Thermanit 18/17 E Mn

Solid wire, stainless, high-alloyed, special applications

Classifications

EN ISO 14343-A	AWS A5.9 / SFA-5.9
G Z 18 16 5 Mn N L	ER317L(mod.)

Characteristics and typical fields of application

Solid wir of type 18 16 5 Mn N L / ER317L(mod.) with good resitance to wet corrosion. High Mo content provides high resistance to Cl-bearing environment and pitting corrosion. Non magnetic. Well suited for joining and surfacing to matching and similar austenitic non-stabilized and stabilized stainless and non magnetic CrNiMo(N) steels / cast steel grades.
Well suited for depositing intermediate layers when welding products clad with a matching or similar overlay.
Service temperatures from -196ºC to 400ºC.

Base materials

TÜV-certified parent metal
1.4429 – X2CrNiMoN17-13-3; 1.4436 – X3CrNiMo17-13-3; 1.4438 – X2CrNiMo18-16-4;
1.4439 – X2CrNiMoN17-13-5; 1.4583 – X10CrNiMoNb18-12
AISI 316Cb, 316 LN, 317LN, 317L, UNS S31726

Typical analysis

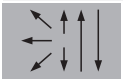
	C	Si	Mn	Cr	Ni	Mo	N
wt.-%	0.02	0.4	5.5	19.0	17.2	4.3	0.16

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	430 (≥400)	650 (≥ 600)	35 (≥ 25)	110 (≥ 47)	(≥ 32)

u untreated, as welded

Operating data



Polarity	DC+
Shielding gas (EN ISO 14175)	M12 M13 M22

Dimension mm
0.8
1.0
1.2

Preheating is in general not necessary. Solution annealing can be applied at 1050ºC.
Non-magnetic CrNiMo(N) steels / cast steel grades should be welded with low interpasstemperature. Stress relieving can be applied according to parent metal, otherwise solution annealing at 1050ºC can be carried out.

Welding instructions

Preheating / Interpass temperature	Basematerials	Post weld heat treatment (PWHT)
None	Matching and similar austenitic non-stabilized and stabilized CrNiMo(N) steels/cast steel grades	If necessary, solution annealing at 1050°C (1922 °F) annealing at 1050°C (1922°C)
None; keep interpass welding temperature low	Non magnetic CrNiMo(N) steels / cast steel grades Stahlgusssorten	If necessary, stress relieving according to parent metal, otherwise solution annealing at 1050°C (19922°F)

Approvals

TÜV (11507), DNV, CE