

High strength basic electrode

Classification

AWS A5.1 :E7018-W2 - H4R*
 ISO 2560-A :E 46 5 Z Mn1Ni B 32 H5

*Deviation:see remarks

General description

Basic all position electrode for welding weather resistant steel

Very suitable for off- and on-shore constructions, high resistance to corrosion caused by seawater or combinations of oil, gas and seawater

Excellent mechanical properties (impact at -50°C)

Extremely low hydrogen $H_{DM} < 3 \text{ ml/100g (WSD)}$

Only available in vacuum sealed WUTPACK SuperDry (WSD) $H_{DM} < 3 \text{ ml/100g}$

Welding positions



ISO/ASME

PA/1G

PB/2F

PC/2G

PF/3G up

PE/4G

PF/5G up

Current type

AC/DC electr. +/-

Approvals

LR

4Y42H5

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

C	Mn	Si	P	S	Ni	Cu	H_{DM}
0.05	1.5	0.4	0.010	0.015	0.9	0.4	3ml/100g

Mechanical properties, all weld metal

	Condition	Yield strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact (ISO), J			
					-18°C	-20°C	-40°C	-50°C
Required	AWS A55	min.460	min.550	min. 19	min. 27			
	ISO 2560-A	min.460	530-680	min. 20				min. 47
Typical values after welding	AW	540	610	25	115	100		60

Packaging, available sizes and identification

	Diameter (mm)	2.5	3.2	4.0	5.0
	Length (mm)	300	350	350	450
Unit:	Pieces / unit (nominal)	xx	xx	xx	xx
Box	Net weight/unit (kg)	xx	xx	xx	xx
Unit:	Pieces / unit (nominal)	69	50	27	23
WSD	Net weight/unit (kg)	1.4	1.9	1.5	2.5

Identification

Imprint: Elex® B 8018-1

Tip colour: black

Elex® B 8018 : rev. EN 20

Materials to be welded

Steel	Code	Type
Weather resisting steel	EN 10155	S235 J0W S235 J2W S355 J0W S355 J2W S355 K2G1W

Weather resistant steels like: Cor-Ten[®], Patinax[®]-F, Patinax[®]-37 and similar Ni- and Cu-alloyed steels

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)	Quantity of electrodes per 1kg of weldmetal (pcs.)	kg Electrodes/ kg weldmetal (1/N)
2.5 x 350	55 - 85	DC+	53	81	0.77	19.7	88	1.74
3.2 x 350	80 - 145	DC+	70	223	1.2	36.9	43	1.60
4.0 x 350	120-185	DC+	77	355	1.6	54.1	29	1.59
5.0 x 450	180-270	DC+	104	784	2.4	105.2	15	1.53

*stub end = 35 mm

Welding parameters, optimum fill passes

Welding position Diameter (mm)	PA/1G Current (A)	PB/2F	PC/2G	PF/3Gup	PE/4G	PF/5G up
2.5	110	110	115	110	105	110
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:

Mn = 1.4 – 1.9%	AWS: Mn = 0.50 – 1.30%
Si = 0.15 – 0.60%	AWS: Si = 0.35 – 0.80%
Cr = 0.1 %	AWS: Cr = 0.45 – 0.75%
Ni = 0.7 – 1.0%	AWS: Ni = 0.40 – 0.80%
Cu = 0.3 – 0.5%	EN: Cu max 0.3%