Avesta 309L

SAW wire/flux combination, high-alloyed, high corrosion resistant

Classification

Wire:			Flux:
EN ISO 14343-A	EN ISO 14343-B	AWS A5.23	EN ISO 14174
S 23 12 L	-	ER309L	-

Characteristics and typical fields of application

Avesta 309L is a high-alloy 24 Cr 14 Ni wire primarily intended for dissimilar welding between stainless and mild steel and for surfacing low-alloy steels. Thick gauges and joints susceptible to hot cracking should be welded using Avesta 309L-HF, which has a higher ferrite content than 309L. the chemical composition obtained when surfacing is from the very first run equivalent to that of ASTM 304. One or two layers of 309L are usually combined with a final layer of 308L, 316L or 347.

Structure: Austenite with 5 – 15 % ferrite. Scaling temperature: Approx. 1000 °C (air).

Corrosion resistance:

Superior to type 308L filler. When surfacing on mild steel a corrosion resistance equivalent to ASTM 304 is obtained at the very first layer.

Base materials

Avesta 309L is primarily used when joining non-molybdenum-alloyed stainless and carbon steels and for surfacing unalloyed or low-alloy steels.

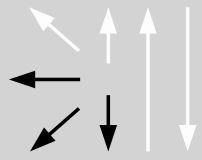
Typical analysis of the solid wire and all-weld-metal (wt.-%)

	C	Si	Mn	Cr	Ni	Ferrite
Wire	0.02	0.4	1.8	23.5	14.0	10 FN (WRC-92)
Flux 801	0.02	0.8	1.0	24.0	13.5	15 (DeLong)
Flux 805	0.02	0.5	1.2	24.5	13.5	14 (DeLong)

Mechanical properties of all-weld-metal

Flux	Yield strength $R_{p0.2}$	Tensile strength R_m	Elongation A (L_0=5d_0)	Impact work ISO-V KV J
	MPa	MPa	%	+20 °C
801	410	580	36	70
805	400	550	36	100

Operating data



Polarity:	Re-drying:	ø (mm)
DC (+) / DC (–)	300 – 350 °C / min. 2 h	2.4 3.2 4.0

Heat treatment: Generally none. For constructions that include low-alloy steels in mixed joints, a stress-relieving annealing stage may be advisable. However, this type of alloy may be susceptible to embrittlement-inducing precipitation 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. Heat input: max. 2.0 kJ/mm. Interpass temperature: max. 150 °C.

Approvals

In combination with flux	
805	DNV