

Classifications

EN ISO 3581-A	AWS A5.4	Mat. No.
E 23 12 L R 3 2	E309L-17	1.4332

Characteristics and typical fields of application

Well suited for fabricating austenitic/ferritic joints at max. application temperature 300 °C (572 °F). Stainless, wet corrosion up to 350 °C (662 °F). Suitable for depositing intermediate layers when welding clad products. 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 clad side of plates of low carbon, unstabilized or stabilized CrNi(Mo,N) austenitic metals.

Base materials

TÜV certified parent metals

1.4583 – X10CrNiMoNb18-12 combined with ferritic steels up to fine grained structural steel S355N. Weld cladding (1st Layer) on ferritic steels up to S355N and 20MnMoNi45;

Joints: of and between high-tensile, unalloyed and alloyed quenched and tempered steels, stainless, ferritic Cr and austenitic CrNi steels, high manganese steels.

Weld claddings: for first layer of chemical resistant claddings on ferritic-pearlitic steels up to fine grained steel S500N used in steam boiler and pressure boiler construction, moreover for creep resistant fine grained structural steels 22NiMoCr4-7 acc. to leaflet "SEW-Werkstoffblatt" No. 365, 366, 20MnMoNi5-5 and G18NiMoCr3-7.

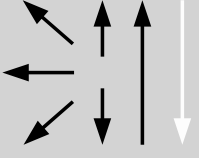
Typical analysis of all-weld metal (wt.-%)

	C	Si	Mn	Cr	Ni
wt-%	< 0.04	< 0.9	0.8	24.5	13.0

Structure: Austenite with part ferrite

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	400	430	550	30	55

Operating data				
	Polarity: DC (+) / AC	ø (mm)	L mm	Amps A
		2.5	350	50 – 80
		3.2	350	60 – 110
		4.0	350	90 – 150
		5.0	450	150 – 210
Welding instruction				
Materials	Preheating	Postweld heat treatment		
Joining CrNi(Mo,N) austenitic steels to 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 the weld fusion zone, loss of toughness, risk of fracturing		
Joining CrNi(Mo,N) austenitic to 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 parent metals with austenitic CrNi(Mo,N) cladding	According to ferritic parent metal	Attention must be paid to resistance to intercrystalline corrosion and to susceptibility of the austenitic metal side to embrittlement		
Approvals				
TÜV (00424), CWB, GL, CE				