

Classifications

EN ISO 3581-A	AWS A5.4 / SFA-5.4
E 29 9 R 1 2	E312-17 (mod.)

Characteristics and typical fields of application

Rutile covered electrode of E 29 9 R / E312-17 type resulting in an all-weld metal ferrite content of 30 – 40% for high tensile strength and excellent resistance to cracking. Avesta P7 is primarily intended for welding dissimilar joints between stainless steel, tool steel, spring steel and 14% Mn-steel, as well as other difficult-to-weld combinations. Very good corrosion resistance in wet sulfuric environments, such as in sulfate digesters used by the pulp and paper industry. Scaling temperature in air is approximately 1000°C.

Base materials

Primarily intended for dissimilar welding between stainless steel, high-strength steels (e.g. ArmoX® and Hardox®), tool steels, spring steel and 14% Mn-steel as well as other difficult-to-weld combinations.

Typical analysis

	C	Si	Mn	Cr	Ni	FN
wt.-%	0.09	0.8	0.8	29.0	9.5	40

Mechanical properties of all-weld metal - typical values (min. values)

Condition	Yield strength $R_{p0.2}$	Tensile strength R_m	Elongation A ($L_0=5d_0$)	Impact energy ISO-V KV J	Hardness
	MPa	MPa	%		HB
u	620 (≥ 450)	810 (≥ 650)	18 (≥ 15)	25	270

u untreated, as-welded

Operating data

	Polarity	DC+ / AC	Dimension mm	Current A
	Electrode identification	312-17/P7	2.5 × 350	50 – 80
			3.2 × 350	80 – 120
			4.0 × 400	100 – 160
			5.0 × 400	160 – 220

Suggested heat input max. 2.0 kJ/mm and interpass temperature max. 150°C.

Post-weld heat treatment generally not needed. Alloys of this type are susceptible to precipitation of secondary phases in the temperature range 550 – 950°C

Metal recovery 116-118%

Approvals

CE