

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.

Specifications

Classifications	AWS A5.23 : F8A4-EA2-A2, F8A4-EA4-A4, F8TA6-EA2TiB AWS A5.17 : F7A5-EM12K
Industry	Pipeline Pipe Mills

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

Classifications

Wire	AWS/EN	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 Weld Metal Analysis %

C	Mn	Si	Mo
OK Autrod 12.24			
0.07	1.3	0.3	0.5
Spoolarc 81			
0.07	1.4	0.4	-
Spoolarc 83			
0.07	2.65	0.71	0.5

Typical Mechanical Properties

Combined with Wire	Condition	Yield Strength	Tensile Strength	Elongation	Charpy V-Notch
OK Autrod 12.24	Two-Run (acc to AWS) Plate Thickness 12 mm (1/2 In) Heat Input 2.3 kJ/mm (58 kJ /in) 650A, 34 V, 58 cm /min (23 in/min) DC+	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 @ 621C (1150F)	450 MPa (65 ksi)	550 MPa (80 ksi)	25 %	25 J @ -40 °C (18 ft-lb @ -40 °F)
OK Autrod 13.64	Two-Run (acc to AWS) Plate Thickness 12 mm (1/2 In) Heat Input 2.3 kJ/mm (58 kJ /in) 650A, 34 V, 58 cm /min (23 in/min) DC+	550 MPa (80 ksi)	650 MPa (94 ksi)	24 %	60 J @ -51 °C (44 ft-lb @ -60 °F)

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Typical Mechanical Properties

Combined with Wire	Condition	Yield Strength	Tensile Strength	Elongation	Charpy V-Notch
Spoolarc 81	Two-Run (acc to AWS) Plate Thickness 12 mm (1/2 In) Heat Input 2.3 kJ/mm (58 kJ /in) 650A, 34 V, 58 cm /min (23 in/min) DC+	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	As Welded	660 MPa (96 ksi)	760 MPa (110 ksi)	24 %	54 J @ -40 °C (40 ft-lb @ -40 °F)
Spoolarc 83	Two-Run (acc to AWS) Plate Thickness 12 mm (1/2 In) Heat Input 2.3 kJ/mm (58 kJ /in) 650A, 34 V, 58 cm /min (23 in/min) DC+	550 MPa (80 ksi)	705 MPa (102 ksi)	28 %	41 J @ -51 °C (30 ft-lb @ -60 °F)