

For welding steel such as:

Outokumpu	EN	ASTM	SS*	BS*	NF*
4301	1.4301	304	2333	304S31	Z7 CN 18-09
4541	1.4541	321	2337	321S31	Z6 CNT 18-10
-	1.4550	347	2338	347S31	Z6 CNNb 18-10

\* Obsolete national standards, replaced by EN 10088.

#### Characteristics

AVESTA 308/308H AC/DC has a rutile-acid coating which ensures very good weldability when working with both positive pole DC and AC.

AVESTA 308/308H is used for welding ASTM 304 and 304H type of steels. The elevated carbon content has a positive effect on the creep resistance, which is an advantage for applications with service temperatures exceeding 400°C.

AVESTA 308/308H may also be used 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 308/308H should be welded using a short arc or with its coating sliding along the workpiece. Direct current (+pole) is preferable. The best result is achieved by using amperage in the upper part of the amperage range given, i.e. somewhat higher than the amperage generally used for other electrode types.

#### Weld deposit data at maximum welding current

Diam. mm	Length mm					Metal recovery, approx. %
		N	B	H	T	
2.5	300	0.57	87	0.98	42	113
3.25	350	0.59	45	1.52	53	109
4.0	350	0.61	30	2.06	58	107
5.0	350	0.64	20	2.79	64	102

#### Packaging data

Diam. mm	Length mm	Weight/ capsule, kg	Approx. No. of electrodes/ capsule	Weight/ carton, kg
2.5	300	3.63	182	10.89
3.25	350	4.10	108	12.30
4.0	350	4.10	75	13.62
5.0	350	4.54	58	13.62

Approvals: CWB, TÜV

#### Standard designations

EN 1600            E 19 9 R  
AWS A5.4        E 308H-17

#### Typical analysis % (All weld metal)

C	Si	Mn	Cr	Ni
0.06	0.7	1.1	20.0	10.0
Ferrite		5 FN DeLong		

#### Mechanical properties

	Typical values (IIW)	Min. values EN 1600
Yield strength, R <sub>p0.2</sub>	450 N/mm <sup>2</sup>	350 N/mm <sup>2</sup>
Tensile strength, R <sub>m</sub>	605 N/mm <sup>2</sup>	550 N/mm <sup>2</sup>
Elongation, A <sub>5</sub>	37 %	30 %
Impact strength, KV		
+20°C	55 J	-
-40°C	50 J	-
Hardness approx.	210 Brinell	

#### Welding data

DC+ or AC	Diam. mm	Current A
	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: Corresponding to ASTM 304, i.e. good resistance to general corrosion. The enhanced carbon content, compared to 308L, makes it slightly more sensitive to intercrystalline corrosion.

#### Welding positions

