

# 316L-Si/SKR-Si

For welding steels such as Outokumpu	EN	ASTM	BS	NF	SS
4436	1.4436	316	316S33	Z7 CND 18-12-03	2343
4432	1.4432	316L	316S13	Z3 CND 17-12-03	2353
4429	1.4429	S31653	316S63	Z3 CND 17-12 Az	2375
4571	1.4571	316Ti	320S31	Z6 CNDT 17-12	2350

## Standard designations

EN ISO 14343 G 19 12 3 L Si

AWS A5.9 ER316LSi

## Characteristics and welding directions

AVESTA 316L-Si/SKR-Si is designed for welding austenitic stainless steel of type 17 Cr 12 Ni 2.5 Mo or similar. The filler metal is also suitable for welding titanium and niobium stabilised steels such as ASTM 316Ti in cases where the construction is used at temperatures not exceeding 400°C. For higher temperatures, a niobium stabilised consumable such as AVESTA 318-Si/SKNb-Si is required.

## Welding data

	Diameter mm	Current A	Voltage V
Short arc	0.80	90 – 120	18 – 22
	1.00	110 – 140	19 – 22
Spray arc	1.00	160 – 220	25 – 29
	1.20	200 – 270	26 – 30
	1.60	250 – 330	29 – 32
Pulsed arc	1.20	$I_{peak} = 350 - 450 \text{ A}$ $I_{bkg} = 50 - 150 \text{ A}$ Freq = 80 – 120 Hz	

## Shielding gas

Ar + 2% O<sub>2</sub> or 2 – 3% CO<sub>2</sub>.

Gas flow rate 12 – 16 l/min.

## Chemical composition, wire

(typical values, %)

	C	Si	Mn	Cr	Ni	Mo
	0.02	0.85	1.7	18.5	12.0	2.6
Ferrite		9 FN 7 FN	DeLong WRC-92			

## Mechanical properties

	Typical values (IIV)	Min. values EN ISO 14343
Yield strength R <sub>p0,2</sub>	400 N/mm <sup>2</sup>	320 N/mm <sup>2</sup>
Tensile strength R <sub>m</sub>	600 N/mm <sup>2</sup>	510 N/mm <sup>2</sup>
Elongation A <sub>5</sub>	36 %	25 %
Impact strength KV		
+20°C	110 J	
-196°C	50 J	
Hardness	210 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).

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

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

**Corrosion resistance:** Excellent resistance to general, pitting and intercrystalline corrosion in chloride containing environments.

Intended for severe service conditions, e.g. in dilute hot acids.

## Approvals

- CE
- DNV
- TÜV
- DB
- GL