

For welding steel such as:

Outokumpu	EN	ASTM	SS*	BS*	NF*
4845	1.4845	310S	2361	310S61	Z8 CN 25-20

* Obsolete national standards, replaced by EN 10088.

Characteristics

AVESTA 310 AC/DC is a rutile-acid type electrodes, designed for welding high temperature steels such as ASTM 310S and similar. It can also be used for welding certain ferritic chromium steels, 14%-Mn steels and stainless to mild steel connections.

AVESTA 310 produces a fully austenitic 25Cr-20Ni type weld metal.

Welding directions

The fully austenitic structure makes the weld metal somewhat susceptible to hot cracking. High welding currents and big weld pools should be avoided. The heat input should be maximised to 1.0 kJ/mm and the material should be allowed to cool to below 100°C between successive passes. For optimum results, welding should be performed using DC (+pole) but it is also possible to use AC/DC.

Weld deposit data at maximum welding current

Diam. mm	Length mm	N	B	H	T	Metal recovery, approx. %
2.5	300	0.60	82	0.90	49	123
3.25	350	0.62	42	1.31	65	119
4.0	350	0.64	28	1.83	70	114

Packaging data

Diam. mm	Length mm	Weight/ capsule, kg	Approx. No. of electrodes/ capsule	Weight/ carton, kg
2.5	300	3.63	186	10.89
3.25	350	4.10	107	12.30
4.0	350	4.10	75	12.30

Standard designations

EN 1600 E 25 20 R
AWS A5.4 E310-17

Typical analysis % (All weld metal)

C	Si	Mn	Cr	Ni
0.10	0.5	2.1	26.0	21.0

Ferrite 0 FN

Mechanical properties

	Typical values (IIW)	Min. values EN 1600
Yield strength, R _{p0.2}	430 N/mm ²	350 N/mm ²
Tensile strength, R _m	625 N/mm ²	550 N/mm ²
Elongation, A ₅	35 %	20 %
Impact strength, KV		
+20°C	80 J	
-196°C	35 J	
Hardness approx.	190 Brinell	

Welding data

DC+ or AC	Diam., mm	Current, A
	2.5	50– 75
	3.25	70–100
	4.0	100–150

Interpass temperature: Max. 100°C.

Heat input: Max. 1.0 kJ/mm.

Heat treatment: Generally none. In special cases quench annealing at 1150°C.

Structure: Fully austenitic.

Scaling temperature: Approx. 1150°C (air)

Corrosion resistance: Intended primarily for constructions running at high temperatures. The wet corrosion properties are moderate.

Approvals: CWB

Welding positions

