

OK Flux 10.77

Agglomerated aluminate-basic flux for Submerged Arc Welding especially for production of mild and high-strength line pipe steels (mainly spiral pipe production). Shallow reinforcement, low transition angles, smooth surface finish even at high welding speeds. Designed for single and multi wire procedures. Suitable for DC and AC welding.

Классификации	EN ISO 14174 : S A AB 1 67 AC H5
Одобрения	CE EN 13479 NAKS/НАКС RD 03-613-03
Отрасль или сегмент	Прокладка трубопроводов

Одобрения на материалы выдаются с привязкой к заводу изготовителю. Подробную информацию можно получить в представительствах ESAB.

Диффузионный водород	max 5 ml H/100g weld metal (Redried flux)
Тип шлака	Aluminate-basic
Перенос легирующего элемента	Slightly Silicon and moderately Manganese alloying
Плотность	nom 1.2 kg/dm ³
Показатель щелочности	nom 1.3
Размер гранулы	0.2-1.6 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	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
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 12.24	A5.23:EA2/ 14171-A:S2Mo; 24598-A:S S Mo	14171-A: S 46 2 AB S2Mo	A5.23: F8A4-EA2-A2	A5.23: F7P2-EA2-A2
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-A4	A5.23: F8P2-EA4-A4
OK Autrod 13.62	A5.23:EG/ 14171-A:SZ3TiB			
OK Autrod 13.64	A5.23:EA2TiB/ 14171-A: S2MoTiB		A5.23: F8TA6-EA2TiB	

Approvals

Combined with Wire	CE
OK Autrod 12.20	•
OK Autrod 12.22	•
OK Autrod 12.24	•

Typical Mechanical Properties

Combined with Wire	Condition	Yield Strength	Tensile Strength	Elongation	Charpy V-Notch
OK Autrod 12.20	As Welded AWS DC+ hr	420 MPa	500 MPa	28 %	80 J @ -20°C 80 J @ -20°C 65 J @ -30°C 65 J @ -30°C 55 J @ -40°C
OK Autrod 12.20	As Welded EN AC hr	430 MPa	510 MPa	28 %	115 J @ -20°C 95 J @ -30°C 70 J @ -40°C
OK Autrod 12.22	As Welded AWS DC+ hr	420 MPa	520 MPa	26 %	130 J @ -20°C 130 J @ -20°C 110 J @ -30°C 110 J @ -30°C 80 J @ -40°C 50 J @ -46°C 50 J @ -46°C

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Typical Mechanical Properties					
Combined with Wire	Condition	Yield Strength	Tensile Strength	Elongation	Charpy V-Notch
OK Autrod 12.22	As Welded EN AC hr	430 MPa	520 MPa	28 %	155 J @ -20°C 125 J @ -30°C 80 J @ -40°C 50 J @ -46°C
OK Autrod 12.24	As Welded AWS DC+ hr	495 MPa	580 MPa	25 %	90 J @ 0°C 90 J @ 0°C 60 J @ -18°C 60 J @ -18°C 60 J @ -20°C 60 J @ -20°C 50 J @ -29°C 50 J @ -29°C 40 J @ -40°C
OK Autrod 12.24	As Welded EN AC hr	520 MPa	590 MPa	25 %	100 J @ 0°C 80 J @ -20°C 45 J @ -40°C
OK Autrod 12.34	As Welded AWS DC+ hr	540 MPa	630 MPa	25 %	70 J @ -20°C 70 J @ -20°C 60 J @ -29°C 60 J @ -29°C 45 J @ -40°C
OK Autrod 12.34	As Welded EN AC hr	570 MPa	630 MPa	25 %	90 J @ -20°C 70 J @ -30°C 50 J @ -40°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+ hr	510 MPa	600 MPa	25 %	150 J @ 0°C 150 J @ 0°C 60 J @ -51°C 60 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+ hr	550 MPa	650 MPa	24 %	60 J @ -51°C 60 J @ -51°C

Хим. состав наплавленного металла			
C	Mn	Si	Mo
OK Autrod 12.20 AC, 580A, 29V			
0.07	1.3	0.2	-
OK Autrod 12.20 DC+, 580A, 29V			
0.06	1.4	0.3	-
OK Autrod 12.22 AC, 580A, 29V			
0.08	1.3	0.3	-
OK Autrod 12.22 DC+, 580A, 29V			
0.07	1.4	0.4	-
OK Autrod 12.24 AC, 580A, 29V			
0.07	1.3	0.3	0.5
OK Autrod 12.24 DC+, 580A, 29V			
0.07	1.3	0.3	0.5
OK Autrod 12.34 AC, 580A, 29V			
0.08	1.6	0.3	0.5
OK Autrod 12.34 DC+, 580A, 29V			
0.08	1.5	0.3	0.5