

## OK Flux 10.77

OK Flux 10.77 is an agglomerated, basic flux designed primarily for multi-wire procedures in the production of spiral welded line pipes. The flux alloys some Si and Mn to the weld metal and it works equally well on DC and AC current. It is used in single wire, tandem and 3-wire systems and it is also suitable for longitudinal welded pipes of limited plate thicknesses. OK Flux 10.77 produces welded joints with shallow reinforcement, low transition angles and smooth surface finish even at high welding speeds. A shallow reinforcement means cost saving in the later pipe coating operation, since the coating thickness can be reduced. With different wires it is suitable for all mild and high strength line pipe steels.

<b>Classifications</b>	AWS A5.17 : F7A5-EM12K AWS A5.23 : F7P2-EA2-A2 AWS A5.23 : F8A4-EA2-A2 AWS A5.23 : F8TA6-EG ASME SFA 5.23 ASME SFA 5.17
<b>Industry</b>	Pipe Construction

<b>Diffusible Hydrogen</b>	max 5 ml H/100g weld metal (Redried flux)
<b>Slag Type</b>	Aluminate-basic
<b>Alloy Transfer</b>	Slightly Silicon and moderately Manganese alloying
<b>Density</b>	nom 1.2 kg/dm <sup>3</sup>
<b>Basicity Index</b>	nom 1.3
<b>Grain Size</b>	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	AWS/EN	AWS - As Welded
OK Autrod 12.20	A5.17:EM12/ 14171-A:S2	A5.17: F7A4-EM12
OK Autrod 12.22	A5.17:EM12K/ 14171-A:S2Si	A5.17: F7A5-EM12K
OK Autrod 12.24	AWS A5.23: EA2	F8A4-EA2-A2
OK Autrod 12.34	A5.23:EA4/ 14171-A:S3Mo; 24598-A:S S MnMo	A5.23: F8A4-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 12.24	As Welded ( )	495 MPa (72 ksi)	580 MPa (84 ksi)	25 %	40 J @ -40°C (30 ft-lb @ -40°F)
OK Autrod 12.24	Stress Relieved 1 hr @ 621°C (1150F) ( )	450 MPa (65 ksi)	550 MPa (80 ksi)	25 %	25 J @ -40°C (18 ft-lb @ -40°F)
Spoolarc 81	As Welded ( )	420 MPa (61 ksi)	520 MPa (75 ksi)	26 %	110 J @ -29°C (81 ft-lb @ -20°F)



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### Typical Weld Metal Analysis %

C	Mn	Si
<b>OK Autrod 12.24</b>		
0.07	1.3	0.3
<b>Spoolarc 81</b>		
0.07	1.4	0.4