

## Creep resistant basic electrode

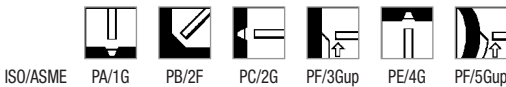
### Classification

AWS A5.5 : E8018-B2-H4  
EN 1599 : E CrMo1 B 32 H5

### General description

Basic very low hydrogen all position electrode ( $H_{DM} < 5$  ml/100g)  
For welding creep and hydrogen resistant CrMo-steels  
Excellent weldability for welding pipe and plate on site  
Reliable X-ray properties  
Good mechanical properties in the as welded and stress relieved condition  
Applicable for service temperature from -20 to 500°C  
SL19G(STC) meets the actual "step cool" requirements including the Bruscato factor of  $X < 15$   
Only available in vacuum sealed Sahara ReadyPack® (SRP)

### Welding positions



### Current type

AC / DC + / -

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

C	Mn	Si	P	S	Cr	Mo	Bruscato	H <sub>DM</sub>
0.06	0.7	0.35	0.010	0.010	1.2	0.55	max. 15 ppm	3 ml/100g

### Mechanical properties, all weld metal

	Condition	0.2% Proof strength (N/mm <sup>2</sup> )	Tensile strength (N/mm <sup>2</sup> )	Elongation (%)	Impact ISO-V(J)	
					+20°C	-20°C
Required: AWS A5.5	SR <sup>1)</sup>	min. 460	min. 550	min. 19	not required	
EN 1599	SR <sup>2)</sup>	min. 355	min. 510	min. 20	min. 47	
Typical values	SR <sup>3)</sup>	570	640	24	180	100

Stress relieved: SR<sup>1)</sup> = 690±14°C/1h, SR<sup>2)</sup> = 660-700°C/1h, SR<sup>3)</sup> = 700°C/1h  
Shifting CVN at 55 J(DeltaT55): +10°C after "STC" (step cool treatment)

### Packaging and available sizes

	Length (mm)	350	350	350
	Diameter (mm)	2.5	3.2	4.0
Unit: SRP	Pieces / unit	69	50	28
	Net weight/unit (kg)	1.4	2.0	1.5

Identification Imprint: 8018-B2 / SL 19 G (STC) Tip Color: red

SL®19G(STC): rev. EN 21

## Materials to be welded

Steel grades/Code	Type
<b>Creep resistant steels</b>	
EN 10028-2	13 CrMo 4-5
EN 10083-1	25 CrMo 4
EN 10222-2	14 CrMo 4-5
<b>Tool steel</b>	
DIN 17210	16 MnCr 5

## Creep data

Test temperature	(°C)	400	450	500	550	600
Yield strength Rp-0,2%	(N/mm <sup>2</sup> )	460	440	430		
Creep strength Rm/1000	(N/mm <sup>2</sup> )			300	140	-80
Creep strength Rm/10.000	(N/mm <sup>2</sup> )		350	240	110	-50
Creep resistance Rp1%/10.000	(N/mm <sup>2</sup> )		250	170	80	-35

## Calculation data

Sizes Diam. x length (mm)	Current range (A)	Current type	Arc time - per electrode at max. (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							
3.2 x 350	80 - 145	DC+	68	227	1.3	37.9	41	1.56
4.0 x 350	120 - 185	DC+	79	367	1.6	54.9	29	1.59

\* stub end 35 mm

## Welding parameters, optimum fill passes

Welding positions Diameter (mm)	PA/1G	PB/2F	PC/2G	PF/3G up	PE/4G	PF/5G up
3.2	130A	120A	130A	120A	120A	120A
4.0	150A	145A	140A	140A	140A	140A

## Remarks/ Application advice

Recommended preheat temperature: 200 - 250 °C

Recommended tempering heat treatment range: 660 - 700°C (time depends on material thickness)

Stepcooling requirements: Bruscato factor  $X = (10 P + 5 Sb + 4 Sn + As) / 100$  \_ 15 ppm and Mn + Si < 1.1