

Classification

AWS A5.4 :E310-16
EN 1600 :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% Yield	Tensile Strength	Elongation (%)	Impact (ISO), J
		Strength (N/mm ²)	(N/mm ²)		+20°C
Required AWS A5.4		not required	min 550	min 30	not required
EN 1600		min 350	min 550	min 20	not required
Typical values after welding	AW	440	600	30	80

Packaging, available sizes and identification

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

Identification

Imprint: Elerep[®] 310

Tip colour: dark green

Elerep[®]310: rev.EN 20

Materials to be welded

Material grades	EN 10088-1/-2	EN 10213-4	W.Nr	ASTM/ACI A240/A351	UNS	
Heat resisting steel	X10 CrAl 24		1.4762			
		GX25 CrNiSi 18-9	1.4825			
		GX40 CrNiSi 22-9	1.4826			
	X15 CrNiSi 20-12		1.4828			
		GX25 CrNiSi 20-14	1.4832			
	X15 CrNiSi 25-20		1.4841	310S	S31008	
				CK20	J94202	
	X12 CrNi 25-21		1.4845			
	GX40 CrNiSi 25-20	1.4848	HK40			

Calculation data

Sizes Diam.x length (mm)	Range of current (A)	Type of current	Arc time - per electrode at max. current - (s)*	Energy E (kJ)	Dep. rate H (kg/h)	Weight/ 1000 pcs. (kg)	Electrodes/ kg weldmetal (pcs)	kg Electrodes/ kg weldmetal (1/N)
2.5x350	80-90	DC+	48	98	0.83	20.4	90	1.84
3.2x350	90-120	DC+	56	155	1.31	31.8	49	1.56
4.0x350	130-175	DC+	72	233	1.55	50.7	32	1.64

*stub end = 35 mm

Welding parameters, optimum fill passes

Welding position	PA/1G	PB/2F	PC/2G	PF/3G up	PE/4G	PF/5G up
Diameter (mm)	Current (A)					
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