

347/MVNB

For welding steels such as Outokumpu	EN	ASTM	BS	NF	SS
4541	1.4541	321	321S31	Z6 CNT 18-10	2337
–	1.4550	347	347S31	Z6 CNNb 18-10	2338

Standard designations

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

Characteristics and welding directions

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

Welding data

Diameter, mm	Current, A	Voltage, V
2.00	250 – 350	28 – 32
2.40	300 – 400	29 – 33
3.20	350 – 500	29 – 33
4.00	425 – 575	30 – 34

Welding flux: AVESTA Flux 801, 805 or 807.

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.

Approvals

In combination with flux

801 • CE • TÜV
807 • CE • TÜV

Chemical composition, wire (typical values, %)

C	Si	Mn	Cr	Ni	Nb
0.04	0.40	1.3	19.5	9.5	>12 x C
Ferrite	6 FN 7 FN	DeLong WRC-92			

Chemical composition, all weld metal (typical values in combination with flux, %)

Flux	C	Si	Mn	Cr	Ni	Nb	FN ¹⁾
801	0.04	0.9	0.5	19.5	9.5	0.7	11
805	0.04	0.6	0.8	20.0	9.5	0.7	12
807	0.04	0.6	0.8	19.0	10.0	0.7	6

¹⁾ According to DeLong.

Mechanical properties

Typical values (IIW) in combination with flux

	801	805
Yield strength $R_{p0.2}$	450 N/mm ²	440 N/mm ²
Tensile strength R_m	640 N/mm ²	640 N/mm ²
Elongation A_5	34 %	35 %
Impact strength KV +20°C	60 J	70 J
Hardness	220 Brinell	

Interpass temperature: Max. 150°C.

Heat input: Max. 2.0 kJ/mm.

Heat treatment: Generally none (in special cases quench annealing at 1050°C). The 347 type wire can be used for cladding, which normally requires stress relieving at around 590°C. Always consult expertise before performing post-weld heat treatment.

Structure: Austenite with 5 – 10% ferrite.

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