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 S 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 can also be used for welding titanium and niobium stabilised steels such as ASTM 321 and ASTM 347 in cases where the construction will be used at temperatures not exceeding 400°C. For higher temperatures a niobium stabilised consumable such as AVESTA 347/MVNb is required.

Welding data

Diameter, mm	Current, A	Voltage, V
1.60	200 – 300	26 – 30
2.40	300 – 400	29 – 33
3.20	350 – 500	29 – 33
4.00	425 – 575	30 – 34

Welding flux: AVESTA Flux 801, 805 and 807.

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

Approvals

In combination with flux

801	• CE	• DNV	• TÜV
805	• CE	• TÜV	
807	• CE	• TÜV	

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

Chemical composition, all weld metal (typical values in combination with flux, %)

Flux	C	Si	Mn	Cr	Ni	FN[1)]
801	0.02	0.9	1.0	20.0	9.5	13
805	0.02	0.6	1.2	20.5	9.5	14
807	0.02	0.6	1.2	19.5	10.0	8

[1)] According to DeLong.

Mechanical properties

Typical values (IIW) in combination with flux	801	805
Yield strength $R_{p0,2}$	440 N/mm^2	410 N/mm^2
Tensile strength R_m	590 N/mm^2	580 N/mm^2
Elongation A_5	37 %	36 %
Impact strength KV		
+20°C	65 J	85 J
–196°C	30 J	35 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).