

## OK Flux 10.71

Agglomerated aluminate-basic flux for Submerged Arc Welding. General purpose flux with excellent welding performance, suitable for all kinds of steels. High impact toughness values. Fits to a large range of SAW wires. For general constructions, pressure vessels, shipbuilding, pipe mills, wind tower productions, transport industries, etc. Designed for single and multi wire procedures, for butt and fillet welds. Suitable for DC and AC welding. Single layer and multi layer welding of unlimited plate thickness.

Specifications	
<b>Classifications</b>	EN ISO 14174 : S A AB 1 67 AC H5
<b>Approvals</b>	CE : EN 13479 DB : 51.039.05 UKCA : EN 13479

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

<b>Diffusible Hydrogen</b>	max 5 ml/100g weld metal (Redried flux)
<b>Slag Type</b>	Aluminate-basic
<b>Alloy Transfer</b>	Slightly Silicon and moderately Manganese alloying
<b>Density</b>	nom: 1.2 kg/dm <sup>3</sup>
<b>Basicity Index</b>	nom: 1.5

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

Conditions : 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 35 4 AB S1	A5.17: F6A4-EL12	A5.17: F6P5-EL12
OK Autrod 12.20	A5.17:EM12/ 14171-A:S2	14171-A: S 38 4 AB S2	A5.17: F7A4-EM12	A5.17: F6P4-EM12
OK Autrod 12.22	A5.17:EM12K/ 14171-A: S2Si	14171-A: S 38 4 AB S2Si	A5.17: F7A5-EM12K	A5.17: F6P5-EM12K
OK Autrod 12.24	A5.23:EA2/ 14171-A:S2Mo; 24598-A:S S Mo	14171-A: S 46 2 AB S2Mo	A5.23: F8A2-EA2-A4	A5.23: F7P0-EA2-A4
OK Autrod 12.30	14171-A:S3	14171-A: S 46 3 AB S3	-	-
OK Autrod 12.32	A5.17:EH12K/ 14171-A: S3Si	14171-A: S 46 4 AB S3Si	A5.17: F7A5-EH12K	A5.17: F7P5-EH12K
OK Autrod 12.34	A5.23:EA4/ 14171-A:S3Mo; 24598-A:S S MnMo	14171-A: S 50 3 AB S3Mo	A5.23: F8A4-EA4-A3	A5.23: F8P2-EA4-A3
OK Autrod 13.24	A5.23:ENi6/ 14171-A: S3Ni1Mo0,2	14171-A: S 50 4 AB S3Ni1Mo0,2	A5.23: F8A5-ENi6-Ni6	A5.23: F8P4-ENi6-Ni6
OK Autrod 13.27	A5.23:ENi2/ 14171-A:S2Ni2	14171-A: S 46 5 AB S2Ni2	A5.23: F8A6-ENi2-Ni2	A5.23: F7P6-ENi2-Ni2
OK Autrod 13.36	A5.23:EG/ 14171-A: S2Ni1Cu	14171-A: S 46 3 AB S2Ni1Cu	A5.23: F8A2-EG-G	-
OK Autrod 13.62	A5.23:EG/ 14171-A:SZ3TiB	-	-	-
OK Autrod 13.64	A5.23:EA2TiB/ 14171-A: S2MoTiB	-	A5.23: F8TA6-EA2TiB	-

Approvals												
Wire	VdTÜV	ABS	BV	CE	DB	DNV	GL	LR	ClassNK	RS	PRS	RINA
OK Autrod 12.10	•	•	•	•	•	•	•	•	-	•	•	-

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Approvals												
Wire	VdTÜV	ABS	BV	CE	DB	DNV	GL	LR	ClassNK	RS	PRS	RINA
OK Autrod 12.20	•	•	•	•	•	•	•	•	-	•	•	•
OK Autrod 12.22	•	•	•	•	•	•	•	•	•	•	-	-
OK Autrod 12.24	•	•	•	•	•	•	•	•	•	•	•	•
OK Autrod 12.30	•	-	-	•	•	-	-	-	-	-	-	-
OK Autrod 12.32	•	-	-	•	•	-	-	-	-	-	-	-
OK Autrod 13.27	•	-	-	-	-	-	-	-	-	-	-	-
OK Autrod 13.36	-	-	-	•	-	-	-	-	-	-	-	-

Typical Weld Metal Analysis %										
C	Mn	Si	S	P	Ni	Cr	Mo	V	Al	
<b>Alloy Shield 70 Ni1S As Welded</b>										
0.06	1.63	0.50	0.012	0.017	0.86	0.05	0.02	0.004	0.018	
<b>Alloy Shield 70S As Welded</b>										
0.06	1.79	0.67	0.009	0.019	-	-	-	-	-	
<b>OK Autrod 12.10 DC+ , 580A, 29V</b>										
0.04	1.0	0.3	-	-	-	-	-	-	-	
<b>OK Autrod 12.10 AC , 580A, 29V</b>										
0.05	0.85	0.2	-	-	-	-	-	-	-	
<b>OK Autrod 12.20 AC, 580A, 29V</b>										
0.06	1.2	0.2	-	-	-	-	-	-	-	
<b>OK Autrod 12.20 DC+, 580A, 29V</b>										
0.05	1.35	0.3	-	-	-	-	-	-	-	
<b>OK Autrod 12.22 AC, 580A, 29V</b>										
0.06	1.2	0.4	-	-	-	-	-	-	-	
<b>OK Autrod 12.22 DC+, 580A, 29V</b>										
0.05	1.4	0.5	-	-	-	-	-	-	-	
<b>OK Autrod 12.24 AC, 580A, 29V</b>										
0.06	1.3	0.25	-	-	-	-	0.5	-	-	
<b>OK Autrod 12.24 DC+, 580A, 29V</b>										
0.05	1.4	0.4	-	-	-	-	0.5	-	-	
<b>OK Autrod 12.30 AC, 580A, 29V</b>										
0.10	1.6	0.3	-	-	-	-	-	-	-	
<b>OK Autrod 12.30 DC+, 580A, 29V</b>										
0.09	1.65	0.4	-	-	-	-	-	-	-	
<b>OK Autrod 12.32 DC+, 580A, 29V</b>										
0.09	2.0	0.5	-	-	-	-	-	-	-	
<b>OK Autrod 12.32 AC, 580A, 29V</b>										
0.10	1.9	0.35	-	-	-	-	-	-	-	
<b>OK Autrod 12.34 DC+, 580A, 29V</b>										
0.09	1.6	0.4	-	-	-	-	0.5	-	-	
<b>OK Autrod 12.34 AC, 580A, 29V</b>										
0.10	1.5	0.25	-	-	-	-	0.5	-	-	
<b>OK Autrod 13.24 DC+, 580A, 29V</b>										
0.07	1.70	0.5	-	-	0.9	-	0.2	-	-	
<b>OK Autrod 13.24 AC , 580A, 29V</b>										
0.09	1.50	0.45	-	-	0.9	-	0.2	-	-	
<b>OK Autrod 13.27 AC, 580A, 29V</b>										

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Typical Weld Metal Analysis %									
C	Mn	Si	S	P	Ni	Cr	Mo	V	Al
0.06	1.3	0.3	-	-	2.2	-	-	-	-
<b>OK Autrod 13.27 DC+, 580A, 29V</b>									
0.05	1.4	0.4	-	-	2.2	-	-	-	-
<b>OK Autrod 13.36 AC , 580A, 29V</b>									
0.09	1.2	0.4	-	-	0.7	0.3	-	-	-
<b>OK Autrod 13.36 DC+, 580A, 29V</b>									
0.08	1.3	0.5	-	-	0.7	0.3	-	-	-
<b>OK Autrod 13.64</b>									
0.05	1.4	0.5	-	-	-	-	0.5	-	-
0.06	1.2	0.4	-	-	-	-	0.5	-	-

Typical Weld Metal Analysis %			
Cu	Ti	Co	B
<b>Alloy Shield 70 Ni1S As Welded</b>			
0.067	0.004	0.008	-
<b>Alloy Shield 70S As Welded</b>			
0.060	-	-	-
<b>OK Autrod 13.36 AC , 580A, 29V</b>			
0.5	-	-	-
<b>OK Autrod 13.36 DC+, 580A, 29V</b>			
0.5	-	-	-
<b>OK Autrod 13.64</b>			
-	0.15	-	0.015
-	0.15	-	0.015

Typical Mechanical Properties					
Wire	Condition	Yield Strength	Tensile Strength	Elongation	Charpy V-Notch
Alloy Shield 70 Ni1S	As Welded	501 MPa	598 MPa	28 %	99 J @ -29 °C
Alloy Shield 70S	As Welded	526 MPa	612 MPa	26 %	35 J @ -46 °C
Alloy Shield 70S	Stress Relieved	438 MPa	556 MPa	30 %	71 J @ -46 °C
OK Autrod 12.10	Stress Relieved AWS DC+ (1.0 hour(s))	330 MPa	430 MPa	32 %	110 J @ 0 °C 90 J @ -20 °C 75 J @ -30 °C 60 J @ -40 °C 35 J @ -46 °C
OK Autrod 12.10	As Welded EN AC	385 MPa	470 MPa	30 %	150 J @ 0 °C 120 J @ -20 °C 85 J @ -30 °C 70 J @ -40 °C
OK Autrod 12.10	As Welded AWS DC+	360 MPa	465 MPa	30 %	125 J @ 0 °C 95 J @ -20 °C 75 J @ -30 °C 65 J @ -40 °C
OK Autrod 12.20	Stress Relieved AWS DC+ (1.0 hour(s))	390 MPa	500 MPa	30 %	100 J @ 20 °C 90 J @ 0 °C 55 J @ -20 °C 30 J @ -40 °C

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Typical Mechanical Properties					
Wire	Condition	Yield Strength	Tensile Strength	Elongation	Charpy V-Notch
OK Autrod 12.20	As Welded AWS DC+	410 MPa	510 MPa	29 %	135 J @ 20 °C 125 J @ 0 °C 80 J @ -20 °C 55 J @ -40 °C
OK Autrod 12.20	As Welded EN AC	430 MPa	535 MPa	33 %	150 J @ 20 °C 130 J @ 0 °C 115 J @ -20 °C 70 J @ -40 °C
OK Autrod 12.22	As Welded EN AC	460 MPa	550 MPa	28 %	145 J @ 0 °C 125 J @ -20 °C 90 J @ -40 °C
OK Autrod 12.22	Stress Relieved AWS DC+ (1.0 hour(s))	390 MPa	500 MPa	32 %	120 J @ 0 °C 80 J @ -20 °C 65 J @ -40 °C 45 J @ -46 °C
OK Autrod 12.22	As Welded AWS DC+	425 MPa	520 MPa	29 %	140 J @ 0 °C 100 J @ -20 °C 60 J @ -40 °C 40 J @ -46 °C
OK Autrod 12.24	As Welded AWS DC+	500 MPa	580 MPa	24 %	125 J @ 20 °C 100 J @ 0 °C 60 J @ -18 °C 40 J @ -29 °C
OK Autrod 12.24	Stress Relieved AWS DC+ (1.0 hour(s))	480 MPa	560 MPa	25 %	100 J @ 20 °C 70 J @ 0 °C 40 J @ -18 °C 25 J @ -29 °C
OK Autrod 12.24	As Welded EN AC	550 MPa	620 MPa	23 %	130 J @ 20 °C 110 J @ 0 °C 70 J @ -20 °C 40 J @ -40 °C
OK Autrod 12.30	Stress Relieved EN DC+ (1.0 hour(s))	460 MPa	550 MPa	29 %	125 J @ 20 °C 105 J @ 0 °C 85 J @ -20 °C 50 J @ -30 °C
OK Autrod 12.30	As Welded EN AC	510 MPa	590 MPa	28 %	140 J @ 20 °C 120 J @ 0 °C 100 J @ -20 °C 70 J @ -30 °C
OK Autrod 12.30	As Welded EN DC+	490 MPa	580 MPa	29 %	130 J @ 20 °C 110 J @ 0 °C 90 J @ -20 °C 60 J @ -30 °C
OK Autrod 12.32	As Welded AWS DC+	480 MPa	580 MPa	28 %	150 J @ 20 °C 130 J @ 0 °C 95 J @ -20 °C 65 J @ -40 °C 40 J @ -46 °C
OK Autrod 12.32	Stress Relieved AWS DC+ (1.0 hour(s))	470 MPa	570 MPa	28 %	135 J @ 20 °C 125 J @ 0 °C 95 J @ -20 °C 50 J @ -40 °C 35 J @ -46 °C

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Typical Mechanical Properties					
Wire	Condition	Yield Strength	Tensile Strength	Elongation	Charpy V-Notch
OK Autrod 12.32	As Welded EN AC	530 MPa	615 MPa	28 %	140 J @ 20 °C 120 J @ 0 °C 100 J @ -20 °C 60 J @ -40 °C
OK Autrod 12.34	As Welded AWS DC+	535 MPa	620 MPa	27 %	120 J @ 20 °C 105 J @ 0 °C 70 J @ -20 °C 60 J @ -30 °C 45 J @ -40 °C
OK Autrod 12.34	As Welded EN AC	560 MPa	635 MPa	23 %	135 J @ 20 °C 120 J @ 0 °C 100 J @ -20 °C 80 J @ -30 °C 60 J @ -40 °C
OK Autrod 12.34	Stress Relieved AWS DC+ (1.0 hour(s))	505 MPa	605 MPa	26 %	110 J @ 20 °C 85 J @ 0 °C 55 J @ -20 °C 40 J @ -29 °C
OK Autrod 13.24	Stress Relieved AWS DC+ (1.0 hour(s))	520 MPa	610 MPa	28 %	135 J @ 20 °C 65 J @ -20 °C 60 J @ -30 °C 40 J @ -40 °C
OK Autrod 13.24	As Welded EN AC	610 MPa	680 MPa	25 %	150 J @ 20 °C 120 J @ -20 °C 100 J @ -30 °C 90 J @ -40 °C
OK Autrod 13.24	As Welded AWS DC+	560 MPa	630 MPa	25 %	120 J @ 20 °C 85 J @ -20 °C 70 J @ -30 °C 60 J @ -40 °C 40 J @ -46 °C
OK Autrod 13.27	As Welded EN AC	530 MPa	620 MPa	28 %	120 J @ -20 °C 90 J @ -40 °C 60 J @ -50 °C
OK Autrod 13.27	Stress Relieved AWS DC+ (1.0 hour(s))	460 MPa	550 MPa	29 %	105 J @ -20 °C 60 J @ -40 °C 50 J @ -51 °C
OK Autrod 13.27	As Welded AWS DC+	500 MPa	600 MPa	28 %	100 J @ -20 °C 60 J @ -40 °C 50 J @ -51 °C
OK Autrod 13.36	As Welded AWS DC+	490 MPa	580 MPa	27 %	120 J @ 20 °C 70 J @ -20 °C 55 J @ -29 °C
OK Autrod 13.36	As Welded EN AC	515 MPa	590 MPa	27 %	150 J @ 20 °C 90 J @ -20 °C 80 J @ -30 °C
OK Autrod 13.62	As Welded (acc. AWS) Plate thickness 12mm; Heat Input 2.2kJ/mm; Side 1 600A, 32V, 53cm/min; Side 2 700A, 32V, 60cm/min. DC+	510 MPa	610 MPa	28 %	40 J @ -51 °C

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### Typical Mechanical Properties

Wire	Condition	Yield Strength	Tensile Strength	Elongation	Charpy V-Notch
OK Autrod 13.64	As Welded (acc. to AWS) Plate thickness 12mm Heat input 2.2kJ /mm 700A, 32V, 60cm /min DC+	550 MPa	650 MPa	28 %	40 J @ -51 °C