AMA OP 119

Standards: EN 760 SA CS 1 98 AC
DIN 32 522 B CS 1 98 AC 12 M

AWS/ASME: F6A0-EL12 F7P2-EM12
F7A2-EM12

Application / Properties: Agglomerated Calcium -Silicate type flux for welding general structural steels, pressure vessel steels, pipe steels as well as fine grain structural steels.
It causes a relatively high silicon pick-up and when using wire electrodes 50-11,50-12,50-15, also a manganese pick-up. The neutral point for manganese is suited at approximately 2.5%, thus the flux being able to be used with low manganese electrode wires. AMA OP 119 is particularly suited for twin-wire, tandem and multi-wire welding at relatively high speed. It is likewise suited for welding from both sides in one pass. For increased weld metal toughness, wire electrodes containing molybdenum 50-14 should be preferably used. AMA OP 119 can be used on either DC or AC up to approximately 1200A (in single wire welding).
Slag removal is easy. The resulting slag is short, i.e., girth seams on work pieces having a small diameter can be welded without the danger of the slag running off.

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

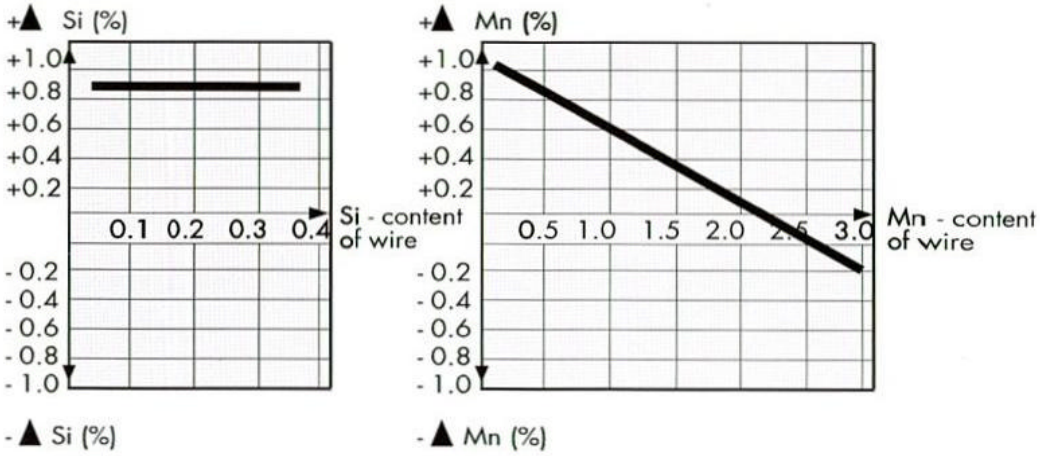
Main constituents:

SiO2 + TiO2	CaO + MgO	Al2O3 + MnO	CaF2
40%	25%	25%	10%

Basicity to boniszewskii: ~1.0

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
50-11	S1	0.04 - 0.08	0.7 - 1.1	1.1 - 1.4	-
50-12	S2	0.04 - 0.08	0.7 - 1.1	1.5 - 1.8	-
50-14	S2Mo	0.04 - 0.08	0.7 - 1.1	1.5 - 1.8	0.5

AMA OP 119

Mechanical properties of all -weld meta l (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	±0	- 20°C
50-11	As - Welded	460 - 560	> 360	> 24	> 90	> 50	> 30
50-12	As - Welded	530 - 630	> 400	> 24	> 90	> 50	> 35
50-14	As - Welded	600 - 700	> 480	> 20	> 65	> 50	> 35

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	50-11,50-14
St 37-3,St 44-2,St 44-3,St 52-3	50-12	50-11,50-14
Pipe steels	With wire electrode	With wire electrode
StE210.7, StE240.7, StE 290.7	50-11	50-12 ,50-14
StE 320.7, StE 360.7	50-12	50-12 ,50-14
St 37.0, St 37.4, St 45.8	50-11	50-12 ,50-14
St 44, St 44.4,St 37.8	50-12	50-12,50-14
St 52,St 52.4	50-12	50-12,50-14
X42	50-11	50-12,50-14
X 46, X 52, X 56	50-12	50-12,50-14
X 60, X 65, X 70	50-14	50-12,50-14
Boiler plates	With wire electrode	With wire electrode
H I, H II	50-11	50-12,50-14
17 Mn 4, 19 Mn 5	50-12	50-12,50-14
Fine grain structural steels	With wire electrode	With wire electrode
StE 255, WStE 255	50-12	50-12,50-14
StE 285, WStE 285	50-12	50-12,50-14
StE 315, WStE 315	50-12	50-12,50-14
StE 355, WStE 355	50-12	50-12,50-14

For welding from both side in one pass, especially in multi-wire welding **50-14** wire electrode should be used

Because of the fine-grain formation caused by molybdenum.

Aproval: LRS,GL