

Repair electrode

Classification

AWS A5.4-92 : E310-16
EN 1600-97 : E 25 20 R 12

Temperature range

pressurized parts: -20 ... +400°C
scaling resistance: 1100°C

General description

Rutile basic coated electrode for all position welding except vertical down
Fully austenitic weld metal with high Cr and Ni content for very high service temperature
High resistance against oxidation and scaling up to 1100°C
Avoid service temperatures between 650 - 850°C
Weldable on AC and DC

Welding positions



ISO/ASME

PA/1G



PB/2F



PC/2G



PF/3G up



PE/4G



PF/5G up

Current type

AC / DC electr. +

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

C	Mn	Si	Cr	Ni
0.12	2.5	0.5	26.0	20.5

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
Required: AWS A5.4-92		not required	min. 550	min. 30	not required
EN 1600-97		min. 350	min. 550	min. 20	not required
Typical values	AW	440	600	30	80

Packaging, available sizes and identification

	Diameter (mm)	2.5	3.2	4.0
	Length (mm)	350	350	350
Unit: PE tube	Pieces / unit (nominal)	121	74	49
	Net weight unit (kg)	2.5	2.5	2.5

Identification

Imprint: RepTec 46

Tip colour: dark green

RepTec 46: rev. EN 15

Materials to be welded

Material grades	EN 10088-1/-2	EN 102 13-4	W.Nr.	ASTM/ACI A240/A351	UNS
Heat resisting steel	X10 CrAl 24	GX25 CrNiSi 18-9 GX40 CrNiSi 22-9	1.4762	310S CK20 HK40	S31008 J94202
			1.4825		
			1.4826		
	X15 CrNiSi 20-12	GX25 CrNiSi 20-14	1.4828		
			1.4832		
	X15 CrNiSi 25-20	GX40 CrNiSi 25-20	1.4841		
			1.4845		
	X12 CrNi 25-21		1.4848		

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	80 - 90	DC+	48	98	0.83	20.4	90	1.84
3.2 x 350	90 - 120	DC+	56	155	1.31	31.8	49	1.56
4.0 x 350	130 - 175	DC+	72	233	1.55	50.7	32	1.64

* 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	100	100	100	90	90	90
3.2	130	120	130	110	110	110
4.0	160	160	160	140		

Application advice

Welding with heat input max. 1.5 kJ/mm
Interpass temperature max. 100°C