

Classifications

EN ISO 3581-A	AWS A5.4 / SFA-5.4
E 23 12 2 L R	E309LMo-17

Characteristics and typical fields of application

Rutile coated electrode of E 23 12 2 L / E309LMo-17 type primarily intended for surfacing low-alloyed steels and for dissimilar welds between mild steel and stainless steels. Results in an austenitic all-weld metal microstructure with 15 – 20% ferrite. The corrosion resistance is superior to E 19 12 3 L / E316L fillers. When used for overlay welding on mild steel a corrosion resistance equivalent to that of 1.4401 / 316L is obtained already in the first layer. Max. service temperature 300°C.

Base materials

Primarily used for surfacing (buffer layer) unalloyed or low-alloyed steels and when joining molybdenum-alloyed stainless steels to carbon steels, austenitic and heat resistant steels, etc. Highly suitable for dissimilar welding of duplex stainless grades to the 300-series austenitic alloys and carbon steels.

Typical analysis


	C	Si	Mn	Cr	Ni	Mo	FN
wt.-%	0.02	0.8	0.8	22.5	13.5	2.5	20

Mechanical properties of all-weld metal - typical values (min. values)

Condition	Yield strength	Tensile strength	Elongation A	Impact energy ISO-V KV J		Hardness
	$R_{p0.2}$	R_m	($L_0=5d_0$)	20°C	-10°C	
	MPa	MPa	%			HB
u	490 (≥ 350)	640 (≥ 550)	33 (≥ 30)	42	39	220

u untreated, as-welded

Operating data

	Polarity	DC+ / AC	Dimension mm	Current A	
	Electrode identification	309MoL-17/P5		2.0 × 300	35 – 60
				2.5 × 300	50 – 80
				3.2 × 350	80 – 120
				4.0 × 450	100 – 160
		5.0 × 450	160 – 220		

Preheating and interpass temperature as required by the base metal.

Suggested heat input is max. 2.0 kJ/mm, interpass temperature max. 150°C.

Metal recovery 108 – 115%.

Heat treatment generally not needed. For constructions that include low-alloy steels in mixed joints, stress relieving may be advisable. Always consult the supplier of the parent metal or seek other expert advice to ensure that the correct heat treatment process is carried out.

Redrying at 350°C for 2 h.

Approvals

TÜV (02426), DB(30.014.21), DNV, Certified by CWB acc. to CSA W48: E309LMo-17, CE