

High strength basic electrode

Classification

AWS A5.5-96 : E9018M H4
EN 757-97 : E 55 4 Z B 32 H5

General description

Basic all position extremely low hydrogen electrode
For welding high strength steel grades (UTS 540-640 N/mm²)
Good impact toughness at -51°C
DC preferred
115-120% recovery
Also available in vacuum sealed Sahara ReadyPack® (SRP): H_{DM} < 3 ml/100g

Welding positions



ISO/ASME PA/1G PB/2F PC/2G PF/3G up PE/4G PF/5G up

Current type

AC / DC electr. + / -

Approvals

ABS	BV	CTL	DNV	GL	LR	TÜV
3Y	4Y50	+	4Y50H5	4YH10	+	+

Chemical composition (w%). typical. all weld metal

C	Mn	Si	P	S	Ni	Mo	H _{DM}
0.06	1.0	0.4	0.015	0.010	1.6	0.3	2 ml/100g

Mechanical properties, all weld metal

	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)		
					-20°C	-40°C	-51°C
Required: AWS A5.5-96		540-620*	min. 620	min. 24			min. 27
EN 757-97		min. 550	610-780	min. 18		min. 47	
Typical values	AW	600	670	25		98	
	SR: 1h/620°C	550	640	24	90		40

* max. Yield strength 655 N/mm² for diam. 2.5 mm

Packaging, available sizes and identification

	Diameter (mm)	2.5	3.2	4.0	5.0
	Length (mm)	350	350	350	450
Unit: Box	Pieces / unit (nominal)	110	120	85	55
	Net weight/unit (kg)	2.5	4.6	4.6	5.8
Unit: SRP	Pieces / unit	65	50	28	23
	Net weight/unit (kg)	1.4	2.0	1.5	2.6

Identification

Imprint: 9018-M / CONARC 60G

Tip colour: red

Conarc® 60G: rev. EN 15

Materials to be welded

Steel	Code	Type
General structural steel	EN 10025	S355
Pipe material	EN 10208-2 API 5 LX	L360, L415, L445, L480 X52, X56, X60, X65, X70
Creep resisting steel	EN 10028-2	16 Mo 3
Fine grained steel	EN 10113-3 EN 10137-2	S420 M (L), S460 M (L), S420 N (L), S460 N (L) S460, S500
Weather resisting steel	EN 10155	S235 J0W S235 J2W S355 J0W S355 J2W S 355 K2G1W

Calculation Data

Sizes Diam. x length (mm)	Current range A)	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
2.5 x 350	60 - 100	DC+	63	114	0.7	23.5	77	1.80
3.2 x 350	80 - 130	DC+	69	231	1.3	38.3	40	1.52
4.0 x 350	120 - 180	DC+	72	324	1.7	55.8	30	1.66
5.0 x 450	160 - 240	DC+	119	760	2.2	105.2	14	1.43

* stub end 35mm

Welding parameters, optimum fill passes

Welding position: Diameter (mm)	PA/1G Current (A)	PB/2F	PC/2G	PF/3G up	PE/4G	PF/5G up
2.5	80	75	80	85	75	75
3.2	130	120	135	120	115	120
4.0	155	145	160	145	140	140
5.0	225	220	210			

Application Advice

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