P7 AC/DC

www.avestawelding.com

Covered electrodes

For welding steel such as:

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

* Obsolete national standards, replaced by EN 10088.

Characteristics

AVESTA P7 AC/DC is a high-alloy electrode designed for welding C/Mn-steels, 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 ferritic-austenitic structure with a high resistance to hot and solidification cracking. The mechanical properties as well as the wear resistance are very good.

AVESTA P7 is also, due to its good corrosion resistance, suitable for some applications in the pulp and paper industry.

Welding directions

AVESTA P7 is primarily intended for welding without preheating and this is particularly true for 14% manganese steels, which should be welded as cold as possible. However, in cases where welding is carried out on severely restrained constructions and on material susceptible to hardening, it may sometimes be advisable to preheat the material slightly.

A short arc should be used when welding and high amperages should be avoided.

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 932°F (500°C).

Packaging data

Diam inch	Diam mm	Length mm/inch	Weight/ capsule, lbs	electrodes/ capsule, approx.	Weight/ carton, kg
3/32	2.5	350 / 14	9.0	174	27
1/8	3.25	350 / 14	9.0	108	27
5/32	4.0	400 / 16	10.8	78	32
3/16	5.0	400 / 16	11.7	58	35

Standard designations

EN 1600 E 29 9 R

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)			
Yield strength, $Rp_{0,2}$	620	N/mm²	90	ksi
Tensile strength, R_m	810	N/mm²	117	ksi
Elongation, A_5	16	%	16	%
Impact strength, KV				
+20°C	25	J	18	ft·lb
Hardness approx.	270	Brinell		

Welding data

DC+ or AC	Diam., inch	Current, A
	3/32	50– 80
	1/8	80–120
	5/32	100–160
	3/16	160–220

Interpass temperature: Max. 212°F (150°C).

Heat input: Max. 50.8 kj/in (2.0 kJ/mm).

Heat treatment: Generally none. Alloys of this type are susceptible to precipitation of secondary phases in the temperature range 1022-1742°F (550–950°C).

Structure: Austenite with 30–40 % ferrite.

Scaling temperature: Approx. 1832°F (1000°C) (air)

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

Approvals: -

Welding positions