

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/MVR has a rutile-acid type coating, which provides very good weldability when working with both positive pole DC and AC.

The electrode is characterised by a steady arc with very little spatter, high welding speed and easy slag removal. It produces a smooth concave weld surface in a horizontal fillet weld, which improves the resistance to fatigue. A flat weld surface is obtained in butt welds and this reduces grinding costs.

AVESTA 308L/MVR is primarily designed for welding austenitic stainless steel of the ASTM 304 and 304L type and offers maximum resistance to intergranular corrosion. 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 752°F (400°C). For higher temperatures, a stabilised welding consumable (AVESTA E347/MVNb) should be used.

Welding directions

AVESTA 308L/MVR should be welded using a short arc or with its coating sliding along the work piece. Direct current positive polarity is preferable. The electrode has a very stable arc over the whole current range.

To ensure good penetration it is often advantageous to tack weld with a somewhat larger gap than when using rutile or basic electrodes.

Packaging data

Diam. inch	Diam. mm	Length mm/inch	Weight/capsule, lbs	Electrodes/capsule, approx.	Weight/carton, lbs
1/16	1.60	250 / 10	3.0	200	18
5/64	2.0	300 / 12	3.5	130	24
3/32	2.5	350 / 14	9.0	193	27
1/8	3.25	350 / 14	9.0	118	27
5/32	4.0	450 / 18	11.9	81	36
3/16	5.0	450 / 18	11.9	53	36

Approvals

CWB, DNV

Standard designations

AWS A5.4 E 308L-17

Typical analysis % (All weld metal)

C	Si	Mn	Cr	Ni
0.02	0.8	0.6	19.5	10.1
Ferrite		10 FN DeLong		

Mechanical properties

	Typical values (IIW)	
Yield strength, R _{p0.2}	440 N/mm ²	64 ksi
Tensile strength, R _m	570 N/mm ²	83 ksi
Elongation, A ₅	37 %	37 %
Impact strength, KV		
+68°F	60 J	44 ft-lb
-40°F	55 J	41 ft-lb
Hardness approx.	200 Brinell	

Welding data

DC+ or AC	Diam. inch	Current, A
	1/16	25– 50
	5/64	30– 60
	3/32	40– 80
	1/8	70–120
	5/32	90–160
	3/16	150–220

Interpass temperature: Max. 300°F (150°C).

Heat input: Max. 51 kJ/inch (2.0 kJ/mm).

Heat treatment: Generally none. In special cases quench annealing at 1922°F (1050°C).

Structure: Austenite with 5- 10% ferrite.

Scaling temperature: Approx. 1562°F (850°C) (air).

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

Welding positions

