Avesta Welding

FCW-2D P5

For welding steels such as					
Outokumpu	EN	ASTM	BS	NF	SS

AVESTA P5 is primarily used when 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 R M/C 3
AWS A5.22 E309LMoT0-4/-1

Characteristics and welding directions

AVESTA FCW-2D P5 is a molybdenum alloyed wire of the 309MoL 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-2D P5 is an all-round wire for welding in the flat, horizontal-vertical, vertical-up and overhead positions.

Welding data

Diameter mm	Welding position	Current A	Voltage V
1.20	Flat, horizontal	150 – 280	24 – 32
	Vertical-up	140 – 170	23 – 28
1.60	Flat, horizontal	200 – 320	28 – 34

Shielding gas

Ar + 15 – 25% CO_2 offers the best weldability, but 100% CO_2 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	0.6	1.4	22.7	12.3	2.7

Ferrite 25 FN WRC-92

Mechanical properties	Typical values (IIW)	Min. values EN ISO 17633
Yield strength $R_{p0,2}$	500 N/mm²	350 N/mm²
Tensile strength R_m	700 N/mm²	550 N/mm²
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 10 – 15% 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, corresponds to that of 316.

Approvals

- CE
- DB
- DNV
- GL
- TÜV