

# P16

For welding steels such as Outokumpu	EN	ASTM	BS	NF	SS
4565	1.4565	S34565	–	–	–
654 SMO®	1.4652	S31654	–	–	–
254 SMO®	1.4547	S31254	–	–	2378
20-25-6	1.4529	N08926	–	–	–

Also for welding nickel base alloys to stainless steels and mild steel.

## Standard designations

EN ISO 18274 S Ni Cr 25 Mo 16

AWS A5.14 ERNiCrMo-13

## Characteristics and welding directions

AVESTA P16 is a nickel base alloy designed for welding 7Mo steels and similar, offering superior resistance to pitting and crevice corrosion. 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 steel.

The chemical composition corresponds to that of Alloy 59 (ERNiCrMo-13).

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:** Superior resistance to pitting and crevice corrosion (CPT >80°C, ASTM G48-A).

## Approvals

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

C	Si	Mn	Cr	Ni	Mo	Nb	Fe
0.01	0.10	0.2	25.0	60.0	15.0	<0.1	<1.0

Ferrite 0 FN

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

Flux	C	Si	Mn	Cr	Ni	Mo	FN
805	0.01	0.3	0.1	26.0	Bal.	15.0	–

## Mechanical properties

Typical values (IIW) in combination with flux

	805
Yield strength $R_{p0,2}$	480 N/mm <sup>2</sup>
Tensile strength $R_m$	720 N/mm <sup>2</sup>
Elongation $A_5$	37 %
Impact strength KV	
+20°C	65 J
–40°C	60 J

**Interpass temperature:** Max. 100°C.

**Heat input:** Max. 1.5 kJ/mm.

**Heat treatment:** Generally none (in special cases quench annealing at 1150 – 1200°C).

**Structure:** Fully austenitic.

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