

P12

For welding steels such as Outokumpu	EN	ASTM	BS	NF	SS
254 SMO®	1.4547	S31254	–	–	2378
20-25-6	1.4529	N08926	–	–	–

Also for welding stainless steels and nickel base alloys to low-alloy and mild steels.

Standard designations

EN ISO 18274 S Ni Cr 22 Mo 9 Nb
AWS A5.14 ERNiCrMo-3

Characteristics and welding directions

AVESTA P12 is a nickel base alloy designed for welding 6Mo steels such as Outokumpu 254 SMO. The wire is also suitable for welding nickel base alloys such as Inconel 625 and Incoloy 825 and for dissimilar welds between stainless or nickel base alloys and mild steels.

When welding fully austenitic and nickel base steels, great care should be taken to minimise the heat input, interpass temperature and dilution with parent metal.

Welding data

Diameter, mm	Current, A	Voltage, V
2.40	300 – 400	29 – 33
3.20	350 – 450	29 – 33

Welding flux: AVESTA Flux 805.

Corrosion resistance: Excellent resistance to general, pitting and intercrystalline corrosion in chloride containing environments.

Approvals

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Chemical composition, wire (typical values, %)

C	Si	Mn	Cr	Ni	Mo	Nb	Fe
0.01	0.10	0.1	22.0	65.0	9.0	3.6	<1.0

Ferrite 0 FN

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

Flux	C	Si	Mn	Cr	Ni	Mo	Nb	FN
805	0.01	0.3	0.1	22.0	Bal.	9.0	3.6	–

Mechanical properties

Typical values (IIW) in combination
with flux

	805
Yield strength $R_{p0,2}$	460 N/mm ²
Tensile strength R_m	730 N/mm ²
Elongation A_5	41 %
Impact strength KV +20°C	80 J

Interpass temperature: Max. 100°C.

Heat input: Max. 1.5 kJ/mm.

Heat treatment: Generally none (in special cases quench annealing at 1050°C).

Structure: Fully austenitic.

Scaling temperature: Approx. 1100°C (air).