

Stainless steel electrode

Classification

AWS A5.4 : E309L-17
EN 1600 : E 23 12 L R 32

Temperature range

pressurized parts : -120 ... +350°C
scaling resistance : n.a.

General description

A rutile-basic all position CrNi over-alloyed buffer electrode
Developed for welding stainless steel to mild steel and for clad steel
Self releasing slag
Excellent side wall wetting, no undercut, mirror like bead appearance
High resistance to porosity
Weldable on AC and DC+ polarity
Also available in vacuum sealed Sahara ReadyPack® (SRP)

Welding positions



ISO/ASME PA/1G PB/2F PC/2G PF/3Gup PE/4G PF/5Gup

Current type

AC / DC +

Approvals

DNV	GL	LR	RMRS	TÜV
309L	4432	SS/CMn	SS/CMn	+

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

C	Mn	Si	Cr	Ni	FN
0.02	0.8	1.0	23.0	12.5	10-20

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
Required: AWS A5.4 EN 1600		not required min. 320	min. 520 min. 510	min. 30 min. 25	not required not required	
Typical values	AW	480	560	40	55	50

Packaging and available sizes

	Diameter (mm)	2.0	2.5	3.2	4.0	5.0
	Length (mm)	300	350	350	450	450
Unit: Box	Pieces / unit	200	125	135	85	55
	Net weight/unit (kg)	2.3	2.8	4.9	5.9	6.0
Unit: SRP	Pieces / unit	60	65	50	28	22
	Net weight/unit (kg)	0.6	1.5	1.8	2.0	2.4
Unit: Linc Can™	Pieces / unit		197	127	79	
	Net weight/unit (kg)		4.4	4.5	5.4	

Identification

Imprint: 309L-17 / LIMAROSTA 309 S

Tip Color: sea green

Limarosta® 309S: rev. EN 21

Materials to be welded

Steel grades	EN 10088-1/-2	W.Nr.	ASTM/ACI A240/A312/A351	UNS
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Corrosion resistant cladsteels

X2 CrNiN 18-10	1.4311	(TP)304LN	S30453
X2 CrNi 19-11	1.4306	(TP)304L CF-3	S30403 J92500
X4 CrNi 18-10	1.4301	(TP)304	S30400

Dissimilar metals (mild and low alloyed steel to CrNi or CrNiMo stainless steel)

Build-up welding on mild and low alloyed steel

Bufferlayer CrNi-cladsteel

Calculation data

Sizes Diam. x length (mm)	Current range (A)	Current type	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	35 - 55	DC+	38	49	0.66	11.3	142	1.59
2.5 x 350	45 - 80	DC+	48	95	0.99	22.1	77	1.69
3.2 x 350	80 - 115	DC+	56	160	1.4	35.1	46	1.59
4.0 x 450	100 - 155	DC+	76	317	2.0	69.9	23	1.64
5.0 x 450	150 - 220	DC+	84	575	2.9	108.0	15	1.59

* stub end 35 mm

Welding parameters, optimum fill passes

Welding positions Diameter (mm)	PA/1G	PB/2F	PC/2G	PF/3G up	PE/4G	PF/5G up
2.0		45A	45A	40A	40A	40A
2.5	70A	70A	70A	60A	60A	60A
3.2	100A	100A	100A	70A	70A	70A
4.0	140A	140A	140A			
5.0	180A	180A				