SLOVENSKI STANDARD
SIST EN 2226:2014

01-oktober-2014

Aeronavtika - Jeklo X105CrMo17 (1.4125) - Utrjeno in mehko žarjeno - Prosto in utopno kovani izkovk - De ≤ 150 mm

Aerospace series - Steel X105CrMo17 (1.4125) - Hardened and tempered - Hand and die forgings - De ≤ 150 mm

Luft- und Raumfahrt - Stahl X105CrMo17 (1.4125) - Gehärtet und angelassen - Gesenk- und Freiformschmiedestücke - De ≤ 150 mm

Série aérospatiale - Acier X105CrMo17 (1.4125) - Trempé et revenu - Pièces forgées et matricées - De ≤ 150 mm

Ta slovenski standard je istoveten z: **EN 2226:2014**

ICS:

49.025.10	Jekla	Steels

SIST EN 2226:2014 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 2226

July 2014

ICS 49.025.10

English Version

Aerospace series - Steel X105CrMo17 (1.4125) - Hardened and tempered - Hand and die forgings - De ≤ 150 mm

Série aérospatiale - Acier X105CrMo17 (1.4125) - Trempé et revenu - Pièces forgées et matricées - De ≤ 150 mm

Luft- und Raumfahrt - Stahl X105CrMo17 (1.4125) - Gehärtet und angelassen - Gesenk- und Freiformschmiedestücke - De ≤ 150 mm

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

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Ref. No. EN 2226:2014 E

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Foreword

This document (EN 2226:2014) 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of an identical text or by endorsement, at the latest by January 2015, and conflicting national standards shall be withdrawn at the latest by January 2015.

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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 4500-003.

1 Scope

This European Standard specifies the requirements relating to:

Steel X105CrMo17 (1.4125)
Hardened and tempered
Hand and die forgings
$D_e \leq 150$ mm

for aerospace applications.

NOTE Other common designation:
UNS: S44004,
AISI: 440C, XDBD.

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

EN 4500-003, *Aerospace series — Metallic materials — Rules for drafting and presentation of material standards — Part 003: Specific rules for heat resisting alloys*

EN 4700-006, *Aerospace series — Steel and heat resisting alloys — Wrought products — Technical specification — Part 006: Pre-production and production forgings*

1	Material designation		Steel X105CrMo17 (1.4125)								
2	Chemical composition %	Element	C	Si	Mn	P	S	Cr	Mo	Ni	Fe
		min.	0,95	–	–	–	–	16,0	0,35	–	Base
		max.	1,10	1,00	1,00	0,030	0,020	18,0	0,75	0,50	
3	Method of melting		Air melted								
4.1	Form		Hand and die forgings								
4.2	Method of production		Forged from forging stock, see EN XXXX [1)]								
4.3	Limit dimension(s)	mm	$D_e \leq 150$								
5	Technical specification		See EN 4700-006.								

6.1	Delivery condition	Softened
	Heat treatment	–
6.2	Delivery condition code	A
7	Use condition	Hardened and tempered
	Heat treatment	Delivery condition + (1 030 to 1 070) ± 10 °C / OQ [a] + temper $\theta \geq 140$ °C ± 10 °C

Characteristics

8.1	Test sample(s)			EN 4700-006 Procedure A, B, C or D	EN 4700-006 Procedure A or B (separately forged)	EN 4700-006 Procedure C (integral)		EN 4700-006 Procedure D (machined from forging)	
8.2	Test piece(s)			See EN 4700-006.					
8.3	Heat treatment			Delivery condition	Use condition				
9	Dimensions concerned		mm	$D \leq 150$	a or $D \leq 25$	a or $D \leq 25$	25 ≤ a or $D \leq 150$	a or $D \leq 25$	25 ≤ a or $D \leq 150$
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			HBW ≤ 255	HV ≥ 650 or HRC ≥ 58 [b]	HV ≥ 650 or HRC ≥ 58 [b]	As agreed between manufacturer and purchaser	HV ≥ 650 or HRC ≥ 58 [b]	As agreed between manufacturer and purchaser
18	Shear strength		R_c MPa	–					
19	Bending		k –	–					
20	Impact strength		KV J	–					
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)			a, b					

1) In preparation at the date of publication of this standard.

30	Microstructure	–	EN 4700-006
		5	Use condition
		7	Carbides shall be fine and non aligned
44	External defects	–	EN 4700-006
		1	Visual inspection
61	Internal defects	–	EN 4700-006
		1	See EN 4050-4.
		7	Category 2
95	Marking inspection	–	EN 4700-006
96	Dimensional inspection	–	EN 4700-006
98	Notes	–	[a] May be sub-zero treated at – 80 °C ± 10 °C. [b] Method to be used in case of conflict.
99	Typical use	–	Bearings