

Stainless steel electrode

Classification

AWS A5.4-92 : E318-16
EN 1600-97 : E 19 12 3 Nb R 12

Temperature Range

pressure parts: -60...+400°C
oxidation resistance: n.a.

General description

Rutile basic all position stainless steel electrodes for welding
Ti or Nb stabilized 316 or equivalent steels
High resistance to general and intergranular corrosion
Smooth bead appearance
Easy slag release
Strong electrode coating
Weldable on AC and DC
Also available in vacuum sealed Sahara ReadyPack® (SRP)

Welding positions



Current type

AC / DC elektr. + / -

Approvals

CTL	TÜV
+	+

Chemical composition (w%), typical, all weld metal

C	Mn	Si	Cr	Ni	Mo	Nb	FN
0.030	0.8	0.85	18.0	11.5	2.7	0.35	6-12

Mechanical properties, all weld metal

Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)		
				+20°C	-20°C	-60°C
Required: AWS A5.4-92	not required	min. 550	min. 25	not required		
EN 1600-97	min. 350	min. 550	min. 25	not required		
Typical values	AW 500	630	38	60	50	35

Packaging, available sizes and identification

Unit: Box	Diameter (mm)	2.0	2.5	3.2	4.0	5.0
	Length (mm)	300	350	350	350	450
Pieces / unit (nominal)		225	135	140	90	65
Net weight/unit (kg)		2.4	2.8	5.0	4.8	6.7

Identification

Imprint: 318-16 /Arosta 318

Tip colour: white

Arosta® 318: rev. EN 15

Materials to be welded

Steel grades	EN 10088-1/-2	EN 102 13-4	W.Nr.	ASTM/ACI A240/A312/A351	UNS
Extra low carbon C <0.03%	X2 CrNiMo 17-12-2		1.4404	(TP)316L CF-3M	S31603 J92800
	X2 CrNiMo 18-14-3		1.4435	(TP)316L	S31603
	X2 CrNiMoN 17-11-2		1.4406	(TP)316LN	S31653
	X2 CrNiMoN 17-13-3		1.4429		
Medium carbon C >0.03%	X4 CrNiMo 17-12-2		1.4401	(TP)316	S31600
	X4 CrNiMo 17-13-3		1.4436		
Ti-, Nb stabilized		GX5 CrNiMo 19-11	1.4408	CF 8M	J92900
	X6 CrNiMoTi 17-12-2		1.4571	316Ti	S31635
	X6 CrNiMoNb 17-12-2		1.4580	316Cb	S31640
	X6 CrNiNb 18-10		1.4550	(TP)347	S34700
		GX5 CrNiNb 19-10	1.4552	CF-8C	J92710

Calculation data

Sizes Diam. x length (mm)	Current range type (A)	Current	Arc time - per electrode at max. current - (s)*	Energy E(kJ)	Dep.rate H(kg/h)	Weight/ 1000 pcs. (kg)	Electrodes/ kg weldmetal B	kg Electrodes/ kg weldmetal 1/N
2.0 x 300	30 - 60	DC+	36	36	0.65	10.7	152	1.64
2.5 x 350	40 - 90	DC+	46	82	0.98	20.3	80	1.64
3.2 x 350	70 - 110	DC+	52	137	1.4	32.1	48	1.54
4.0 x 350	90 - 140	DC+	61	212	1.9	48.6	31	1.49

* stub end 35mm

Welding parameters, optimum fill passes

Welding positions Diameter (mm)	PA/1G Current (A)	PB/2F	PC/2G	PF/3G up	PE/4G	PF/5G up
2.0		45	45	40	40	40
2.5	70	70	70	60	60	60
3.2	100	100	100	70	70	70
4.0	140	140	140	80		

For root passes DC- is recommended.