

Low temperature basic electrode

Classification

AWS A5.5-96 : E8018-C1 H4
EN 449-94 : E 46 8 3Ni B 32 H5*

* Deviation: see remarks

General description

The basic all position offshore electrode with approx. 2.5% Ni
115-120% recovery
Excellent impact toughness at -80°C
Good CTOD at -10°C
Extremely low hydrogen $H_{DM} < 3\text{ml}/100\text{g}$ (SRP)
Also available in vacuum sealed Sahara ReadyPack® (SRP) $H_{DM} < 3\text{ ml}/100\text{g}$

Welding positions



Current type

AC / DC electr. + / -

Approvals

ABS	BV	CTL	DNV	GL	LR	RINA	TÜV
+	UP	+	5YH10	6Y42H10	5Y40H	5YH5	+

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

C	Mn	Si	P	S	Ni	H_{DM}
0.05	0.7	0.3	0.015	0.010	2.5	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)		
					-59°C	-60°C	-80°C
Required: AWSA5.5-96	SR	min. 460	min. 550	min. 19	min. 27		
EN 499-94		min. 460	530-680	min. 20			min. 47
Typical values	AW	500	600	26		120	60

CTOD value at -10°C > 0.25 mm

Stress relieved SR = 605±14°C/1h

Packaging, available sizes and identification

	Diameter (mm)	2.5	3.2	3.2	4.0	4.0	5.0
	Length (mm)	350	350	450	350	450	450
Unit: Box	Pieces / unit (nominal)	135	120		85		55
	Net weight/unit (kg)	2.7	4.2		4.4		5.7
Unit: SRP	Pieces / unit	70	50	50	28	28	23
	Net weight/unit (kg)	1.4	1.9	2.4	1.5	2.0	2.5

Identification Imprint: 8018-C1/Kryo 3 Tip colour: silver

Kryo® 3: rev. EN 15

Materials to be welded

Steel	Code	Type
General structural steel	EN 10025	S355
Pipe material	EN 10208-2	L360, L415, L445
	API 5 LX	X52, X56, X60, X65
Fine grained steel	EN 10113-2	S355, S420
	EN 10113-3	S355, S420
Low temperature steel	EN 10028-4	11 MnNi 5-3, 13 MnNi 6-3, 15 NiMn 6 (12 Ni 14 G 1, G 2)
	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 - 80	DC+	57	103	0.72	19.5	88	1.71
3.2 x 350	80 - 140	DC+	65	218	1.3	37.4	44	1.64
3.2 x 450	80 - 140	DC+	79	263	1.4	48.5	33	1.59
4.0 x 350	120 - 170	DC+	74	344	1.6	52.7	30	1.57
4.0 x 450	120 - 170	DC+	100	463	1.7	69.8	21	1.45
5.0 x 450	180 - 240	DC+	103	723	2.5	104.8	14	1.48

* 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		

Remarks

Deviations: chemical composition:
Ni = 2.25 - 2.75%

EN: Ni = 2.6 - 3.8%

Application Advice

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