

For welding steel such as:

Outokumpu	EN	ASTM	SS*	BS*	NF*
Overalloyed electrode for welding stainless steels to carbon steel, low-alloy steel or Mn-steel.					

* Obsolete national standards, replaced by EN 10088.

Characteristics

AVESTA 307AC/DC is a rutile-acid type electrode, which ensures very good weldability when using either positive pole DC or AC.

AVESTA 307 is an overalloyed fully austenitic consumable for welding stainless steel to mild steel, low alloyed or Mn-steels. It is also suitable for welding some 14% Mn steels and other difficult-to-weld steels.

The high Mn-content makes the weld metal, even though it is austenitic, very resistant to hot cracking.

Welding directions

AVESTA 307 is primarily intended for welding without preheating, particularly as regards 14% Mn steels, which should be welded as cold as possible. However, in cases where welding is performed on severely restrained constructions and on materials susceptible to hardening, it is sometimes advantageous to preheat the material slightly.

When welding stainless steel to unalloyed or low-alloyed steels, it is advisable/necessary to reduce the dilution of the weld as much as possible. Welding should therefore be performed with a limited heat input and appropriate bevel angle.

Welding to primer-coated sheet should be avoided, as there is a significant risk of pore formation. The paint should therefore be removed from all surfaces that are likely to be exposed to temperatures above 500°C.

Weld deposit data

Metal recovery approx. 110 %.

Packaging data

Diam. mm	Length mm	Weight/capsule, kg	Approx. No. of electrodes/capsule	Weight/carton, kg
2.5	300	3.63	184	10.89
3.25	350	4.10	105	12.30
4.0	450	5.70	81	17.10
5.0	450	6.10	60	18.30

Standard designations

EN 1600 E 18 9 Mn Mo R
AWS A5.4 E 307-17

Typical analysis % (All weld metal)

C	Si	Mn	Cr	Ni	Mo
0.07	0.8	4.0	20.0	10.5	0.8

Ferrite 5 FN DeLong

Mechanical properties

	Typical values (IIW)	Min. values EN 1600
Yield strength, R _{p0.2}	465 N/mm ²	350 N/mm ²
Tensile strength, R _m	605 N/mm ²	500 N/mm ²
Elongation, A ₅	35 %	25 %
Impact strength, KV +20°C	45 J	-
Hardness approx.	200 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 0–5% ferrite.

Scaling temperature: Approx. 850°C (air)

Corrosion resistance: Primarily intended for stainless to mild steel connections, however, the corrosion resistance corresponds to that of ASTM 304.

Approvals: –

Welding positions

