merian® Thermanit Nicro 82

TIG rods, nickel-alloy

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

Characteristics and typical fields of application

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

Temperature limits: 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 – Alloy 800 - UNS N08800 – X8NiCrAlTi32-21

1.4877 – X6NiCrNbCe32-27

1.4958 – Alloy 800 H – UNS N08810 – X5NiCrAlTi31-20

2.4816 – Alloy 600 – UNS N06600 – NiCr15Fe

2.4817 – Alloy 600 L – UNS N06600 – LC-NiCr15Fe

2.4851 – Alloy 601 – UNS N06601 – NiCr23Fe

1.5662 – X8Ni9;

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

Typical analysis of the TIG rods (wt.-%)

	C	Si	Mn	Cr	Ni	Nb	Fe
wt-%	0.02	0.1	3.0	20.0	> 67.0	2.5	< 2

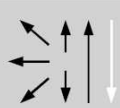
Structure: Austenite

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	-269 °C
aw	400	430	620	35	150	32

Creep rupture properties: According to matching / similar high temperature resistant metals up to 900 °C (1652 °F).

Operating data

	Polarity:	Shielding gas:	Marks:	ø mm	L mm
	DC (–)	(EN ISO 14175) I1	✢ Ni 6082 / ERNiCr-3	1.6	1000
				2.0	1000
				2.4	1000
				3.2	1000

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 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

Approvals

TÜV (01703 / 08125), DB (43.132.11), DNV·GL, CE