

Low temperature basic electrode

Classification

AWS A5.5-96 : E9018-G H4R
EN 757-97 : E 55 6 Z B 32 H5

General description

Basic all position offshore electrode for high strength steels (YS 420 - 500 N/mm²)

110 - 120% recovery

Extremely low hydrogen H_{DM} < 3ml/100g (SRP)

Excellent impact toughness at -60°C

Good CTOD at -10°C

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

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

C	Mn	Si	P	S	Ni	H _{DM}
0.05	1.6	0.3	0.015	0.01	1.5	2 ml/100 g

Mechanical properties, all weld metal

	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)		
					-40°C	-50°C	-60°C
Required: AWS A5.5-96		min. 530	min.620	min. 17	not required		
EN 757-97		min. 550	610-780	min. 18			min. 47
Typical values	AW	570	650	22	140	110	60

CTOD-value at -15°C > 0.30mm

Packaging, available sizes and identification

	Diameter (mm)	2.5	3.2	4.0	5.0
	Length (mm)	350	450	450	450
Unit: Box	Pieces / unit (nominal)	135	120	85	55
	Net weight/unit (kg)	2.7	5.8	5.9	5.7
Unit: SRP	Pieces/unit	70	50	28	23
	Net weight/unit (kg)	1.4	2.4	2.0	2.5

Identification Imprint: 9018-G/Kryo 2

Tip colour: green

Kryo® 2: rev. EN 15

Materials to be welded

Steel	Code	Type
General structural steel	EN 10025	S355
Cast steel	EN 10213-2	GP 240R
Pipe material	EN 10208-1	L290 GA, L360 GA
	EN 10208-2	L290, L360, L415, L445, L480
	API 5 LX	X42, X46, X52, X60, X65, X70
	EN 10216-1	P275 T1
Fine grained steel	EN 10217-1	P275 T2, P355 N
	EN 10113-2	S275, S355, S420, S460
	EN 10113-3	S275, S355, S420, S460
Low temperature steel	EN 10137-2	S460, S500
	EN 10028-4	11 MnNi 5-3, 13 MnNi 6-3, 15 NiMn 6
	EN 10222-3	13 MnNi 6-3, 15 NiMn 6

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	55 - 85	DC+	59	85	0.72	19.4	86	1.65
3.2 x 450	80 - 140	DC+	80	268	1.2	46.8	36	1.70
4.0 x 450	120 - 170	DC+	89	445	1.8	70.0	22	1.52
5.0 x 450	180 - 240	DC+	96	598	2.6	103.8	14	1.51

* 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	80	80	85	80	80
3.2	140	120	145	120	120	120
4.0	150	140	150	140	135	140
5.0	220	210	210	170		

Application Advice

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