

For welding steel such as:

Outokumpu	EN	ASTM	SS*	BS*	NF*
4401	1.4401	316	2347	316S16	Z7 CND 17-11-02
4571	1.4571	316Ti	2350	320S17	Z6 CNDT 17-12
-	1.4919	316H	2347	S316S51	Z6 CND 17-13

* Obsolete national standards, replaced by EN 10088.

Characteristics

AVESTA 316/316H AC/DC has a rutile-acid type coating that provides very good weldability when working with both positive pole DC and AC.

AVESTA 316/316H is used for welding steels of type ASTM 316 and 316H. The elevated carbon content has a positive effect on the creep resistance which is an advantage for applications with service temperatures exceeding 400°C.

AVESTA 316/316H may also be used for welding titanium and niobium-stabilised steels, such as 316Ti, except in cases where the construction is intended for service at temperatures exceeding 400°C. In that case, AVESTA 318/SKNb is recommended.

Welding directions

AVESTA 316/316H should be welded using a short arc or with its coating sliding on the workpiece. Positive pole DC is preferable. The best result is achieved by using an amperage in the upper region of the amperage range stated.

Weld deposit data at maximum welding current

Diam. mm	Length mm	N	B	H	T	Metal recovery, approx. %
2.5	300	0.55	91	0.99	40	110
3.25	350	0.59	45	1.66	50	108
4.0	350	0.62	30	2.21	58	107
5.0	350	0.65	20	2.99	61	104

Packaging data

Diam. mm	Length mm	Weight/capsule, kg	Approx. No. of electrodes/capsule	Weight/carton, kg
2.5	300	3.63	186	10.89
3.25	350	4.10	107	12.30
4.0	350	4.10	74	12.30
5.0	350	4.54	58	13.62

Standard designations

EN 1600 E 19 12 2 R
AWS A5.4 E316H-17

Typical analysis % (All weld metal)

C	Si	Mn	Cr	Ni	Mo
0.06	0.8	1.0	19.0	12.0	2.8
Ferrite		5 FN DeLong			

Mechanical properties

	Typical values (IIW)	Min. values EN 1600
Yield strength, R _{p0.2}	470 N/mm ²	320 N/mm ²
Tensile strength, R _m	615 N/mm ²	550 N/mm ²
Elongation, A ₅	35 %	25 %
Impact strength, KV +20°C	50 J	
Hardness approx.	210 Brinell	

Welding data

DC+ or AC	Diam., mm	Current, A
	2.5	50– 80
	3.25	80–120
	4.0	100–160
	5.0	160–220

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: CWB, TÜV

Welding positions

