

CLASSIFICATION

AWS A5.5	E9018-B3-H4	A-Nr	4
ISO 3580-A	E CrMo2 B 3 2 H5	F-Nr	4
		9606 FM	3

GENERAL DESCRIPTION

Basic very low hydrogen all position electrode (HDM<5 ml/100g)
 For welding creep and hydrogen resistant CrMo-steels
 Maximum service temperature 600°C
 DC-welding preferred
 115 - 120% recovery
 Also available in vacuum sealed Sahara ReadyPack®(SRP)

WELDING POSITIONS (ISO/ASME)



CURRENT TYPE

AC / DC +/-

APPROVALS

RINA	TÜV
C2M1	+

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

C	Mn	Si	P	S	Cr	Mo	HDM
0.06	0.8	0.6	0.015	0.010	2.3	1.0	3 ml/100 g

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition	0.2% Proof strength [N/mm²]	Tensile strength [N/mm²]	Elongation [%]	Impact ISO-V(J)	
					+20°C	-10°C
Required: AWS A5.5	SR ¹	min. 530	min. 620	min. 17	not required	
ISO 3580-A	SR ²	min. 400	min. 500	min. 18	min. 47	
Typical values	SR ³	530	650	22	150	90

Stress relieved: SR¹ = 690±14°C/1h, SR² = 690-750°C/1h, SR³ = 695°C/1h

PACKAGING AND AVAILABLE SIZES

	Diameter (mm)		Length (mm)
	2.5	3.2	
Carton + PE foil	Pieces / unit	110	120
	Net weight/unit (kg)	2.6	4.7
SRP	Pieces / unit	67	50
	Net weight/unit (kg)	1.4	2.0

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

SL® 20G: rev. C-ENZ-12/05/16

SL[®] 20G

EXAMPLES OF MATERIALS TO BE WELDED

Steel grades/Standard	Type
Creep resistant steels	
EN 10028-2	10CrMo9-10 & similar alloys
EN 10222-2	12CrMo9-10 & similar alloys
ASTM A387	Grade 21 & 22
ASTM A182	Grade F22
ASTM A217	Grade WC9
ASTM A234	Grade WP22
ASTM A199/A200	Grade T21 & T22
ASTM A213	Grade T22
ASTM A335	Grade P22

CREEP DATA

Test temperature °C	400	450	500	550	600
Yield strength Rp-0,2% [N/mm ²]	480	460	430	160	[100]
Creep strength Rm/1000 [N/mm ²]			240	210	[60]
Creep strength Rm/10.000 [N/mm ²]			210	110	[60]
Creep resistance Rp1%/10.000 [N/mm ²]			160	85	[45]

CALCULATION DATA

Sizes Diam. x length [mm]	Current range [A]	Current type	Arc time	Energy	Dep. rate	Weight/ 1000 pcs [kg]	Electrodes/ kg weldmetal	kg electrodes/ kg weldmetal
			[S]*	- per electrode at max. current - E[kJ]	H[kg/h]		B	1/N
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

*Stub end 35mm

WELDING PARAMETERS, OPTIMUM FILL PASSES

Diameter [mm]	Welding positions					
	PA/1G	PB/2F	PC/2G	PF/3Gup	PE/4G	PH/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

REMARKS / APPLICATION ADVICE

Recommended preheat temperature:200 - 300°C

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

Redry electrodes 2-4h 350 ±25°C after removal from cardboard boxes