Agglomerated Welding Flux BF 38

BF 38

Flux type: **A**luminate-**F**luoride-Basic **Classification:**

ISO 14174 – **S A AF 2 5644 DC H5 *)**
(EN 760 – **SA AF 2 DC**)

Characteristics:
Specially designed for welding austenitic and austenitic-ferritic stainless steels (Duplex). This basic, but neutral flux will produce outstanding results in the welding of the standard austenitic and heat-resisting stainless steels, when using the corresponding wire electrodes according to EN ISO 14343 or ASME II C: SFA-5.9. Due to the basic flux characteristics of BF 38 most grades of the 300-stainless steels can be welded using single or multiple wire submerged-arc processes. It is also suited for joint-and overlay welding of nickel alloys, together with adequate Ni-base wire electrodes.
BF 38 produces smooth flat weld beads when fillet welding. If appropriate welding parameters are applied a finelyribbed surface along with self-releasing slag is yielded as well as weld beads that are free of slag inclusions.
The metallurgical behavior of the flux is neutral (C-neutral, low Si pick-up and low Mn burn-out) without Cr- or other alloy compensation.

Application:
Joint welding and surfacing of:
- Austenitic-ferritic stainless steels (DSS) such as grade 2205 (Duplex S31805/S32205 = 1.4462)
- Austenitic CrNi(Mo)-steels (including Nb/Ti and ELC-grades); resistant against intergranular corrosion in both the as-welded and solution-treated condition
- High-alloy CrNi(Mo)-steels for use at low temperatures and heat resisting steels
- Nickel-base alloys using NiCr- and NiCrMo- wire electrodes acc. to AWS A5.14 / EN ISO 18274
- Welding of dissimilar metals such as low alloy steel with stainless steel or special cryogenic steel (e.g.9%Ni-steel) in flat or 2G-position

Characteristic chemical Constituents:

$SiO_2 + TiO_2$	$Al_2O_3 + MnO$	$CaO + MgO$	CaF_2
10 %	35 %	5 %	50 %
Basicity according to Boniszewski: ~1.9			

Flux density: 1.0 kg/dm^3 (l)

Grain size acc. to ISO 14174: 2 – 16 (Tyler 10 x 65)

Current-carrying capacity: up to 900 A DC using one wire

Packaging: 20 kg PE-coated Aluminum bags

Storage and redrying:
Unopened originally packed flux bags can be stored up to 1 year in dry storage rooms after date of delivery ex factory.
Redrying conditions specific to the flux: 200 ± 50 °C effective flux temperature.

*) Diffusible hydrogen content H5: determined in deposited metal acc. to the method described in ISO 3690 Type of current DC; redrying conditions 200 ± 50 °C

Chemical composition of all-weld metal acc. to EN ISO 15792-1 and AWS A5.9/5.14 (standard values in wt. %)

Wire electrode		C	Si	Mn	Cr	Ni	Mo	Others
BA-WIRE 308L	ER308L	< 0.03	0.3 – 0.65	1.0 – 2.5	19.5 – 22.0	9.0 – 11.0		
BA-WIRE 309L	ER309L	< 0.03	0.3 – 0.65	1.0 – 2.5	23.0 – 25.0	12.0 – 14.0		
BA-WIRE 316L	ER316L	< 0.03	0.3 – 0.65	1.0 – 2.5	18.0 – 20.0	11.0 – 14.0	2.0 – 3.0	
BA-WIRE 317L	ER317L	< 0.03	0.3 – 0.65	1.0 – 2.5	18.5 – 20.5	13.0 – 15.0	3.0 – 4.0	
BA-WIRE 318	ER318	< 0.08	0.3 – 0.65	1.0 – 2.5	18.0 – 20.0	11.0 – 14.0	Mo: 2.0 – 3.0	Nb: 8xC / max 1.0
BA-WIRE 347	ER347	< 0.08	0.3 – 0.65	1.0 – 2.5	19.0 – 21.5	9.0 – 11.0		Nb: 10xC / max 1.0
BA-WIRE 2209	ER2209	< 0.03	< 0.9	0.5 – 2.0	21.5 – 23.5	7.5 – 9.5	2.5 – 3.5	N: 0.08 – 0.2 Cu < 0.75

Mechanical properties of all-weld metal acc. to EN ISO 15792-1 and AWS A5.9/5.14 (standard values)

Wire electrode		Heat treatment	YS MPa	UTS MPa	Elong. %	Impact ISO-V (J)				
						+ 20 °C	- 40 °C	- 60 °C	- 120 °C	- 196 °C
BA-WIRE 308L	ER308L	AW	> 370	> 560	> 35	> 80				> 40
BA-WIRE 309L	ER309L	AW	> 370	> 520	> 30	> 100				
BA-WIRE 316L	ER316L	AW	> 370	> 520	> 30	> 100				> 40
BA-WIRE 317L	ER317L	AW	> 400	> 600	> 30	> 100		> 60		> 40
BA-WIRE 318	ER318	AW	> 370	> 560	> 25	> 100				
BA-WIRE 347	ER347	AW	> 370	> 560	> 30	> 100				
BA-WIRE 2209	ER2209	AW	> 570	> 750	> 20	> 80		> 50		

Approvals:
VdTUEV

with wire electrodes:
S 22 9 3 NL (ER2209)