

## Stainless steel electrode

### Classification

AWS A5.4 : E316L-17  
EN 1600 : E 19 12 3 L R 12

### Temperature range

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

### General description

A rutile-basic all position stainless steel electrode for 316L or equivalent steels

Molybdenum level min. 2.7 %

Mirror like bead appearance

Self releasing slag

Good side wall fusion, no undercut

High resistance to porosity

Weldable on AC and DC

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	LR	RMRS	TÜV
316LH10	316L	316L	+

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

C	Mn	Si	Cr	Ni	Mo	FN
0.02	0.8	1.0	18.0	11.5	2.8	04-10

### Mechanical properties, all weld metal

	Condition	0.2% Proof strength (N/mm <sup>2</sup> )	Tensile strength (N/mm <sup>2</sup> )	Elongation (%)	Impact ISO-V(J)		
					+20°C	-20°C	-105°C
Required: AWS A5.4		not required	min. 490	min. 30	not required		
EN 1600		min. 320	min. 510	min. 25	not required		
Typical values	AW	450	580	40	70	60	40

### Packaging and available sizes

	Diameter (mm)	1.5	2.0	2.5	3.2	4.0	5.0
	Length (mm)	250	300	350	350	450	450
Unit: Box	Pieces / unit	125	200	125	135	85	55
	Net weight/unit (kg)	0.8	2.3	2.7	4.8	5.9	5.9
Unit: SRP	Pieces / unit		57	65	52	28	22
	Net weight/unit (kg)		0.6	1.5	1.8	2.0	2.4
Unit: Linc Pack	Pieces / unit			47	28		
	Net weight/unit (kg)			1.0	1.0		
Unit: Linc Can™	Pieces / unit			202	124	79	
	Net weight/unit (kg)			4.4	4.3	5.3	

### Identification

Imprint: 316L-17 / LIMAROSTA 316 L Tip Color: pink

Limarosta® 316L: rev. EN 21

## Materials to be welded

Steel grades	EN 10088-1/-2	EN 102 13-4	W.Nr.	ASTM/ACI A240/A312/A351	UNS
<b>Extra low carbon (C &lt;0.03%)</b>					
	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		
<b>Medium carbon (C &gt;0.03%)</b>					
	X4 CrNiMo 17-12-2		1.4401	(TP)316	S31600
	X4 CrNiMo 17-13-3		1.4436		
		GX5 CrNiMo 19-11	1.4408	CF 8M	J92900
<b>Ti-, Nb stabilized</b>					
	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 (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
1.5 x 250	20 - 40							
2.0 x 300	35 - 50	DC+	39	49	0.59	11.4	155	1.79
2.5 x 350	45 - 80	DC+	46	92	0.95	21.5	83	1.79
3.2 x 350	80 - 115	DC+	51	157	1.5	35.3	48	1.69
4.0 x 450	100 - 155	DC+	75	339	1.9	69.2	24	1.69
5.0 x 450	150 - 220	DC+	85	577	2.7	107.8	16	1.69

\* 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				

For root passes DC- is recommended.