

Classifications

EN ISO 3581-A	AWS A5.4 / SFA-5.4
E 19 12 3 L R 3 2	E316L-17

Characteristics and typical fields of application

Rutile coated low carbon, core wire alloyed electrode of E 19 12 3 L R / E316L-17 type for welding 1.4404 and 1.4436 / 316L type stainless steels in all positions. The weld metal offers a good resistance to general corrosion, pitting and intercrystalline corrosion in chloride-containing environments e.g. for applications in dilute hot acids. Resulting weld microstructure is austenite with 5 – 10% ferrite. Max. service temperature 400°C.

Base materials

1.4401 X5CrNiMo17-12-2, 1.4404 X2CrNiMo17-12-2, 1.4409 GX2CrNiMo19-11-2, 1.4429 X2CrNiMoN17-12-3, 1.4432 X2CrNiMo17-12-3, 1.4435 X2CrNiMo18-14-3, 1.4436 X3CrNiMo17-12-3, 1.4571 X6CrNiMoTi17-12-2, 1.4580 X6CrNiMoNb17-12-2, 1.4583 X10CrNiMoNb18-12
 UNS S31600, S31603, S31635, S31640, S31653
 AISI 316L, 316Ti, 316Cb

Typical analysis


	C	Si	Mn	Cr	Ni	Mo
wt.-%	0.02	0.8	0.7	18.0	12.0	2.8

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

Condition	Yield strength $R_{p0.2}$	Tensile strength R_m	Elongation A ($L_0=5d_0$)	Impact energy ISO-V KV J		Hardness
	MPa	MPa	%	20°C	-120°C	
u	460 (≥ 320)	580 (≥ 510)	40 (≥ 25)	65	50 (≥ 32)	210

u untreated, as-welded

Operating data

	Polarity	DC+ / AC	Dimension mm	Current A	
	Electrode identification		316L-17/SKR	1.5 × 250	25 – 40
				2.0 × 300	40 – 60
				2.5 × 350	50 – 90
				3.2 × 350	80 – 120
				4.0 × 450	110 – 160
				5.0 × 450	140 – 200

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

Post-weld heat treatment generally not needed. In special cases, solution annealing can be performed at 1050°C followed by water quenching.

Redrying if necessary at 250 – 300°C for min. 2 h.

Approvals

TÜV (01073), DB (30.014.18), DNV, CE