



SLOVENSKI STANDARD
SIST EN 4566:2022

01-maj-2022

Aeronavtika - Toplotno odporna zlitina CO-PH4101 (CoCr20W15N1) - Taljena v vakuumu - Topilno žarjena - Izkovki - De ≤ 100 mm

Aerospace series - Heat resisting alloy CO-PH4101 (CoCr20W15N1) - Vacuum melted - Solution treated - Forgings - De ≤ 100 mm

Luft- und Raumfahrt - Hochwärmefeste Legierung CO-PH4101 (CoCr20W15Ni) - Vakuumerschmolzen - Lösungsgeglüht - Schmiedestücke - De ≤ 100 mm

Série aérospatiale - Alliage résistant à chaud CO-PH4101 (CoCr20W15Ni) - Élaboré sous vide - Mis en solution - Pièces forgées ou matriçées - De ≤ 100 mm

Ta slovenski standard je istoveten z: EN 4566:2022

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ICS:

49.025.15	Neželezove zlitine na splošno	Non-ferrous alloys in general
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SIST EN 4566:2022

en,fr,de

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EUROPEAN STANDARD

EN 4566

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2022

ICS 49.025.15

English Version

Aerospace series - Heat resisting alloy CO-PH4101
(CoCr20W15N1) - Vacuum melted - Solution treated -
Forgings - $De \leq 100$ mm

Série aérospatiale - Alliage résistant à chaud CO-
PH4101 (CoCr20W15Ni) - Elaboré sous vide - Mis en
solution - Pièces forgées ou matricées - $De \leq 100$ mm

Luft- und Raumfahrt - Hochwarmfeste Legierung CO-
PH4101 (CoCr20W15Ni) - Vakuumerschmolzen -
Lösungsgeglüht - Schmiedestücke - $De \leq 100$ mm

This European Standard was approved by CEN on 22 February 2021.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

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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 4566:2022) 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 document 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 shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2022, and conflicting national standards shall be withdrawn at the latest by September 2022.

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 document: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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EN 4566:2022 (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 4500-003.

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1 Scope

This document specifies the requirements relating to:

Heat-resisting alloy CO-PH4101 (CoCr20W15Ni)
Vacuum melted
Solution treated
Forgings
 $D_e \leq 100$ 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 4700-006, *Aerospace series — Steel and heat resisting alloys — Wrought products — Technical specification — Part 006: Pre-production and production forgings*

EN 4246, *Aerospace series — Heat resisting alloy CO-PH4101 (CoCr26Ni11W) — Vacuum melted — As forged — Forging stock — $D_e \leq 360$ mm*¹⁾

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:

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

4 Requirements

According to Table 1.

¹⁾ Published as ASD-STAN Standard at the date of publication of this document by AeroSpace and Defence industries Association of Europe — Standardization (ASD-STAN), <https://www.asd-stan.org/>.

Table 1 — Requirements for heat-resisting alloy CO-PH4101 (CoCr20W15Ni)

1		Heat-resisting alloy CO-PH4101 (CoCr20W15Ni)										
2	Chemical composition %	Element	C	Si	Mn	P	S	Cr	Fe	Ni	W	Co
		min.	0,05	—	1,00	—	—	19,0	—	9,0	14,0	Base
		max.	0,15	0,40	2,00	0,020	0,015	21,0	3,00	11,0	16,00	
3		Method of melting										
3		Vacuum melted										
4.1		Form										
4.1		Forgings										
4.2		Method of production										
4.2		Forged from forging stock EN 4246										
4.3		Limit dimension(s)	mm	$D_e \leq 100$								
5		Technical specification										
5		EN 4700-006										
6.1		Delivery condition										
6.1		Solution treated										
6.1		Heat treatment										
6.1		$1\ 180\ ^\circ\text{C} \leq \theta \leq 1\ 240\ ^\circ\text{C}/t \geq 2\ \text{h/AC or faster}$										
6.2		Delivery condition code										
6.2		U										
7		Use condition										
7		Delivery condition										
7		Heat treatment										
7		—										
Characteristics												
8.1		Test sample(s)										
8.1		according to EN 4700-006										
8.2		Test piece(s)										
8.2		according to EN 4700-006										
8.3		Heat treatment										
8.3		Use condition										
9		Dimensions concerned	mm	$D_e \leq 100$								
10		Thickness of cladding on each face	%	—								
11		Direction of test piece										
11		https://standards.iteh.ai/catalog/standards/sist/6fb380bb-4913-48fa-b1ea-204c0801e6ce/sist-en-4566-2022										
12		Temperature	θ	$^\circ\text{C}$	Ambient							
13		Proof stress	$R_{p0,2}$	MPa	≥ 340							
14		Strength	R_m	MPa	≥ 860							
15		Elongation	A	%	≥ 35							
16		Reduction of area	Z	%	—							
17		Hardness	HB	≤ 282								
18		Shear strength	R_c	MPa	—							
19		Bending	k	—	—							
20		Impact strength										
20		—										
21		Temperature	θ	$^\circ\text{C}$	815							
22		Time		h	$t_R \geq 23$							
23		Stress	σ_a	MPa	—							
24		Elongation	a	%	—							
25		Rupture stress	σ_R	MPa	165							
26		Elongation at rupture	A	%	≥ 10							
27		Notes (see line 98)										
27		—										

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95	Marking inspection	—	according to EN 4700-006.
96	Dimensional inspection	—	according to EN 4700-006.
98	Notes	—	—
99	Typical use	—	—

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