

FCW P5-PW

For welding steels such as Outokumpu	EN	ASTM	BS	NF	SS
AVESTA P5-PW is primarily used for surfacing unalloyed or low-alloy steels and when joining molybdenum-alloyed stainless and carbon steels.					

Standard designations

EN ISO 17633 T 23 12 2 L P M/C 1
AWS A5.22 E309LMoT1-4/-1

Characteristics and welding directions

AVESTA FCW P5-PW is a molybdenum-alloyed wire of the 309LMo type, primarily designed for welding dissimilar joints between stainless steels and low-alloy steels. It is also widely used for surfacing low-alloy steels offering a composition similar to that of ASTM 316 from the first run.

AVESTA FCW P5-PW is designed for all-round welding and can be used in all positions without changing the parameter settings.

Welding data

Diameter mm	Welding position	Current A	Voltage V
1.20	Flat, horizontal	150 – 240	24 – 32
	Vertical-up	130 – 160	23 – 28
	Overhead	150 – 200	24 – 29
	Vertical-down	120 – 180	22 – 27

Shielding gas

Ar + 15 – 25% CO₂ offers the best weldability, but 100% CO₂ can also be used (voltage should be increased by 2V).
Gas flow rate 20 – 25 l/min.

Chemical composition, all weld metal (typical values, %)

C	Si	Mn	Cr	Ni	Mo
0.03	0.47	1.4	23.0	12.8	2.5

Ferrite 25 FN WRC-92

Mechanical properties	Typical values (IIW)	Min. values EN ISO 17633
Yield strength R _{p0,2}	500 N/mm ²	350 N/mm ²
Tensile strength R _m	700 N/mm ²	550 N/mm ²
Elongation A ₅	30 %	25 %
Impact strength KV +20°C	55 J	
Hardness	220 Brinell	

Interpass temperature: Max. 150°C.

Heat input: Max. 2.0 kJ/mm.

Heat treatment: Generally none.

For constructions that include low-alloy steels in mixed joints, a stress-relieving annealing stage may be advisable. However, this type of alloy may be susceptible to embrittlement-inducing precipitation in the temperature range 550 – 950°C. Always consult the supplier of the parent metal or seek other expert advice to ensure that the correct heat treatment process is carried out.

Structure: Austenite with 20 – 30% ferrite.

Scaling temperature: Approx. 950°C (air).

Corrosion resistance: Superior to type 316L. Excellent resistance to pitting and crevice corrosion in chloride containing environments. The corrosion resistance obtained in the first layer when surfacing is equivalent to that of 316.

Approvals

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