FLUX UP LA04

Agglomerated Aluminate-Basic Neutral Welding Flux

Classification

ISO 14174 S A AB 1 67 AC H5

Description & Applications

Neutral semi basic - Aluminate-Basic type - agglomerated flux for submerged arc welding (SAW-process) of low-alloy structural steels, fine-grained steels and pipe steels and boiler steels. It shows constant metallurgical characteristics (low Si and Mn pick up). With appropriate Mo, Ni or NiMo- alloyed wires, uniform mechanical properties with low temperature toughness are achieved.
Flux UP LA04 is formulated to achieve very low diffusible hydrogen levels (<0.4ml/100g of weld metal deposit), easy slag detachability even in narrow-groove welds.

Could be used on D.C and A.C welding, using Single, Tandem, Twin or multi wire welding.

Wires recommended for

ISO 14171-A	***AWS A5.17***
S1	EL12
S2	EM12
S3	EH10K
S2Si	EM12K
S3Si	EH12K
S2Mo	EA2
S3Mo	EA4
S2Ni1	ENi1
S2Ni2	ENi2
S2NiCu1	EG
ISO 26304-A	***AWS A5.23***
S3Ni1Mo	EF3
ISO 24958-A	***AWS A5.23***
S S CrMo1	EB2

Typical Chemical Composition (%)

$SiO_2 + TiO_2$	$Al_2O_3 + MnO$	CaO + MgO	CaF_2	Basicity according To Boniszewski
20	30	30	15	~1.7

Flux Properties

Density (kg / dm³)	Grain size ISO 14174	Current carrying capacity
1.1	3 - 20 ; Tyler 8x48	Up to 1000A (AC or DC) using one wire

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All Weld Metal Typical Chemical analysis (%)

Wire	C	Si	Mn	Cr	Ni	Mo
S2	0.05-0.08	0.2-0.4	1.1-1.5			
S3	0.05-0.08	0.2-0.4	1.5-1.9			
S2Si	0.05-0.08	0.3-0.5	1.1-1.5			
S3Si	0.05-0.08	0.3-0.5	1.5-1.9			
S2Mo	0.05-0.08	0.2-0.4	1.1-1.5			0.5
S3Mo	0.05-0.08	0.2-0.4	1.5-1.9			0.5
S2Ni1	0.05-0.08	0.2-0.4	1.1-1.5		0.8	
S2Ni2	0.05-0.08	0.2-0.4	1.1-1.5		2.0	
S3Ni1Mo	0.05-0.08	0.2-0.4	1.5-1.9		0.9	0.5
S2NiCu1	0.05-0.08	0.3-0.5	1.0-1.4		0.8	
S2CrMo1	0.05-0.08	0.2-0.4	1.0-1.4	1.0		0.5

All Weld Metal Typical Mechanical Properties

Wire		$R_{p0,2}$ (MPa)	R_m (MPa)	A (%)	KV (J) 0°C	-20°C	-40°C	-51°C	-73°C
S1	AW	>400	>490	>24	>80	>60			
S2	AW	>420	>510	>24	>100	>70	>47		
	S*	>360	>450	>24	>100	>70	>27		
S3	AW	>470	>560	>23	>100	>70	>60	>47	
	S*	>400	>490	>23	>110	>80	>60	>47	
S2Si	AW	>440	>520	>24	>100	>80	>60	>47	
	S**	>400	>480	>24	>100	>80	>60	>47	
S3Si	AW	>470	>560	>23	>120	>100	>80	>47	
	S*	>420	>520	>24	>120	>110	>70	>47	
S2Mo	AW	>490	>580	>22	>90	>60	>47		
	S*	>470	>560	>22	>100	>70	>27		
S3Mo	AW	>540	>640	>22	>90	>60	>47		
	S**	>540	>620	>22	>90	>60	>27		
S2Ni	AW	>440	>530	>25		>140	>100	>60	>47
	S*	>400	>490	>26		>150	>120	>110	>47
S2Ni2	AW	>480	>580	>22		>140	>100	>60	>47
	S*	>460	>550	>23		>150	>110	>70	>47
S3Ni1Mo	AW	>570	>670	>22	>110	>100	>47		
	S**	>570	>670	>22	>120	>110	>47		
S2NiCu1	AW	>470	>570	>23	>90	>70	>47		
S2CrMo1	S***	>470	>570	>22	>80	>47	>27		

* After PWHT at 580°C/15h - ** After PWHT at 620°C/15h - *** After PWHT at 650°C/15h / 700°C/2h

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: 200 ± 50°C. Supplied in moisture proof packaging.

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