

## Stainless steel electrode

## Classification

AWS A5.4 : E308L-15  
EN 1600 : E 19 9 L R 21

## Temperature range

pressurized parts : -196...+350°C  
oxidation resistance : to 800°C

## General description

A rutile-basic stainless steel electrode for welding 304L or equivalent steels  
Specially developed for vertical down welding on DC  
Root passes in grooves with root opening  
High corrosion resistance in oxidizing environments

## Welding positions



ISO/ASME PG/3Gdown

## Current type

DC +

## Approvals

TÜV

+

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

C	Mn	Si	Cr	Ni	FN
0.02	0.8	0.7	20.0	9.8	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
Required: AWS A5.4		not required	min. 520	min. 35	not required	
EN 1600		min. 320	min. 510	min. 30	not required	
Typical values	AW	440	600	40	70	50

## Packaging and available sizes

	Diameter (mm)	2.5	3.2
	Length (mm)	300	300
Unit: Box	Pieces / unit	190	130
	Net weight/unit (kg)	2.9	3.1

## Identification

Imprint: 308L-15 / VERTAROSTA 304 L Tip Color: grey

Vertarosta® 304L: 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 CrNi 19 11		1.4306	(TP)304L CF-3	S30403 J92500
	X2 CrNiN 18 10		1.4311	(TP)304LN 302,304	S30453 S30400
<b>Medium carbon (C &gt;0.03%)</b>					
	X4 CrNi 18 10		1.4301	(TP)304	S30409
		GX5 CrNi 19 10	1.4308	CF 8	J92600
<b>Ti-, Nb stabilized</b>					
	X6 CrNiTi 18 10		1.4541	(TP)321 (TP)321H	S32100 S32109
	X6 CrNiNb 18 10		1.4550	(TP)347 (TP)347H	S34700 S34709
		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
2.5 x 300	60 - 70	DC+	44	65	0.81	15.0	101	1.52
3.2 x 300	80 - 110	DC+	51	117	1.2	23.5	59	1.39

\* stub end 35 mm

## Welding parameters, optimum fill passes

Welding positions	3G down
Diameter (mm)	
2.5	70A
3.2	100A