

For welding steel such as:

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

* Obsolete national standards, replaced by EN 10088.

Characteristics

AVESTA 308L AC/DC has a rutile-acid type coating, which ensures very good weldability both when welding with positive pole DC and AC.

AVESTA 308L meets all requirements of ASME SFA 5.4 and AWS A5.4. The difference between 308L and 308L/MVR is that 308L/MVR does not meet the length specified in AWS A5.4.

AVESTA 308L is used for welding low-carbon steels of the 304 and 304L types. It can also be used with good results for welding titanium and niobium stabilised steels, such as ASTM 321 and 347, in cases where the welded component will be operating at temperatures not exceeding 400°C. For higher temperatures, a stabilised welding consumable (AVESTA 347/MVNb) should be used.

Welding directions

AVESTA 308L should be welded using a short arc or with its coating sliding along the work piece. Direct current positive polarity is preferable. The best result is achieved by using an amperage in the upper part of the given range, i.e. slightly higher than the amperage generally used for other electrode types.

Weld deposit data at maximum welding current

Diam. mm	Length mm	N	B	H	T	Metal recovery, approx. %
1.6	250	0.54	266	0.60	23	113
2.0	250	0.53	170	0.71	30	114
2.5	300	0.57	89	0.99	41	111
3.25	350	0.60	44	1.50	54	111
4.0	350	0.62	30	2.05	59	110
5.0	350	0.65	19	2.97	62	106

Packaging data

Diam. mm	Length mm	Weight/capsule, kg	Approx. No. of electrodes/capsule	Weight/carton, kg
1.6	250	1.36	192	8.16
2.0	250	1.36	124	8.16
2.5	300	3.63	186	10.89
3.25	350	4.10	108	12.30
4.0	350	4.10	72	12.30
5.0	350	4.54	59	13.62

Standard designations

EN 1600 E 199 LR
AWS A5.4 E 308L-17

Typical analysis % (All weld metal)

C	Si	Mn	Cr	Ni
0.03	0.8	1.0	20.0	10.5
Ferrite		10 FN DeLong		

Mechanical properties

	Typical values (IIW)	Min. values EN 1600
Yield strength, R _{p0.2}	450 N/mm ²	320 N/mm ²
Tensile strength, R _m	580 N/mm ²	510 N/mm ²
Elongation, A ₅	37 %	30 %
Impact strength, KV		
+20°C	60 J	
-40°C	40 J	
Hardness approx.	200 Brinell	

Welding data

DC+ or AC	Diam. mm	Current A
	1.6	30–50
	2.0	35–60
	2.5	50–80
	3.25	80–120
	4.0	100–160
	5.0	160–220

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: Very good under fairly severe conditions, e.g. in oxidising acids and cold or dilute reducing acids.

Approvals: CWB

Welding positions

