

Classification

EN ISO 14343-A	AWS A5.9
S 19 9 Nb	ER347

Characteristics and typical fields of application

Avesta 318/SKNb is used for welding titanium and niobium stabilized steel type 19 Cr 10 Ni Ti or similar, providing improved high temperature properties, e.g. creep resistance, compared to low-carbon non-stabilized materials. 347/MVNB is therefore primarily used for applications where service temperatures exceed 400 °C.

Structure: Austenite with 5 – 10 % ferrite.

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

Corrosion resistance:

347/MVNB is primarily intended for high temperature service or applications that should be heat treated. However, the corrosion resistance corresponds to 308H, i.e. good resistance to general corrosion.

Base materials

Outokumpu 4541, ASTM 321, 347, EN 1.4541, 1.4550


Typical analysis of the solid wire (wt.-%)

	C	Si	Mn	Cr	Ni	Nb	Ferrite
Wire	0.04	0.4	1.3	19.5	9.5	> 12xC	6 FN (DeLong)
Flux 801	0.04	0.9	0.5	19.5	9.5	0.7	11 FN (DeLong)
Flux 805	0.04	0.6	0.8	20.0	9.5	0.7	12 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
801	450	640	34	60	220
805	440	640	35	70	220

Operating data

	Polarity DC (+)	Re-drying: 300 – 350 °C / min. 2 h	ø (mm) 2.4 3.2 4.0
---	-----------------------------	--	------------------------------------

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

Interpass temperature: Max. 150 °C.

Heat input: Max. 2.0 kJ/mm.

Approvals

TÜV, CE