Thermanit X

Solid wire, high-alloyed, stainless

Classifications		
EN ISO 14343-A	AWS A5.9	Mat. No.
G 18 8 Mn	ER307(mod.)	1.4370

Characteristics and typical fields of application

Stainless. Resistant to scaling up to 850 °C (1562 °F).

No adequate resistance against sulphureous combustion gases at temperatures above 500 °C (932 °F). For joining and surfacing applications with heat resistant Cr-steels and heat resistant austenitic steels. Well suited for fabricating austenitic-ferritic joints – max. application temperature 300 °C (572 °F). For joining unalloyed / low-alloy or Cr-steels to austenitic steels. Low heat input required in order to avoid brittle martensitic transition zones.

Base materials

High tensile, unalloyed and alloyed structural, quenched and tempered, and armour steels, same parent metal or in combination; unalloyed and alloyed boiler or structural steels with high alloyed Cr and CrNi steels; heat resistant steels; austenitic high manganese steel with matching and other steels. Cryogenic sheet metals and pipe steels in combination with austenitic parent metals.

Typical analysis of solid wire (wt.-%)

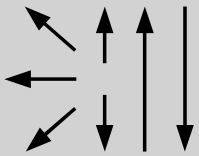
	C	Si	Mn	Cr	Ni
wt-%	0.08	0.8	7.0	19.0	9.0

Structure: Austenite with small amount of ferrite

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 KV J
	MPa	MPa	MPa	%	+20 °C
aw	370	400	600	35	100

Operating data



Polarity:	Shielding gas:	ø mm	Spool:
DC (+)	(EN ISO 14175)	0.8	BS300
	M12, M13, M21	1.0	B300
		1.2	B300
		1.6	B300

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Welding instruction		
Materials	Preheating	Postweld heat treatment
Heat resistant Cr-steels	According to wall thickness: 150 – 300 °C (302 - 572 °F)	Tempering at 750 °C (1382 °F) not necessary if service temperature is the same or higher
Heat resistant CrNi steels	None	None
Joining of CrNi(MoN) austenitic steels to unalloyed / low-alloy steels	According to ferritic parent metal, mostly not necessary	No PWHT >300 °C (572 °F) – risk of carbide precipitation at grain boundaries in the weld fusion zone, loss of toughness, fracturing
Joining of CrNi(MoN) austenitic steels to stainless and heat-resistant Cr-steels	According to ferritic parent metal	According to parent metals. Attention must be paid to the inter-crystalline corrosion resistance and embrittlement susceptibility of the austenitic metal side

Approvals
TÜV (05651), DB (43.132.01), DNV·GL, VG 95132-1, CE