

Thermanit Nicro 82 NiCrNb solid wire

Product features	User benefits
» Good strength » High ductility	» Reducing the risk of cracking during welding and service » Useful for repairing castings or components with elevated carbon content and high residual stresses
» Good corrosion resistance » Service temperature from -269°C up to 900°C	» Suitable for many different steels from mild steel to stainless incl. dissimilar joints » No embrittlement due to fluctuating temperature
» GMAW solid wire	» High deposition efficiency » Automation of the welding operations

Solid wire of S Ni 6082 (NiCr20Mn3Nb) / ERNiCr-3 type for welding a wide range of creep-resistant steels and nickel alloys. The weld metal provides high resistance to cracking and is well-suited for dissimilar welding of stainless and nickel alloys to mild steels. Heat and high temperature resistant – can be used for welding nickel alloys for use in high temperature applications. It can also be applied as a buffer layer in many difficult-to-weld applications, where the high nickel content effectively reduces carbon diffusion from mild steel into stainless materials. Good toughness at cryogenic temperatures down to -269°C. Maximum service temperature of 900 °C for fully stressed welds. High resistance to stress corrosion cracking, as well as excellent resistance to intergranular corrosion due to the low carbon content and absence of detrimental secondary phases.

Base materials

Suitable for high-quality weld joints of nickel 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, X8Ni9, 800H, UNS N06600, N07080, N08800, N08810



Typical applications

- » Welding of similar NiCr alloys in the chemical industry
- » Welding of difficult weldable steels and cast steels
- » Heterogeneous joints exposed to various environments and temperatures
- » Repair of cracked general mechanical parts such as shafts of gear wheels
- » Repair of broken tool steels
- » Build-up layers prior to hardfacing

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Classifications

EN ISO 18274	AWS A5.14	Polarity	Approvals
S Ni 6082 (NiCr20Mn3Nb)	ERNiCr-3	DC+	TÜV (03089), DNV, ABS

Typical chemical composition in wt-%

C	Si	Mn	Cr	Nb	Ni	Fe
0.02	0.2	2.8	19.5	2.5	balance	<2.0

Mechanical properties

Heat-treatment	Yield strength $R_{p0.2}$	Tensile strength R_m	Elongation A	Impact strength K_V J
	MPa	MPa	%	at 20°C
As welded	(>380)	(>620)	(>22)	(>90)

Wire diameter [mm]	Current type	Shielding gas (EN ISO 14175)	
0.8	DC (+)	I 1	Z-ArHeHC-30/2/0.1
1.0	DC (+)	I 1	Z-ArHeHC-30/2/0.1
1.2	DC (+)	I 1	Z-ArHeHC-30/2/0.1
1.6	DC (+)	I 1	Z-ArHeHC-30/2/0.1

Packaging

BS300 spools

	Weight: 15 kg
	Wire diameter: 1.2 mm (art. nr. 69738)
	Other diameters available on request