Avesta Welding

308L/MVR

For welding steels such as Outokumpu	EN	ASTM	BS	NF	SS
4301	1.4301	304	304S31	Z7 CN 18-09	2333
4307	1.4307	304L	304S11	Z3 CN 18-10	2352
4311	1.4311	304LN	304S61	Z3 CN 18-10 Az	2371
4541	1.4541	321	321S31	Z6 CNT 18-10	2337

Standard designations

EN ISO 14343 W 19 9 L
AWS A5.9 ER308L

Characteristics and welding directions

AVESTA 308L/MVR is designed for welding austenitic stainless steel type 19 Cr 10 Ni or similar. The wire is also suitable for welding titanium and niobium stabilised steels such as ASTM 321 and ASTM 347 in cases where the construction is used at temperatures not exceeding 400°C. For higher temperatures a niobium stabilised consumable such as AVESTA 347-Si/MVNb-Si is required.

AVESTA 308L/MVR is also available with high silicon content (308L-Si/MVR-Si). The higher silicon content will improve fluidity and minimise the spatter, giving a nicer weld bead appearance.

Welding data

Diameter, mm	Current, A	Voltage, V
1.00	50 – 70	9 – 11
1.20	60 – 80	9 – 11
1.60	80 – 120	10 – 13
2.00	100 – 130	14 – 16
2.40	130 – 160	16 – 18
3.20	160 – 200	17 – 20

Shielding gas

Ar (99.95%) or Ar with an addition of 20 – 30% helium (He) or 1 – 5% hydrogen (H_2). Gas flow rate 4 – 8 l/min.

Chemical composition, wire (typical values, %)

C	Si	Mn	Cr	Ni
0.02	0.40	1.7	20.0	10.0

Ferrite	8 FN	DeLong
	10 FN	WRC-92

Mechanical properties	Typical values (IIW)	Min. values EN ISO 14343
Yield strength $R_{p0,2}$	400 N/mm^2	320 N/mm^2
Tensile strength R_m	590 N/mm^2	510 N/mm^2
Elongation A_5	35 %	30 %
Impact strength KV		
+20°C	130 J	
–40°C	120 J	
Hardness	200 Brinell	

Interpass temperature: Max. 150°C.

Heat input: Max. 2.0 kJ/mm.

Heat treatment: Generally none (in special cases quench annealing at 1050°C).

Structure: Austenite with 5 – 10% ferrite.

Scaling temperature: Approx. 850°C (air).

Corrosion resistance: Corresponding to ASTM 304, i.e. fairly good under severe conditions such as in oxidising and cold dilute reducing acids.

Approvals

• CE • DNV • TÜV