

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 25.5kJ/in (1.0 kJ/mm) and the material should be allowed to cool to below 212°F (100°C) between successive passes. For optimum results, welding should be performed using DC (+pole) but it is also possible to use AC/DC.

#### Packaging data

Diam. inch	Diam. mm	Length mm/inch	Weight/capsule, lbs	Electrodes/capsule, approx.	Weight/carton, lbs
3/32	2.5	300 / 12	8.0	186	24
1/8	3.25	350 / 14	9.0	107	27
5/32	4.0	350 / 14	9.0	75	27

#### Standard designations

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)

Yield strength, Rp <sub>0.2</sub>	430 N/mm <sup>2</sup>	62 ksi
Tensile strength, R <sub>m</sub>	625 N/mm <sup>2</sup>	91 ksi
Elongation, A <sub>5</sub>	35 %	35 %
Impact strength, KV		
+20°C	80 J	59 ft-lb
-196°C	35 J	26 ft-lb
Hardness approx.	190 Brinell	

#### Welding data

DC+ or AC	Diam., inch	Current, A
	3/32	50– 75
	1/8	70–100
	5/32	100–150

**Interpass temperature:** Max. 212°F (100°C).

**Heat input:** Max. 25.4 kJ/in (1.0 kJ/mm).

**Heat treatment:** Generally none. In special cases quench annealing at 2102°F (1150°C).

**Structure:** Fully austenitic.

**Scaling temperature:** Approx. 2102°F (1150°C) (air)

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

**Approvals:** -

#### Welding positions

