b]
7	Use condition	Delivery condition
	Heat treatment	–

Characteristics

8.1	Test sample(s)				See EN 4800-002.
8.2	Test piece(s)				See EN 4800-002.
8.3	Heat treatment				Use condition
9	Dimensions concerned			mm	$D_e \leq 150$
10	Thickness of cladding on each face			%	–
11	Direction of test piece				L [c]
12	T	Temperature	θ	°C	Ambient
13	T	Proof stress	$R_{p0,2}$	MPa	≥ 830
14	T	Strength	R_m	MPa	900 ≤ R_m ≤ 1160
15	T	Elongation	A	%	≥ 8
16	T	Reduction of area	Z	%	≥ 20
17	Hardness				–
18	Shear strength		R_c	MPa	–
19	Bending		k	–	–
20	Impact strength				–
21	C	Temperature	θ	°C	–
22	C	Time		h	–
23	C	Stress	σ_a	MPa	–
24	C	Elongation	a	%	–
25	C	Rupture stress	σ_R	MPa	–
26	C	Elongation at rupture	A	%	–
27	Notes (see line 98)				a, b, c

30	Microstructure	–	See EN 4800-002.
		2	Each extruded section back end
		3	The sample shall represent the full cross section
		7	Criteria to be agreed between the manufacturer and the purchaser
44	External defects	–	See EN 4800-002.
		1	Visual examination
61	Internal defects	–	See EN 4800-002.
74	Surface contamination	–	See EN 4800-002.
95	Marking inspection	–	See EN 4800-002.
96	Dimensional inspection	–	See EN 4800-002.
98	Notes	–	[a] If after annealing, any straightening or stretching operations are performed on extruded section below 550 °C, the extruded section shall be stress relieved by heating to a temperature 550 °C ≤ θ ≤ 700 °C / t ≥ 30 min/AC or cooled in inert atmosphere. [b] According to EN 2032-2. [c] If required, properties for LT direction to be agreed between manufacturer and purchaser.
99	Typical use	–	–