

## Classifications

EN ISO 14172	AWS A5.11	Mat. No.
E Ni 6182 (NiCr15Fe6Mn)	ENiCrFe-3	2.4807

## Characteristics and typical fields of application

Basic electrode, core-wire-alloyed, corresponding to AWS E NiCrFe-3 for high grade welding of nickel-base alloys, 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

TÜV-approved base materials

1.4876 – X10NiCrAlTi32-20; 2.4816 – NiCr15Fe (alloy 600);

Cryogenic 1.5 – 5 % Ni-steels; X8Ni9.

Dissimilar joints e.g. 1.4583 – X10CrNiMoNb18-12 with ferritic steels up to 16Mo3; alloy 800 (H)

## Typical analysis of all-weld metal

	C	Si	Mn	Cr	Ni	Nb	Fe
wt.-%	0.025	0,4	6,0	16,0	Bal.	2,2	6,0

**Structure:** Austenite

## Mechanical properties of all-weld metal – typical values (min. values)

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	<b>400</b> (≥ 360)	<b>670</b> (≥ 600)	<b>40</b> (≥ 30)	<b>120</b> (≥ 90)	<b>80</b> (≥ 32)

u untreated, as welded

**Creep rupture properties:** According to matching/similar high temperature resistant metals up to 800 °C (1472 °F).

## Operating data

	<b>Polarity:</b> DC ( + )	<b>ø mm</b>	<b>L mm</b>	<b>Amps A</b>
		2.5	300	50 – 70
		3.2	300	70 – 95
		4.0	350	90 – 120
		5.0	400	120 – 160

<b>Welding instruction</b>		
<b>Materials</b>	<b>Preheating</b>	<b>Post-weld heat treatment</b>
Unalloyed/low alloy steels to austenitic CrNi(Mo,N) steels / cast steel grades	Ferritic side, according to parent metal	According to parent metal. Attention must be paid to intercrystalline corrosion and embrittlement in the case of stainless austenitic steels / cast steel grades
Stainless/heat resistant Cr steels / cast steel grades to austenitic CrNi(Mo,N) steels / cast steel grades	According to parent metal	According to parent metal
Cryogenic Ni steels	According to parent metal	According to parent metal
<b>Approvals</b>		
TÜV (02073), TÜV (KTA) (08128.00), CE		