Avesta Welding

P7 AC/DC

For welding steels such as Outokumpu	EN	ASTM	BS	NF	SS
Specially designed for difficult-to-weld steels such as Mn-steels, tool steels and high temperature grades.					

Standard designations

EN 1600 E 29 9 R

Characteristics

AVESTA P7 is a highly alloyed Cr-Ni electrode with approx. 40% ferrite offering high tensile strength and excellent resistance to cracking. The chemical composition corresponds to that of AWS A5.4 E312. The electrode is primarily intended for dissimilar welding between stainless steel, high strength steels such as Armox® and Hardox®, tool steel, spring steel and 14% Mn-steel as well as other difficult-to-weld combinations.

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

Weld deposit data at maximum welding current

Electrode diam. mm	length mm	N	B	H	T	Metal recov. ~ %
2.5	350	0.59	71	1.00	50	118
3.25	350	0.62	42	1.53	56	117
4.0	400	0.66	24	2.14	70	116
5.0	400					

Typical analysis % (All weld metal)

C	Si	Mn	Cr	Ni
0.09	0.8	0.8	29.0	9.5

Ferrite 40 FN WRC-92

Mechanical properties	Typical values (IIW)	Min. values EN 1600
Yield strength $R_{p0.2}$	620 N/mm^2	450 N/mm^2
Tensile strength R_m	810 N/mm^2	650 N/mm^2
Elongation A_5	18 %	15 %
Impact strength KV +20°C	25 J	
Hardness approx.	270 Brinell	

Interpass temperature: Max. 150°C.

Heat input: Max. 2.0 kJ/mm.

Heat treatment: Generally none. Alloys of this type are susceptible to precipitation of secondary phases in the temperature range 550 – 950°C.

Structure: Austenite with 30 – 40% ferrite.

Scaling temperature: Approx. 1000°C (air).

Corrosion resistance: Very good corrosion resistance in wet sulphuric environments, such as in sulphate digesters used by the pulp and paper industry.

Approvals

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Welding positions