

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-HX AC/DC is a high recovery electrode offering good welding properties with both positive pole DC and AC.

AVESTA P5-HX produces weld beads with very good geometry. Due to its special high recovery properties, this electrode produces a large amount of weld metal in a short space of time, with the result that the heat effect on the parent metal is relatively low.

#### Welding directions

When welding stainless steel to unalloyed or low-alloyed steels, it is advisable/necessary to reduce the dilution of the weld as much as possible. Welding should therefore be performed with a limited heat input and appropriate bevel angle.

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 at maximum welding current

Diam. mm	Length mm	N	B	H	T	Metal recovery, approx. %
4.0	450	0.67	16	3.26	69	151
5.0	450	0.65	11	4.08	82	144

#### Packaging data

Diam. mm	Length mm	Weight/ capsule, kg	Approx. No. of electrodes/ capsule	Weight/ carton, kg
4.0	450	5.70	59	17.10
5.0	450	4.80	33	14.40

Approvals: –

#### Standard designations

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

#### Typical analysis % (All weld metal)

C	Si	Mn	Cr	Ni	Mo
0.03	0.8	1.0	22.0	13.5	2.7

Ferrite 20 FN DeLong

#### Mechanical properties

	Typical values (IIW)	Min. values EN 1600
Yield strength, R <sub>p0.2</sub>	450 N/mm <sup>2</sup>	350 N/mm <sup>2</sup>
Tensile strength, R <sub>m</sub>	625 N/mm <sup>2</sup>	550 N/mm <sup>2</sup>
Elongation, A <sub>5</sub>	30 %	25 %
Impact strength, KV +20°C	35 J	
Hardness approx.	220 Brinell	

#### Welding data

DC+ or AC	Diam., mm	Current, A
	4.0	110–170
	5.0	170–230

**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 15–20 % ferrite.

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

**Corrosion resistance:** Superior to 316L. When surfacing mild steel a corrosion resistance equivalent to that of ASTM 316 is obtained already in the first bead.

#### Welding positions

Ø 4.0–5.0

