SLOVENSKI STANDARD
SIST EN 3330:2009

01-maj-2009

Aeronavtika - Jeklo FE-PL1503 (35CrMo4) - Ţarjeno - Palice in ţice - De Ò40 mm - Za pritrditvene matice

Aerospace series - Steel FE-PL1503 (35CrMo4) - Annealead - Bar and wire - De Ò40 mm - For prevailing torque nuts

Luft- und Raumfahrt - Stahl FE-PL1503 (35CrMo4) - Gegl¿ht - Stangen und Drªhte - De Ò40 mm - F¿r klemmende Sicherungsmuttern

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S®rie a®rospatiale - Acier FE-PL1503 (35CrMo4) - Recuit - Barres et fils - De Ò40 mm - Pour ®crous ¨ freinage interne par d®formation

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Ta slovenski standard je istoveten z: EN 3330:2009

ICS:

49.025.10 Jekla Steels

SIST EN 3330:2009 en

2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 3330

March 2009

ICS 49.025.10

English Version

Aerospace series - Steel FE-PL1503 (35CrMo4) - Annealead - Bar and wire - De ≤ 40 mm - For prevailing torque nuts

Série aérospatiale - Acier FE-PL1503 (35CrMo4) - Recuit - Barres et fils - De ≤ 40 mm - Pour écrous à freinage interne par déformation

Luft- und Raumfahrt - Stahl FE-PL1503 (35CrMo4) - Geglüht - Stangen und Drähte - De ≤ 40 mm - Für klemmende Sicherungsmuttern

This European Standard was approved by CEN on 18 October 2008.

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

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Ref. No. EN 3330:2009: E

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Foreword

This document (EN 3330:2009) 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of an identical text or by endorsement, at the latest by September 2009, and conflicting national standards shall be withdrawn at the latest by September 2009.

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Introduction

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 4500-5.

1 Scope

This standard specifies the requirements relating to:

Steel FE-PL1503 (35CrMo4)
Annealed
Bar and wire
$D_e \leq 40$ mm
For prevailing torque nuts

for aerospace applications.

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2 Normative references

The following referenced documents are indispensable for the application 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.

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EN 2034, *Round steel bars drawn and/or descaled — Dimensions — Tolerance h 11 — Aerospace series.* [1)]

EN 2036, *Round steel bars — Ground — Dimensions — Tolerance h 8 — Aerospace series.* [1)]

EN 2600, *Aerospace series — Designation of metallic semi-finished products — Rules.* [2)]

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

EN 4500-5, *Aerospace series — Metallic materials — Rules for drafting and presentation of material standards — Part 5: Specific rules for steels.* [2)]

EN 4700-2, *Aerospace series — Steel and heat resisting alloys — Wrought products — Technical specification — Part 2: Bar and section.* [2)]

EN 4700-4, *Aerospace series — Steel and heat resisting alloys — Wrought products — Technical specification — Part 4: Wire.* [2)]

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1) Published as ASD Standard at the date of publication of this standard.

2) Published as ASD Prestandard at the date of publication of this standard.

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1	Material designation		Steel FE-PL1503 (35CrMo4)								
2	Chemical composition %	Element	C	Si	Mn	P	S	Cr	Mo	Ni	Fe
		min.	0,30	0,15	0,50	–	–	0,90	0,15	–	Base
		max.	0,37	0,40	0,80	0,025	0,020	1,20	0,30	0,40	
3	Method of melting		Air melted								
4.1	Form		Bar and wire								
4.2	Method of production		–								
4.3	Limit dimension(s)	mm	$D_e \leq 40$								
5	Technical specification		EN 4700-2								

6.1	Delivery condition	Annealed
	Heat treatment	–
6.2	Delivery condition code	U
7	Use condition	Delivery condition
	Heat treatment	–

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					Characteristics	
8.1	Test sample(s)				See EN 4700-2 or EN 4700-4.	
8.2	Test piece(s)				–	
8.3	Heat treatment				Annealed	Reference on sample ∅ ≤ 40 mm (see line 95)
9	Dimensions concerned			mm	$D_e \leq 40$	–
10	Thickness of cladding on each face			%	–	
11	Direction of test piece				–	
12	T	Temperature	θ	°C	Ambient	
13		Proof stress	$R_{p0,2}$	MPa*	–	
14		Strength	R_m	MPa*	–	
15		Elongation	A	%	–	
16		Reduction of area	Z	%	–	
17	Hardness				HB ≤ 217 HV5 ≤ 228	40 ≤ HRC ≤ 43 390 ≤ HV5 ≤ 430
18	Shear strength		R_c	MPa*	–	
19	Bending		k	–	–	
20	Impact strength				–	
21	C	Temperature	θ	°C	–	
22		Time		h	–	
23		Stress	σ_a	MPa*	–	
24		Elongation	a	%	–	
25		Rupture stress	σ_R	MPa*	–	
26		Elongation at rupture	A	%	–	
27	Notes (see line 98)				*	

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29	Reference heat treatment	–	Step quenched in a salt bath 850 °C ≤ θ ≤ 860 °C Salt bath quenched θ ≥ 325 °C / AC or other equivalent heat treatment
44	External defects	–	See EN 4700-2 or EN 4700-4.
59	Carburization and decarburization	–	See EN 4700-2 or EN 4700-4.
		5	See line 29.
		7	The material shall be free from carburization. Total decarburization shall not be present and partial decarburization shall not exceed 5 % of the diameter with a maximum depth of 0,2 mm.
95	Marking inspection	–	See EN 4700-2 or EN 4700-4.
96	Dimensional inspection	–	See EN 2034 or EN 2036.
97	Designation	–	The rules governing the designation of semi-finished products are indicated in standard EN 2600. When the codified designation is used, the identification code shall be as follows: **EN3330 U XX --------** Material standard number Letter code (see 6.2) Appropriate dimensional standard code (see 5.3) Data concerning dimension (see EN 2600)
98	Notes	–	* 1 MPa = 1 N/mm^2.
99	Typical use	–	Low alloy steel for nuts.

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100	–	Product qualification	–	–
				Qualification programme to be agreed between manufacturer and purchaser.

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