

OK Flux 10.99

OK Flux 10.99 is a neutral agglomerated basic flux designed for the submerged arc welding process of austenitic stainless steels with relevant wires, either using AC or DC+ current.

This flux can also be used in both current modes to weld Ni-based alloys with carefully chosen Ni-based wires.

Welding in AC usually provides good mechanical properties and better impact properties (when compared to DC+ current).

The high basicity of OK Flux 10.99 gives better impact values, regardless of the current being used.

It also has very good weldability in 1G and 2G position; the slag is self-lifting or easily detached leaving clean and nice bead appearance.

Classifications	EN ISO 14174 : S A FB 2 55 53 AC
Approvals	NAKS/HAKC RD 03-613-03

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

Slag Type	Fluoride basic CaF ₂ - MgO - Al ₂ O ₃
Alloy Transfer	Non alloying
Density	nom 1.0 kg/dm ³
Basicity Index	nom 2.1
Grain Size	0.2-2.0 mm (10x65 mesh)

Flux Consumption

Volts	kg Flux / kg Wire DC+	kg Flux / kg Wire AC
26 V	0.7 kg	0.6 kg
30 V	0.8 kg	0.8 kg
34 V	0.9 kg	1.1 kg
38 V	1.1 kg	1.3 kg

Dimensions	Amps	Travel Speed
3.2 mm	400 A	50 cm/min

Classifications

Wire	SFA/AWS - EN ISO	AWS - As Welded
OK Autrod 308L	A5.9:ER308L/ 14343-A:S 19 9 L	
OK Autrod 309L	A5.9:ER309L/ 14343-A:S 23 12 L	
OK Autrod 316L	A5.9:ER316L/ 14343-A:S 19 12 3 L	
OK Autrod 316LMn	A5.9:ER316LMn/ 14343-A:S 20 16 3 Mn N L	
OK Autrod NiCrMo-4	A5.14:ERNiCrMo-4/ 18274:S Ni 6276 (NiCr15Mo16Fe6W4)	A5.39: F100A32-ERNiCrMo-4/NiCrMo-4

Approvals

Combined with Wire	LR	CCS
OK Autrod NiCrMo-4	•	•

Typical Mechanical Properties

Combined with Wire	Condition	Yield Strength	Tensile Strength	Elongation	Charpy V-Notch
OK Autrod 308L	As Welded AC hr	400 MPa	560 MPa	36 %	105 J @ -20°C 100 J @ -40°C 90 J @ -60°C 55 J @ -196°C
OK Autrod 308L	As Welded DC+ hr	400 MPa	560 MPa	36 %	85 J @ -20°C 80 J @ -40°C 75 J @ -60°C 50 J @ -196°C
OK Autrod 309L	As Welded AC hr	410 MPa	575 MPa	36 %	105 J @ -20°C 100 J @ -40°C 95 J @ -60°C 85 J @ -110°C
OK Autrod 316L	As Welded AC hr	410 MPa	570 MPa	35 %	110 J @ -20°C 105 J @ -40°C 100 J @ -60°C 70 J @ -196°C
OK Autrod 316LMn	As Welded 400A, 30V, 33m/h AC hr	420 MPa	630 MPa	40 %	105 J @ -60°C 90 J @ -110°C 55 J @ -196°C
OK Autrod NiCrMo-4	As Welded HI ~0,9-1,1 kJ/mm AC	480 MPa	720 MPa	42 %	100 J @ -196°C
OK Autrod NiCrMo-4	As Welded HI ~0,9-1,1 kJ/mm DC+	480 MPa	720 MPa	42 %	75 J @ -196°C 75 J @ -196°C

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Typical Weld Metal Analysis %

C	Mn	Si	S	P	Ni	Cr	Mo	V	Cu
OK Autrod 308L AC									
0.025	1.9	0.3	0.01	0.02	9.8	19.2	0.1	-	0.2
OK Autrod 308L DC+									
0.02	1.9	0.3	0.01	0.02	9.8	19.2	0.1	-	0.2
OK Autrod 309L AC									
0.030	1.9	0.4	0.01	0.02	13.0	22.0	0.1	-	0.04
OK Autrod 316L AC									
0.025	1.7	0.4	0.01	0.02	12.0	18.3	2.6	-	0.2
OK Autrod 316LMn									
0.03	7.0	0.5	0.01	0.02	16.0	20.0	3.0	-	0.30
OK Autrod NiCrMo-4 AC									
0.015	0.7	0.08	0.002	0.006	Bal	15.2	15.6	0.1	0.1
OK Autrod NiCrMo-4 DC+									
0.01	0.7	0.11	0.002	0.006	Bal	15.2	15.6	0.1	0.1

N	Co	Fe	W	FN WRC-92
OK Autrod 308L AC				
0.07	-	-	-	6
OK Autrod 308L DC+				
0.07	-	-	-	6
OK Autrod 309L AC				
0.09	-	-	-	-
OK Autrod 316L AC				
0.05	-	-	-	6
OK Autrod 316LMn				
0.17	-	-	-	-
OK Autrod NiCrMo-4 AC				
-	0.1	6.5	3.7	-
OK Autrod NiCrMo-4 DC+				
-	0.1	6.5	3.6	-