



**SLOVENSKI STANDARD**  
**SIST EN 3314:2019**  
**01-junij-2019**

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**Aeronavtika - Titanova zlitina TI-P64001 - Topilno žarjena in starana - Palice za obdelavo -  $D \leq 75$  mm**

Aerospace series - Titanium alloy TI-P64001 - Solution treated and aged - Bar for machining -  $D \leq 75$  mm

Luft- und Raumfahrt - Titanlegierung TI-P64001 - Lösungsgeglüht und ausgelagert - Stangen zum Zerspanen -  $D \leq 75$  mm

Série aérospatiale - Alliage de titane TI-P64001 - Mis en solution et revenu - Barres pour usinage -  $D \leq 75$  mm

[SIST EN 3314:2019](https://standards.iteh.ai/catalog/standards/sist/c1e1dc3e-c1fb-4bb2-bbb4-eeb120da8e11/sist-en-3314-2019)  
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**Ta slovenski standard je istoveten z: EN 3314:2019**

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**ICS:**

49.025.30 Titan Titanium

**SIST EN 3314:2019 en,fr,de**

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EUROPEAN STANDARD

EN 3314

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 2019

ICS 49.025.30

English Version

## Aerospace series - Titanium alloy TI-P64001 - Solution treated and aged - Bar for machining - $D \leq 75$ mm

Série aérospatiale - Alliage de titane TI-P64001 - Mis en solution et revenu - Barres pour usinage -  $D \leq 75$  mm

Luft- und Raumfahrt - Titanlegierung TI-P64001 - Lösungsgeglüht und ausgelagert - Stangen zum Zerspanen -  $D \leq 75$  mm

This European Standard was approved by CEN on 2 December 2018.

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.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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## European foreword

This document (EN 3314:2019) 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 October 2019, and conflicting national standards shall be withdrawn at the latest by October 2019.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN 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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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EN 3314:2019 (E)

## Introduction

This document 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 document has been prepared in accordance with EN 4500-004.

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## 1 Scope

This document specifies the requirements relating to:

Titanium alloy TI-P64001  
Solution treated and aged  
Bar for machining  
 $D \leq 75$  mm

for aerospace applications.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 2500-004, *Aerospace series — Instructions for the drafting and use of metallic material standards — Part 4: Specific requirements for titanium and titanium alloys*

EN 2600, *Aerospace series — Designation of metallic semi-finished products — Rules*

EN 3114-002, *Aerospace series — Test method — Microstructure of ( $\alpha + \beta$ ) titanium alloy wrought products — Part 002: Microstructure of bars, sections, forging stock and forgings*

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

EN 4267, *Aerospace series — Round bars in titanium and titanium alloys — Diameter  $6 \text{ mm} \leq D \leq 160 \text{ mm}$  — Dimensions*

EN 4500-004, *Aerospace series — Metallic materials — Rules for drafting and presentation of material standards — Part 004: Specific rules for titanium and titanium alloys*

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

## 3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

## 4 Requirements

See Table 1.

## EN 3314:2019 (E)

Table 1 — Titanium alloy TI-P64001

1	Material designation		Titanium alloy TI-P64001										
2	Chemical composition %	Element	Al	V	O <sub>2</sub> +2N <sub>2</sub>	N <sub>2</sub>	H <sub>2</sub>	Fe	C	Other <sup>a</sup>		Ti	
		min.	5,5	3,5	-	-	-	-	-	-	-	-	Base
		max.	6,75	4,5	0,25	0,03	0,0 125	0,30	0,08	0,10	0,40		
3	Method of melting		See EN 4800-002.										
4.1	Form		Bar for machining										
4.2	Method of production		-										
4.3	Limit dimension(s)	mm	D ≤ 75										
5	Technical specification		EN 4800-002 EN 4267										

6.1	Delivery condition		Solution treated and aged								
	Heat treatment		860 °C ≤ θ ≤ 960 °C <sup>b</sup> / t ≥ 30 min / Quenched in agitated water + 460 °C ≤ θ ≤ 600 °C / 2 h ≤ t ≤ 8 h / AC								
6.2	Delivery condition code		U								
7	Use condition		Delivery condition								
	Heat treatment		-								

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Characteristics  
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8.1	Test sample(s)		-								
8.2	Test piece(s)		SIST EN 3314:2019 -								
8.3	Heat treatment		Use condition								
9	Dimensions concerned	mm	D ≤ 25		25 < D ≤ 38		38 < D ≤ 50		50 < D ≤ 75		
10	Thickness of cladding on each face	%	-								
11	Direction of test piece		-								
12	Temperature	θ	°C		Ambient						
13	Proof stress	R <sub>p0,2</sub>	MPa		≥ 1 030		≥ 1 000		≥ 965		≥ 900
14	T Strength	R <sub>m</sub>	MPa		≥ 1 100		≥ 1 070		≥ 1 035		≥ 970
15	Elongation	A	%		≥ 8		≥ 8		≥ 8		≥ 8
16	Reduction of area	Z	%		≥ 20		≥ 20		≥ 20		≥ 20
17	Hardness		-								
18	Shear strength	R <sub>c</sub>	MPa		-						
19	Bending	k	-		-						
20	Impact strength		-								
21	Temperature	θ	°C		-						
22	Time		h		-						
23	Stress	σ <sub>a</sub>	MPa		-						
24	C Elongation	a	%		-						
25	Rupture stress	σ <sub>R</sub>	MPa		-						
26	Elongation at rupture	A	%		-						
27	Notes (see line 98)		a, b								



30	Microstructure	-	See EN 4800-002.			
		1	See EN 3114-002.			
		7	$D$ mm	$\leq 25$	Acceptable microstructure	Not acceptable microstructure
					From 2 T 1 to 2 T 12	From 2 T 13 to 2 T 15
					From 2 L 1 to 2 L 7	From 2 L 8 to 2 L 15
					From 2 T 100 to 2 T 103	From 2 T 104 to 2 T 117
					2 A 1	-
			-	From 2 T 200 to 2 T 201		
			$25 < D \leq 75$	From 2 T 1 to 2 T 15	-	
				From 2 L 1 to 2 L 12	From 2 L 13 to 2 L 15	
From 2 T 100 to 2 T 106	2 T 107					
From 2 T 108 to 2 T 110, if number of defects less than 5 per cm <sup>2</sup> of the sampling section	From 2 T 108 to 2 T 110, if number of defects more than 5 per cm <sup>2</sup> of the sampling section					
-	From 2 T 111 to 2 T 117					
2 A 1	-					
-	From 2 T 200 to 2 T 201					
44	External defects	-	See EN 4800-002.			
		1	Visual examination			
61	Internal defects	-	See EN 4800-002.			
		7	SIST EN 3314:2019 Class 5.			
			<a href="https://standards.iteh.ai/catalog/standards/sist/c1e1dc3e-c1fb-4bb2-bbb4-eeb120da8e11/sist-en-3314-2019">https://standards.iteh.ai/catalog/standards/sist/c1e1dc3e-c1fb-4bb2-bbb4-eeb120da8e11/sist-en-3314-2019</a>			
95	Marking inspection	-	-			
96	Dimensional inspection	-	-			
97	Designation	-	See EN 2600.			
98	Notes	-	a Determination not required for routine acceptance. b As an alternative beta-transus minus 30 °C may be used as the solution heat treatment temperature.			
99	Typical use	-	-			