FLUX UP WP380

Fused Welding Flux for High alloyed

Classification

ISO 14174 : S F CS 2 5742 DC (stainless) ISO 14174 : S F CS 1 63 DC (low alloyed)

Description & Applications

Fused welding flux designed for submerged arc welding and surfacing (SAW process) of austenitic stainless steels and low alloyed steels used for high temperature applications. Due to the semi-basic flux, characteristics crack free weld deposits are obtained with most stainless steels' grades.
Flux UP WP380 has neutral metallurgical behaviour (C-neutral, low Si pick-up and low Mn loss, no Cr compensation).

Wires recommended for

AWS A5.9	*ISO 14343-A*	*AWS A5.11*	*ISO 18274*	*AWS A5.23*	*ISO 24598-A*
ER308L	S 19 9 L	ERNiCrMo-3	S 6625 (NiCr20Mn3Nb)	EA2	S2Mo (ISO 14171-A)
ER347	S 19 9 Nb	ERNiCrMo-4	S 6276 (NiCr15Mo16Fe6W4)	EB66	S S CrMo5
ER316L	S 19 12 3 L			EB9	S S CrMo91
ER318	S 19 12 3 Nb			EG	S S CrMoWV12
ER309L	S 23 12 L				
ER2209	S 22 9 3 N L				

Typical Chemical Composition (%)

SiO_2	Al_2O_3	CaO + MgO	CaF_2	Basicity according to Boniszewski
30 %	5 %	35 %	20 %	~1.3

Flux Properties

Density (kg / dm³)	Grain size ISO 14174	Current carrying capacity
1.5	1-16 ; Tyler 10x150	Up to 900A DC using one wire

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All Weld Metal Typical Chemical analysis (%)

Wire	C	Si	Mn	Cr	Ni	Mo	Nb	Others
ER308L	<0.03	<1.0	<1.6	18.5-20.5	9.0-11.0			
ER347	<0.06	<1.0	<1.6	18.5-20.5	9.0-11.0		12xC	
ER316L	<0.03	<1.0	<1.6	17.5-19.5	11.0-14.0	>2.5		
ER318	<0.06	<1.0	<1.6	17.5-19.5	11.0-14.0	>2.5	12xC	
ER309L	<0.03	<1.0	<1.6	22.0-24.5	12.0-14.0			
ER2209	<0.03	<1.0	<1.6	20.5-23.5	7.5-9.0	>2.5		N <0.2
ERNiCrMo-3	<0.04	<0.6	<0.5	20.0-22.5		8.0-10.0	3.0-3.5	Fe: 4
ERNiCrMo-4	<0.025	<0.4	<1.0	14.5-16.0		15.0-17.0		W: 4 - Co <2.5
EA2	<0.08	<0.5	<1.0			0.5		
EB66	<0.08	<0.7	<0.6	5.5		0.6		
EB9	<0.10	<0.7	<0.8	9.0	0.6	1.0	0.05	V: 0.2
EG	<0.2	<0.6	<1.0	11.0		1.0		V: 0.3 – W: 0.5

All Weld Metal Mechanical properties

Wire	$R_{p0,2}$ (MPa)	R_m (MPa)	A (%)	KV (J) +20°C	KV (J) -120°C	KV (J) -196°C	PWHT
ER308L	>340	>540	>30	>70		>40	
ER347	>360	>570	>30	>80		>50	
ER316L	>350	>550	>30	>70		>40	
ER318	>370	>580	>30	>80	>40		
ER309L	>380	>580	>26	>70			
ER2209	>550	>750	>25	>80			
ERNiCrMo-3	>440	>740	>30	>70	>60	>50	
ERNiCrMo-4	>400	>700	>35	>80		>60	
EA2	>440	>540	>20	>90			Stress relieved 620°C
EB6	>470	>600	>18	>70			Annealed 740-760°C
EB9	>540	>660	>17	>47			Annealed 740-760°C
EG	>570	>740	>17	>35			Annealed 740-760°C

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: 150-200°C. Supplied in moisture proof packaging.