

CLASSIFICATION

<b>AWS A5.5</b>	E7018-A1-H4R	<b>A-Nr</b>	2
<b>ISO 3580-A</b>	E Mo B 3 2 H5	<b>F-Nr</b>	4
		<b>9606 FM</b>	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<sup>®</sup> (SRP)

WELDING POSITIONS (ISO/ASME)



CURRENT TYPE

AC / DC +/-

APPROVALS

<b>DB</b>	<b>DNV</b>	<b>TÜV</b>
+	0,3 Mo	+

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

<b>C</b>	<b>Mn</b>	<b>Si</b>	<b>P</b>	<b>S</b>	<b>Mo</b>	<b>HDM</b>
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 <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. 390	min. 490	min. 25	not required	
ISO 3580-A	SR <sup>2)</sup>	min. 355	min. 510	min. 22	min. 47	
Typical values	SR <sup>3)</sup>	560	620	25	140	50
	AW	550	610	25	160	70

Stress relieved: SR<sup>1)</sup> = 620±14°C/1h, SR<sup>2)</sup> = 570-620°C/1h, SR<sup>3)</sup> = 620°C/1h

PACKAGING AND AVAILABLE SIZES

	Diameter (mm) Length (mm)	2.5	3.2	4.0	5.0
			350	350	350
<b>Carton + PE foil</b>	<b>Pieces / unit</b>	94	108	80	50
	<b>Net weight/unit (kg)</b>	2.0	4.0	4.3	5.3
<b>SRP</b>	<b>Pieces / unit</b>	67	50	28	
	<b>Net weight/unit (kg)</b>	1.4	1.9	1.5	

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

SL<sup>®</sup> 12G; rev. C-EN26-30/09/21

# SL<sup>®</sup> 12G

SMAW

## EXAMPLES OF MATERIALS TO BE WELDED

Steel grades/Standard	Type
<b>Creep resistant steels</b>	
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
<b>Fine grained steels</b>	
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 <sup>2</sup> ]	420	380	330	
Creep strength Rm/1000 [N/mm <sup>2</sup> ]		360	300	[200]
Creep strength Rm/10.000 [N/mm <sup>2</sup> ]		320	180	[80]
Creep resistance Rp1%/10.000 [N/mm <sup>2</sup> ]		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