

Thermanit 25/14 E-309L

GTAW welding rod

Classifications	EN 12072	AWS A 5.9	Mat. No.
	W 23 12 L	ER309L	1.4332

Characteristics and field of use
 Stainless; wet corrosion up to 350 °C (662 °F). Well suited for depositing intermediate layers when welding clad 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.

Marks  W 23 12 L / ER309L

Materials
 TÜV-certified parent metal.
 Combinations between X10CrNiMoNb18-12 (1.4583) 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 in %	C	Si	Mn	Cr	Ni
	0.02	0.5	1.7	24.0	13.0

Mechanical properties of the weld metal according to EN 1597-1 (min. values at RT)	Heat-treatment	Yield strength 0.2% N/mm ²	Yield strength 1.0% N/mm ²	Tensile strength N/mm ²	Elongation (L ₀ =5d ₀) %	Impact values in J CVN
	AW	430	460	580	30	80

Structure Austenite with part ferrite

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
Clad 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

**Polarity = –
 Shielding gas (EN 439) I1**

Approvals TÜV (Certificate No. 2661) Controlas (0651)
 CWB (ER 309L-Si)

Packaging and weights	Diam. x Length (mm)	kg / pack
	1.6 x 1000	10
	2.0 x 1000	10
	2.4 x 1000	10
	3.2 x 1000	10