



SLOVENSKI STANDARD
SIST EN 3464:2012

01-oktober-2012

Nadomešča:
SIST EN 3464:2010

Aeronavtika - Titanova zlitina TI-P64001 (Ti-6Al-4V) - Žarjeno - Plošče - 6 mm < a ≤ 100 mm

Aerospace series - Titanium alloy TI-P64001 (Ti-6Al-4V) - Annealed - Plate - 6 mm < a ≤ 100 mm

Luft- und Raumfahrt - Titanlegierung TI-P64001 (Ti-6Al-4V) - Geglüht - Platten - 6 mm < a ≤ 100 mm

ITeCh STANDARD PREVIEW
(standards.iteh.ai)

Série aérospatiale - Alliage de titane TI-P64001 (Ti-6Al-4V) - Recuit - Plaques - 6 mm < a ≤ 100 mm

<https://standards.iteh.ai/catalog/standards/sist/a728f82d-e53e-4aa5-ab91-d91298104d73/sist-en-3464-2012>

Ta slovenski standard je istoveten z: EN 3464:2012

ICS:

49.025.30 Titan

Titanium

SIST EN 3464:2012

en,fr,de

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 3464:2012](#)

<https://standards.iteh.ai/catalog/standards/sist/a728f82d-e53e-4aa5-ab91-d91298104d73/sist-en-3464-2012>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 3464

August 2012

ICS 49.025.30

Supersedes EN 3464:2009

English Version

**Aerospace series - Titanium alloy Ti-6Al-4V - Annealed - Plate -
6 mm < a ≤ 100 mm**

Série aérospatiale - Alliage de titane Ti-6Al-4V - Recuit -
Plaques - 6 mm < a ≤ 100 mm

Luft- und Raumfahrt - Titanlegierung Ti-6Al-4V - Geglüht -
Platten - 6 mm < a ≤ 100 mm

This European Standard was approved by CEN on 23 March 2012.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

[SIST EN 3464:2012](https://standards.iteh.ai/catalog/standards/sist/a728f82d-e53e-4aa5-ab91-d91298104d73/sist-en-3464-2012)

<https://standards.iteh.ai/catalog/standards/sist/a728f82d-e53e-4aa5-ab91-d91298104d73/sist-en-3464-2012>



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents		Page
Foreword.....		3
Introduction.....		3
1	Scope	4
2	Normative references	4

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 3464:2012](https://standards.iteh.ai/catalog/standards/sist/a728f82d-e53e-4aa5-ab91-d91298104d73/sist-en-3464-2012)

<https://standards.iteh.ai/catalog/standards/sist/a728f82d-e53e-4aa5-ab91-d91298104d73/sist-en-3464-2012>

Foreword

This document (EN 3464:2012) 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 document supersedes EN 3464:2009.

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 February 2013, and conflicting national standards shall be withdrawn at the latest by February 2013.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

(standards.iteh.ai)

[SIST EN 3464:2012](https://standards.iteh.ai/catalog/standards/sist/a728f82d-e53e-4aa5-ab91-d91298104d73/sist-en-3464-2012)

Introduction

<https://standards.iteh.ai/catalog/standards/sist/a728f82d-e53e-4aa5-ab91-d91298104d73/sist-en-3464-2012>

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

EN 3464:2012 (E)**1 Scope**

This European Standard specifies the requirements relating to:

Titanium alloy Ti-6Al-4V
Annealed
Plate
 $6 \text{ mm} < a \leq 100 \text{ mm}$

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 2002-8, *Aerospace series — Metallic materials — Test methods — Part 8: Micrographic determination of grain size* ¹⁾

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

EN 3114-003, *Aerospace series — Test method — Microstructure of ($\alpha + \beta$) titanium alloy wrought products — Part 003: Microstructure of plate*

EN 4050-4, *Aerospace series — Test method for metallic materials — Ultrasonic inspection of bars, plates, forging stock and forgings — Part 4: Acceptance criteria*

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 4800-001, *Aerospace series — Titanium and titanium alloys — Technical specification — Part 001: Plate, sheet and strip*

1) Published as ASD-STAN Prestandard 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-6Al-4V											
2	Chemical composition %	Element	Al	V	O+2N	N	H	Fe	C	Y	Others		Ti	
		min.	5,50	3,50	–	–	–	–	–	–	–	–	–	Base
		max.	6,75	4,50	0,25	0,03	0,012 5	0,30	0,08	0,005 0	0,10	0,40		
3	Method of melting		See EN 4800-001.											
4.1	Form		Plate											
4.2	Method of production		–											
4.3	Limit dimension(s)	mm	$6 < a \leq 100$											
5	Technical specification		See EN 4800-001.											

6.1	Delivery condition		Annealed										
	Heat treatment		$690\text{ °C} \leq \theta \leq 840\text{ °C} / t \geq 30\text{ min} / \text{AC}$ in inert atmosphere										
6.2	Delivery condition code		U ^a										
7	Use condition		Delivery condition										
	Heat treatment		–										

iTeh STANDARD PREVIEW
Characteristics
(standards.iteh.ai)

8.1	Test sample(s)		See EN 4800-001.											
8.2	Test piece(s)		SIST EN 3464:2012 See EN 4800-001.											
8.3	Heat treatment		Use condition											
9	Dimensions concerned	mm	$6 < a \leq 12$			$12 < a \leq 40$			$40 < a \leq 100$					
10	Thickness of cladding on each face	%	–											
11	Direction of test piece		L - LT								ST			
12	Temperature	θ	°C	Ambient										
13	Proof stress	$R_{p0,2}$	MPa	≥ 830			≥ 830			≥ 830			≥ 830	
14	T Strength	R_m	MPa	$900 \leq R_m \leq 1\ 160$			$900 \leq R_m \leq 1\ 160$			$900 \leq R_m \leq 1\ 160$			$900 \leq R_m \leq 1\ 160$	
15	Elongation	A	%	≥ 10			≥ 8			≥ 8			≥ 6	
16	Reduction of area	Z	%	–			≥ 20			≥ 20			≥ 15	
17	Hardness		–											
18	Shear strength	R_c	MPa	–										
19	Bending	k	–	–										
20	Impact strength		–											
21	Temperature	θ	°C	–										
22	Time		h	–										
23	C Stress	σ_a	MPa	–										
24	Elongation	a	%	–										
25	Rupture stress	σ_R	MPa	–										
26	Elongation at rupture	A	%	–										
27	Notes (see line 98)		a											

EN 3464:2012 (E)

30	Microstructure	–	See EN 4800-001.				
		1	EN 3114-003				
		3	LT-ST section				
		7	$6 < a \leq 30$		Acceptable microstructure	Unacceptable microstructure	
					3 T 1 to 3 T 19	3 T 20 and 3 T 21	
					3 T 22 to 3 T 27	3 T 28 to 3 T 30	
					3 T 31 to 3 T 33	3 T 34 to 3 T 38	
					3 T 100 and 3 T 101, if incidence less than 5 per cm ² of the sampling section	3 T 100 and 3 T 101, if incidence of 5 or more per cm ² of the sampling section	
					–	3 T 102 to 3 T 106	
			$30 < a \leq 100$			3 A 1 to 3 A 8	–
						–	3 T 200 to 3 T 202
						3 T 1 to 3 T 19	3 T 20 and 3 T 21
						3 T 22 to 3 T 38	–
3 T 100 to 3 T 102	3 T 103 and 3 T 104						
3 T 105	–						
			3 T 106, if incidence less than 5 per cm ² of the sampling section	3 T 106, if incidence of 5 or more per cm ² of the sampling section			
			3 A 1 to 3 A 8	–			
			–	3 T 200 to 3 T 202			
34	Grain size	–	See EN 4800-001.				
		1	See EN 2002-8.				
		3	LT – ST section				
		7	G ≥ 6				
		–	See EN 4800-001.				
44	External defects	–	See EN 4800-001.				
61	Internal defects	–	See EN 4800-001.				
		1	EN 4050-4				
		7	Class 5				
74	Surface contamination	–	See EN 4800-001.				
95	Marking inspection	–	See EN 4800-001.				
96	Dimensional inspection	–	See EN 4800-001.				
98	Notes	–	^a According to EN 2032-2.				
99	Typical use	–	–				