

Stainless steel electrode

Classification

AWS A5.4-92 : E2209-16*
EN 1600-97 : E 22 9 3 N L R 32

* Deviation: see remarks

Temperature Range

pressure parts: -40 ... +250°C
oxidation resistance: n.a.

General description

A rutile-basic all position electrode for duplex stainless steel welding
Excellent weldability for filling as well as for root runs
Applicable up to a service temperature of 250°C
High resistance to general corrosion, pitting and stress corrosion (PRE_N ~35)
High yield strength > 500 N/mm²
Weldable on AC and DC
EMR-Sahara product
Also available in vacuum sealed Sahara ReadyPack® (SRP)

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	RINA	TÜV
2209	+	+	4462	2209	+

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

C	Mn	Si	Cr	Ni	Mo	N	FN
0.020	0.8	1.0	22.5	9.5	3.2	0.16	30-55

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	-30°C -40°C
Required: AWS A5.4-92		not required	min. 690	min. 20	not required	
EN 1600-97		min. 450	min. 550	min. 20	not required	
Typical values	AW	650	800	27	60	50 40

Packaging, available sizes and identification

	Diameter (mm)	2.5	3.2	4.0	5.0
	Length (mm)	350	350	350	350
Unit: SRP	Pieces / unit (nominal)	69	52	29	24
	Net weight / unit (kg)	1.5	1.8	1.6	2.0
Unit: Box	Pieces / unit (nominal)	120	152	80	55
	Net weight / unit	2.6	5.0	4.8	4.6

Identification Imprint: 2209-16 /Arosta 4462 Tip colour: white

Arosta® 4462: rev. EN 15

Materials to be welded

Steel grades	EN 10088-1/-2	W.Nr.	ASTM / ACI A240	UNS
Duplex- stainless steel	X2 CrNiMoN 22 -5-3	1.4462		S31803
		1.4417		S31500
	X3 CrNiMoN 27-5-2	1.4460		S31200
		X2 CrNiN 23-4		1.4362

Dissimilar joints such as un- and low alloyed steel to duplex stainless steel

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+	61	127	0.73	20.6	81	1.67
3.2 x 350	80 - 110	DC+	56	184	1.4	34.3	46	1.59
4.0 x 350	80 - 150	DC+	59	205	2.0	51.5	30	1.52
5.0 x 350	140 - 220	DC+	65	357	2.8	77.4	20	1.61

* 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	100	100	70	70	70
4.0	140	140	140	80		
5.0	180	180	180			

For root passes DC- is recommended.

Remarks

Deviations: chemical composition:

Si = max. 1.2%

AWS: Si = max. 0.90%

Application advice

Welding with heat input max. 2.5 kJ/mm

Interpass temperature max. 150°C