Avesta Welding

308L-Si/MVR-Si

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 G 19 9 L Si
AWS A5.9 ER308LSi

Characteristics and welding directions

AVESTA 308L-Si/MVR-Si is designed for welding austenitic stainless steel type 19 Cr 10 Ni or similar. The wire can also be used 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.

Welding data

	Diameter mm	Current A	Voltage V
Short arc	0.80	90 – 120	18 – 22
	1.00	110 – 140	19 – 22
Spray arc	1.00	160 – 220	25 – 29
	1.20	200 – 270	26 – 30
	1.60	250 – 330	27 – 32
Pulsed arc	1.20	I_{peak} = 340 – 450 A I_{bkg} = 50 – 150 A Freq = 80 – 120 Hz	

Shielding gas

Ar + 2% O_2 or 2 – 3% CO_2.
Gas flow rate 12 – 16 l/min.

Chemical composition, wire (typical values, %)

C	Si	Mn	Cr	Ni
0.02	0.85	1.8	20.0	10.5

Ferrite 11 FN DeLong
9 FN WRC-92

Mechanical properties	Typical values (IIW)	Min. values EN ISO 14343
Yield strength $R_{p0,2}$	420 N/mm²	320 N/mm²
Tensile strength R_m	600 N/mm²	510 N/mm²
Elongation A_5	36 %	30 %
Impact strength KV		
+20°C	110 J	
–196°C	60 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 oxidising and cold dilute reducing acids.

Approvals

• CE • DB • DNV • TÜV