

Rutile electrode

Classification

AWS A5.1-91 : E6012
 EN 499-94 : E 38 0 RC 11

General description

All position rutile electrode with excellent vertical down welding properties

Shipbuilding repairs

Excellent on painted or rustcovered steel

Recommended for bridging wide gaps

Weldable in all positions with one current setting

Welding positions



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

Current type

AC / DC electr. -

Approvals

ABS	BV	CTL	DB	DNV	FORCE	GL	LR	RMRS	TÜV
2	2	+	+	2	+	2	2	2	+

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

C	Mn	Si
0.12	0.5	0.6

Mechanical properties, all weld metal

	Condition	Yield strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J) 0°C
Required: AWS A5.1-91		min. 331	min. 414	min. 17	not required
EN 499-94		min. 380	470-600	min. 20	min. 47
Typical values	AW	470	550	23	56

Packaging, available sizes and identification

	Diameter (mm)	2.5	3.2	4.0	5.0
	Length (mm)	350	350	350	350
Unit:box	Pieces / unit (nominal)	155	180	120	80
	Net weight/unit (kg)	2.8	5.0	5.0	5.2

Identification Imprint: 6012/Supra

Tip colour: brown

Supra®: rev. EN 15

Materials to be welded

Steel	Code	Type
General structural steel	EN 10025	S185, S235, S275
Ship plates	ASTM A 131	Grade A, B, D
Fine grained steel	EN 10113-2	S275
	EN 10113-3	S275

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 350	70 - 90	AC	47	109	0.84	17.5	90	1.58
3.2 x 350	95 - 130	AC	64	175	1.1	27.6	53	1.45
4.0 x 350	130 - 170	AC	66	330	1.4	41.1	39	1.61
5.0 x 350	170 - 250	AC	77	534	1.8	63.6	26	1.63

*stub end 35 mm

Welding parameters, optimum fill passes

Welding position Diameter (mm)	PA/1G Current (A)	PB/2F	PC/2G	PF/3G up	PG/3G down	PE/4G
2.5	85	80	80	80	80	80
3.2	115	115	120	120	120	120
4.0	155	170	155	160	180	155
5.0	190	220			240	190

Application advice

Weldable in all positions with one current setting