Thermanit 25/14 E-309L

TIG rods, high-alloyed, stainless

Classifications			
EN ISO 14343-A	EN ISO 14343-B	AWS A5.9	Mat. No.
W 23 12 L	SS309L	ER309L	1.4332

Characteristics and typical fields of application

Stainless; wet corrosion up to 350 °C (662 °F). Well suited for depositing intermediate layers when welding cladded materials. Favourably high Cr- and Ni-contents, low C content. For joining unalloyed/low-alloy steels/cast steel grades or stainless heat resistant Cr-steels/cast steel grades to austenitic steels/cast steel grades. For depositing intermediate layers when welding the side of plates clad with low-carbon – non-stabilized and stabilized – austenitic CrNi(MoN) austenitic metals

Base materials

TÜV-certified parent metal.

Combinations between 1.4583 – X10CrNiMoNb18-12 and ferritic steels up to S355N.

Joints of and between high-tensile, unalloyed and alloyed quenched and tempered steels, stainless, ferritic Cr and austenitic Cr-Ni steels, high manganese steels as well as claddings: for the first layer of chemical resistant weld claddings on ferritic-pearlitic steels up to fine grained structural steels S500N, in steam boiler and pressure boiler construction, as well as creep resistant fine grained structural steels 11NiMoCr4-7 acc. to leaflet “SEW-Werkstoffblatt” No. 365, 366, 20MnMoNi5-5 and G18NiMoCr3-7.

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

	C	Si	Mn	Cr	Ni
wt-%	0.02	0.5	1.7	24.0	13.0

Structure: Austenite with part ferrite

Mechanische Gütewerte des Schweißgutes

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	460	580	30	80

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Operating data

Polarity:	Shielding gas:	Marks:	ø (mm)	L mm
DC (–)	(EN ISO 14175) I1	W 23 12 L / ER309L	1.6	1000
			2.0	1000
			2.4	1000
			3.2	1000

Welding instruction

Materials	Preheating	Postweld heat treatment
Joining: CrNi(MoN) austenitic steels with unalloyed / low-alloy steels / cast steel grades	According to ferritic parent metal; mostly not necessary	No Postweld heat treatment above 300 °C (572 °F); risk of carbide precipitation in weld fusion zone, loss of toughness, fracturing
Joining: CrNi(MoN) austenitic steels with stainless heat resistant Cr- steels/cast steel grades	According to ferritic parent metal	According to the parent metals. Attention must be paid to resistance to intercrystalline corrosion and to susceptibility of the austenitic metal side to embrittlement
Cladded plates and cast materials with austenitic CrNi(MoN) overlay	According to ferritic parent metal	According to the parent metals. Attention must be paid to resistance to intercrystalline corrosion and to susceptibility of the austenitic metal side to embrittlement

Approvals

TÜV (02661), GL, CE