



For welding steels such as Outokumpu	EN	ASTM	BS	NF	SS
Over-alloyed electrode for surfacing unalloyed steel, joint welding non-molybdenum-alloyed stainless steel to unalloyed steel and welding clad material.					

Standard designations

EN 1600	E 23 12 L R
AWS A5.4	E309L-17

Characteristics

AVESTA 309L is a highly alloyed low carbon electrode designed for dissimilar welding between stainless and mild or low-alloy steels. The electrode is also well suited as a buffer layer when performing overlay welding on mild steels, providing an 18 Cr 8 Ni deposit from the very first layer. It can also be used for welding some high temperature steels such as ASTM 309S.

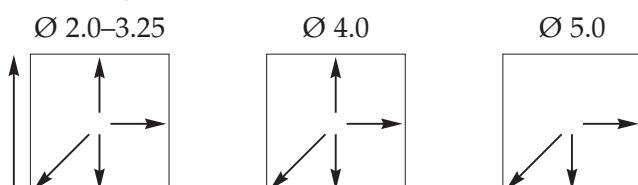
Welding data

DC+ or AC	Diam. mm	Current, A
	2.0	35 – 60
	2.5	50 – 80
	3.25	80 – 120
	4.0	100 – 160
	5.0	160 – 220

Weld deposit data at maximum welding current

Electrode diam. mm	length mm					Metal recov. ~ %
		N	B	H	T	
2.0	300					
2.5	300	0.60	82	1.02	43	119
3.25	350	0.61	43	1.58	52	114
4.0	450	0.63	29	2.07	61	112
5.0	450	0.68	18	3.11	64	112

Welding positions



Typical analysis % (All weld metal)

C	Si	Mn	Cr	Ni
0.02	0.8	0.8	23.0	13.0

Ferrite 15 FN DeLong

Mechanical properties

	Typical values (IIW)	Min. values EN 1600
Yield strength $R_{p0.2}$	450 N/mm ²	320 N/mm ²
Tensile strength R_m	550 N/mm ²	510 N/mm ²
Elongation A_5	35 %	25 %
Impact strength KV		
+20°C	50 J	
-40°C	45 J	
Hardness approx.	210 Brinell	

Interpass temperature: Max. 150°C.

Heat input: Max. 2.0 kJ/mm.

Heat treatment: Generally none.

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.

Structure: Austenite with 10 – 15% ferrite.

Scaling temperature: Approx. 1000°C (air).

Corrosion resistance: Superior to 308L. When surfacing mild steel a corrosion resistance equivalent to that of ASTM 304 is obtained already in the first bead.

Approvals

- CE
- DB
- GL
- RINA
- CWB
- DNV
- LR
- TÜV