SLOVENSKI STANDARD
SIST EN 2402:2014

01-julij-2014

Aeronavtika - Toplotnoodporna zlitina na osnovi niklja NiCr20Co3Fe3 - Žarjena - Žica - D ≤ 10 mm

Aerospace series - Heat resisting nickel base alloy NiCr20Co3Fe3 - Annealed - Wire - D ≤ 10 mm

Luft- und Raumfahrt - Hochwarmfeste Nickelbasislegierung NiCr20Co3Fe3 - Geglüht - Draht - D ≤ 10 mm

Série aérospatiale - Alliage résistant à base de nickel NiCr20Co3Fe3 - Requit - Fil - D ≤ 10 mm

Ta slovenski standard je istoveten z: **EN 2402:2014**

ICS:

49.025.15	Neželezove zlitine na splošno	Non-ferrous alloys in general

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EUROPEAN STANDARD

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English Version

Aerospace series - Heat resisting nickel base alloy NiCr20Co3Fe3 - Annealed - Wire - D ≤ 10 mm

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Luft- und Raumfahrt - Hochwarmfeste Nickelbasislegierung NiCr20Co3Fe3 - Geglüht - Draht - D ≤ 10 mm

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

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Foreword

This document (EN 2402:2014) 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of an identical text or by endorsement, at the latest by October 2014, and conflicting national standards shall be withdrawn at the latest by October 2014.

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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:

Heat resisting nickel base alloy NiCr20Co3Fe3
Annealed
Wire
$D \leq 10$ mm

for aerospace applications.

NOTE Other designation:
Only the chemical composition of this standard must be considered.

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 2043, *Aerospace series - Metallic materials - General requirements for semi-finished product qualification (excluding forgings and castings).*

EN 3238, *Aerospace series - Metallic materials - Test method - Shear test for wires and rivets*

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 4700-004, *Aerospace series - Steel and heat resisting alloys - Wrought products - Technical specification - Part 004: Wire*

	Material designation		Heat resisting nickel base alloy NiCr20Co3Fe3										
2	Chemical composition %	Element	C	Si	Mn	S	Co	Cr	Cu	Fe	Pb	Ti	Ni
		min.	0,08	–	–	–	–	18,0	–	–	–	0,20	Base
		max.	0,15	1,0	1,0	0,020	5,0	21,0	0,5	5,0	0,005	0,60	
3	Method of melting		Air or vacuum melted or air melted and vacuum refined or consumable electrode remelted										
4.1	Form		Wire										
4.2	Method of production		Cold drawn										
4.3	Limit dimension(s)	mm	$D \leq 10$										
5	Technical specification		EN 4700-004										

6.1	Delivery condition	Annealed and descaled or bright annealed
	Heat treatment	1 000 °C ≤ θ ≤ 1 050 °C/ AC or WQ or cool in protective atmosphere
6.2	Delivery condition code	U
7	Use condition	Delivery condition
	Heat treatment	–

Characteristics

8.1	Test sample(s)				See EN 4700-004.
8.2	Test piece(s)				See EN 4700-004.
8.3	Heat treatment				Use condition
9	Dimensions concerned			mm	$D \leq 10$
10	Thickness of cladding on each face			%	–
11	Direction of test piece				L
12	T	Temperature	θ	°C	Ambient
13	T	Proof stress	$R_{p0,2}$	MPa	–
14	T	Strength	R_m	MPa	≥ 690
15	T	Elongation	A	%	≥ 25
16	T	Reduction of area	Z	%	–
17	Hardness				–
18	Shear strength		R_c	MPa	≤ 440 [a]
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

36	Reverse torsion test	–	See EN 4700-004.
		7	$D \leq 10$ mm; Seven turns in each direction
43	Wrapping test	–	See EN 4700-004.
44	External defects	–	See EN 4700-004.
51	Macrostructure	–	See EN 4700-004.
95	Marking inspection	–	See EN 4700-004.
96	Dimensional inspection	–	See EN 4700-004
98	Notes	–	[a] Determined on one sample per batch in accordance with EN 3238.
99	Typical use	–	–