

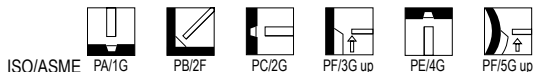
**CLASSIFICATION**

AWS A5.5 : E9018-B3-H4  
ISO 3580-A : E CrMo2 B 32 H5

**GENERAL DESCRIPTION**

Basic very low hydrogen all position electrode ( $H_{DM} < 5 \text{ ml/100g}$ )  
For welding creep and hydrogen resistant CrMo-steels  
Maximum service temperature 600°CDC-welding preferred  
115 - 120% recovery  
Also available in vacuum sealed Sahara ReadyPack®(SRP)

**WELDING POSITIONS**



**CURRENT TYPE**

AC / DC + / -

**APPROVALS**

RINA TÜV  
C2M1 +

**CHEMICAL COMPOSITION (W%), TYPICAL, ALL WELD METAL**

C	Mn	Si	P	S	Mo	Cr	H <sub>DM</sub>
0.06	0.8	0.6	0.015	0.01	1.0	2.3	3 ml/100 g

**MECHANICAL PROPERTIES, TYPICAL, 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	-10°C
Required: AWS A5.5	SR <sup>1)</sup>	min. 530	min. 620	min. 17	not required	
ISO 3580-A	SR <sup>2)</sup>	min. 400	min. 500	min. 18	min. 47	
Typical values	SR <sup>3)</sup>	530	650	22	15	90

Stress relieved: SR<sup>1)</sup> = 690±14°C/1h, SR<sup>2)</sup> = 690-750°C/1h, SR<sup>3)</sup> = 695°C/1h

**PACKAGING AND AVAILABLE SIZES**

	Diameter (mm)	2.5	3.2	4.0	5.0
	Length (mm)	350	350	350	450
Unit: carton box	Pieces / unit	110	120	85	55
	Net weight/unit (kg)	2.6	4.7	4.8	6.2
Unit: SRP	Pieces / unit	67	50	28	23
	Net weight/unit (kg)	1.4	2.0	1.5	2.6

Identification Imprint: 9018-B3 / SL 20 G Tip Color: white

SL® 20G: rev. EN 23

# SL<sup>®</sup> 20G

## MATERIALS TO BE WELDED

Steel grades/Code	Type
<b>Creep resistant steels</b>	
EN 10028-2	10 CrMo 9-10
EN 10222-2	12 CrMo 9-10

## CREEP DATA

Test temperature °C	400	450	500	550	600
Yield strength Rp-0.2% (N/mm <sup>2</sup> )	480	460	430		
Creep strength Rm/1000 (N/mm <sup>2</sup> )			240	160	(100)
Creep strength Rm/10.000 (N/mm <sup>2</sup> )			210	110	(60)
Creep resistance Rp1%/10.000 (N/mm <sup>2</sup> )			160	85	(45)

## CALCULATION DATA

Sizes		Current type	Arc time (S)*	Energy - per electrode at max. current - E(kJ)	Dep. rate H(kg/h)	Weight/ 1000 pcs (kg)	Electrodes/ kg weld-metal B	kg electrodes/ kg weldmetal 1/N
Diam. x length (mm)	Current range (A)							
2.5x350	60-90	DC+	63	114	0.72	21.0	79	1.67
3.2x350	80-130	DC+	70	233	1.3	37.6	40	1.49
4.0x350	120-180	DC+	75	348	1.7	56.7	28	1.56
5.0x450	160-240	DC+	100	754	2.6	107.6	14	1.47

\*Stub end 35mm

## WELDING PARAMETERS, OPTIMUM FILL PASSES

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

## REMARKS / APPLICATION ADVICE

Recommended preheat temperature:200 - 300°C

Recommended tempering heat treatment range:690 - 750°C (time depends on material thickness)

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