

Stainless steel electrode

Classification

EN 1600-97 : E 18 16 5 N L R 32

Temperature Range

pressure parts: -120...+400°C
oxidation resistance: n.a.

General description

Rutile-basic fully austenitic 4.5% Mo-containing stainless steel electrode

Electrode for welding AISI 317LN or equivalent stainless steels

High resistance to:

- pitting corrosion
- intergranular corrosion
- stress corrosion

Good impact toughness at low temperature

Easy slag release and good weld appearance

Welding positions



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

Current type

AC / DC electr. + / -

Approvals

BV	CTL	DNV	GL	TÜV
UP	+	+	4439	+

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

C	Mn	Si	Cr	Ni	Mo	N	FN
0.020	1.3	0.8	18.0	17.0	4.6	0.18	<0.3

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	-196°C
Required: EN 1600-97		min. 300	min. 480	min. 25	not required		
Typical values	AW	460	650	40	70	70	50

Packaging, available sizes and identification

	Diameter (mm)	2.5	3.2	4.0
	Length (mm)	350	350	350
Unit: Box	Pieces / unit (nominal)	140	140	100
	Net weight/unit (kg)	2.8	4.7	5.1

Identification Imprint: Arosta 4439 Tip colour: red

Arosta® 4439: rev. EN 15

Materials to be welded

Steel grades	EN 10088-1/-2	EN 102 13-4	W.Nr.	ASTM/ACI	UNS
Fully austenitic	X2 CrNiMoN 17-11-2		1.4406	(TP)316LN	S31653
CrNiMo-	X2 CrNiMoN 17-13-3		1.4429	(TP)316LN	S31653
corrosion	X2 CrNiMo 18-14-3		1.4435	(TP)316L	S31603
resistant steel	X2 CrNiMo 18-15-4		1.4438	317L	S31725
	X2 CrNiMoN 17-13-5		1.4439	317LN	S31726
	G-X2 CrNiMoN 17-13-4	GX2 CrNiMo 17-13-4	1.4446		
	G-X6 CrNiMo 17-13	GX6 CrNiMo 17-13	1.4448		

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
2.5 x 350	40 - 75	DC+	78	153	0.58	19.8	79	1.56
3.2 x 350	60 - 110	DC+	55	152	1.3	33.8	49	1.67
4.0 x 350	90 - 145	DC+	67	291	1.8	51.6	29	1.47

* 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
2.5	70	70	70	60	60	60
3.2	100	90	100	65	65	65
4.0	130	125	130	80		

For root passes DC- is recommended.