

316L/SKR

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 S 19 12 3 L

AWS A5.9 ER316L

Characteristics and welding directions

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

Welding data

Diameter, mm	Current, A	Voltage, V
1.60	200 – 300	26 – 30
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: Excellent resistance to general, pitting and intercrystalline corrosion in chloride containing environments. Intended for severe service conditions, e.g. in dilute hot acids.

Approvals

In combination with flux

801	• CE	• DNV	• TÜV
805	• CE	• DNV	• TÜV
807	• CE	• TÜV	

Chemical composition, wire (typical values, %)

C	Si	Mn	Cr	Ni	Mo
0.02	0.40	1.7	18.5	12.0	2.6

Ferrite	8 FN	DeLong
	8 FN	WRC-92

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

Flux	C	Si	Mn	Cr	Ni	Mo	FN ¹⁾
801	0.02	0.9	1.0	19.0	12.0	2.6	13
805	0.02	0.6	1.2	19.5	12.0	2.6	14
807	0.02	0.6	1.2	18.5	12.0	2.6	8

¹⁾ According to DeLong.

Mechanical properties

Typical values (IIW) in combination
with flux

	801	805
Yield strength $R_{p0.2}$	430 N/mm ²	430 N/mm ²
Tensile strength R_m	580 N/mm ²	570 N/mm ²
Elongation A_5	36 %	36 %
Impact strength KV		
+20°C	70 J	80 J
-196°C	–	35 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).