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.

Classifications Weld Metal	SFA/AWS A5.5 : E9018-B3 H4 R EN ISO 3580-A : E CrMo2 B 32 H5
Approvals	CE EN 13479 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	Yield Strength	Tensile Strength	Elongation
AWS			
PWHT 1hr 690°C (1274°F)	550 MPa (80 ksi)	650 MPa (94 ksi)	23 %
PWHT 4hr 690°C (1274°F)	540 MPa (78 ksi)	650 MPa (94 ksi)	25 %
PWHT 32hr 690°C (1274°F)	460 MPa (67 ksi)	580 MPa (84 ksi)	27 %
PWHT 32hr 690°C (1274°F) (Test Temp. 454°C)	370 MPa (54 ksi)	455 MPa (66 ksi)	18 %

Typical Charpy V-Notch Properties

Condition	Testing Temperature	Impact Value
AWS		
PWHT 1hr 690°C (1274°F)	-30 °C (-22 °F)	120 J (89 ft-lb)
PWHT 4hr 690°C (1274°F)	-30 °C (-22 °F)	150 J (111 ft-lb)
PWHT 32hr 690°C (1274°F)	-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	PE	J-Factor	X-bar
0.04	0.004	0.007	0.001	0.002	0.0002	0.004	0.9	0.018	0.009	2.7	70	7

Deposition Data

Diameter	Current	Voltage	Number of electrodes/ kg weld metal	Burn-off Time/ Electrode	Deposition Efficiency %	Deposition Rate @ 90% I max
2.5 x 350.0 mm (0.098 x 13,8 in.)	60-95 A	23 V	75	63 sec	60 %	0.8 kg/h (1,8 lb/h)
3.2 x 350.0 mm (1/8 x 13,8 in.)	75-145 A	23 V	48	62 sec	60 %	1.2 kg/h (2,6 lb/h)
4.0 x 450.0 mm (5/32 x 17,7 in.)	100-200 A	26 V	25	86 sec	58 %	1.7 kg/h (3,7 lb/h)
5.0 x 450.0 mm (0.197 x 17,7 in.)	115-260 A	25 V	15	106 sec	63 %	2.3 kg/h (5,1 lb/h)

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