Agglomerated Welding Flux BF 10 MW

Flux type: Fluoride-Basic
Classification: ISO 14174 – S A FB 1 55 AC H5*

Characteristics:
BF 10 MW is a fluoride-basic flux with high basicity and low impurity levels such as P and S. As a result of low oxygen levels in the weld deposits uniform mechanical properties with high toughness values at low temperature are achieved. Designed for multi wire application where high deposition rate as well as good slag removal is required this flux shows excellent weldability and weld bead appearance.
BF 10 MW is suitable for welding on D.C. and A.C. using single, tandem and Multi-Wire processes.

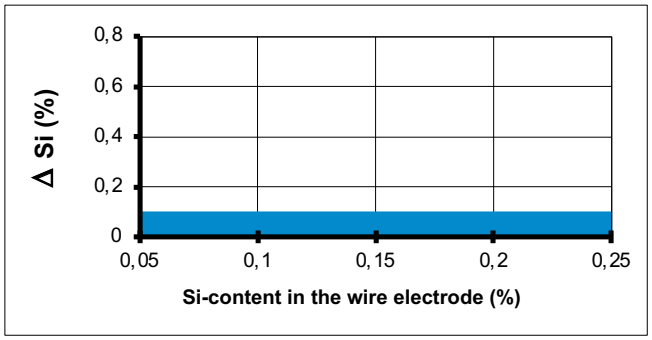
Application:
Low hydrogen levels after redrying and optimum mechanical properties, whilst observing recommended heat control, enable the welding of:
- thick-walled constructional steels with yield strengths of up to 420 MPa
- offshore applications up to 550 MPa yield strength on steels such as BS 4360-Grade 50 D and S355 2G3 acc. to DIN EN 10025 (previous designation St 52-3N)
- fine grain structural steels for low temperature requirements with impact toughness at – 60°C or below
- high tensile fine grain steels such as S690QL1 and N-A-XTRA 70
- boiler and vessel steels such as 16Mo3/A204 Gr. A, 13CrMo4-5/A387 Gr. 12 or 10CrMo9-10/A387 Gr. 22

Characteristic chemical Constituents:

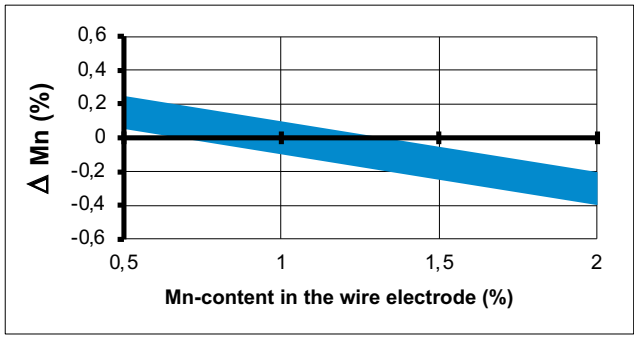
$SiO_2 + TiO_2$	$Al_2O_3 + MnO$	$CaO + MgO$	CaF_2
15 %	20 %	35 %	30 %
Basicity according to Boniszewski: ~3.2			

Metallurgical behaviour acc. to ISO 14174 type of current DC:

Pick-up Silicon



Pick-up/Burn-out Manganese



Flux density: 0.95 kg/dm³ (l)
Grain size acc. to ISO 14174: 2–20 (Tyler 8×65)
Current-carrying capacity: up to 800 A (DC or AC) using one wire

* Diffusible hydrogen content H5: determined in deposited metal acc. to the method described in ISO 3690 Type of current DC; redrying conditions 300–350 °C

All-weld metal multiple pass classification of wire-flux combinations:

Wire electrode		Test assembly ISO 15792-1: type 1.3	AWS A5.17M/5.23M	AWS A5.17/5.23
ISO 14171-A EN 14295 ISO 26304-A	AWS A5.17/.23			
BA-S2	EM12(K)	ISO 14171-A: S 38 6 FB S2	F48A6/P6-EM12(K)	F7A8/P8-EM12(K)
BA-S2Si	EH12	ISO 14171-A: S 38 6 FB S2Si	F48A6/P6-EM12K	F7A8/P8-EM12K
BA-S3Si	EH12K	ISO 14171-A: S 46 6 FB S3Si	F55A6/F55P6-EH12K	F8A8/F8P8-EH12K
BA-S2Mo	EA2	ISO 14171-A: S 46 4 FB S2Mo	F55A4/F49P4-EA2-A2	F8A4/F7P4-EA2-A2
BA-S2Ni1	ENi1	ISO 14171-A: S 42 7 FB S2Ni1	F49A7/P7-ENi1-Ni1	F7A10/P10-ENi1-Ni1
BA-S2Ni2	ENi2	ISO 14171-A: S 46 8 FB S2Ni2	F55A7/F49P7-ENi2-Ni2	F8A10/F7P10-ENi2-Ni2
BA-S2Ni3	ENi3	ISO 14171-A: S 50 8 FB S2Ni3	F55A7/P7-ENi3-Ni3	F8A10/P10-ENi3-Ni3
BA-S2NiCu	EG	ISO 14171-A: S 46 5 FB S2Ni1Cu	F55A5-EG-G	F8A6/-EG-G
BA-S3NiMo1/4	ENi5	ISO 14171-A: S 46 6 FB S3Ni1Mo0,2	F55A6/P6-ENi5-Ni5	F8A8/P8-ENi5-Ni5
BA-S3NiMo1	EF3	ISO 26304-A: S 55 6 FB S3Ni1Mo	F62A6-/P6-EF3-F3	F9A8/P8-EF3-F3
BA-S3NiCrMo2,5	EM4 mod.	ISO 26304-A: S 69 6 FB- S3Ni2,5CrMo	F76A6/P6-EM4 mod.-M4	F11A8/P8-EM4 mod.-M4

Chemical composition of all-weld metal acc. to EN ISO 15792-1 and AWS A5.17/5.23:

(characteristical values in wt. %)

Wire electrode		C	Si	Mn	Mo	Ni	Cr
BA-S2	EM12(K)	0.05–0.09	0.1–0.3	0.8–1.2			
BA-S2Si	EM12K	0.05–0.09	0.15–0.5	0.8–1.2			
BA-S3Si	EH12K	0.05–0.09	0.2–0.5	1.2–1.6			
BA-S2Mo	EA2	0.05–0.09	0.1–0.3	0.8–1.2	0.5		
BA-S2Ni1	ENi1	0.05–0.09	0.1–0.3	0.8–1.4		1.0	
BA-S2Ni2	ENi2	0.05–0.09	0.1–0.3	0.8–1.4		2.0	
BA-S2Ni3	ENi3	0.05–0.09	0.1–0.3	0.8–1.2		3.0	
BA-S2NiCu	EG	0.12	0.8	0.5–1.6		0.4–0.8	Cu:0.30–0.75
BA-S3NiMo1/4	ENi5	0.05–0.09	0.2–0.4	1.1–1.5	0.25	1.0	
BA-S3NiMo1	EF3	0.05–0.09	0.1–0.3	1.2–1.6	0.5	1.0	
BA-S3NiCrMo2,5	EM4 mod.	0.05–0.09	0.1–0.3	1.2–1.6	0.5	2.5	0.5

Mechanical properties of all-weld metal acc. to EN ISO 15792-1 and AWS A5.17/5.23:
(characteristical values)

Wire electrode		Heat treatment	YS MPa	UTS MPa	Elong. %	Impact ISO-V (J)				
						RT	-20 °C -4 °F	-40 °C -40 °F	-60 °C -76 °F	-80 °C -112 °F
BA-S2	EM12(K)	AW	>400	>490	>26	>120	>100	>70	>47	
BA-S2Si	EH12(K)	AW	>400	>490	>26	>120	>100	>70	>47	
BA-S3Si	EH12K	AW	>470	>560	>25	>120	>100	>80	>47	
		S*	>470	>560	>26	>120	>100	>90	>47	
BA-S2Mo	EA2	AW	>490	>570	>23	>100	>90	>50		
		S**	>440	>530	>24	>100	>90	>60		
BA-S2Ni1	ENi1	AW	>440	>540	>26	>160	>140	>120	>90	
BA-S2Ni2	ENi2	AW	>470	>550	>25	>160	>140	>120	>80	>47
		S*	>420	>520	>26	>160	>140	>120	>90	>47
BA-S2Ni3	ENi3	AW	>500	>590	>24	>160	>150	>120	>100	>47
		S*	>470	>560	>25	>160	>150	>120	>100	>47
BA-S2NiCu	EG	AW	>460	>550	>24	>140	>120	>80	>47(50°C)	
BA-S3NiMo1/4	ENi5	AW	>480	>560	>26	>160	>140	>120	>47	
		S*	>470	>550	>26	>160	>150	>120	>47	
BA-S3NiMo1	EF3	AW	>570	>670	>22	>140	>110	>80	>47	
		S*	>550	>640	>22	>150	>110	>80	>47	
BA-S3NiCrMo2,5	EM4mod.	AW	>690	>820	>18	>140	>90	>70	>47	

Post Weld Heat Treatment: * 590 °C/15 h; ** 620 °C/15 h

Packaging: 25 kg Alpha Dry Alu-Bag
Storage: Unopened originally packed flux bags can be stored up to one year in dry storage rooms after date of delivery ex-factory.
Redrying conditions specific to the flux:
300–350°C effective flux temperature