

# 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 steel.

## Standard designations

EN ISO 18274 W 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 and nickel base alloys to mild steel.

Welding of fully austenitic steels and nickel base alloys should be performed taking great care to minimise the heat input, interpass temperature and dilution with parent metal.

## Welding data

Diameter, mm	Current, A	Voltage, V
1.20	60 – 80	9 – 11
1.60	80 – 110	10 – 12
2.00	100 – 130	14 – 16
2.40	120 – 150	16 – 18
3.20	140 – 180	17 – 19

## Shielding gas

Ar (99.95%).

Gas flow rate 4 – 8 l/min.

## Chemical composition, wire (typical values, %)

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

Ferrite 0 FN

Mechanical properties	Typical values (IIW)	Min. values EN ISO 18274
Yield strength $R_{p0.2}$	490 N/mm <sup>2</sup>	420 N/mm <sup>2</sup>
Tensile strength $R_m$	740 N/mm <sup>2</sup>	700 N/mm <sup>2</sup>
Elongation $A_5$	37 %	30 %
Impact strength KV		
+20°C	130 J	
-40°C	120 J	
Hardness	220 Brinell	

**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).

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

## Approvals

- CE
- TÜV