316L/SKR basic

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Covered electrodes

For welding steel such as:

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

* Obsolete national standards, replaced by EN 10088.

Characteristics

AVESTA 316L/SKR basic has a basic coating, which produces a weld metal that ensures safety against the formation of pores and cracks and possesses very good mechanical properties. The composition of the coating, characteristic of basic electrodes, gives very good penetration and position welding properties.

AVESTA 316L/SKR basic is used for welding austenitic chromium-nickel-molybdenum steels of the ASTM 316 and 316L types. It can also be used for welding niobium and titanium-stabilised steels such as ASTM 316Ti and 316Nb. However, if the welded component is intended for use at temperatures exceeding 752°F (400°C) stabilised welding electrodes (AVESTA 318/SKNb) should be used.

Welding directions

AVESTA 316L/SKR basic should be welded using a short arc and DC (positive polarity). High amperages causing overheating of the electrode should be avoided. The proper amperage and welding speed should be chosen in order to avoid producing large weld pools.

Packaging data

Diam. inch	Diam. mm	Length mm/inch	Weight/ capsule, lbs	Eectrodes/ capsule, approx.	Weight/ carton, lbs
3/32	2.5	300 / 12	3.7	102	22
1/8	3.25	350 / 14	9.1	125	27
5/32	4.0	350 / 14	10.6	101	32

Approvals: -

Standard designations

EN 1600	E 19 12 3 L B
AWS A5.4	E316L-15

Typical analysis % (All weld metal)

C	Si	Mn	Cr	Ni	Mo
0.03	0.2	1.7	18.5	12.0	2.8
Ferrite	5 FN DeLong				

Mechanical properties	Typical values (IIW)		Min. values EN 1600	
Yield strength, Rp0,2	430	N/mm2	62	ksi
Tensile strength, R_m	565	N/mm²	82	ksi
Elongation, A_5	34	%	34	%
Impact strength, KV				
+20°C	70	J	52	ft·lb
-40°C	50	J	37	ft·lb
-196°C	25	J	18	ft·lb
Hardness approx.	210	Brinell		

Welding data

DC+	Diam., inch	Current, A
	3/32	50– 70
	1/8	70–110
	5/32	100–150

Interpass temperature: Max. 300°F (150°C).

Heat input: Max. 50.8 kj/in (2.0kj/mm)

Heat treatment: Generally none. In special cases quench annealing at 1922°F (1050°C).

Structure: Austenite with 5–10 % ferrite.

Scaling temperature: Approx. 1562°F (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.

Welding positions