

Classification

EN ISO 14172	AWS A5.11
E Ni 6182 (NiCr15Fe6Mn)	ENiCrFe-3

Characteristics and typical fields of application

Basic electrode, core-wire-alloyed, corresponding to AWS E NiCrFDe-3 for high grade welding of nickel-base alloys, high temperature and creep resistant steels, heat resisting and cryogenic materials, dissimilar joints and low-alloyed steels with difficult welding behaviour. Ferritic-austenitic joints for service temperatures above +300 °C or applications where post weld heat treatment is required. Suitable for pressure vessels from -196 °C up to 650 °C.

Scaling resistance up to 1200 °C (S-free atmosphere). Insusceptible to embrittlement, highly resistant to hot cracking, high resistance to porosity, thermal shock resistant, stainless, fully austenitic. Excellent welding characteristics in all welding positions, except vertical down, easy slag removal.

Base materials

NiCr 15 Fe (alloy 600) as well as Ni-alloys of similar or same chemical composition. Un-alloyed or low alloyed steels for elevated temperatures e.g. P235GH to P265GH, S255NB, 16Mo3, creep resistant steels as well as constructional steels with comparable tensile strength, austenitic steels e.g. X8CrNiNb16-13, X8CrNiMoNb16-16, X8CrNiMoVNb16-13, Ni-steels containing 1.5 to 5 % Ni. X20CrMoV12-1, X20CrMoWV12-1; also suitable for alloy 800.

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

	C	Si	Mn	Cr	Ti	Ta	Nb	Co	Ni	Fe
wt.-%	0.025	0.4	6.0	16.0	+	≤ 0.08	2.2	≤ 0.08	bal.	6.0

Mechanical properties of all-weld metal

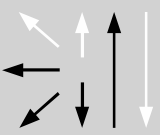
Heat-treatment	Yield strength R _{p0,2}	Tensile strength R _m	Elongation A (L ₀ =5d ₀)	Impact work ISO-V KV J	
	MPa	MPa	%	20 °C	-196 °C
u, s1, s2	400 (≥ 360)	670 (≥ 600)	40 (≥ 30)	120 (≥ 90)	80 (≥ 32)

u untreated, as welded

s1 stress relieved, 650 °C/15h/air

s2 stress relieved, 750 °C/10h/air

Operating data

	Polarity: DC (+)	Redrying if necessary: 250 – 300 °C, min. 2 h	Electrode identification: FOX NIBAS 70/15 NiCrFe 3	ø (mm)	L mm	Amps A
				2.5	300	45 – 75
				3.2	300	70 – 105
				4.0	350	95 – 130

Approvals

TÜV (0842.), CE / FOX NiCr 70/15: TÜV (0842.), KTA 1408.1 (8037.00)