

OK Flux 10.71

OK Flux 10.71 is an agglomerated, basic flux for submerged arc welding. It is used for single and multi-run welding of all plate thicknesses. It can be combined with a wide range of solid wires and cored wires and thus it is suitable for all kinds of steels. OK Flux 10.71 combines good toughness values with excellent weldability. It is used for single and multiwire procedures such as tandem, twin-arc, tandem-twin welding and many more, for butt, overlap and fillet welds. It works equally well on DC and AC current. The good slag detachability and limited alloying of Si and Mn makes it well suited for multi-pass thick section welding. High welding speeds can be achieved producing a finely rippled weld metal, all this in combination with very good impact values. In general construction, OK Flux 10.71 is one of the most used SAW fluxes. Not just for structural steels and fine-grained steels, but also for weather resistant steels e.g. for bridges. Pressure vessels are welded with this flux, because it can be used for a wide range of steels including low temperature steels. This reduces the number of different fluxes a customer needs to have in stock. Wind tower production with plate thicknesses of greater than 50 mm require not only excellent slag detachability, particularly in the first run, and high deposition rates in all following runs, but also excellent toughness values. Since OK Flux 10.71 offers all this it is well established in this market segment. Other applications are in shipbuilding with approvals or in the production of pipes with steels up to X70 strength level. OK Flux 10.71 can also be combined with a number of SAW cored wires in order to increase the productivity and the mechanical properties of the weld metal.

Clasificaciones	EN ISO 14174 : S A AB 1 67 AC H5
Aprobaciones	CE EN 13479 NAKS/HAKC RD 03-613-03 DB 51.039.05

Las aprobaciones dependen de la ubicación de la fábrica. Póngase en contacto con ESAB para obtener más información.

Hidrógeno difusible	max 5 ml H/100g weld metal (Redried flux)
Tipo de escoria	Aluminate-basic
Transferencia de aleación	Slightly Silicon and moderately Manganese alloying
Densidad	nom 1.2 kg/dm ³
Índice de basicidad	nom 1.5
Granulometría	0.2-1.6 mm (10x65 mesh) or 0.315 -2.0 mm (9x48 mesh)

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

Dimensions	Amps	Travel Speed
Ø 4.0 mm	580 A	55 cm/min

Classifications

Wire	SFA/AWS - EN ISO	EN - As Welded	AWS - As Welded	AWS - PWHT
ESAB SA10K	A5.17:EH10K		A5.17: F7A4-EH10K	A5.17: F7P6-EH10K
OK Autrod 12.08L	A5.17:EL8/EL12/ 14171-A:S1		A5.17: F6A2-EL8	
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 12.22L	A5.17:EM12K/ 14171-B:SU21		A5.17: F7A4-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 12.24L	A5.23:EA2/ 14171-B:SU2M3		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 12.33L	A5.23:EA3K		A5.23: F9A0-EA3K-G	A5.23: F8P0-EA3K-G
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 12.40L	A5.17:EH14/ 14171-B:SU41		A5.17: F7A4-EH14	A5.17: F7P5-EH14
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	



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Approvals

Combined with Wire	ABS	BV	DNV	GL	LR	DB	CE	PRS	RINA	RS	ClassNK/dTÜV	IRS	IBR	M N Dastur
OK Autrod 12.08L	•	-	-	-	-	-	-	-	-	-	-	•	-	-
OK Autrod 12.10	•	•	•	•	•	•	•	•	-	•	-	•	-	-
OK Autrod 12.20	•	•	•	•	•	•	•	•	•	•	-	•	-	-
OK Autrod 12.22	•	•	•	•	•	•	•	-	-	•	•	•	-	-
OK Autrod 12.22L	-	-	-	-	•	-	-	-	-	-	-	-	-	-
OK Autrod 12.24	•	•	•	•	•	•	•	•	•	•	•	•	-	-
OK Autrod 12.30	-	-	-	-	-	•	•	-	-	-	-	•	-	-
OK Autrod 12.32	-	-	-	-	-	•	•	-	-	-	-	•	-	-
OK Autrod 12.40L	-	-	•	-	•	-	-	-	-	-	-	-	•	•
OK Autrod 13.27	-	-	-	-	-	-	-	-	-	-	-	•	-	-
OK Autrod 13.36	-	-	-	-	-	-	•	-	-	-	-	-	-	-

Typical Mechanical Properties

Combined with Wire	Condition	Yield Strength	Tensile Strength	Elongation	Charpy V-Notch
OK Autrod 12.10	As Welded AWS DC+	360 MPa	465 MPa	30 %	125 J @ 0°C 125 J @ 0°C 95 J @ -20°C 95 J @ -20°C 75 J @ -30°C 75 J @ -30°C 65 J @ -40°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 12.20	As Welded AWS DC+	410 MPa	510 MPa	29 %	135 J @ 20°C 135 J @ 20°C 125 J @ 0°C 125 J @ 0°C 80 J @ -20°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 AWS DC+	425 MPa	520 MPa	29 %	140 J @ 0°C 140 J @ 0°C 100 J @ -20°C 100 J @ -20°C 60 J @ -40°C 40 J @ -46°C 40 J @ -46°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 12.22L	As Welded DC+	450 MPa	540 MPa	29 %	60 J @ -18°C 45 J @ -29°C 30 J @ -40°C
ESAB SA10K	As Welded DC+	490 MPa	580 MPa	26 %	70 J @ -18°C 45 J @ -29°C 30 J @ -40°C
OK Autrod 12.08L	As Welded DC+	390 MPa	450 MPa	25 %	120 J @ 0°C 100 J @ -18°C 70 J @ -29°C
OK Autrod 12.24	As Welded AWS DC+	500 MPa	580 MPa	24 %	125 J @ 20°C 125 J @ 20°C 100 J @ 0°C 100 J @ 0°C 60 J @ -18°C 60 J @ -18°C 40 J @ -29°C 40 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 12.24L	As Welded DC+	550 MPa	610 MPa	23 %	90 J @ 0°C 65 J @ -18°C 40 J @ -29°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



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Typical Mechanical Properties					
Combined with Wire	Condition	Yield Strength	Tensile Strength	Elongation	Charpy V-Notch
OK Autrod 12.30	As Welded EN DC+	490 MPa	580 MPa	29 %	130 J @ 20°C 130 J @ 20°C 110 J @ 0°C 110 J @ 0°C 90 J @ -20°C 90 J @ -20°C 60 J @ -30°C 60 J @ -30°C
OK Autrod 12.32	As Welded AWS DC+	480 MPa	580 MPa	28 %	150 J @ 20°C 150 J @ 20°C 130 J @ 0°C 130 J @ 0°C 95 J @ -20°C 95 J @ -20°C 65 J @ -40°C 40 J @ -46°C 40 J @ -46°C
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 12.33L	As Welded DC+	630 MPa	700 MPa	25 %	65 J @ 0°C 35 J @ -18°C
OK Autrod 12.34	As Welded AWS DC+	535 MPa	620 MPa	27 %	120 J @ 20°C 120 J @ 20°C 105 J @ 0°C 105 J @ 0°C 70 J @ -20°C 70 J @ -20°C 60 J @ -30°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 12.40L	As Welded DC+	490 MPa	580 MPa	27 %	75 J @ -18°C 60 J @ -29°C 40 J @ -40°C
OK Autrod 13.24	As Welded AWS DC+	560 MPa	630 MPa	25 %	120 J @ 20°C 120 J @ 20°C 85 J @ -20°C 85 J @ -20°C 70 J @ -30°C 70 J @ -30°C 60 J @ -40°C 40 J @ -46°C 40 J @ -46°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 13.27	As Welded AWS DC+	500 MPa	600 MPa	28 %	100 J @ -20°C 100 J @ -20°C 60 J @ -40°C 50 J @ -51°C 50 J @ -51°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 13.36	As Welded AWS DC+	490 MPa	580 MPa	27 %	120 J @ 20°C 120 J @ 20°C 70 J @ -20°C 70 J @ -20°C 55 J @ -29°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 40 J @ -51°C
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 40 J @ -51°C

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Combined with Wire	Condition	Yield Strength	Tensile Strength	Elongation	Charpy V-Notch
OK Autrod 12.40L	PWHT DC+	440 MPa	530 MPa	29 %	100 J @ -18°C 80 J @ -29°C 55 J @ -40°C 45 J @ -46°C
OK Autrod 12.33L	PWHT DC+	550 MPa	650 MPa	30 %	70 J @ 0°C 40 J @ -18°C
OK Autrod 12.24L	PWHT DC+	480 MPa	560 MPa	26 %	80 J @ 0°C 50 J @ -18°C
OK Autrod 12.08L	PWHT DC+	300 MPa	390 MPa	35 %	125 J @ 0°C 110 J @ -18°C 80 J @ -29°C
ESAB SA10K	PWHT DC+	430 MPa	530 MPa	32 %	120 J @ -18°C 100 J @ -29°C 75 J @ -40°C 40 J @ -51°C
OK Autrod 12.22L	PWHT DC+	390 MPa	490 MPa	32 %	90 J @ -18°C 65 J @ -29°C 40 J @ -40°C 30 J @ -46°C
ESAB SA10K	PWHT DC+	410 MPa	500 MPa	34 %	40 J @ -29°C
OK Autrod 12.22L	PWHT DC+	360 MPa	490 MPa	36 %	60 J @ -29°C
OK Autrod 12.22L	PWHT DC+	360 MPa	480 MPa	33 %	100 J @ -29°C

à% Análisis metal depositado (valores típicos)

C	Mn	Si	S	P	Ni	Cr	Mo	Cu
ESAB SA10K DC+ 550A, 29V								
0.07	1.75	0.50	-	-	-	-	-	-
OK Autrod 12.08L DC+ 550A, 29V								
0.06	0.90	0.20	-	-	-	-	-	-
OK Autrod 12.10 AC , 580A, 29V								
0.05	0.85	0.2	-	-	-	-	-	-
OK Autrod 12.10 DC+ , 580A, 29V								
0.04	1.0	0.3	-	-	-	-	-	-
OK Autrod 12.20 AC, 580A, 29V								
0.06	1.2	0.2	-	-	-	-	-	-
OK Autrod 12.20 DC+, 580A, 29V								
0.05	1.35	0.3	-	-	-	-	-	-
OK Autrod 12.22 AC, 580A, 29V								
0.06	1.2	0.4	-	-	-	-	-	-
OK Autrod 12.22 DC+, 580A, 29V								
0.05	1.4	0.5	-	-	-	-	-	-
OK Autrod 12.22L DC+ 550A, 29V								
0.08	1.35	0.40	-	-	-	-	-	-
OK Autrod 12.24 AC, 580A, 29V								
0.06	1.3	0.25	-	-	-	-	0.5	-
OK Autrod 12.24 DC+, 580A, 29V								
0.05	1.4	0.4	-	-	-	-	0.5	-
OK Autrod 12.24L DC+ 550A, 29V								
0.08	1.35	0.40	0.020	0.025	-	-	0.45	-
OK Autrod 12.30 AC, 580A, 29V								
0.10	1.6	0.3	-	-	-	-	-	-
OK Autrod 12.30 DC+, 580A, 29V								
0.09	1.65	0.4	-	-	-	-	-	-
OK Autrod 12.32 AC, 580A, 29V								
0.10	1.9	0.35	-	-	-	-	-	-
OK Autrod 12.32 DC+, 580A, 29V								
0.09	2.0	0.5	-	-	-	-	-	-
OK Autrod 12.33L DC+								
0.06	1.95	0.75	-	-	-	-	0.40	-
OK Autrod 12.34 AC, 580A, 29V								
0.10	1.5	0.25	-	-	-	-	0.5	-
OK Autrod 12.34 DC+, 580A, 29V								
0.09	1.6	0.4	-	-	-	-	0.5	-
OK Autrod 12.40L DC+ 550A, 29V								

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à% Análisis metal depositado (valores típicos)

C	Mn	Si	S	P	Ni	Cr	Mo	Cu
0.07	1.95	0.40	-	-	-	-	-	-
OK Autrod 13.24 AC , 580A, 29V								
0.09	1.50	0.45	-	-	0.9	-	0.2	-
OK Autrod 13.24 DC+, 580A, 29V								
0.07	1.70	0.5	-	-	0.9	-	0.2	-
OK Autrod 13.27 AC, 580A, 29V								
0.06	1.3	0.3	-	-	2.2	-	-	-
OK Autrod 13.27 DC+, 580A, 29V								
0.05	1.4	0.4	-	-	2.2	-	-	-
OK Autrod 13.36 AC , 580A, 29V								
0.09	1.2	0.4	-	-	0.7	0.3	-	0.5
OK Autrod 13.36 DC+, 580A, 29V								
0.08	1.3	0.5	-	-	0.7	0.3	-	0.5