

CLASSIFICATION

AWS A5.5	E7018-A1-H4R	A-Nr	2
ISO 3580-A	E Mo B 3 2 H5	F-Nr	4
		9606 FM	1/3

GENERAL DESCRIPTION

Basic very low hydrogen all position electrode (HDM< 5 ml/100g)

For welding creep resisting and Fine grained steels

Service temperature from -40 up to 500°C

DC-welding preferred

115 - 120% recovery

Also available in vacuum sealed Sahara ReadyPack[®] (SRP)

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PF/3Gu



PE/4G



PH/5Gu

CURRENT TYPE

AC / DC +/-

APPROVALS

DB DNV TÜV

+ 0,3 Mo +

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

C	Mn	Si	P	S	Mo	HDM
0.05	0.8	0.6	0.020	0.010	0.55	2 ml/100 g

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition	0.2% Proof strength [N/mm ²]	Tensile strength [N/mm ²]	Elongation [%]	Impact ISO-V(J)	
					+20°C	-20°C
Required: AWS A5.5	SR ¹	min. 390	min. 490	min. 25	not required	
ISO 3580-A	SR ²	min. 355	min. 510	min. 22	min. 47	
Typical values	SR ³	560	620	25	140	50
	AW	550	610	25	160	70

Stress relieved: SR¹ = 620±14°C/1h, SR² = 570-620°C/1h, SR³ = 620°C/1h

PACKAGING AND AVAILABLE SIZES

	Diameter (mm) Length (mm)	2.5	3.2	4.0	5.0
			350	350	350
Carton + PE foil	Pieces / unit	110	120	85	55
	Net weight/unit (kg)	2.5	4.5	4.7	6.0
SRP	Pieces / unit	67	50	28	23
	Net weight/unit (kg)	1.4	2.0	1.5	2.6

Identification Imprint: 7018-A1 / SL 12 G Tip Color: blue

SL[®] 12G: rev. C-EN26-12/05/16

SL[®] 12G

EXAMPLES OF MATERIALS TO BE WELDED

Steel grades/Standard	Type
Creep resistant steels	
EN 10028-2	P295GH, P355GH, 16Mo3 & similar alloys
EN 10222-2	17Mo3, 14Mo6 & similar alloys
ASTM A335	Grade P1
ASTM A209	Grade T1
ASTM A250	Grade T1
ASTM A336	Grade F1
ASTM A204	Grade A, B, C
ASTM A217	Grade WC1
ASTM A352	Grade LC1
Fine grained steels	
EN 10025 part 3	S275, S355, S420
EN 10025 part 4	S275, S355, S420

CREEP DATA

Test temperature °C	400	450	500	550
Yield strength Rp-0,2% [N/mm ²]	420	380	330	
Creep strength Rm/1000 [N/mm ²]		360	300	[200]
Creep strength Rm/10.000 [N/mm ²]		320	180	[80]
Creep resistance Rp1%/10.000 [N/mm ²]		230	150	[65]

CALCULATION DATA

Sizes		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
Diam. x length [mm]	Current range [A]							
2.5x350	60-90	DC+	65	118	0.7	22.8	84	1.92
3.2x350	80-130	DC+	69	230	1.3	379	42	1.59
4.0x350	120-180	DC+	81	373	1.6	54.8	28	1.56
5.0x450	160-240	DC+	106	799	2.4	1074	14	1.52

*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
5.0	225A	225A	210A			

REMARKS / APPLICATION ADVICE

Recommended tempering heat treatment range:580 - 630°C (time depends on material thickness)
Redry electrodes 2-4h 350 ±25°C after removal from cardboard boxes