Thermanit Nicro 82

Covered electrode, high-alloyed, nickel-base

Classifications

EN ISO 14172	AWS A5.11 / SFA-5.11
E Ni 6082 (NiCr20Mn3Nb)	ENiCrFe-3 (mod.)

Characteristics and typical fields of application

Stainless, heat-resistant, creep resistant, low temperatures toughness down to –269 ° C, well suited for austenite-ferrite joints. Even with heat treatments above 300 ° C, there are no embrittling Cr carbide zones in the ferrite / weld metal transition. Good for joining and surfacing on heat-resistant Cr and CrNi steels and nickel alloys. Temperature limits: 550° C in S-containing atmospheres, max. 900° C for fully loaded seams. Resistant to scaling up to 1000° C. Well suited for dissimilar joints of stainless and nickel alloys to unalloyed steels. Can also be used for buffer layers in difficult applications, the high Ni content minimizes carbon diffusion from the unalloyed area into the stainless steel. Structure: austenite

Base materials

Suitable for high-quality weld joints of nickel-base alloys, joint welding of dissimilar steels and difficult-to-weld combinations including low-temperature steels up to 5% Ni, high-temperature and creep resistant materials, scaling resistant, unalloyed and high-alloyed Cr and CrNiMo stainless steels. Dissimilar welding of 1.4583 X10CrNiMoNb18-12 and 1.4539 X2NiCrMoCu25-20 with ferritic pressure vessel boiler steels. 2.4816 NiCr15Fe, 2.4817 LC-NiCr15Fe, 1.4876 X10NiCrAlTi32-21
NiCr15Fe, X8Ni9, 10CrMo9-10 Alloy 600, 600L, 800, 800H UNS N06600, N07080, N0800, N0810

Typical analysis

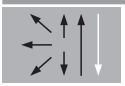
	C	Si	Mn	Cr	Ni	Mo	Nb	Fe
wt.-%	0.025	< 0.4	5.0	19.0	Bal.	1.5	2.2	3.0

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

Condition	Yield strength $R_{p0.2}$	Tensile strength R_m	Elongation A (L_0=5d_0)	Impact energy ISO-V KV J	
	MPa	MPa	%	20°C	–196°C
u	440 (≥ 360)	680 (≥ 600)	40 (≥ 22)	120	100

u untreated, as-welded

Operating data



Polarity	DC+
Electrode identification	Thermanit Nicro 82 Ni 6082 (NiCr20Mn3Nb)

Dimension mm	Current A
2.5 x 300	45 – 70
3.2 x 300	65 – 100
4.0 x 350	85 – 130
5.0 x 400	130 – 160

Suggested heat input is max. 1.5 kJ/mm and interpass temperature max. 150°C.
Creep rupture properties according to matching high temperature steels / alloys up to 900°C.
Need for preheating and-weld heat treatment determined by the base material.

Approvals

TÜV (01775), TÜV (KTA 1408.1) (08129.00), DNV