

Classification

EN ISO 14343-A	AWS A5.9
W 19 12 3 L	ER316L

Characteristics and typical fields of application

Avesta 316L/SKR is designed for welding austenitic stainless steel of type 17 Cr 12 Ni 2.5 Mo or similar. The filler metal is also suitable for welding titanium and niobium stabilized steels such as ASTM 316Ti and ASTM 316Nb in cases where the construction is used at temperatures not exceeding 400 °C. For higher temperatures, a niobium stabilized consumable such as Avesta 318-Si/SKNb-Si is required. Avesta 316L/SKR is also available with high silicon content (316L-Si/SKR-Si). The higher silicon content will improve fluidity and minimize the spatter, giving a nicer weld bead appearance.

Structure: Austenite with 5 – 10 % ferrite. Scaling temperature: Approx. 850 °C (air).

Corrosion resistance:

Excellent resistance to general, pitting and intercrystalline corrosion in chloride containing environments. Intended for severe service conditions, e.g. in dilute hot acids.

Base materials

Outokumpu	EN	ASTM	BS	NF	SS
4436	1.4436	316	316S33	Z7 CND 18-12-03	2343
4432	1.4432	316L	316S13	Z3 CND 17-12-03	2353
4429	1.4429	S31653	316S63	Z3 CND 17-12 Az	2375
4571	1.4571	316Ti	320S31	Z6 CNDT 17-12	2350

Typical analysis of the solid wire (wt.-%)

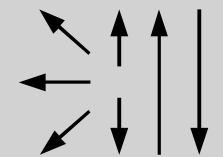
	C	Si	Mn	Cr	Ni	Mo	Ferrite
wt.-%	0.02	0.4	1.7	18.5	12.0	2.6	8 FN (WRC-92)

Mechanical properties of all-weld-metal

Heat treatment	Yield strength R _{p0.2}	Tensile strength R _m	Elongation (L ₀ =5d ₀)	Impact work ISO-V KV J		Hardness
	MPa	MPa	%	+20 °C	-40 °C	Brinell
u	460	610	33	140	130	200

u untreated, as welded – Shielding gas Ar + 20 – 30 % He

Operating data

	Polarity DC (+)	Shielding gas: Ar (99.95 %) Ar + 20 – 30 % He Ar + 1 – 5 % H ₂ Gas flow rate: 4 – 8 l/min	ø (mm)	
			1.0	2.0
			1.2	2.4
			1.6	3.2

Heat treatment: Generally none (in special cases quench annealing at 1050 °C). Interpass temperature: Max. 150 °C. Heat input: Max. 2.0 kJ/mm.

Approvals

CE, DNV, TÜV (01668.), GL