Avesta Welding

P625 basic

For welding steels such as					
Outokumpu	EN	ASTM	BS	NF	SS
–	2.4856	N06625	–	–	–

Also for welding nickel base alloys to stainless or unalloyed steels and for surfacing.

Standard designations

EN ISO 14172 E Ni Cr 22 Mo 9 Nb
AWS A5.11 ENiCrMo-3

Characteristics

AVESTA P625 basic is a nickel base electrode intended for welding nickel base alloys. Due to its higher niobium content compared to P12-R, P625 is well suited for welding nickel alloys such as Inconel 625 and Incoloy 825 for use in high temperature applications. P625 has a fully austenitic structure which makes it somewhat more sensitive to hot cracking than for example 316L. Welding should be performed taking great care about low heat input and interpass temperature.

Welding data

DC+	Diam., mm	Current, A
	2.5	40 – 70
	3.25	60 – 95
	4.0	90 – 135

Weld deposit data at maximum welding current

Electrode diam. mm	Electrode length mm	N	B	H	T	Metal recov. ~%
2.5	300	0.64	88	0.99	42	106
3.25	350	0.66	44	1.38	59	105
4.0	350	0.68	29	1.97	63	106

Chemical composition, wire (typical values, %)

C	Si	Mn	Cr	Ni	Mo	Nb	Fe
0.02	0.5	0.2	21.5	Bal.	9.5	3.5	1.5

Ferrite 0 FN

Mechanical Properties	Typical values (IIW)	Min. values EN ISO 14172
Yield strength $R_{p0,2}$	480 N/mm²	420 N/mm²
Tensile strength R_m	770 N/mm²	760 N/mm²
Elongation A_5	30 %	27 %
Impact strength KV		
+20°C	60 J	
–40°C	50 J	
Hardness	220 Brinell	

Interpass temperature: Max. 100°C.

Heat input: Max. 1.5 kJ/mm.

Heat treatment: Generally none (in special cases quench annealing at 1150 – 1200°C.

Structure: Fully austenitic.

Scaling temperature: Approx. 1100°C

Corrosion resistance: Maximum resistance to pitting and crevice corrosion in chloride containing environments. Good resistance in sulphuric acids contaminated by chlorides.

Approvals

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Welding positions

Ø 2.5–3.25 Ø 4.0