OP 192C

OERLIKON

SAW Fluxes
SAW Basic and Semi-basic Fluxes

OP 192C is an agglomerated aluminate-basic type flux for welding of general structural steels, boiler and pipe steels, fine-grain structural steels and as well for surfacing. OP 192C produces a higher silicon level compared to OP 192 with medium Manganese pick-up and allows high welding speeds (0,9 m/min). OE-S1, OE-S2 and OE-S2Mo wire electrodes are preferred for multilayer welding; OE-S2Mo is also recommended for welding from both sides in one pass or when welding one-sided with single layer technique for higher level of toughness. OP 192C is suitable for twin-wire, tandem and multi-wire welding techniques. Nice bead surface and good slag detachability make OP 192C perfectly suited for fillet welds. It can be welded on DC and AC up to 1000 A with the single-wire technique and up to 1500 A with two-wire technique. Damp flux should be re-dried at 300-350°C.
Grain size according to EN-ISO 14174: 2-16. Special grain size distribution (2-20) is recommended for applications with intensive flux recycling.

Classification		
	EN ISO	14174: S A AB 1 87 AC H5
OE-S2 Mo	AWS	A5.23: F8A2-F8P2-EA2 A2
OE-S1	AWS	A5.17: F6A2-F6P2-EL12
OE-S2	AWS	A5.17: F7A4-F7P4-EM12K
OE-SD3	AWS	A5.17: F7A6-F7P6-EH12K

	Approvals	Grade
OE-S2 Mo	ABS	3YM
OE-S2 Mo	BV	3YM
OE-S2 Mo	DNV	3YM
OE-S2	ABS	3YM
OE-S2	BV	3YM
OE-S2	DNV	3YM
OE-S2	LRS	3YM
OE-S2	TÜV	●

Flux Main Components	
CaO + CaF2 + MgO	38 %
Al2O3 + TiO2 + ZrO2	29 %
SiO2	22 %
MnO + FeO	9 %

Boniszewski Basicity 1.3

Chemical analysis (Typical values in %)

		C	Mn	Si	Mo
All weld metal	OE-S2 Mo	0.05	1.6	0.7	0.5
All weld metal	OE-S1	0.05	1	0.4	-
All weld metal	OE-S2	0.06	1.5	0.7	-
All weld metal	OE-SD3	0.07	1.7	0.7	-

All-weld metal Mechanical Properties

	Heat Treatment	Yield Strength (MPa)	Tensile Strength (MPa)	Elongation A5 (%)
OE-S2 Mo	As Welded	≥ 490	570 - 680	≥ 20
OE-S2 Mo	620°Cx1h	≥ 480	560 - 690	≥ 20
OE-S1	As Welded	≥ 355	440 - 550	≥ 24
OE-S1	620°Cx1h	≥ 330	420 - 550	≥ 22
OE-S2	As Welded	≥ 420	510 - 640	≥ 22
OE-S2	620°Cx1h	≥ 400	490 - 650	≥ 22
OE-SD3	As Welded	≥ 440	530 - 650	≥ 22
OE-SD3	620°Cx1h	≥ 420	510 - 650	≥ 22

All-weld metal Mechanical Properties - CV

	Heat Treatment	Impact Energy (J)			
		-20 °C	-30 °C	-40 °C	-50 °C
OE-S2 Mo	As Welded	≥ 50	≥ 27		
OE-S2 Mo	620°Cx1h	≥ 50	≥ 27		
OE-S1	As Welded	≥ 40	≥ 27		
OE-S1	620°Cx1h	≥ 60	≥ 27		
OE-S2	As Welded	≥ 100	≥ 50	≥ 27	
OE-S2	620°Cx1h	≥ 110	≥ 60	≥ 40	
OE-SD3	As Welded	≥ 90		≥ 50	≥ 27
OE-SD3	620°Cx1h	≥ 90		≥ 50	≥ 27

Typical applications

	Materials
OE-S2 Mo	ASME: ASTM A285 Grades A, B, C; A106 Grades A, B, C; X60, X65 EN: 16Mo3, S(P)355-S(P)460, L245-L450
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-SD3	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

Redrying
25300-350°Cx2-4h

Current Conditions
AC; DC+

Packaging data

Packaging Type	PE
Weight (kg)	25
-	●