

## SAW Basic and Semi-basic Fluxes C-Mn and low alloy steels

OP 100 is an agglomerated aluminate-basic type flux used for the welding of general structural steels, boiler and pipe steels, as well as fine grain structural steels, having a yield strength of up to 420 N/mm<sup>2</sup>. It produces a silicon and manganese pick-up and is suitable for use in combination with OE-S1 to OE-S3 wire electrodes, including OE-S2 Mo. The weld metal produced is extremely resistant to cracking, and the weld bead is resistant to base plate impurities. OP 100 is suitable to be used for single and multi-wire welding and for welding from both sides in one pass.

The slag detaches very easily even in narrow V-type preparations. The fused slag freezes rapidly and allows small diameter circumferential pipe to be welded without the risk of slag running off.

OP 100 can be used on either DC+ or AC up to 1000A. Damp flux should be re-dried at 300-350°C. Grain size according to EN 760: 2-20.

Wire	Classification
OE-S1	AWS 5.17: F6A0-EL12
OE-S2	AWS 5.17: F7A0-EM12K
OE-S2Mo	AWS 5.23: F7A0-EA2-A2
	EN 760: S A AB 1 76 AC

Wire	Approvals	Grades
OE-S1	DB	
OE-S1	TÜV	
OE-S2	DB	
OE-S2	TÜV	
OE-S2Mo	DB	
OE-S2Mo	TÜV	

see Appendix, Classification Society Approvals, for details pag. 521

Flux Analysis	
CaO + MgO	20 %
SiO <sub>2</sub> + TiO <sub>2</sub>	25 %
Al <sub>2</sub> O <sub>3</sub> + MnO	45 %
CaF <sub>2</sub>	10 %

**Basicity to Boniszewski** 0,8

### Typical Applications

Wire	Materials
OE-S1	ASME: ASTM A131 Grades A, B, D, DS; A253 All grades; A529 Grades 42, 50; A570 All grades; A572 Grades 42, 50; A709 Grades 36, 50 EN: 'S(P)235-S(P)355; L245-L360
OE-S2	ASME: ASTM A131 Grades A, B, D, DS; A253 All grades; A529 Grades 42, 50; A570 All grades; A572 Grades 42, 50; A709 Grades 36, 50 EN: 'S(P)235-S(P)355; L245-L360
OE-S2Mo	ASME: ASTM A355 Gr. P1; A182M Gr. F1 EN: 16 Mo 3, S(P)355-S(P)460, L245-L450

### Analysis of all-weld metal (Typical values in %)

Wire	C	Mn	Si	Cr	Ni	Mo	Nb	N	Cu
OE-S1	0.06	1	0.30	-	-	-	-	-	-
OE-S2	0.06	1.40	0.40	-	-	-	-	-	-
OE-S2Mo	0.06	1.40	0.40	-	-	0.40	-	-	-

## All-weld metal Mechanical Properties

Wire	Heat Treatment	Yield Strength N/mm <sup>2</sup>	Tensile Strength N/mm <sup>2</sup>	Elongation A5 (%)
OE-S1	As Welded	≥ 360	420 - 520	≥ 24
OE-S2	As Welded	≥ 400	500 - 600	≥ 24
OE-S2Mo	As Welded	≥ 450	600 - 700	≥ 20

## All-weld metal Mechanical Properties - Cv

Wire	Heat Treatment	Charpy V Notch Impact Toughness (J)							
		+20	0	- 20	- 30	- 40	- 60	- 80	- 101
OE-S1	As Welded	90 min	60 min	30min	-	-	-	-	-
OE-S2	As Welded	90 min	60 min	30 min	-	-	-	-	-
OE-S2Mo	As Welded	65 min	45 min	35 min	-	-	-	-	-

## Packaging data

25kg heavy duty sealed polythene sacks

Further forms of delivery on request.

## Current condition

**AC; DC+**