P5-VDX

www.avestawelding.com

Covered electrodes

For welding steel such as:

Outokumpu	EN	ASTM	SS*	BS*	NF*
Overalloyed electrode for surfacing unalloyed steel, joint welding molybdenum alloyed stainless steel to unalloyed steel and for welding clad material.					

* Obsolete national standards, replaced by EN 10088.

Characteristics

AVESTA P5-VDX AC/DC is a rutile-acid 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-VDX is specially designed for welding in the vertical down position, particularly with thin plates, e.g. corner welds.

Welding directions

Welding is best performed using DC+, but AC can also be used. Welding in the vertical down position requires well-adapted amperages. The degree of difficulty increases from the butt joint, through the corner joint and lap joint to the fillet joint. In the latter case it is especially important to use small tack welds or, in the case of stringent requirements, to interrupt welding and grind the tack weld.

Penetration increases with increasing amperages and also with increasing electrode inclination and has its maximum at 90°C. However, for optimum weldability, an inclination of approximately 60-70° is recommended.

Welding to primer-coated sheet should be avoided, as there is a significant risk of pore formation. The paint should therefore be removed from all surfaces that are likely to be exposed to temperatures above 500°C.

Weld deposit data

Metal recovery approx. 105 %.

Packaging data

Diam. mm	Length mm	Weight/ capsule, kg	Approx. No. of electrodes/ capsule	Weight/ carton, kg
2.0	250			
2.5	300	1.90	127	11.40
3.25	350	5.20	177	15.60

Standard designations

EN 1600 E 23 12 2 L R

Typical analysis % (All weld metal)

C	Si	Mn	Cr	Ni	Mo
0.02	0.9	0.9	22.5	13.5	2.7

Ferrite 20 FN WRC-92

Mechanical properties	Typical values (IIW)		Min. values EN 1600	
Yield strength, $Rp_{0,2}$	545	N/mm²	350	N/mm²
Tensile strength, R_m	685	N/mm²	550	N/mm²
Elongation, A_5	30	%	25	%
Impact strength, KV +20°C	40	J		
Hardness approx.	225	Brinell		

Welding data

DC+ or AC	Diam., mm	Current, A
	2.0	35– 55
	2.5	50– 70
	3.25	95–105

Interpass temperature: Max. 150°C.

Heat input: Max. 2.0 kJ/mm.

Heat treatment: Generally none. For constructions, which 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.

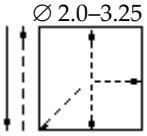
Structure: Austenite with 15–20 % ferrite.

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: –

Welding positions



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