

SWX 130

EN ISO 14174: S A AB 1 67 AC H5

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Type no: 130

Features

- Agglomerated flux
- Aluminate-basic type
- Slightly Si and Mn alloying
- For multi wire applications
- Steels up to API X100

Benefits

- Low and wide bead profile
- Excellent slag detachability
- Very high deposition rates
- Supplied in moisture proof packaging

Applications

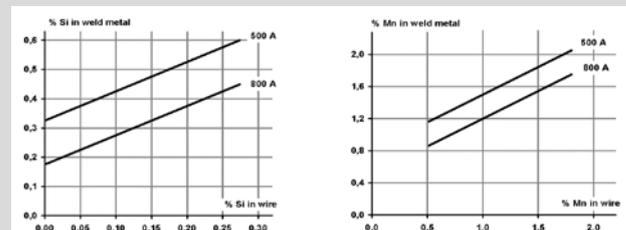
- Longitudinal pipe mills

Flux Characteristics

Flux type	Aluminate-Basic
Basicity index	1.5 (Boniszewski)
Alloy transfer	Slightly Si and Mn alloying
Density	1.2 kg/litre
Grain size	0.2-2.0 mm / 10-70 mesh
HDM	< 5 ml/100 g weld metal
Current	DC+/AC
Re-drying unopened bag	Not required
Re-drying opened bag	See storage and handling recommendations

Metallurgical Behaviour

The diagrams show the typical weld metal analysis in relation to wire analysis for silicon and manganese.



Single wire, ø 4.0 mm, DC+, 30 V, 60 cm/min

Flux Main Components

Al ₂ O ₃ + MnO	CaO + MgO	SiO ₂ + TiO ₂	CaF ₂
~35%	~25%	~20%	~15%

Flux/Wire - Combination Classifications

With wire	EN ISO	AWS	Mechanical Properties - Typical Values								
			Re/Rp0.2 MPa	Rm Mpa	A %	CVN J					
							0°C	-20°C	-30°C	-40°C	-50°C
SDX S2	AW 14171-A: S 38 4 AB S2		430	520	27	110	75		60		
SDX S2Si-EM12K	AW 14171-A: S 38 4 AB S2Si	A5.17: F7A4-EM12K	430	520	27	100	70		50		
SDX S3Si-EH12K	AW 14171-A: S 46 6 AB S3Si	A5.17: F7A6-EH12K	490	550	29						
SDX S2Mo-EA2	AW 14171-A: S 46 2 AB S2Mo	A5.23: F7A4-EA2-A4	520	590	24	100	70		40		
	SR ¹	A5.23: F7P4-EA2-A4									
SDX S3Mo-EA4	AW 14171-A: S 50 2 AB S3Mo		580	670	23		55		40		
SubCOR EM12K-S	AW	A5.17: F7A6-EC1									
SubCOR EM13K-S	AW	A5.17: F7A6-EC1									
	SR ¹	A5.17: F7P6-EC1									
SubCOR EM13K-S MOD	AW	A5.17: F7A6-EC1									
	SR ¹	A5.17: F7P8-EC1									

Mechanical properties of two-run pipe joint (high dilution)

SDX S2Mo-EA2	TR	480	550	23	100	80	50
SDX S3Mo-EA4	TR	510	590	20	70		
SDX S3TiB	TR	560	700	20		45	
SDX S3MoTiB	TR	630	700	25	200	180	120
SubCOR SL 735-1W-5W*	TR	480	600	24	60	50	

Mechanical properties of pipe welds in the two run technique depend on the chemical composition of the base material.

AW: as welded, all weld metal. SR: stress relieved, all weld metal. TR: two-run. SR¹: PWHT 620 °C (1150 °F)/1h.

Metric values are typical of EN ISO testing and imperial values are typical of AWS testing.

*Depends on the type of solid wire used.

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Flux/Wire - Combination Classifications				Mechanical Properties - Typical Values			
With wire	EN ISO	AWS	YS ksi	TS ksi	E %	CVN ft-lbf	
SDX S2	AW 14171-A: S 38 4 AB S2						0°F -40°F -60°F -80°F -100°F
SDX S2Si-EM12K	AW 14171-A: S 38 4 AB S2Si	A5.17: F7A4-EM12K	69	82	27	23	
SDX S3Si-EH12K	AW 14171-A: S 46 6 AB S3Si	A5.17: F7A6-EH12K	81	91	27	46	
SDX S2Mo-EA2	AW 14171-A: S 46 2 AB S2Mo	A5.23: F7A4-EA2-A4	80	90	27	39	
	SR ¹	A5.23: F7P4-EA2-A4	76	88	28	32	
SDX S3Mo-EA4	AW 14171-A: S 50 2 AB S3Mo						
SubCOR EM12K-S	AW	A5.17: F7A6-EC1	60	71	29	84	
SubCOR EM13K-S	AW	A5.17: F7A6-EC1	65	77	31	70	53
	SR ¹	A5.17: F7P6-EC1	58	72	33	84	69
SubCOR EM13K-S MOD	AW	A5.17: F7A6-EC1	77	87	27	50	
	SR ¹	A5.17: F7P8-EC1	68	83	29	102	47

Mechanical properties of pipe welds in the two run technique depend on the chemical composition of the base material.

AW: as welded, all weld metal. SR: stress relieved, all weld metal. TR: two-run. SR¹: PWHT 1150 °F (620 °C)/1h.

Metric values are typical of EN ISO testing and imperial values are typical of AWS testing.

Chemical Composition All Weld Metal - Typical Values

With wire	%C	%Si	%Mn	%Mo	%Ti	%B
SDX S2	0.06	0.2	1.3			
SDX S2Si-EM12K	0.06	0.3	1.3			
SDX S3Si-EH12K	0.08	0.3	1.6			
SDX S2Mo-EA2	0.05	0.4	1.4	0.5		
SDX S3Mo-EA4	0.08	0.4	1.6	0.5		
SubCOR EM12K-S	0.05	0.2	1.2			
SubCOR EM13K-S	0.06	0.4	1.2			
SubCOR EM13K-S MOD	0.06	0.4	1.1			

Weld metal analyses of two-run pipe joint (high dilution)

SDX S3TiB	0.06	0.5	1.6		0.024	0.0024
SDX S3MoTiB	0.06	0.5	1.4	0.3	0.022	0.0024
SubCOR SL 735-1W-5W	Depends on the type of solid wire used.					

Standard Packages

Description	Item number	No of bags/pallet	Net weight/pallet
25 kg (55 lbs) Aluminium/PE Bag EAE	130022500H	42	1050 kg (2310 lbs)
1000 kg (2200 lbs) Double Bag	130071T00H	1	1000 kg (2200 lbs)



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Approvals

With wire	ABS	BV	DNV	GL	LR	CWB	DB	TÜV	CE
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SDX S2Mo-EA2

Limitations (diameter, position, etc.) may exist. Please refer to product approval certificates for more information.

Storage, recycling and re-drying

HOBART welding fluxes from undamaged moisture proof packaging can be used without costly re-drying. The flux recycling system must be free from moisture and oil. Slag and millscale must be removed from the recycled flux. At least one part of new flux to three parts of recycled flux must be added. From open packaging and if the flux has been exposed to moist conditions, re-drying is recommended. Agglomerated fluxes should be re-dried at a temperature of 300-350 °C (570-660 °F) for a minimum of 2 hours. Re-dried flux must be stored at 150±25 °C (300±45 °F) before use. Re-drying should be made maximum three times.

Maintaining a proper welding procedure - including pre-heat and interpass temperatures - may be critical depending on the type and thickness of steel being welded.

TECHNICAL QUESTIONS? For technical support on Hobart Filler Metals products please visit www.hobartbrothers.com/where-to-buy to find your closest Hobart representative or send an e-mail to subarc@itw-welding.com for further assistance.

DISCLAIMER:

The information contained or otherwise referenced herein is for reference purposes only and is presented only as "typical." Typical data are those obtained when welding and testing are performed in accordance with applicable AWS and/or EN ISO specification(s). Other tests and procedures may produce difference results and typical data should not be assumed to yield similar results in a particular application or weldment. No data is to be constructed as a recommendation for any welding condition or technique not controlled by ITW Welding. ITW Welding does not assume responsibility for any results obtained by persons over whose methods it has no control. It is the user's responsibility to determine the suitability of any products or methods mentioned herein for a particular purpose. In light of the foregoing, ITW Welding specifically disclaims any liability incurred from reliance on such information, and disclaims all guarantees and warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, and further disclaims any liability for consequential or incidental damages of any kind, including lost profits.

CAUTION:

Consumers should be thoroughly familiar with the safety precautions on the warning label posted in each shipment and in the American National Standard Z49.1, "Safety in Welding and Cutting," published by the American Welding Society, 8669 NW 36 St, # 130, Miami, FL 33166-6672 (can also be downloaded online at www.aws.org); OSHA Safety and Health Standards 29 CFR 1910 is available from the U.S. Department of Labor, Washington, D.C. 20210.

Safety Data Sheets on any Hobart Brothers Company product may be obtained from Hobart Customer Service or at www.hobartbrothers.com.

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Prepared By: I.Oziewicz // **Reason For Issue:** Format Standardization. Approvals added.