

Basic electrode

Classification

AWS A5.1 : E7018-1 H4R
ISO 2560-A : E 46 4 B 32 H5

General description

Basic extremely low hydrogen electrode
Reliable impact toughness -40°C, good CTOD at -10°C
The off-shore electrode when Ni-alloying is not allowed
100 - 120% recovery
Good pipe welding properties
Excellent X-ray soundness
Also available in vacuum sealed Sahara ReadyPack® (SRP)

Welding positions



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

Current type

AC / DC + / -

Approvals

ABS	BV	DNV	FORCE	GL	LR	RMRS	TÜV
3H,3Y	3YHH	3YH5	+	3YH10	3,3YH5	3-3YH5	+

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

C	Mn	Si	P	S	H ₀₁ M
0.06	1.4	0.3	0.015	0.010	2 ml/100 g

Mechanical properties, all weld metal

	Condition	Yield strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)		
					-20°C	-40°C	-46°C
Required: AWS A5.1 ISO 2560-A		min. 400 min. 460	min. 483 530-680	min. 22 min. 20		min. 47	min. 27
Typical values	AW	480	580	28	200	170	

Packaging and available sizes

	Diameter (mm)	2.5	3.0	3.2	3.6	4.0	4.0	5.0	6.0
	Length (mm)	350	350	350	450	350	450	450	450
Unit: box	Pieces / unit	135	80	120	120	85	85	55	46
	Net weight/unit (kg)	2.7	2.4	4.2	5.8	4.5	5.7	6.0	6.5
Unit: SRP	Pieces / unit	70	54	50	50	28	28	23	21
	Net weight/unit (kg)	1.4	1.5	2.0	2.5	1.6	2.0	2.6	3.0

Identification Imprint: 7018-1 / CONARC 49C Tip Color: grey

Conarc® 49C: rev. EN 21

Materials to be welded

Steel grades/Code	Type
General structural steel	
EN 10025	S185, S235, S275, S355
Ship plates	
ASTM A131	Grade A, B, D, AH32 to EH40
Cast steel	
EN 10213-2	GP240R
Pipe material	
EN 10208-1	L210, L240, L290, L360
EN 10208-2	L240, L290, L360, L415
API 5LX	X42, X46, X52, X60
EN 10216-1/	P235T1, P235T2, P275T1
EN 10217-1	P275T2, P355N
Boiler & pressure vessel steel	
EN 10028-2	P235GH, P265GH, P295GH, P355GH
Fine grained steel	
EN 10113-2	S275, S275, S355, S420
EN 10113-3	S275, S355, S420,

Calculation data

Sizes Diam. x length (mm)	Current range (A)	Current type	Arc time - per electrode at max. (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+	55	99	0.78	19.6	84	1.65
3.0 x 350	70 - 110	DC+	53	193	1.2	30.4	58	1.77
3.2 x 350	80 - 130	DC+	65	217	1.2	37.9	45	1.69
4.0 x 350	120 - 160	DC+	75	348	1.6	54.2	30	1.61
4.0 x 450	120 - 160	DC+	100	444	1.7	70.4	21	1.47
5.0 x 450	180 - 240	DC+	90	632	2.6	105.6	15	1.60
6.0 x 450	250 - 330	DC+	106	976	3.5	136.9	10	1.33

* stub end 35 mm

Welding parameters, optimum fill passes

Welding positions Diameter (mm)	PA/1G	PB/2F	PC/2G	PF/3G up	PE/4G	PF/5G up
2.5	80A	80A	80A	85A	80A	80A
3.0	110A	110A	115A	110A	105A	110A
3.2	140A	120A	145A	120A	120A	120A
4.0	150A	140A	150A	140A	135A	140A
5.0	220A	210A	210A	170A		
6.0	300A	290A				

Remarks/ Application advice

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

Best choice: 3.0 x 350 mm for rootlayer welding in pipes

Best choice: 3.2 x 350 mm for pipewelding