Avesta Welding

P5-4D

For welding steels such as					
Outokumpu	EN	ASTM	BS	NF	SS

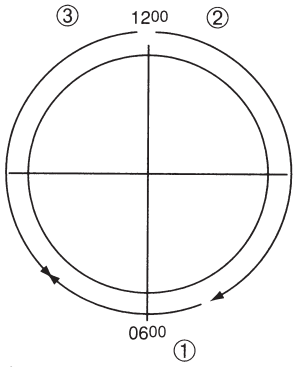
Over-alloyed electrode for surfacing unalloyed steel, joint welding non-molybdenum-alloyed stainless steel to unalloyed steel and welding clad material.

Standard designations

EN 1600	E 23 12 2 L R
AWS A5.4	E309MoL-17

Characteristics

AVESTA P5-4D is a molybdenum-alloyed electrode of the 309LMo type, which is primarily designed for surfacing low-alloy steels and for joining stainless and low-alloy steels (dissimilar joints). When used for surfacing, the composition obtained is more or less equal to that of ASTM 316 from the very first run. AVESTA P5-4D is primarily intended for pipe and position welding, but can also be used as a general purpose electrode, especially for thin material.



Pipe welding can be performed in several different ways. One possibility is to start welding in the overhead position (1), followed by vertical-down on both sides from the 12 o'clock position (2 and 3). Another possibility is to start at the 7 o'clock position and weld vertical-up to the 11 o'clock position on both sides. This requires an inverter power source with a remote control.

DC– is often preferred to bridge large root gaps and when welding stainless to unalloyed thin plates and pipes.

Welding data

DC+ or AC	Diam. mm	Current, A
	2.0	25 – 55
	2.5	30 – 85
	3.25	45 – 110

Typical analysis % (All weld metal)

C	Si	Mn	Cr	Ni	Mo
0.02	0.7	1.0	23.0	13.0	2.5

Ferrite 20 FN WRC-92

Mechanical properties	Typical values (IIW)	Min. values EN 1600
Yield strength $R_{p0.2}$	530 N/mm²	350 N/mm²
Tensile strength R_m	660 N/mm²	550 N/mm²
Elongation A_5	28 %	25 %
Impact strength KV +20°C	40 J	
Hardness approx.	220 Brinell	

Interpass temperature: Max. 150°C.

Heat input: Max. 2.0 kJ/mm.

Heat treatment: Generally none.
For constructions that include low-alloyed steels in mixed joints, a stress-relieving 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 15 – 20% ferrite.

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

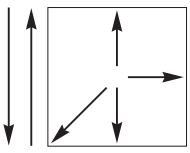
Corrosion resistance: Superior to 316L. The corrosion resistance obtained in the first layer when surface welding corresponds to that of 316.

Approvals

- CE
- TÜV

Welding positions

Ø 2.0–2.5



Ø 3.25