904L AC/DC

www.avestawelding.com

Covered electrodes

For welding steel such as:

Outokumpu	EN	ASTM	SS*	BS*	NF*
904L	1.4539	904L	2562	904S13	Z2 NCDU 25-20
Also for welding similar steels of the 20-25 CrNiMoCu-type.					

* Obsolete national standards, replaced by EN 10088.

Characteristics

AVESTA 904L AC/DC is a rutile-acid type electrode which is easy to use. It offers good weldability using both positive pole DC and AC, but welding with DC is to be preferred.

AVESTA 904L AC/DC is used for welding copper alloyed stainless steel of the ASTM N08904 type (AvestaPolarit 904L, Sandvik 20.25.5 LCu) or Cu-Nb alloyed steels such as EN 1.4505, 1-4506 and 1.4585.

Welding directions

AVESTA 904L electrodes produce a fully austenitic high-alloy weld deposit with relatively little risk of hot cracking, i.e. cracks occurring immediately after the solidification of the weld deposit, provided that welding is performed carefully. However, the risk of hot cracking is somewhat greater than for electrodes such as AVESTA 316L/SKR.

Therefore, to ensure optimum resistance to corrosion and cracking the heat input should be kept to a low level. High amperages and unnecessarily thick electrodes should be avoided and welding should be carried out without appreciable weaving. Finally, the material should be allowed to cool to below 212°F (100°C) before the next run is welded.

When welding AvestaPolarit 904L steel to unalloyed steel, AVESTA P5 or 904L electrodes may be used.

Packaging data

Diam. inch	Diam. mm	Length mm/inch	Weight/ capsule, lbs	Electrodes/ capsule, approx.	Weight/ carton, lbs
3/32	2.5	350 / 14	9.7	181	29
1/8	3.25	350 / 14	9.1	104	27
5/32	4.0	400 / 16	10.8	69	32
3/16	5.0	400 / 16	10.8	48	32

Standard designations

EN 1600	E 20 25 5 Cu N L R
AWS A5.4	E 385-17

Typical analysis % (All weld metal)

C	Si	Mn	Cr	Ni	Mo	Cu
0.02	0.7	1.2	20.5	25.0	4.5	1.5

Ferrite 0 FN

Mechanical properties	Typical values (IIW)			
Yield strength, $Rp_{0,2}$	400	N/mm²	58	ksi
Tensile strength, R_m	565	N/mm²	82	ksi
Elongation, A_5	34	%	34	%
Impact strength, KV				
+20°C	60	J	44	ft·lb
Hardness approx.	200	Brinell		

Welding data

DC+ or AC	Diam., inch	Current, A
	3/32	50– 75
	1/8	80–110
	5/32	100–150
	1/16	140–190

Interpass temperature: Max. 212°F (100°C).

Heat input: Max. 38.1 kj/in (1.5 kJ/mm).

Heat treatment: Generally none. In special cases quench annealing at 1958-2012°F (1070–1100°C).

Structure: Fully austenitic.

Scaling temperature: Approx 1832°F (1000°C) (air)

Corrosion resistance: Very good resistance in non-oxidising environments such as sulphuric acid (up to 90% conc.), phosphoric acid and organic acids. Good resistance to pitting and crevice corrosion in chloride-containing solutions.

Approvals: -

Welding positions