Thermanit 19/15*

TIG rods, high-alloyed, stainless

Classifications			
EN ISO 14343-A	EN ISO 14343-B	AWS A5.9	Mat. No.
W 20 16 3 Mn N L	SSZ316L	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 CrNiMo(Mn,N) steels / cast steel grades. Seawater resistant, good resistance to nitric acid, selective attack max. 200 µm.

Non magnetic (permeability in field of 8000 A/m 1.01 max.). Particularly suited for corrosion conditions in urea synthesis

plants for welding work on steel X2CrNiMo18-12. 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

1.4429 – X2CrNiMoN17-13-3

1.4315 – X5CrNiN19-9

1.4561 – X1CrNiMoTi18-13-2

1.5662 – X8Ni9

1.6903 – 10CrNiTi18-10 and cryogenic 3.5 – 5 % Ni-steels

Typical analysis of the TIG rods (wt.-%)

	C	Si	Mn	Cr	Mo	Ni	N
wt-%	0.02	0.5	7.5	20.5	2.8	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
awt	430	450	650	30	80

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Operating data				
Polarity:	**Shielding gas:**	**Marks:**	**ø (mm)**	**L mm**
DC (–)	(EN ISO 14175) I1	✢ W 20 16 3 Mn N L / ER316LMn or ✢ W 20 16 3 Mn N L / 19/15H	2.0	1000

Welding instruction		
Materials	Preheating	Postweld heat treatment
Matching / similar materials	None	None
Plattierungen	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 (10266), DB (43.132.32), (Stamicarbon),CE

*also available as Thermanit 19/15 H
(Huey test in acc. ASTM A 262: max. 3.3 µm/48 h (0.54 g/m²h))

TÜV (Certificate No. 3497)