Avesta Welding

P7

For welding steels such as					
Outokumpu	EN	ASTM	BS	NF	SS

AVESTA P7 is an all-round wire, specially designed for difficult-to-weld steels such as Mn-steels, tool steels and high temperature grades.

Standard designations

EN ISO 14343 S 29 9
AWS A5.9 ER312

Characteristics and welding directions

AVESTA P7 is a high-alloy consumable designed for welding C/Mn-steels, high-strength steels such as Hardox® and Armox®, tool steels, spring steels, high temperature steels and other difficult-to-weld steels. P7 is also suitable for dissimilar welds between stainless and mild steel.

AVESTA P7 provides a weldment with high tensile strength and wear resistance as well as an excellent resistance to cracking.

Pre-heating is normally not necessary, but when working with constricted designs and materials susceptible to hardening, some pre-heating may be required.

Welding data

Diameter, mm	Current, A	Voltage, V
2.40	300 – 400	29 – 33
3.20	350 – 500	29 – 33

Welding flux: AVESTA Flux 801 or 805.

Corrosion resistance: Very good corrosion resistance in wet sulphuric enviroments, e.g. in sulphate digesters used by the pulp and paper industry.

Approvals

In combination with flux
801 • DNV

Chemical composition, wire (typical values, %)

C	Si	Mn	Cr	Ni
0.11	0.45	1.9	30.0	9.5

Ferrite 60 FN WRC-92.

Chemical composition, all weld metal (typical values in combination with flux, %)

Flux	C	Si	Mn	Cr	Ni	FN[1)]
801	0.11	0.9	1.2	30.5	9.0	60
805	0.11	0.6	1.5	31.0	9.0	60

[1)] According to WRC-92.

Mechanical properties

Typical values (IIW) in combination with flux	805
Yield strength $R_{p0,2}$	640 N/mm^2
Tensile strength R_m	770 N/mm^2
Elongation A_5	22 %
Impact strength KV	
+20°C	35 J

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 40 – 60% ferrite.

Scaling temperature: Approx. 850°C (air).