

OK Flux 10.74

Agglomerated aluminate-basic flux-wire-combination for Submerged Arc Welding. Especially for multi wire procedures in the production of longitudinal welded line pipes. Low weld bead profile at high welding speeds. Suitable for line pipe steels up to X70. Due to the careful metallurgical design it produces a hard-spot free weld metal. Suitable for DC and AC welding of unlimited plate thickness.

Specifications

Classifications	EN ISO 14174 : S A AB 1 67 AC H5
Approvals	NAKS/HAKC : RD 03-613-03

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

Diffusible Hydrogen	max 5 ml H/100g weld metal (Redried flux)
Slag Type	Aluminate-basic
Alloy Transfer	Slightly Silicon and moderately Manganese alloying
Density	nom: 1.2 kg/dm ³
Basicity Index	nom: 1.4

Flux_Consumption_SAW

Volts	DC+ Weight	AC Weight
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_SAW

Wire	AWS/EN	EN - As Welded	AWS - As Welded	AWS - PWHT
OK Autrod 12.20	A5.17:EM12/ 14171-A:S2	14171-A: S 42 4 AB S2	A5.17: F7A6-EM12	A5.17: F6P6-EM12
OK Autrod 12.22	A5.17:EM12K/ 14171-A:S2Si	14171-A: S 42 4 AB S2Si	A5.23: F8TA4G-EM12K	A5.17: F6P6-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 12.34	A5.23:EA4/ 14171-A:S3Mo; 24598-A:S S MnMo	14171-A: S 50 2 AB S3Mo	A5.23: F9A2-EA4-A3	A5.23: F9P0-EA4-A3
OK Autrod 13.62	A5.23:EG/ 14171-A:SZ3TiB	-	A5.23: F8TA6-EG	-
OK Autrod 13.64	A5.23:EA2TiB/ 14171-A:S2MoTiB	-	A5.23: F8TA6-EA2TiB	-

Approvals_SAW

Wire
*Selected production units only. Please contact ESAB for more information. Visit esab.com to download specific flux/wire combination fact sheets for more details.

Typical Weld Metal Analysis %

C	Mn	Si	Mo
OK Autrod 12.20 AC, 580A, 29V			
0.08	1.3	0.2	-
OK Autrod 12.20 DC+, 580A, 29V			
0.07	1.5	0.3	-
OK Autrod 12.22 AC, 580A, 29V			
0.08	1.3	0.4	-
OK Autrod 12.22 DC+, 580A, 29V			
0.07	1.5	0.5	-

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Typical Weld Metal Analysis %

C	Mn	Si	Mo
OK Autrod 12.24 AC, 580A, 29V			
0.06	1.3	0.3	0.5
OK Autrod 12.24 DC+, 580A, 29V			
0.05	1.4	0.4	0.5
OK Autrod 12.34 DC+, 580A, 29V			
0.08	1.6	0.4	0.5
OK Autrod 12.34 AC, 580A, 29V			
0.09	1.5	0.3	0.5

Typical Wire Composition %

C	Mn	Si	Mo	Ti	B
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 12.34					
0.13	1.51	0.16	0.48	-	-
OK Autrod 13.64					
0.07	1.22	0.28	0.49	0.14	0.013

SAW_Typical_Mech_Properties

Wire	Testing Condition	Yield Strength	Tensile Strength	Elongation	Charpy V-Notch Result
OK Autrod 12.20	As Welded AWS DC+	440 MPa (64 ksi)	540 MPa (78 ksi)	30 %	60 J @ -40 °C (44 ft-lb @ -40 °F) 40 J @ -51 °C (30 ft-lb @ -59.8 °F)
OK Autrod 12.20	As Welded EN AC	450 MPa	540 MPa (78 ksi)	27 %	110 J @ -20 °C (81 ft-lb @ -4 °F) 80 J @ -30 °C (59 ft-lb @ -22 °F) 60 J @ -40 °C (44 ft-lb @ -40 °F)
OK Autrod 12.22	As Welded Two-run acc. to AWS; X70- plate, thickness 12mm; Heat input 2.2 kJ/mm; 700A, 32V, 60cm/min DC+	530 MPa (77 ksi)	640 MPa (93 ksi)	27 %	150 J @ 0 °C (111 ft-lb @ 32 °F) 110 J @ -30 °C (81 ft-lb @ -22 °F) 60 J @ -40 °C (44 ft-lb @ -40 °F)
OK Autrod 12.22	As Welded EN AC	460 MPa	550 MPa (80 ksi)	26 %	110 J @ -20 °C (81 ft-lb @ -4 °F) 80 J @ -30 °C (59 ft-lb @ -22 °F) 60 J @ -40 °C (44 ft-lb @ -40 °F)
OK Autrod 12.22	As Welded AWS DC+	440 MPa (64 ksi)	540 MPa (78 ksi)	30 %	55 J @ -40 °C (41 ft-lb @ -40 °F) 35 J @ -51 °C (26 ft-lb @ -59.8 °F)

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SAW_Typical_Mech_Properties

Wire	Testing Condition	Yield Strength	Tensile Strength	Elongation	Charpy V-Notch Result
OK Autrod 12.24	As Welded EN AC	550 MPa	620 MPa (90 ksi)	23 %	120 J @ 0 °C (89 ft-lb @ 32 °F) 80 J @ -20 °C (59 ft-lb @ -4 °F) 50 J @ -40 °C (37 ft-lb @ -40 °F)
OK Autrod 12.24	As Welded AWS DC+	520 MPa (75 ksi)	590 MPa (86 ksi)	24 %	100 J @ 0 °C (74 ft-lb @ 32 °F) 65 J @ -20 °C (48 ft-lb @ -4 °F) 50 J @ -29 °C (37 ft-lb @ -20.2 °F) 30 J @ -40 °C (22 ft-lb @ -40 °F)
OK Autrod 12.34	As Welded AWS DC+	590 MPa (86 ksi)	670 MPa (97 ksi)	24 %	90 J @ 0 °C (67 ft-lb @ 32 °F) 60 J @ -18 °C (44 ft-lb @ -0.4 °F) 55 J @ -20 °C (41 ft-lb @ -4 °F) 40 J @ -29 °C (30 ft-lb @ -20.2 °F)
OK Autrod 12.34	As Welded EN AC	620 MPa	680 MPa (99 ksi)	23 %	100 J @ 0 °C (74 ft-lb @ 32 °F) 80 J @ -20 °C (59 ft-lb @ -4 °F) 60 J @ -30 °C (44 ft-lb @ -22 °F)
OK Autrod 13.62	As Welded (acc. AWS) Plate thickness 12mm; Heat input 2.2 kJ/mm; Side1: 600A/32V/53cm /min; Side2: 700A/32V /60cm/min.; DC+	520 MPa (75 ksi)	610 MPa (88 ksi)	26 %	130 J @ 0 °C (96 ft-lb @ 32 °F) 70 J @ -51 °C (52 ft-lb @ -59.8 °F)
OK Autrod 13.64	As Welded (acc. to AWS) Plate thickness 12mm Heat input 2.2kJ /mm 700A, 32V, 60cm /min DC+	550 MPa (80 ksi)	650 MPa (94 ksi)	26 %	70 J @ -51 °C (52 ft-lb @ -59.8 °F)