

Classifications

EN ISO 14172	AWS A5.11	Mat. No.
E Ni 6082 (NiCr20Mn3Nb)	ENiCrFe-3 (mod.)	2.4648

Characteristics and typical fields of application

Stainless, heat resistant, high temperature resistant. Good toughness at subzero temperatures as low as -269 °C (-452 °F). Well suited for welding austenitic ferritic joints. No Cr-carbide zones that become brittle in the ferrite weld deposit transition zone, not even as a result of heat treatments above 300 °C (572 °F). Well suited for tough joints and surfacing on heat resistant Cr and CrNi steels and Ni-alloys.

Temperature limits: 550 °C (122 °F) in sulphureous atmospheres, 900 °C max (1652 °F) for fully stressed welds. Resistant to scaling up to 1000 °C (1832 °F).

Base materials

TÜV certified parent metals

1.4876 – X8NiCrAlTi32-21; 2.4816 – NiCr15Fe; X8Ni9; 10CrMo9-10;

Combinations between 1.4583 – X10CrNiMoNb18-12, 1.4539 – X1NiCrMoCu25-20-5 and ferritic boiler steels;

Alloy 600, Alloy 600L, Alloy 800 (H)

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

	C	Si	Mn	Cr	Mo	Ni	Nb	Fe
wt-%	< 0.05	< 0.4	4.0	19.5	1.5	Bal.	2.0	< 4.0

Structure: Austenite

Mechanical properties of all-weld metal

Heat-treatment	Yield strength	Yield strength	Tensile strength	Elongation	Impact work		
	$R_{p0.2}$	$R_{p1.0}$	R_m	A ($L_0=5d_0$)	ISO-V CVN J		
	MPa	MPa	MPa	%	+20 °C	-196 °C	-269 °C
aw	380	420	620	35	90	70	50

Creep rupture properties: According to matching / similar high temperature resistant materials up to 900 °C (1472 °F).

Operating data

	Polarity:	ø mm	L mm	Amps A
	DC (+)	2.5	300	45 – 70
		3.2	300	65 – 100
		4.0	350	85 – 130
		5.0	400	130 – 160

Welding instruction		
Materials	Preheating	Postweld heat treatment
Unalloyed / low alloy steels to austenitic CrNi(Mo,N)-steels	Ferritic side according to parent metal	According to parent metal. Attention must be paid to inter-crystalline corrosion and embrittlement in the case of stainless austenitic steels
Heat resistant Cr steels	According to parent metal	None
Heat resistant CrNi steels, Ni-alloys	None	None
Cryogenic Ni steels	According to parent metal	According to parent metal
Approvals		
TÜV (01775), TÜV (KTA) (08129), DNV-GL, CE		