

OK Flux 10.90

Agglomerated aluminate-fluoride-basic flux for welding of 9 % Ni steels and other high alloyed steels with Ni based wires. The flux is manganese adding, which reduces the risk of hot cracking. Good slag detachability and nice bead appearance.

Classifications	EN ISO 14174 : S A AF 2 55 53 MnNi DC
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 -Al ₂ O ₃ -SiO ₂
Alloy Transfer	Chromium compensating. Nickel- and manganese alloying.
Density	nom 1.0 kg/dm ³
Basicity Index	nom 1.7

Flux Consumption

Volts	kg Flux / kg Wire DC+	kg Flux / kg Wire AC
26 V	0.5 kg	-
30 V	0.6 kg	-
34 V	0.8 kg	-
38 V	1.0 kg	-

Dimensions	Amps	Travel Speed
4.0 mm	580 A	33 m/h

Classifications

Wire	SFA/AWS - EN ISO	AWS - As Welded
OK Autrod 310	A5.9:ER310/ 14343-A:S 25 20	
OK Autrod NiCr-3	A5.14:ERNiCr-3/ 18274:S Ni 6082 (NiCr20Mn3Nb)	
OK Autrod NiCrMo-13	A5.14:ERNiCrMo-13/ 18274:S Ni 6059 (NiCr23Mo16)	
OK Autrod NiCrMo-3	A5.14:ERNiCrMo-3/ 18274:S Ni 6625 (NiCr22Mo9Nb)	A5.39: F100A32-ERNiCrMo-3/G
OK Autrod NiCrMo-3	A5.14:ERNiCrMo-3/ 18274:S Ni 6625 (NiCr22Mo9Nb)	A5.39: F100A32-ERNiCrMo-3/G
OK Autrod NiCrMo-3 SAW	A5.14:ERNiCrMo-3/ 18274:S Ni 6625 (NiCr22Mo9Nb)	
OK Autrod NiCrMo-4	A5.14:ERNiCrMo-4/ 18274:S Ni 6276 (NiCr15Mo16Fe6W4)	A5.39: F100A32-ERNiCrMo-4/G
OK Autrod NiCrMo-4	A5.14:ERNiCrMo-4/ 18274:S Ni 6276 (NiCr15Mo16Fe6W4)	A5.39: F100A32-ERNiCrMo-4/G

Approvals

Combined with Wire	ABS	BV	DNV	RINA	CCS	ClassNK	KR	DNV-GL
OK Autrod NiCrMo-3	-	-	-	-	-	-	-	•
OK Autrod NiCrMo-3 SAW	-	-	•	-	-	-	-	-
OK Autrod NiCrMo-4	•	•	•	•	•	•	•	•

Typical Mechanical Properties

Combined with Wire	Condition	Yield Strength	Tensile Strength	Elongation	Charpy V-Notch
OK Autrod 310	As Welded ISO DC+ hr °C (°F)	390 MPa (57 ksi)	570 MPa (83 ksi)	34 %	85 J @ 20°C (63 ft-lb @ 68°F)
OK Autrod NiCr-3	As Welded ISO DC+ hr °C (°F)	400 MPa (58 ksi)	600 MPa (87 ksi)	35 %	145 J @ -80°C (107 ft-lb @ -112°F) 130 J @ -196°C (96 ft-lb @ -320.8°F)
OK Autrod NiCrMo-13	As Welded 350 A, HI 1.3-1.7 kJ/mm DC+ hr °C (°F)	470 MPa (68 ksi)	675 MPa (98 ksi)	46 %	70 J @ -196°C (52 ft-lb @ -320.8°F)
OK Autrod NiCrMo-3	As Welded HI ~1.0-1.7 kJ/mm DC+ hr °C (°F)	440 MPa (64 ksi)	720 MPa (104 ksi)	42 %	100 J @ -196°C (74 ft-lb @ -320.8°F) 100 J @ -196°C (74 ft-lb @ -320.8°F)
OK Autrod NiCrMo-3 SAW	As Welded HI ~1.0-1.7 kJ/mm DC+ hr °C (°F)	440 MPa	720 MPa	42 %	100 J @ -196°C
OK Autrod NiCrMo-4	As Welded DC+hr °C (°F)	480 MPa (70 ksi)	700 MPa (102 ksi)	40 %	60 J @ -196°C (44 ft-lb @ -320.8°F) 60 J @ -196°C (44 ft-lb @ -320.8°F)

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Typical Weld Metal Analysis %

C	Mn	Si	S	P	Ni	Cr	Mo	V	Cu
OK Autrod 310									
0.07	3.2	0.40	0.010	0.020	20.5	25.5	0.015	-	0.010
OK Autrod NiCrMo-13 Current Type: DC+ , 350A, 29V									
0.01	2.8	0.2	0.001	0.01	bal.	22.0	15.0	-	-
OK Autrod NiCrMo-3 DC+, 350A, 29V									
0.01	1.7	0.2	0.01	0.01	Bal.	21.0	8.5	-	-
OK Autrod NiCrMo-4 DC+, 350A, 29V									
0.01	2.2	0.2	0.003	0.01	Bal.	15.0	15.5	0.04	0.01

Co	Fe	Nb+Ta	W
OK Autrod 310			
-	-	-	-
OK Autrod NiCrMo-13 Current Type: DC+ , 350A, 29V			
-	1	-	-
OK Autrod NiCrMo-3 DC+, 350A, 29V			
-	2.0	3.0	-
OK Autrod NiCrMo-4 DC+, 350A, 29V			
0.15	6.0	-	3.4