

# Basic electrode

## Classification

AWS A5.1 : E7018 H4R  
ISO 2560-A : E 46 3 B 32 H5

## General description

Basic very low hydrogen electrode ( $H_{DM} < 5 \text{ ml}/100\text{g}$ )  
Most suitable universal basic electrode for shipbuilding and light general construction work  
Welding characteristics come very close to the welders ideal electrode  
Almost no spatter, nice wetting and full weld pool control  
One current setting for all positions possible  
Perfect welding and 120% recovery contributes to high productivity

## Welding positions



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

## Current type

AC / DC + / -

## Approvals

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

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

C	Mn	Si	P	S	$H_{DM}$
0.09	1.1	0.6	0.015	0.010	4 ml/100 g

## Mechanical properties, all weld metal

	Condition	Yield strength (N/mm <sup>2</sup> )	Tensile strength (N/mm <sup>2</sup> )	Elongation (%)	Impact ISO-V(J)		
					-20°C	-29°C	-30°C
Required: AWS A5.1		min. 400	min. 483	min. 22		min. 27	
ISO 2560-A		min. 460	530-680	min. 20			min. 47
Typical values	AW	480	560	28	140		

## Packaging and available sizes

		2.5	3.2	4.0	4.0	5.0	6.0
	Diameter (mm)	350	350	350	450	450	450
	Length (mm)	118	120	85	85	55	46
Unit: box	Pieces / unit	2.7	4.5	4.6	5.9	6.0	6.5
	Net weight/unit (kg)	44	27	18			
Unit: Linc Pack	Pieces / unit	1.0	1.0	1.0			
	Net weight/unit (kg)						

## Identification

Imprint: 7018 / CONARC 49

Tip Color: green

Conarc® 49: rev. EN 21

**Materials to be welded**

Steel grades/Code	Type
<b>General structural steel</b>	
EN 10025	S185, S235, S275, S355
<b>Ship plates</b>	
ASTM A131	Grade A, B, D, AH32 to EH40
<b>Cast steel</b>	
EN 10213-2	GP240R
<b>Pipe material</b>	
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
<b>Boiler &amp; pressure vessel steel</b>	
EN 10028-2	P235GH, P265GH, P295GH, P355GH
<b>Fine grained steel</b>	
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. 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	70 - 80	DC+	58	120	0.85	23.1	73	1.7
3.2 x 350	110 - 130	DC+	68	194	1.3	36.8	41	1.5
4.0 x 450			98	429	1.8	69.5	20	1.4
5.0 x 450	160 - 240	DC+	117	619	2.3	107.3	13	1.4
6.0 x 450	250 - 300	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	95A	95A	90A	90A	85A	85A
3.2	140A	130A	130A	120A	120A	110A
4.0	180A	180A	180A	160A	150A	160A
5.0	230A	230A	230A	180A		
6.0	300A	290A				

**Remarks/ Application advice**

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