Thermanit 19/15*

Solid wire, high-alloyed, stainless

Classifications			
EN ISO 14343-A	EN ISO 14343-B	AWS A5.9	Mat. No.
G 20 16 3 Mn N L	SS316LMn	ER316LMn	1.4455

Characteristics and typical fields of application

Stainless; resistant to intercrystalline corrosion and wet corrosion up to 350 °C (662 °F). Corrosion-resistant similar to low-carbon CrNiMoMn(N) steels / cast steel grades. Seawater resistant, good resistance to nitric acid;

Non magnetic (permeability in field of 8000 A/m 1.01 max.). Particularly suited for corrosion conditions in urea synthesis plants; well suited for joining and surfacing applications with matching and similar austenitic CrNi(N) and CrNiMo(Mn,N) steels/cast steel grades.

Base materials

TÜV-certified parent metal

1.4315 – X5CrNiN19-9; 1.4429 – X2CrNiMo17-13-3; 1.4561 – X1CrNiMoTi18-13-2;
1.5662 – X8Ni9; 1.6903 – 10CrNiTi18-10
and cryogenic 3.5 – 5 %ige Ni-steels

Typical analysis of solid wire (wt.-%)

	C	Si	Mn	Cr	Mo	Ni	N
wt-%	0.03	0.5	7.5	20.5	3.0	15.5	0.18

Structure: Austenite with part ferrite, 0.6 % max.

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	430	450	650	30	80

Operating data

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

Welding instruction

Materials	Preheating	Postweld heat treatment
Matching / similar materials	None	Mostly not necessary
Type 1.455 claddings	According to parent metal mostly 150 °C (302 °F)	In case of excessive hardening of the parent metal, stress relieving at 510 °C (950 °F) 20 h max., annealing above 530 °C (986 °F) only **prior** to welding the last pass

Approvals

TÜV (10267), DB (43.132.12), CE

*also available as Thermanit 19/15 H. (Huey test acc. ASTM A 262: max. 3,3 µm/48 h (0,54 g/m2h)
TÜV (Certificate No. 6005); GL; DNV