

# P54

For welding steels such as Outokumpu	EN	ASTM	BS	NF	SS
4565	1.4565	S34565	–	–	–
254 SMO®	1.4547	S31254	–	–	2378

## Standard designations

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## Characteristics and welding directions

AVESTA P54 is an iron-based fully austenitic consumable designed for welding Outokumpu 254 SMO, 1.4565 and other similar 6Mo and 7Mo-steels.

AVESTA P54 is specially developed for applications exposed to highly oxidising chloride containing environments, such as D-stage bleachers in pulp mills, where a nickel base filler will suffer from trans-passive corrosion. The consumable also offers very high resistance to localised corrosion.

AVESTA P54 produces a fully austenitic high alloy weld metal and is therefore somewhat more sensitive to hot cracking than, for example, 304-type steels.

The parameter box when welding P54 is rather narrow and welding is best performed using a synergic pulsed machine.

## Welding data

	Diameter mm	Current A	Voltage V
Spray arc	1.20	180 – 220	25 – 29
Pulsed arc	1.20	$I_{peak} = 320 - 360 \text{ A}$ $I_{bkg} = 90 - 120 \text{ A}$ Freq = 80 – 100 Hz	

## Shielding gas

Welding is best performed using pulsed arc with a shielding gas of pure argon or Ar + 30% He + 2.5% CO<sub>2</sub>.

Gas flow rate 12 – 16 l/min.

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

C	Si	Mn	Cr	Ni	Mo	N	Cu
0.02	0.20	5.1	26.0	22.0	5.5	0.35	0.9

Ferrite 0 FN

Mechanical properties	Typical values (IIW)	Min. values EN ISO 14343
Yield strength $R_{p0,2}$	480 N/mm <sup>2</sup>	–
Tensile strength $R_m$	750 N/mm <sup>2</sup>	–
Elongation $A_5$	35 %	–
Impact strength KV +20°C	90 J	
Hardness	220 Brinell	

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

**Heat input:** Max. 1.0 kJ/mm.

**Heat treatment:** Generally none.

**Structure:** Fully austenitic.

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

**Corrosion resistance:** Superior resistance in near neutral chloride dioxide containing environments, such as D-stage bleachers.

## Approvals

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