

SAW Fluxes SAW Basic and Semi-basic Fluxes

OP 192 is an agglomerated aluminate-basic type flux for the welding of general structural steels, boiler and pipe steels, as well as fine-grain structural steels. The welding flux produces a medium silicon and manganese pick-up and is therefore used in combination with the wire electrodes OE-S2 and OE-S2 Mo. OP 192 is suitable for twin-wire, tandem and multi-wire welding using the single layer or multi-layer techniques. For higher level of toughness, it an OE-S2 Mo wire electrode is recommended when welding from both sides in one pass or when welding one-sided with the single layer technique. The finely rippled bead surface and the good slag detachability make OP 192 perfectly suited for fillet welds. It can be welded on DC and AC up to 1000 A with the single-wire technique.

Damp flux should be re-dried at 300-350°C.

Grain size according to EN-ISO 14174: 2-16.

Classification		
	EN ISO	14174: S A AB 1 67 AC H5
OE-S2 NiCu	EN ISO	14171-A: S 42 2 AB S2Ni1Cu
OE-S2 Mo	AWS	A5.23: F8A2-F8P2-EA2-A2
OE-S2 NiCu	AWS	A5.23: F7A2-EG-G
OE-S1	AWS	A5.17: F6A2-F6P2-EL12
OE-S2	AWS	A5.17: F7A2-F7P4-EM12K
OE-SD3	AWS	A5.17: F7A6-F7P6-EH12K

Flux Main Components	
CaO + CaF ₂ + MgO	39 %
Al ₂ O ₃ + TiO ₂ + ZrO ₂	30 %
SiO ₂	20 %
MnO + FeO	9 %

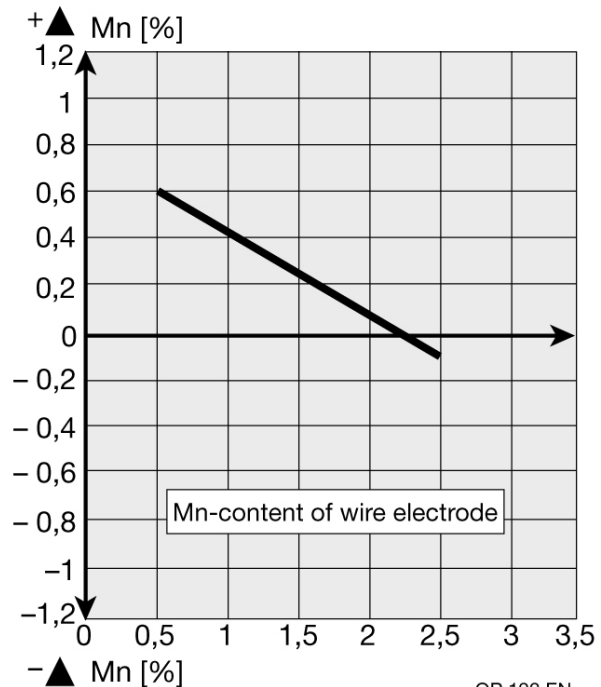
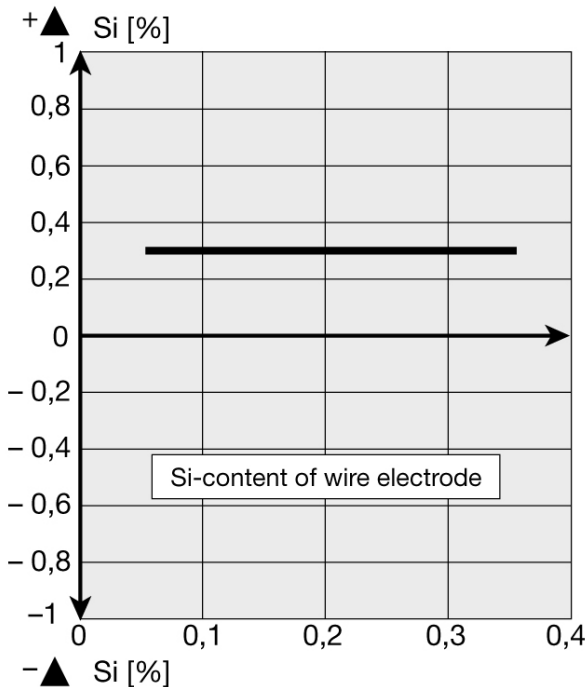
	Approvals	Grade
OE-S2 Mo	DNV	3YMT
OE-S2 Mo	TÜV	●
OE-S2	ABS	2YT
OE-S2	BV	A3M-3YM-A2T-2YT
OE-S2	DB	●
OE-S2	DNV	3YM-2YT
OE-S2	GL	3YM-2YT
OE-S2	LRS	3Y
OE-S2	TÜV	●
OE-S4	DB	●
OE-S4	DNV	IV Y40T

CE

Boniszewski Basicity 1.3

METALLURGICAL BEHAVIOUR

Pick-up and burn-out of the alloying elements Si and Mn = f (alloy content of wire electrode)
DVS-Merkblatt 0907 Part 1



OP 192 EN

Chemical analysis (Typical values in %)

		C	Mn	Si	Ni	Mo	Cu
All weld metal	OE-S2 Mo	0.07	1.5	0.6	-	0.5	-
All weld metal	OE-S2 NiCu	0.07	1.5	0.6	0.7	-	0.5
All weld metal	OE-SD3 Mo	0.07	1.7	0.6	-	0.5	-
All weld metal	OE-S1	0.05	1	0.4	-	-	-
All weld metal	OE-S2	0.05	1.5	0.6	-	-	-
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	≥ 500	560-680	≥ 22
OE-S2 Mo	620°Cx1h	≥ 480	560-690	≥ 20
OE-S2 NiCu	As Welded	≥ 450	500-600	≥ 25
OE-SD3 Mo	As Welded	≥ 490	560-680	≥ 22
OE-S1	As Welded	≥ 355	440-550	≥ 24
OE-S1	620°Cx1h	≥ 330	420-550	≥ 22
OE-S2	As Welded	≥ 420	510-620	≥ 24
OE-S2	620°Cx1h	≥ 400	490-650	≥ 22
OE-SD3	As Welded	≥ 440	530-650	≥ 22
OE-SD3	620°Cx1h	≥ 420	510-650	≥ 22

SAW Fluxes SAW Basic and Semi-basic Fluxes

All-weld metal Mechanical Properties - CV

	Heat Treatment	Impact Energy (J)			
		-20 °C	-30 °C	-40 °C	-50 °C
OE-S2 Mo	As Welded	≥ 100	≥ 27		
OE-S2 Mo	620°Cx1h	≥ 90	≥ 27		
OE-S2 NiCu	As Welded	≥ 60	≥ 27		
OE-SD3 Mo	As Welded	≥ 80	≥ 50		
OE-S1	As Welded	≥ 40	≥ 27		
OE-S1	620°Cx1h	≥ 60	≥ 27		
OE-S2	As Welded	≥ 100	≥ 60	≥ 27	
OE-S2	620°Cx1h	≥ 100	≥ 60	≥ 47	
OE-SD3	As Welded	≥ 90		≥ 70	≥ 27
OE-SD3	620°Cx1h	≥ 90		≥ 60	≥ 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-S2 NiCu	ASME: EN: S235J0W; S235J2W; S355J0W; S355J2W; S355K2W
OE-SD3 Mo	ASME:ASTM A381 Class Y60 EN: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

300-350°Cx2-4h

Current Conditions

AC; DC+

Packaging data

Packaging Type	PE
Weight (kg)	25
-	●