

# 309L basic

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 B
AWS A5.4	E309L-15

## Characteristics

AVESTA 309L basic 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.

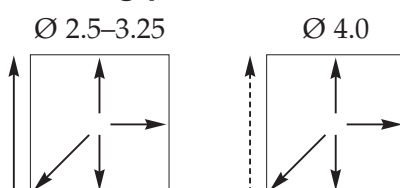
## Welding data

DC+	Diam. mm	Current, A
	2.5	50 – 75
	3.25	70 – 100
	4.0	100 – 140

## Weld deposit data

Metal recovery approx. 105%.

## Welding positions



## Typical analysis % (All weld metal)

C	Si	Mn	Cr	Ni
0.03	0.2	1.9	24.0	13.0

Ferrite 15 FN DeLong

## Mechanical properties

	Typical values (IIW)	Min. values EN 1600
Yield strength $R_{p0.2}$	440 N/mm <sup>2</sup>	320 N/mm <sup>2</sup>
Tensile strength $R_m$	570 N/mm <sup>2</sup>	510 N/mm <sup>2</sup>
Elongation $A_5$	30 %	25 %
Impact strength KV +20°C	50 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, a stress-relieving stage may be advisable. However, this type of alloy may be susceptible to embrittlement-inducing participation in the temperature range 550 – 950°C. 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 layer.

## Approvals

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