

OK Flux 10.81

Agglomerated, aluminate-rutile, low basicity flux-wire-combination for Submerged Arc Welding. Top-class surface finish and excellent slag detachability. Particular combination for high speed tube to fin welding of membrane wall panels. Also for structural steels, fine grained steels, pressure vessel steels, line pipe steels, etc. For butt welds and especially for concave horizontal fillet welds. Suitable for single and multi wire procedures, for DC and AC. Due to high Si-alloying intended for a limited number of passes and plate thickness up to about 25 mm.

Specifications

Classifications	EN ISO 14174 : S A AR 1 97 AC
Approvals	CE : EN 13479 DB : 51.039.04 NAKS/HAKC : RD 03-613-03

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

Slag Type	Aluminate-rutile
Alloy Transfer	Very high Silicon and moderately Manganese alloying
Density	nom: 1.2 kg/dm ³
Basicity Index	nom: 0.6

Flux Consumption

Volts	kg Flux / kg Wire DC+	kg Flux / kg Wire AC
34 V	1.3 kg	1.2 kg
30 V	1.0 kg	0.9 kg
26 V	0.7 kg	0.6 kg
38 V	1.6 kg	1.4 kg

Condition : Dimension Ø 4.0 mm , Amps 580 A , Travel Speed 55 cm/min

Classifications

Wire	SFA/AWS - EN ISO	EN - As Welded	AWS - As Welded	AWS - PWHT
OK Autrod 12.10	A5.17:EL12/ 14171-A:S1	14171-A: S 42 A AR S1	A5.17: F7AZ-EL12	A5.17: F7PZ-EL12
OK Autrod 12.20	A5.17:EM12/ 14171-A:S2	14171-A: S 46 0 AR S2	A5.17: F7A0-EM12	A5.17: F7PZ-EM12
OK Autrod 12.22	A5.17:EM12K/ 14171-A:S2Si	14171-A: S 50 A AR S2Si	A5.17: F7AZ-EM12K	A5.17: F7PZ-EM12K
OK Autrod 12.24	A5.23:EA2/ 14171-A:S2Mo; 24598-A:S S Mo	14171-A: S 50 A AR S2Mo	A5.23: F9AZ-EA2-A4	A5.23: F9PZ-EA2-A4
OK Autrod 12.30	14171-A:S3	14171-A: S 50 0 AR S3	-	-
OK Autrod 13.10 SC	A5.23:EB2R/ 24598-A:S S CrMo1	-	-	A5.23: F9PZ-EB2R-G
OK Autrod 13.36	A5.23:EG/ 14171-A:S2Ni1Cu	14171-A: S 50 A AR S2Ni1Cu	A5.23: F9A0-EG-G	-

Approvals

Wire	VdTÜV	CE	DB	ABS	BV	DNV	GL	LR
OK Autrod 12.10	•	•	•	-	-	-	-	-
OK Autrod 12.20	•	•	•	•	•	•	•	•
OK Autrod 12.22	-	•	-	-	-	-	-	-
OK Autrod 12.24	•	-	-	-	-	-	-	-
OK Autrod 12.30	•	•	•	-	-	-	-	-
OK Autrod 13.10 SC	•	-	-	-	-	-	-	-
OK Autrod 13.36	-	•	-	-	-	-	-	-

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Typical Weld Metal Analysis %								
C	Mn	Si	S	P	Ni	Cr	Mo	Cu
OK Autrod 12.10 DC+, 580A, 29V								
0.06	1.2	0.8	-	-	-	-	-	-
OK Autrod 12.10 AC, 580A, 29V								
0.07	1.1	0.7	-	-	-	-	-	-
OK Autrod 12.20 AC , 580A, 29V								
0.09	1.4	0.7	-	-	-	-	-	-
OK Autrod 12.20 DC+, 580A, 29V								
0.07	1.5	0.8	-	-	-	-	-	-
OK Autrod 12.22 AC, 580A, 29V								
0.09	1.4	0.8	-	-	-	-	-	-
OK Autrod 12.22 DC+, 580A, 29V								
0.07	1.5	0.9	-	-	-	-	-	-
OK Autrod 12.24 AC, 580A, 29V								
0.09	1.4	0.7	-	-	-	-	0.5	-
OK Autrod 12.24 DC+, 580A, 29V								
0.07	1.5	0.8	-	-	-	-	0.5	-
OK Autrod 12.30 AC, 580A, 29V								
0.10	1.7	0.6	-	-	-	-	-	-
OK Autrod 12.30 DC+, 580A, 29V								
0.08	1.75	0.7	-	-	-	-	-	-
OK Autrod 13.10 SC								
-	-	-	0.010	0.020	-	-	-	-
OK Autrod 13.10 SC DC+, 575A, 29V								
0.06	1.4	0.9	-	-	-	1.0	0.5	-
OK Autrod 13.36 AC, 580A, 29V								
0.09	1.3	0.8	-	-	0.7	0.3	-	0.5
OK Autrod 13.36 DC+, 580A, 29V								
0.07	1.4	0.9	-	-	0.7	0.3	-	0.5

Typical Wire Composition %							
C	Mn	Si	Ni	Cr	Mo	Cu	X-bar
OK Autrod 12.10							
0.07	0.52	0.08	-	-	-	-	-
OK Autrod 12.20							
0.10	1.06	0.07	-	-	-	-	-
OK Autrod 12.22							
0.09	1.01	0.19	-	-	-	-	-
OK Autrod 12.24							
0.09	1.08	0.14	-	-	0.48	-	-
OK Autrod 12.30							
0.11	1.61	0.13	-	-	-	-	-
OK Autrod 13.10 SC							
0.10	0.83	0.12	-	1.21	0.49	-	11
OK Autrod 13.36							
0.10	0.95	0.29	0.78	0.29	-	0.48	-

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Typical Mechanical Properties					
Wire	Condition	Yield Strength	Tensile Strength	Elongation	Charpy V-Notch
OK Autrod 12.10	As Welded EN AC	450 MPa	530 MPa	25 %	80 J @ 20 °C 40 J @ 0 °C
OK Autrod 12.10	As Welded AWS DC+	450 MPa	540 MPa	25 %	50 J @ 20 °C 30 J @ 0 °C
OK Autrod 12.20	As Welded AWS DC+	510 MPa	610 MPa	25 %	80 J @ 20 °C 60 J @ 0 °C 40 J @ -18 °C
OK Autrod 12.20	As Welded EN AC	500 MPa	570 MPa	30 %	90 J @ 20 °C 70 J @ 0 °C 50 J @ -18 °C
OK Autrod 12.22	As Welded AWS DC+	530 MPa	610 MPa	24 %	60 J @ 20 °C
OK Autrod 12.22	As Welded EN AC	550 MPa	640 MPa	20 %	70 J @ 20 °C
OK Autrod 12.24	As Welded EN AC	650 MPa	715 MPa	24 %	80 J @ 20 °C 50 J @ 0 °C
OK Autrod 12.24	As Welded AWS DC+	565 MPa	660 MPa	23 %	65 J @ 20 °C 45 J @ 0 °C
OK Autrod 12.30	As Welded EN DC+	550 MPa	640 MPa	25 %	80 J @ 20 °C 60 J @ 0 °C
OK Autrod 12.30	As Welded EN AC	550 MPa	620 MPa	25 %	100 J @ 20 °C 80 J @ 0 °C
OK Autrod 13.10 SC	PWHT PWHT 575A DC+ 29V (1 hour(s))	650 MPa	730 MPa	22 %	30 J @ 20 °C
OK Autrod 13.36	As Welded EN AC	610 MPa	680 MPa	25 %	80 J @ 20 °C 50 J @ 0 °C 40 J @ -20 °C
OK Autrod 13.36	As Welded AWS DC+	570 MPa	680 MPa	23 %	55 J @ 20 °C 40 J @ 0 °C 35 J @ -18 °C