

## Classifications

EN ISO 18274	AWS A5.14	Mat. No.
S Ni 6082 (NiCr20Mn3Nb)	ERNiCr-3	2.4806

## Characteristics and typical fields of application

Nickel alloy; heat and high temperature resistant. Good toughness at subzero temperatures as low as  $-269\text{ °C}$  ( $-452\text{ °F}$ ). Good for welding austenitic-ferritic joints. No Cr-carbide zone that become brittle in the ferrite weld deposit transition zone, even as a result of heat treatments above  $300\text{ °C}$  ( $572\text{ °F}$ ). Good for fabricating tough joints and surfacing with heat resistant Cr- and CrNi-steels and Ni-alloys.

Temperature limits:  $900\text{ °C}$  max. ( $1652\text{ °F}$ ) for fully stressed welds. Resistant to scaling up to  $1000\text{ °C}$  ( $1832\text{ °F}$ ).

## Base materials

TÜV-certified parent metals

1.4876 – X8NiCrAlTi32-21; 1.4877 – X6NiCrNbCe32-27; 1.4958 – X5NiCrAlTi31-20;  
2.4816 – NiCr15Fe; 2.4817 – LC-NiCr15Fe; 2.4851 – NiCr23Fe; 1.5662 – X8Ni9;

Combinations of 1.4539 – X1NiCrMoCu25-20-5, 1.4583 – X10CrNiMoNb18-12 and ferritic boiler steels as 1.7380 – 10CrMo9-10;

Alloy 800, Alloy 800 H, Alloy 600, Alloy 600 L, Alloy 601; UNS N08800, UNS N08810, UNS N06600, UNS N06600, UNS N06601

## Typical analysis of solid wire (wt.-%)

	C	Si	Mn	Cr	Ni	Nb	Fe
wt-%	0.02	0.2	2.8	19.5	> 67	2.5	< 2.0

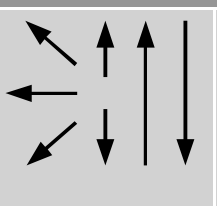
**Structure:** Austenite

## Mechanical properties of all-weld metal

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

**Creep rupture properties:** According to matching / similar high temperature resistant metals up to  $900\text{ °C}$  ( $1652\text{ °F}$ ).

## Operating data

	<b>Polarity:</b> DC (+)	<b>Shielding gas:</b> (EN ISO 14175) I1, Z (ArHeHC-30/2/~0,1)	<b>ø mm</b> 0.8 1.0 1.2 1.6	<b>Spool:</b> BS300 BS300 BS300 BS300
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<b>Welding instruction</b>		
<b>Materials</b>	<b>Preheating</b>	<b>Postweld heat treatment</b>
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 intercrystalline corrosion resistance and embrittlement in the case of stainless austenitic steels
Heat resistant Cr steels	According to parent metal	According to parent metal
Heat resistant CrNi steels, Ni-alloys	None	None
Cryogenic Ni steels	According to parent metal	According to parent metal
<b>Approvals</b>		
TÜV (03089), DNV-GL, CE		