

## Pipeweld 78LH Flux

Pipeweld 78LH flux is a low hydrogen and moisture resistant agglomerated, basic flux, specifically designed for multi wire welding of line pipe steels grades like X70 and X80. It can be used in the production of spiral or longitudinal welded line pipe. The flux adds some Si and Mn to the weld metal and it works equally well on DC and AC current. Pipeweld 78LH flux produces welded joints with minimal reinforcement, low transition angles and smooth surface finish even at high welding speeds. A proper 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 : F8A4-EA2-A2 F8A4-EA4-A4 F8TA6-EA2TiB
<b>Industry</b>	Pipeline Pipe Mills

<b>Diffusible Hydrogen</b>	4ml H/100g weld metal (as produced)
<b>Slag Type</b>	Aluminate-basic
<b>Density</b>	1.2 kg/dm <sup>3</sup>
<b>Basicity Index</b>	1.3
<b>Grain Size</b>	0.315mm-2.0mm

Classifications			
Wire	SFA/AWS - EN ISO	AWS - As Welded	AWS - PWHT
OK Autrod 12.24	AWS A5.23: EA2	AWS A5.23: F8A4-EA2-A2	AWS A5.23: F7P2-EA2-A2
OK Autrod 13.64	AWS A5.23: EA2TiB	AWS A5.23: F8TA6-EA2TiB	
Spoolarc 81	AWS A5.17: EM12K	AWS A5.17: F7A5-EM12K	

Typical Mechanical Properties					
Combined with Wire	Condition	Yield Strength	Tensile Strength	Elongation	Charpy V-Notch
OK Autrod 12.24	-	515 MPa (75 ksi)	650 MPa (94 ksi)	25 %	31 J @ -29°C (23 ft-lb @ -20°F)
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 (1150°F) ( )	450 MPa (65 ksi)	550 MPa (80 ksi)	25 %	25 J @ -40°C (18 ft-lb @ -40°F)
OK Autrod 13.64	-	550 MPa (80 ksi)	650 MPa (94 ksi)	24 %	60 J @ -51°C (44 ft-lb @ -60°F)
Spoolarc 81	-	505 MPa (73 ksi)	640 MPa (93 ksi)	24 %	36 J @ -29°C (27 ft-lb @ -20°F)
Spoolarc 81	As Welded ( )	420 MPa (61 ksi)	520 MPa (75 ksi)	26 %	110 J @ -29°C (81 ft-lb @ -20°F)
Spoolarc 83	-	550 MPa (80 ksi)	705 MPa (102 ksi)	28 %	41 J @ -51°C (30 ft-lb @ -60°F)
Spoolarc 83	As Welded ( )	660 MPa (96 ksi)	760 MPa (110 ksi)	24 %	54 J @ -40°C (40 ft-lb @ -40°F)

Typical Weld Metal Analysis %			
C	Mn	Si	Mo
<b>OK Autrod 12.24</b>			
0.07	1.3	0.3	0.5
<b>Spoolarc 81</b>			
0.07	1.4	0.4	-
<b>Spoolarc 83</b>			
0.07	2.65	0.71	0.5