

Creep resistant basic electrode

Classification

AWS A5.5-96 : E8018-B1 H4
EN 1599-97 : E Z B 32 H5

General description

Basic, very low hydrogen all position electrode $H_{DM} < 5\text{ml}/100\text{g}$ (SRP)

For welding creep resistant CrMoV-steels
maximum service temperature 550°C

DC-welding preferred

115 - 120% recovery

Only available in vacuum sealed Sahara ReadyPack® (SRP)

Welding positions



Current type

AC / DC electr. + / -

Approvals

CTL	TÜV
+	+

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

C	Mn	Si	P	S	Cr	Mo	V	H_{DM}
0.06	0.8	0.6	0.02	0.01	0.5	0.5	0.3	3 ml/100 g

Mechanical properties, all weld metal (for creep data see overleaf)

	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)	
					+20°C	-10°C
Required: AWS A5.5-96	SR1)	min. 460	min. 550	min. 19	not required	
Typical values	SR2)	570	640	24	180	110

Stress relieve: SR1) = 690±14°C/1h, SR2) = 730°C/1h

Packaging, available sizes and identification

	Diameter (mm)	2.5	3.2	4.0	5.0
Length (mm)		350	350	350	450
Unit: SRP	Pieces / unit (nominal)	67	50	28	23
	Net weight/unit (kg)	1.4	2.0	1.5	2.6

Identification Imprint: 8018-B1/SL22G Tip colour: orange

SL®22G: rev. EN 15

Materials to be welded

Steel	Code	Type
Creep resistant steels	DIN	14MoV63 17MnMoV64 10CrSiMoV7

Creep Data

Test temperature	°C	400	450	500	550	575
Yield strength Rp-0,2%	N/mm ²	480	470	450		
Creep strength Rm/1000	N/mm ²			270	170	150
Creep strength Rm/10.000	N/mm ²			250	150	130
Creep resisteces Rp1%/10.000	N/mm ²			210	130	110

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	60 - 90	DC+	64	115	0.70	21.0	82	1.69
3.2 x 350	80 - 130	DC+	71	238	1.2	37.5	41	1.54
4.0 x 350	120 - 180	DC+	76	353	1.6	55.8	30	1.64
5.0 x 450	160 - 220	DC+	101	762	2.6	106.6	14	1.49

* stub end 35mm

Welding parameters, optimum fill passes

Welding position Diameter (mm)	PA/1G Current (A)	PB/2F	PC/2G	PF/3G up	PE/4G	PF/5G up
2.5	80	85	80	85	80	80
3.2	130	120	130	120	120	120
4.0	150	145	140	140	140	140
5.0	225	225	210			

Remarks

Recommended preheat temperature: 200 - 250°C

Recommended stress relieving temperature range: 690 - 740°C (time depends on material thickness)

Application Advice

Electrodes after removal from cardboard boxes redry 2-4h 350 ± 25°C