



SLOVENSKI STANDARD
SIST EN 4384:2009

01-maj-2009

5 YfcbUj h_U!'N]h]bUB=7 <% '\$' fB]7 c&\$7 f&\$Ac) H]85 `LzcXdcfbUdfch]j'fc]b]!
Hcd`c]bc`bYcVXYUbU!'A UYf]U'nUdfYUj UbY

Aerospace series - Heat resisting alloy NI-CH1303 (NiCo20Cr20Mo5Ti2Al) - Non heat treated - Remelting stock

Luft- und Raumfahrt - Hochwarmfeste Legierung NI-CH1303 (NiCo20Cr20Mo5Ti2Al) - Nicht wärmebehandelt - Gussvormaterial

Série aérospatiale - Alliage résistant à chaud NI-CH1303 (NiCo20Cr20Mo5Ti2Al) - Non traité - Produit pour refusion

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Ta slovenski standard je istoveten z: EN 4384:2007

ICS:

49.025.15	Neželezove zlitine na splošno	Non-ferrous alloys in general
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en,de

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EUROPEAN STANDARD

EN 4384

NORME EUROPÉENNE

EUROPÄISCHE NORM

July 2007

ICS 49.025.10

English Version

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This European Standard was approved by CEN on 15 February 2007.

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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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

EN 4384:2007 (E)**Foreword**

This document (EN 4384:2007) 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 2008, and conflicting national standards shall be withdrawn at the latest by January 2008.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] 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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

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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 4500-3.

1 Scope

This standard specifies the requirements relating to:

Heat resisting alloy NI-CH1303 (NiCo20Cr20Mo5Ti2Al)
Non heat treated
Remelting stock

for aerospace applications.

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.

EN 2043, *Aerospace series — Metallic materials — General requirements for semi-finished product qualification (excluding forgings and castings)*.¹⁾ [SIST EN 4384:2009](#)
[dd34b7a3078a/sist-en-4384-2009](#)

EN 2103-2, *Aerospace series — Steel, nickel base and cobalt base alloy remelting stock and castings — Technical specification — Part 2: Remelting stock*.

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

EN 4500-3, *Aerospace series — Metallic materials — Rules for drafting and presentation of material standards — Part 3: Specific rules for heat resisting alloys*.¹⁾

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

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1	Material designation		Heat resisting alloy NI-CH1303 (NiCo20Cr20Mo5Ti2Al)									
2	Chemical composition %	Element	C	Si	Mn	S	Ag	Al	B	Bi	Co	Cr
		min.	0,04	–	–	–	–	0,30	–	–	18,5	19,0
		max.	0,08	0,40	0,60	70 ^a	5 ^a	0,60	50 ^a	1 ^a	21,0	21,0
		Element	Cu	Fe	Mo	Pb	Ti	W	Al + Ti	Nb	P	Ni
		min.	–	–	5,60	–	1,90	–	2,4	–	–	Base
max.	0,20	0,70	6,10	10 ^a	2,40	0,2	2,8	0,25	0,015			
3	Method of melting		Vacuum melting									
4.1	Form		Remelting stock									
4.2	Method of production		–									
4.3	Limit dimension(s)	mm	–									
5	Technical specification		EN 2103-2									

6.1	Delivery condition		Not heat treated									
	Heat treatment		–									
6.2	Delivery condition code		U									
7	Use condition		–									
	Heat treatment		Delivery condition									

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8.1	Test sample(s)		See EN 2103-2.									
8.2	Test piece(s)		See EN 2103-2.									
8.3	Heat treatment		See line 29.									
9	Dimensions concerned	mm	–									
10	Thickness of cladding on each face	%	–									
11	Direction of test piece		–									
12	Temperature	θ	°C	Ambient ^b								
13	Proof stress	R _{p0,2}	MPa	≥ 430								
14	T Strength	R _m	MPa	≥ 620								
15	Elongation	A	%	≥ 12								
16	Reduction of area	Z	%	–								
17	Hardness		–									
18	Shear strength	R _c	MPa	–								
19	Bending	k	–	–								
20	Impact strength		–									
21	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									

29	Reference heat treatment	-	Treatment in protective atmosphere $\theta = 1\ 150\ ^\circ\text{C} \pm 10\ ^\circ\text{C}/t = 2\ \text{h}/\text{AC}$ + $\theta = 800\ ^\circ\text{C} \pm 10\ ^\circ\text{C}/t = 8\ \text{h}/\text{AC}$
95	Marking inspection	-	See EN 2103-2.
96	Dimensional inspection	-	See EN 2103-2.
98	Notes	-	^a p.p.m. ^b The "capability clause" applies.
99	Typical use	-	-

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100	-	Product qualification	-	See EN 2043.
				Qualification programme to be agreed between manufacturer and purchaser.
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