

Avesta 318-Si/SKNb-Si

TIG rod

Classifications

high-alloyed

EN ISO 14343-A:

AWS A5.9:

W 19 12 3 Nb Si

ER318 (mod.)

Characteristics and field of use

Avesta 318-Si/SKNb-Si is designed for welding steels that are stabilised with titanium or niobium such as 1.4571/ASTM 316Ti and similar, providing improved high temperature properties, e.g. creep resistance, compared to low-carbon non-stabilised materials. 318-Si/SKNb-Si shows better properties than 316L-Si/SKR-Si at elevated temperatures and is therefore recommended for applications with service temperatures above 400°C. A stabilised weldment has improved high temperature properties, e.g. creep resistance, compared to low-carbon non-stabilised grades.

Corrosion resistance:

Corresponding to 1.4571/ASTM 316Ti, i.e. good resistance to general, pitting and intergranular corrosion.

Base materials

For welding steels such as

Outokumpu	EN	ASTM	BS	NF	SS
4571	1.4571	316Ti	320S31	Z6 CNDT 17-12	2350

Typical composition of welding rod (Wt-%)

C	Si	Mn	Cr	Ni	Mo	Nb
0.04	0.85	1.3	19.0	12.0	2.6	>12xC

7 FN; WRC- 92

Mechanical properties of all-weld metal

Heat Treatment	Yield strength 0.2%	Tensile strength	Elongation ($L_0=5d_0$)	Impact values in J CVN	
	MPa	MPa	%	+20°C:	-40°C:
untreated	520	690	31	110	60

Operating data



Polarity = -

Shielding gas:

Ar (99.95%) or Ar with an addition of 20 – 30% helium (He) or 1 – 5% hydrogen (H₂). The addition of helium (He) and hydrogen (H₂) will increase the energy of the arc. Gas flow rate 4 – 8 l/min.

Dimensions (mm)

1.6	2.0	2.4	3.2
-----	-----	-----	-----