SLOVENSKI STANDARD
SIST EN 3378:2019

01-september-2019

Aeronavtika - Titan TI-P99002 - Žarjen - Žica za zakovico - 1,6 mm ≤ D ≤ 10 mm

Aerospace series - Titanium TI-P99002 - Annealed - Wire for rivet - 1,6 mm ≤ D ≤ 10 mm

Luft- und Raumfahrt - Titan TI-P99002 - Geglüht - Nietdraht - 1,6 mm ≤ D ≤ 10 mm

Série aérospatiale - Titane TI-P99002 - Recuit - Fils pour rivet - 1,6 mm ≤ D ≤ 10 mm

Ta slovenski standard je istoveten z: **EN 3378:2019**

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49.025.30	Titan	Titanium

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EUROPEAN STANDARD

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English Version

Aerospace series - Titanium TI-P99002 - Annealed - Wires for rivets - 1,6 mm ≤ D ≤ 10 mm

Série aérospatiale - Titane TI-P99002 - Recuit - Fils pour rivet - 1,6 mm ≤ D ≤ 10 mm

Luft- und Raumfahrt - Titan TI-P99002 - Geglüht - Nietdrähte - 1,6 mm ≤ D ≤ 10 mm

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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 3378:2019) 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of an identical text or by endorsement, at the latest by December 2019, and conflicting national standards shall be withdrawn at the latest by December 2019.

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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.

1 Scope

This document specifies the requirements relating to:

Titanium TI-P99002
Annealed
Wires for rivets
1,6 mm ≤ *D* ≤ 10 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 2043, *Aerospace series — Metallic materials — General requirements for semi-finished product qualification (excluding forgings and castings)*

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

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 4800-004, *Aerospace series — Titanium and titanium alloys — Technical specification — Part 004: Wire*

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.

Table 1 — Requirements for titanium TI-P99002

1	Material designation		Titanium TI-P99002							
2	Chemical composition %	Element	O_2	N_2	H_2	Fe	C	Others [a]		Ti
								Each	Total	
		min.	–	–	–	–	–	–	–	Base
		max.	0,25	0,05	100 *	0,25	0,08	0,10	0,60	
3	Method of melting		See EN 4800-004.							
4.1	Form		Wire							
4.2	Method of production		–							
4.3	Limit dimension(s)	mm	$1,6 \leq D \leq 10$							
5	Technical specification		EN 4800-004							

6.1	Delivery condition	Annealed under vacuum or inert atmosphere
	Heat treatment	$640\ °C \leq \theta \leq 660\ °C$ / $t \geq 30$ min
6.2	Delivery condition code	U
7	Use condition	Delivery condition
	Heat treatment	–

					Characteristics	
8.1	Test sample(s)				See EN 4800-004.	
8.2	Test piece(s)				See EN 4800-004.	
8.3	Heat treatment				Delivery condition	
9	Dimensions concerned			mm	$1,6 \leq D \leq 4$	$4 \leq D \leq 10$
10	Thickness of cladding on each face			%	–	–
11	Direction of test piece				–	–
12	T	Temperature	θ	°C	–	–
13	T	Proof stress	$R_{p0,2}$	MPa	–	–
14	T	Strength	R_m	MPa	–	–
15	T	Elongation	A	%	–	–
16	T	Reduction of area	Z	%	–	–
17	Hardness				–	–
18	Shear strength		R_c	MPa	$350 \leq R_c \leq 410$	$330 \leq R_c \leq 390$
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	

34	Grain size	–	See EN 4800-004.
		7	G ≥ 4
36	Reverse torsion test for wires	–	See EN 4800-004.
		4	Length of test piece: 200 mm ± 10 mm
		7	10 turns in one direction around the axis of the wire. After torsion, examination of the surface shall not reveal any cracks or tears. 10 turns in the opposite direction to the initial position with no rupture.
95	Marking inspection	–	See EN 4800-004.
96	Dimensional inspection	–	See EN 4800-004.
98	Notes	–	* p.p.m. a Determination not required for routine acceptance.
99	Typical use	–	–