

# 318/SKNb

For welding steels such as Outokumpu	EN	ASTM	BS	NF	SS
4571	1.4571	316Ti	320S31	Z6 CNDT 17-12	2350

## Standard designations

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

## Characteristics and welding directions

AVESTA 318/SKNb is used for welding titanium and niobium stabilised steel type 17 Cr 11 Ni 2.5 Ti or similar.

A stabilised weld metal possesses improved high temperature properties, e.g. creep resistance, compared to low-carbon non-stabilised 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.

## Welding data

Diameter, mm	Current, A	Voltage, V
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:** The corrosion resistance corresponds to that of ASTM 316Ti, i.e. good resistance to general, pitting and intercrystalline corrosion.

## Approvals

In combination with flux

801 • CE • TÜV  
 807 • CE • TÜV

## Chemical composition, wire (typical values, %)

C	Si	Mn	Cr	Ni	Mo	Nb
0.04	0.40	1.3	19.0	12.0	2.6	>12 x C
Ferrite	8 FN 7 FN	DeLong WRC-92				

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

Flux	C	Si	Cr	Ni	Mo	Nb	FN <sup>1)</sup>
801	0.04	0.9	19.0	11.5	2.6	0.6	13
805	0.04	0.6	19.5	11.5	2.6	0.6	14
807	0.04	0.6	18.5	12.0	2.6	0.6	8

<sup>1)</sup> According to DeLong.

## Mechanical properties

Typical values (IIW) in combination with flux

	805
Yield strength $R_{p0,2}$	490 N/mm <sup>2</sup>
Tensile strength $R_m$	660 N/mm <sup>2</sup>
Elongation $A_5$	30 %
Impact strength KV	
+20°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 1050°C).

**Structure:** Austenite with 5 – 10% ferrite.

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