Avesta 318/SKNb // Flux 801

SAW Wire/flux combination, high-alloyed

Classification

EN ISO 14343-A	AWS A5.9
S 19 12 3 Nb	ER318

Characteristics and typical fields of application

Avesta 318/SKNb is used for welding titanium and niobium stabilized steel type 17 Cr 11 Ni 2.5 Ti or similar. A stabilized weld metal possesses improved high temperature properties, e.g. creep resistance, compared to low-carbon non-stabilized materials. 318/SKNb shows somewhat better properties than 316L/SKR at elevated temperatures and is therefore recommended for applications where service temperatures exceed 400 °C.

Structure: Austenite with 5 – 10 % ferrite.

Scaling temperature: Approx. 850 °C (air).

Corrosion resistance:

The corrosion resistance corresponds to that of ASTM 316Ti, i.e. good resistance to general, pitting and intercrystalline corrosion.

Base materials

Outokumpu 4571, ASTM 316Ti, EN 1.4571

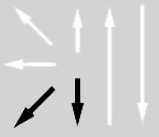
Typical analysis of the solid wire and all-weld-metal (wt.-%)

	C	Si	Mn	Cr	Ni	Mo	Nb	Ferrite
Wire	0.04	0.4	1.3	19.0	12.0	2.6	> 12xC	8 FN (DeLong)
Flux 801	0.04	0.9	-	19.0	11.5	2.6	0.6	13 FN (DeLong)
Flux 805	0.04	0.6	-	19.5	11.5	2.6	0.6	14 FN (DeLong)

Mechanical properties of all-weld-metal

Flux	Yield strength $R_{p0.2}$	Tensile strength R_m	Elongation (L_0=5d_0)	Impact work ISO-V KV J	Hardness
	MPa	MPa	%	+20 °C	Brinell
805	490	660	30	50	220

Operating data



Polarity	Re-drying:	ø (mm)
DC (+)	300 – 350 °C / min. 2 h	2.4 3.2

Heat treatment: Generally none (in special cases quench annealing at 1050 °C).

Interpass temperature: Max. 100 °C.

Heat input: Max. 1.5 kJ/mm.

Approvals

TÜV, CE