

OK B3 SC

OK B3 SC is a basic AC/DC electrode designed for welding of creep resistant 2,25% Cr 1% Mo alloyed steels, SA-387 Grade 22, A335 Grade P22 or similar materials when highest toughness values are required also after step cooling treatment. Very low level of impurity elements providing a X-bar max. 10 for temper embrittlement resistant applications. Usually welding is followed by a PWHT. Suitable for refinery, petrochemical and chemical industries, power generation, pressure vessels, etc.

Specifications

Classifications	SFA/AWS A5.5 : E9018-B3 H4 R EN ISO 3580-A : E CrMo2 B 32 H5
Approvals	CE : EN 13479 NAKS/HAKC : 3.2 mm NAKS/HAKC : 4.0 mm VdTÜV : 19612

Approvals are based on factory location. Please contact ESAB for more information.

Welding Current	DC+/-, AC
Diffusible Hydrogen	< 4.0 ml/100g
Alloy Type	Low alloyed (2.25% Cr ; 1% Mo)
Coating Type	Basic covering

Typical Tensile Properties

Condition	Conditional Statement	Yield Strength	Tensile Strength	Elongation
AWS				
3.PWHT 32 hour(s) 690 °C (1274 °F)		460 MPa (67 ksi)	580 MPa (84 ksi)	27 %
4.PWHT (Test)	Test Temp. 454°C	370 MPa (54 ksi)	455 MPa (66 ksi)	18 %
1.PWHT 1 hour(s) 690 °C (1274 °F)		550 MPa (80 ksi)	650 MPa (94 ksi)	23 %
2.PWHT 4 hour(s) 690 °C (1274 °F)		540 MPa (78 ksi)	650 MPa (94 ksi)	25 %

Typical Charpy V-Notch Properties

Condition	Testing Temperature	Impact Value
AWS		
2.PWHT	-30 °C (-22 °F)	150 J (111 ft-lb)
1.PWHT	-30 °C (-22 °F)	120 J (89 ft-lb)
3.PWHT	-30 °C (-22 °F)	140 J (104 ft-lb)

Typical Weld Metal Analysis %

C	Mn	Si	S	P	Ni	Cr	Mo	V	Al
0.085	0.7	0.20	0.004	0.005	0.04	2.35	1	0.007	0.002

Typical Weld Metal Analysis %

Cu	Nb	Ti	Sb	As	B	Sn	Mn+Si	Nb+Ti+V	P+Sn
0.04	0.004	0.007	0.001	0.002	0.0002	0.004	0.9	0.018	0.009

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Typical Weld Metal Analysis %

PE	J-Factor	X-bar
2.7	85	7

Deposition Data

Diameter	Current	Voltage	Deposition Efficiency (%)	Burn-off Time /Electrode	Deposition Rate @ 90% I max
2.5 x 350.0 mm (0.098 x 13.8 in.)	60-95 A	23 V	60 %	63 sec	0.8 kg/h (1.8 lbs/h)
3.2 x 350.0 mm (1/8 x 13.8 in.)	75-145 A	23 V	60 %	62 sec	1.2 kg/h (2.6 lbs/h)
4.0 x 450.0 mm (5/32 x 17.7 in.)	100-200 A	26 V	58 %	86 sec	1.7 kg/h (3.7 lbs/h)
5.0 x 450.0 mm (0.197 x 17.7 in.)	115-260 A	25 V	63 %	106 sec	2.3 kg/h (5.1 lbs/h)