

Vertarosta® 316L

EMR  
SAHARA®

SMAW

CLASSIFICATION

AWS A5.4	E316L-15	A-Nr	8	Mat-Nr	1.4430
ISO 3581-A	E 19 12 3 L R 2 1	F-Nr	5		
		9606 FM	5		

TEMPERATURE RANGE

Pressurized parts : -60...+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 %  
Specially developed for vertical down welding on DC  
Root passes in grooves with root opening  
High general corrosion resistance

WELDING POSITIONS (ISO/ASME)



PG/3Gd

CURRENT TYPE

AC/DC +

APPROVALS

ABS	BV	DNV	GL	LR	TÜV
+	316L	316L	4429	316L	+

CHEMICAL COMPOSITION (W%), TYPICAL, ALL WELD METAL

C	Mn	Si	Cr	Ni	Mo	FN (acc.WRC 1992)
0.02	0.7	0.85	18.0	11.5	2.8	4-10

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition	0.2% Proof strength [N/mm²]	Tensile strength [N/mm²]	Elongation [%]	Impact ISO-V(J)		
					+20°C	-20°C	-60°C
Required: AWS A5.4 ISO 3581-A Typical values	AW	not required min. 320 500	min. 490 min. 510 620	min. 30 min. 25 35	not required not required 50	45	35

PACKAGING AND AVAILABLE SIZES

	Diameter (mm)	2.5	3.2
	Length (mm)	300	300
Carton + PE foil	Pieces / unit	190	130
	Net weight/unit (kg)	2.9	3.1

Identification Imprint: 316L-15 / VERTAROSTA 316 L Tip Color: brown

Vertarosta® 316L: rev. C-EN24-01/02/16

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## EXAMPLES OF MATERIALS TO BE WELDED

Steel grades	EN 10088-1/-2	EN 10213-4	Mat. Nr	ASTM/ACI A240/A312/A351	UNS
<b>Extra low carbon [C &lt;0.03%]</b>					
	X2CrNiMo17-12-2		1.4404	(TP)316L CF-3M	S31603 J92800
	X2CrNiMo18-14-3		1.4435	(TP)316L	S31603
	X2CrNiMoN17-12-2		1.4406	(TP)316LN	S31653
	X2CrNiMoN17-13-3		1.4429		
<b>Medium carbon [C &gt;0.03%]</b>					
	X4CrNiMo17-12-2		1.4401	(TP)316	S31600
	X4CrNiMo17-13-3		1.4436		
		GX5CrNiMo19-11	1.4408	CF 8M	J92900
<b>Ti-, Nb stabilized</b>					
	X6CrNiMoTi17-12-2		1.4571	316Ti	S31635
	X6CrNiMoNb17-12-2		1.4580	316Cb	S31640
	X6CrNiNb18-10		1.4550	(TP)347	S34700
		GX5CrNiNb19-10	1.4552	CF-8C	J92710

SMAW

## 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	71	0.83	14.9	98	1.47
3.2 x 300	80-110	DC+	47	118	1.3	23.9	59	1.41

\*Stub end 35mm

## WELDING PARAMETERS, OPTIMUM FILL PASSES

Diameter (mm)	Welding positions PG/3Gdown
2.5	70A
3.2	100A