OK Flux 10.62

Agglomerated fluoride-basic flux for Submerged Arc Welding. Primarily for multi-run welding. For highest demands on impact properties, low temperature toughness, strength and CTOD-values. Especially suitable for narrow gap welding due to good slag detachability and smooth side-wall blending. The Advanced Slag Release version improves weldability with excellent slag detachability, even better side wall wetting and stronger grains which improve weld quality due to flux grain size consistency also after multiple recycling cycles. All other attributes unchanged. For Offshore constructions, pressure vessels, power generation, shipbuilding, pipe mills, civil constructions, transport industries, etc. Produces weld metals with hydrogen contents maximum 5 ml/100 g, in BlockPac (moisture protection) maximum 4 ml/100g. Operates optimally at the lower end of the voltage range. Designed for single and multi wire procedures, for butt and fillet welds. Works equally well on DC and AC current. Single layer and multi layer welding of unlimited plate thickness.

Specifications	
Classifications	EN ISO 14174 : S A FB 1 55 AC H5 EN ISO 14174 : S A FB 1 55 AC H4 only BlockPac/moisture-protection
Approvals	CE : EN 13479 DB : 51.039.07 UKCA : EN 13479

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

Diffusible Hydrogen	max 5 ml/100g weld metal (Redried flux); max 4 ml/100g in BlockPac (moisture protection)
Slag Type	Fluoride-basic
Alloy Transfer	No Silicon or Manganese alloying
Density	nom: 1.1 kg/dm3
Basicity Index	nom: 3.2

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	Weld Metal		
Wire	**SFA/AWS - EN ISO**	**EN - As Welded**	**AWS - As Welded**	**AWS - PWHT**
OK Autrod 12.22	A5.17:EM12K 14171-A:S2Si	14171-A: S 38 5 FB S2Si	A5.17: F7A8-EM12K	A5.17: F6P8-EM12K
OK Autrod 12.24	A5.23:EA2 14171-A:S2Mo; 24598-A:S S Mo	14171-A: S 46 4 FB S2Mo	A5.23: F8A6-EA2-A2	A5.23: F8P6-EA2-A2
OK Autrod 12.32	A5.17:EH12K 14171-A:S3Si	14171-A: S 46 6 FB S3Si	A5.17: F7A8-EH12K	A5.17: F7P8-EH12K
OK Autrod 12.34	A5.23:EA4 14171-A:S3Mo; 24598-A:S S MnMo	14171-A: S 50 4 FB S3Mo	A5.23: F8A6-EA4-A4	A5.23: F8P6-EA4-A4
OK Autrod 12.40	A5.17:EH14 14171-A:S4	14171-A: S 50 4 FB S4	A5.17: F7A6-EH14	A5.17: F7P6-EH14
OK Autrod 13.10 SC	A5.23:EB2R 24598-A:S S CrMo1	-	-	A5.23: F8P2-EB2R-B2
OK Autrod 13.20 SC	A5.23:EB3R 24598-A:S S CrMo2	-	-	A5.23: F8P2-EB3R-B3
OK Autrod 13.21	A5.23:ENi1 14171-A:S2Ni1	14171-A: S 42 4 FB S2Ni1	A5.23: F7A6-ENi1-Ni1	A5.23: F7P8-ENi1-Ni1
OK Autrod 13.24	A5.23:ENi6 14171-A:S3Ni1Mo0,2	14171-A: S 50 6 FB S3Ni1Mo0.2	A5.23: F8A10-ENi6-Ni6	A5.23: F8P8-ENi6-Ni6

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Classifications	Wire	Weld Metal		
Wire	**SFA/AWS - EN ISO**	**EN - As Welded**	**AWS - As Welded**	**AWS - PWHT**
OK Autrod 13.27	A5.23:ENi2 14171-A:S2Ni2	14171-A: S 46 7 FB S2Ni2	A5.23: F7A10-ENi2-Ni2	A5.23: F7P10-ENi2-Ni2
OK Autrod 13.36	A5.23:EG 14171-A:S2Ni1Cu	14171-A: S 46 5 FB S2Ni1Cu	A5.23: F8A6-EG-G	-
OK Autrod 13.40	A5.23:EF3 14171-A:S3Ni1Mo; 26304-A:S3Ni1Mo; 26304-B: (SUN2M2)	26304-A: S 55 6 FB S3Ni1Mo	A5.23: F9A8-EF3-F3	A5.23: F9P8-EF3-F3
OK Autrod 13.43	A5.23:EG 26304-A:S3Ni2,5CrMo; 26304-B:(SUN4C1M3)	26304-A: S 69 6 FB S3Ni2, 5CrMo	A5.23: F11A8-EG-G	A5.23: F11P8-EG-G
OK Autrod 13.49	A5.23:ENi3 14171-A:S2Ni3	14171-A: S 46 8 FB S2Ni3	A5.23: F8A15-ENi3-Ni3	A5.23: F8P15-ENi3-Ni3

Approvals											
Wire	**ABS**	**BV**	**CE**	**DB**	**DNV**	**DNV-GL**	**GL**	**LR**	**RINA**	**RS**	**VdTÜV**
OK Autrod 12.22	•	•	•	•	•	-	•	•	-	-	•
OK Autrod 12.24	-	-	•	-	-	-	-	-	-	-	•
OK Autrod 12.32	•	•	•	•	•	-	•	•	•	•	•
OK Autrod 12.34	•	•	•	-	-	•	-	•	-	•	-
OK Autrod 12.40	-	-	-	-	-	•	-	-	-	-	-
OK Autrod 13.10 SC	-	-	•	•	-	-	-	-	-	-	•
OK Autrod 13.20 SC	-	-	•	-	-	-	-	-	-	-	•
OK Autrod 13.24	•	•	•	-	•	-	•	•	-	-	-
OK Autrod 13.27	•	•	•	•	•	-	•	•	•	•	•
OK Autrod 13.36	-	-	•	-	-	-	-	-	-	-	-
OK Autrod 13.40	•	•	•	-	•	-	-	•	-	-	•
OK Autrod 13.43	•	•	•	-	•	-	•	•	-	-	-
OK Tubrod 15.27S	•	-	•	-	•	-	•	•	-	-	-

Typical Weld Metal Analysis %						
C	**Mn**	**Si**	**Ni**	**Cr**	**Mo**	**Cu**
OK Autrod 12.22 AC, 580 A, 29 V						
0.10	0.95	0.27	-	-	-	-
OK Autrod 12.22 DC+, 580 A, 29 V						
0.07	1.0	0.30	-	-	-	-
OK Autrod 12.24 DC+, 580A, 29V						
0.07	1.0	0.22	-	-	0.5	-
OK Autrod 12.32 AC, 580A, 29V						
0.11	1.5	0.3	-	-	-	-
OK Autrod 12.32 DC+, 580A, 29V						
0.10	1.6	0.35	-	-	-	-
OK Autrod 12.34 AC, 580A, 29V						
0.13	1.4	0.18	-	-	0.5	-
OK Autrod 12.34 DC+, 580A, 29V						
0.10	1.45	0.21	-	-	0.5	-
OK Autrod 12.40 AC, 580A, 29V						
0.12	1.85	0.10	-	-	-	-

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Typical Weld Metal Analysis %						
C	**Mn**	**Si**	**Ni**	**Cr**	**Mo**	**Cu**
OK Autrod 12.40 DC+, 580A, 29V						
0.08	1.9	0.12	-	-	-	-
OK Autrod 13.10 SC AC, 580A, 29V						
0.10	0.7	0.20	-	1.1	0.5	-
OK Autrod 13.10 SC DC+, 580A, 29V						
0.08	0.7	0.22	-	1.1	0.5	-
OK Autrod 13.20 SC AC, 580A, 29V						
0.09	0.60	0.20	-	2.2	1.0	-
OK Autrod 13.20 SC DC+, 580A, 29V						
0.08	0.60	0.20	-	2.2	0.95	-
OK Autrod 13.21 AC, 580A, 29V						
0.08	0.95	0.22	0.9	-	-	-
OK Autrod 13.21 DC+, 580A, 29V						
0.06	1.0	0.25	0.9	-	-	-
OK Autrod 13.24 AC, 580A, 29V						
0.10	1.3	0.25	0.9	-	0.2	-
OK Autrod 13.24 DC+, 580A, 29V						
0.08	1.4	0.30	0.9	-	0.2	-
OK Autrod 13.27 AC, 580A, 29V						
0.08	0.95	0.22	2.1	-	-	-
OK Autrod 13.27 DC+, 580A, 29V						
0.06	1.0	0.25	2.1	-	-	-
OK Autrod 13.36 AC, 580A, 29V						
0.10	0.9	0.3	0.7	3	-	0.4
OK Autrod 13.36 DC+, 525A, 29V						
0.08	1.0	0.3	0.7	0.3	-	0.4
OK Autrod 13.40 AC, 580A, 29V						
0.10	1.45	0.23	0.9	-	0.5	-
OK Autrod 13.40 DC+, 580A, 29V						
0.07	1.50	0.26	0.9	-	0.5	-
OK Autrod 13.43 AC, 580A, 29V						
0.12	1.45	0.22	2.2	0.6	0.5	-
OK Autrod 13.43 DC+, 580A, 29V						
0.11	1.5	0.25	2.2	0.6	0.5	-
OK Autrod 13.49 AC, 580A, 29V						
0.08	0.95	0.20	3.1	-	-	-
OK Autrod 13.49 DC+, 580A, 29V						
0.06	1.0	0.25	3.1	-	-	-

Typical Mechanical Properties					
Wire	**Condition**	**Yield Strength**	**Tensile Strength**	**Elongation**	**Charpy V-Notch**
OK Autrod 12.22	As Welded EN AC	440 MPa	510 MPa	29 %	180 J @ 0 °C 170 J @ -20 °C 90 J @ -40 °C 80 J @ -50 °C

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Typical Mechanical Properties

Wire	Condition	Yield Strength	Tensile Strength	Elongation	Charpy V-Notch
OK Autrod 12.22	Stress Relieved AWS DC+ (1.0 hour(s))	360 MPa	480 MPa	34 %	190 J @ 0 °C 170 J @ -20 °C 130 J @ -40 °C 75 J @ -50 °C 35 J @ -62 °C
OK Autrod 12.22	As Welded AWS DC+	410 MPa	500 MPa	33 %	170 J @ 0 °C 160 J @ -20 °C 90 J @ -40 °C 70 J @ -50 °C 35 J @ -62 °C
OK Autrod 12.24	As Welded EN AC	520 MPa	600 MPa	24 %	150 J @ 20 °C 125 J @ 0 °C 100 J @ -20 °C 55 J @ -40 °C 40 J @ -51 °C
OK Autrod 12.24	As Welded AWS DC+	500 MPa	580 MPa	25 %	140 J @ 20 °C 115 J @ 0 °C 80 J @ -20 °C 60 J @ -40 °C 45 J @ -51 °C
OK Autrod 12.24	Stress Relieved AWS DC+ (1.0 hour(s))	510 MPa	580 MPa	30 %	140 J @ 20 °C 100 J @ 0 °C 75 J @ -20 °C 55 J @ -40 °C 40 J @ -51 °C
OK Autrod 12.32	As Welded AWS DC+	475 MPa	560 MPa	28 %	175 J @ 20 °C 150 J @ 0 °C 130 J @ -30 °C 110 J @ -40 °C 70 J @ -62 °C
OK Autrod 12.32	As Welded EN AC	520 MPa	600 MPa	26 %	175 J @ 20 °C 170 J @ 0 °C 110 J @ -30 °C 90 J @ -40 °C 60 J @ -60 °C
OK Autrod 12.32	Stress Relieved AWS DC+ (1.0 hour(s))	410 MPa	510 MPa	28 %	175 J @ 20 °C 165 J @ 0 °C 140 J @ -30 °C 110 J @ -40 °C 60 J @ -62 °C
OK Autrod 12.34	Stress Relieved AWS DC+ (1.0 hour(s))	540 MPa	620 MPa	25 %	165 J @ 20 °C 150 J @ 0 °C 120 J @ -20 °C 70 J @ -40 °C 40 J @ -51 °C
OK Autrod 12.34	As Welded EN AC	560 MPa	630 MPa	25 %	160 J @ 20 °C 150 J @ 0 °C 130 J @ -20 °C 100 J @ -40 °C 55 J @ -51 °C
OK Autrod 12.34	As Welded AWS DC+	540 MPa	620 MPa	24 %	170 J @ 20 °C 160 J @ 0 °C 140 J @ -20 °C 115 J @ -40 °C 45 J @ -51 °C

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Typical Mechanical Properties

Wire	Condition	Yield Strength	Tensile Strength	Elongation	Charpy V-Notch
OK Autrod 12.40	As Welded AWS DC+	530 MPa	620 MPa	26 %	140 J @ 20 °C 110 J @ 0 °C 80 J @ -20 °C 50 J @ -40 °C 40 J @ -51 °C
OK Autrod 12.40	As Welded EN AC	550 MPa	630 MPa	22 %	150 J @ 20 °C 105 J @ 0 °C 70 J @ -20 °C 55 J @ -40 °C 40 J @ -51 °C
OK Autrod 12.40	Stress Relieved AWS DC+ (1.0 hour(s))	460 MPa	560 MPa	26 %	140 J @ 20 °C 110 J @ 0 °C 70 J @ -20 °C 45 J @ -40 °C 35 J @ -51 °C
OK Autrod 13.10 SC	Stress Relieved EN DC+ (15.0 hour(s))	430 MPa	560 MPa	26 %	140 J @ 20 °C
OK Autrod 13.10 SC	Stress Relieved AWS DC+ (1.0 hour(s))	500 MPa	610 MPa	26 %	110 J @ -18 °C 80 J @ -29 °C
OK Autrod 13.10 SC	Stress Relieved EN DC+ (1.0 hour(s))	510 MPa	605 MPa	25 %	200 J @ 20 °C
OK Autrod 13.20 SC	Stress Relieved EN DC+ (0.5 hour(s))	515 MPa	620 MPa	24 %	180 J @ 20 °C 150 J @ 0 °C
OK Autrod 13.20 SC	Stress Relieved AWS DC+ (1.0 hour(s))	525 MPa	620 MPa	25 %	120 J @ -18 °C 80 J @ -29 °C
OK Autrod 13.20 SC	Stress Relieved EN DC+ (1.0 hour(s))	500 MPa	615 MPa	25 %	200 J @ 20 °C 130 J @ -20 °C
OK Autrod 13.21	As Welded AWS DC+	470 MPa	560 MPa	28 %	195 J @ 20 °C 185 J @ 0 °C 160 J @ -20 °C 70 J @ -40 °C 60 J @ -51 °C
OK Autrod 13.21	As Welded EN AC	520 MPa	595 MPa	24 %	170 J @ 20 °C 165 J @ 0 °C 150 J @ -20 °C 70 J @ -40 °C 50 J @ -51 °C
OK Autrod 13.21	Stress Relieved AWS DC+ (1.0 hour(s))	435 MPa	540 MPa	30 %	190 J @ 20 °C 180 J @ 0 °C 160 J @ -20 °C 110 J @ -40 °C 70 J @ -51 °C 60 J @ -62 °C
OK Autrod 13.24	As Welded EN AC	560 MPa	640 MPa	23 %	130 J @ -40 °C 120 J @ -50 °C 80 J @ -60 °C
OK Autrod 13.24	As Welded AWS DC+	530 MPa	620 MPa	25 %	120 J @ -40 °C 110 J @ -50 °C 70 J @ -60 °C 50 J @ -73 °C
OK Autrod 13.24	Stress Relieved AWS DC+ (1.0 hour(s))	500 MPa	590 MPa	27 %	120 J @ -40 °C 100 J @ -50 °C 65 J @ -62 °C

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Typical Mechanical Properties					
Wire	**Condition**	**Yield Strength**	**Tensile Strength**	**Elongation**	**Charpy V-Notch**
OK Autrod 13.27	Stress Relieved AWS DC+ (1.0 hour(s))	460 MPa	570 MPa	28 %	150 J @ -20 °C 100 J @ -40 °C 90 J @ -60 °C 40 J @ -73 °C
OK Autrod 13.27	As Welded EN AC	520 MPa	605 MPa	27 %	150 J @ -20 °C 120 J @ -40 °C 80 J @ -60 °C 60 J @ -70 °C
OK Autrod 13.27	As Welded AWS DC+	460 MPa	570 MPa	28 %	140 J @ -20 °C 110 J @ -40 °C 80 J @ -60 °C 50 J @ -73 °C
OK Autrod 13.36	As Welded EN AC	550 MPa	620 MPa	25 %	110 J @ -40 °C 90 J @ -50 °C
OK Autrod 13.36	As Welded AWS DC+	500 MPa	590 MPa	27 %	70 J @ -40 °C 60 J @ -51 °C
OK Autrod 13.40	As Welded EN AC	660 MPa	730 MPa	24 %	110 J @ -40 °C 90 J @ -50 °C 70 J @ -60 °C
OK Autrod 13.40	As Welded AWS DC+	610 MPa	690 MPa	24 %	90 J @ -40 °C 80 J @ -50 °C 50 J @ -62 °C
OK Autrod 13.40	Stress Relieved AWS DC+ (1 hour(s))	600 MPa	680 MPa	26 %	60 J @ -40 °C 45 J @ -62 °C
OK Autrod 13.43	As Welded AWS DC+	700 MPa	800 MPa	21 %	100 J @ -20 °C 75 J @ -40 °C 65 J @ -50 °C 50 J @ -62 °C
OK Autrod 13.43	Stress Relieved AWS DC+ (1.0 hour(s))	695 MPa	790 MPa	21 %	80 J @ -20 °C 60 J @ -40 °C 50 J @ -50 °C 40 J @ -62 °C
OK Autrod 13.43	As Welded EN ISO-A AC	720 MPa	845 MPa	19 %	110 J @ -20 °C 90 J @ -40 °C 70 J @ -50 °C 60 J @ -60 °C
OK Autrod 13.49	Stress Relieved AWS DC+ (1.0 hour(s))	510 MPa	570 MPa	29 %	95 J @ -70 °C 50 J @ -101 °C
OK Autrod 13.49	As Welded AWS DC+	500 MPa	600 MPa	27 %	95 J @ -70 °C 40 J @ -101 °C
OK Autrod 13.49	As Welded EN AC	560 MPa	640 MPa	22 %	95 J @ -70 °C 75 J @ -80 °C 55 J @ -90 °C