BÖHLER FOX NIBAS 70/20, FOX NiCr 70 Nb*

Basic stick electrode, nickel-based

*Product name in Germany

Classification

EN ISO 14172	AWS A5.11
E Ni 6082 (NiCr20Mn3Nb)	ENiCrFe-3 (mod.)

Characteristics and typical fields of application

Basic electrode, core wire alloyed, corresponding to AWS ENiCrFe-3 for high- grade welding of nickel-base alloys, high-temperature and creep resisting steels, heat resisting and cryogenic materials, low-alloyed problem steels and dissimilar joints. Ferritic-austenitic joints for service temperatures above +300 °C or for applications where a post weld heat treatment is required. Suitable in pressure vessel fabrication for -196 °C to +650 °C, otherwise up to the scaling resistance temperature of +1200 °C (S-free atmosphere). Insusceptible to embrittlement, highly resistant to hot cracking, furthermore, C-diffusion at high temperature or during heat treatment of dissimilar joints is largely reduced. Thermal shock resistant, stainless, fully austenitic, low coefficient of thermal expansion between the coefficient values of C-steel and austenitic CrNi (Mo)-steel. Excellent welding characteristics in all positions except vertical-down, easy slag removal, high resistance to porosity, absence of undercuts, high degree of purity. Electrode and weld metal meet highest quality requirements.

Base materials

2.4816 NiCr15Fe, 2.4817 LC-NiCr15Fe,

nickel and nickel alloys, low-temperature steels up to 5 % Ni-steels, unalloyed and alloyed, high-temperature, creep resisting, high-alloy Cr- and CrNiMo-steels particularly for joint welding of dissimilar steels, and nickel to steel combinations; also recommended for alloy 800

Typical analysis of all-weld metal (wt.-%)

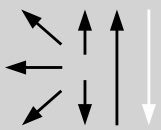
	C	Si	Mn	Cr	Ni	Mo	Ti	Nb	Co	Fe
wt.-%	0.025	0.4	5.0	19.0	Bal.	1.5	+	2.2	≤ 0.08	3.0

Mechanical properties of all-weld metal

Condition	Yield strength $R_{p0,2}$	Tensile strength R_m	Elongation A (L_0=5d_0)	Impact work ISO-V KV J	
	MPa	MPa	%	+20 °C	–196 °C
u	**420** (≥ 360)	**680** (≥ 600)	**40** (≥ 22)	**120**	**80** (≥ 32)
s1	**420** (≥ 360)	**680** (≥ 600)	**42** (≥ 22)	**120**	**70** (≥ 32)
s2	**420** (≥ 360)	**680** (≥ 600)	**43** (≥ 22)	**120**	**70** (≥ 32)

u untreated, as-welded
s1 stress relieved, 650 °C/15 h / air
s2 stress relieved, 760 °C/10 h / air

Operating data



Polarity:	Redrying if necessary:	Electrode identification:	ø (mm)	L mm	Amps A
DC (+)	250 – 300 °C, min. 2 h	FOX NIBAS 70/20 resp. FOX NiCr 70 Nb	2.5 3.2 4.0 5.0	300 300 350 400	40 – 70 70 – 105 90 – 125 120 – 160

Approvals

TÜV (04697.), Statoil, LTSS, SEPROZ, NAKS, (FOX NiCr 70 Nb: TÜV (00889.), KTA 1408 1 (8039.00), CE

All information provided is based upon careful investigation and intensive research.
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