FLUX UP WP380M

Agglomerated Type aluminate-fluoride Welding Flux for Stainless Steels

Classification

ISO 14174 S A AF 2 5644 DC H5

Description & Applications

Fluoride-Basic agglomerated Flux for submerged arc welding (SAW-process) of Duplex and Super Duplex stainless steels, also suitable for general stainless steel wire electrodes (like 300 series). If appropriate welding parameters are applied a finely ribbed surface along with self-releasing slag is yielded as well as weld beads that are free of slag inclusions.
Flux UP WP380M has neutral metallurgical behaviour (C-neutral, low Si pick-up and low Mn loss, no Cr or other elements compensation).

Could be used on DC welding for single or multi layers and for fillet welds.

Wires recommended for

AWS A5.9	*ISO 14343-A*	*AWS A5.11*	*ISO 18274*
ER308L	S 19 9 L	ERNiCrMo-3	S 6625 (NiCr20Mn3Nb)
ER347	S 19 9 Nb		
ER316L	S 19 12 3 L		
ER317L	S 18 15 3 L		
ER318	S 19 12 3 Nb		
ER309L	S 23 12 L		
ER2209	S 22 9 3 N L		
ER2594	S 25 9 4 N L		
ER16-8-2	S 16 8 2		

Typical Chemical Composition (%)

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

Flux Properties

Density (kg / dm^3)	Grain size ISO 14174	Current carrying capacity
1.0	2-16 ; Tyler 10x65	Up to 900A DC using one wire

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Agglomerated Welding Flux for High alloyed steels

All Weld Metal Chemical analysis

Wire	C	Si	Mn	Cr	Ni	Mo	Nb	Others
ER308L	<0.03	0.3-0.65	1.0-2.5	19.5-22.0	9.0-11.0			
ER347	<0.08	0.3-0.65	1.0-2.5	19.0-21.5	9.0-11.0		10xC-max1.0	
ER316L	<0.03	0.3-0.65	1.0-2.5	18.0-20.0	11.0-14.0	2.0-3.0		
ER317L	<0.03	0.3-0.65	1.0-2.5	18.5-20.5	13.0-15.0	3.0-4.0		
ER318	<0.08	0.3-0.65	1.0-2.5	18.0-20.0	11.0-14.0	2.0-3.0	10xC-max1.0	
ER309L	<0.03	0.3-0.65	1.0-2.5	23.0-25.0	12.0-14.0			
ER2209	<0.03	<0.9	0.5-2.5	21.5-23.5	7.5-9.5	2.5-3.5		N : 0.08-0.2 Cu : <0.75
ER2594	<0.03	<1.0	<2.5	24.0-27.0	8.0-10.5	2.5-4.5		N : 0.2-0.3 Cu : <1.5 W : <1.0
ER16-8-2	<0.10	0.3-0.65	1.0-2.0	14.5-16.5	7.5-9.5	1.0-2.0		
ERNiCrMo-3	<0.10	<0.5	<0.5	20.0-23.0	Bal.	8.0-10.0	3.15-4.15	Fe: <5.0 Ti: <0.4 Al: <0.4

All Weld Metal Mechanical properties

Wire	$R_{p0,2}$ (MPa)	R_m (MPa)	A (%)	KV (J) +20°C	KV (J) -60°C	KV (J) -196°C
ER308L	>370	>560	>35	>80		>40
ER347	>370	>560	>25	>100		
ER316L	>370	>520	>30	>100		>40
ER317L	>400	>600	>30	>100	>60	>40
ER318	>370	>560	>25	>100		
ER309L	>370	>520	>30	>100		
ER2209	>570	>750	>20	>80	>50	
ER2594	>620	>820	>18	>60	>50	>40
ER16-8-2	>370	>600	>35	>60		
ERNiCrMo-3	>420	>760	>30	>70	>60	>50

Storage Recycling and Drying

It is recommended to store and use the flux up to 1 year after delivery in dry storage rooms. Nevertheless, the flux can be used even if stored for more than one year, just requires the user to make a weldability test to check if all is well.
Drying conditions specific to the flux: 300-350°C. Supplied in moisture proof packaging.

FT En-SFL08-231201