AMA OP 185

Standards: EN 760 SAAR 1 88 AC
DIN 32 522 BAR 1 88 AC 10 SKM

AWS/ASME: F7AZ-EL12 F7PZ-EM12
F7AZ-EM12 F7AZ-EM12K

Application / Properties: Agglomerated aluminate-rutile type flux for welding general structural steels, pressure vessel and pipe steels, as well as fine grain structural steels having a yield strength of up to 355N/mm2. AMA OP185 produces a high, silicon and manganese pick-up and can therefore be used with 50-11, 50-12 wire electrodes.
It is particularly suited for high-speed welding applying the twin-wire process, as well as for tandem and multi-wire welding Owing to its metallurgical behavior; AMA OP185 can be advantageously used for welding from both sides in one pass.
It is outstanding for welding tube-web-tube joints or finned tubes.
On account of easy slag removal, AMA OP 185 is preferably used in fillet welding.
The weld metal produced with this flux is not susceptible to porosity when welding on surfaces contaminated by rust, scale etc. The flux has a low bulk density with correspondingly low consumption.
AMA OP 185 can be used on either DC or AC up to 1000A.

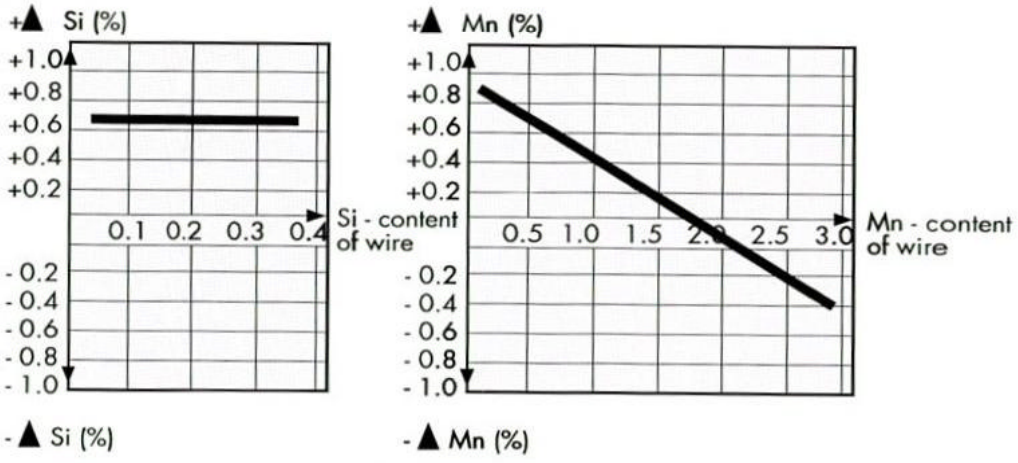
Damp flux shall be redried by baking at 300-350C
Grain size in accordance with DIN 32 522:2-20.

Main constituents:

SiO2 + TiO2	Al2O3 + MnO	CaF2
30%	55%	5%

Basicity to boniszewskii: ~0.5

Metallurgical behavior: Pick-up and burn-off the alloying elements Si and Mn as a function of the alloy content of the wire electrode, DVS Merkblatt 0907, part 1



All -Weld metal analysis (typical values) :

With	Wire electrode	Weight-%				
	DIN/EN	C	Si	Mn	Mo	Cr
50-11	S1	0.04 - 0.08	0.5 - 0.8	1.2 - 1.6	-	-
50-12	S2	0.04 - 0.08	0.5 - 0.8	1.4 - 1.8	-	-
50-14	S2Mo	0.04 - 0.08	0.5 - 0.8	1.4 - 1.8	0.5	-
50-22	S2CrMo1	0.05 - 0.10	0.5 - 0.8	1.4 - 1.8	0.5	1

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Mechanical properties of all -weld metal (typical values) :

With Wire electrode	Heat treatment	Tensile Strength (N/mm^2)	Yield Strength (N/mm^2)	Elongation Lo = 5d %	Impact energy (j) (Joule) ISO - V +20°C
50-11	As - Welded	500 - 600	> 400	> 24	> 50
50-12	As - Welded	530 - 630	> 420	> 22	> 50
50-14	As - Welded	580 - 680	> 440	> 20	> 50

Mechanical properties of Welded joints (typical values) :

13 Cr Mo 44, 10 mm Welded From both sides in one pass.

With Wire electrode	Heat treatment	* Tensile Strength (N/mm^2)	* Yield Strength (N/mm^2)	Impact energy (j) (Joule) ISO - V +20°C
50-22	As - Welded	> 440	> 300	> 70
50-22	Stress relived	> 440	> 300	> 80

Stress relived 15 hrs / 700C

* Transverse flat tensile specimen

Application:

Materials	Multi pass joint welding	Welding from both sides in one pass
General structural steels	With wire electrode	With wire electrode
St37-2,Ust37-2, RSt37-2	50-11, 50-12	50-12
St 44-2,St 44-3	50-11, 50-12	50-12
St 52-3**	50-12	50-12
Pipe steels	With wire electrode	With wire electrode
StE210.7, StE240.7,StE 290.7	50-11	50-12
StE 320.7, StE 360.7	50-12	50-12
St 37, St 37.4, St 35.8	50-11	50-12
St 44, St 44.4, St 45.8	50-11	50-12
St 52,St 52.4	50-12	
Boiler plates	With wire electrode	With wire electrode
H I, H II	50-11, 50-12	50-11, 50-12
17 Mn 4, 19 Mn 5	50-12	50-11, 50-12
15 Mo 3	50-14	50-14
13 Cr Mo 44 *	-	50-22
Fine grain structural steels	With wire electrode	With wire electrode
StE 255, StE 355 **	50-11, 50-12	50-12

* Only for fillet welds or tube-web-tube welding on finned tubes.

** At service temperatures down to + 0°C