

SWX 150

EN ISO 14174: S A FB 1 55 AC H5

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Type no: 150

Features

- Agglomerated flux
- Fluoride-basic type
- Non alloying
- For single and multi wire applications
- Wide range of steels incl. HS and creep resistant

Benefits

- High impact toughness at low temperatures
- Excellent slag detachability
- Works great in narrow gap applications
- Supplied in moisture proof packaging

Applications

- Offshore construction
- Offshore wind towers
- Civil construction
- Pressure vessels
- Nuclear applications
- Narrow gap welding
- Double jointing
- High strength applications
- Structural pipes

Flux Characteristics

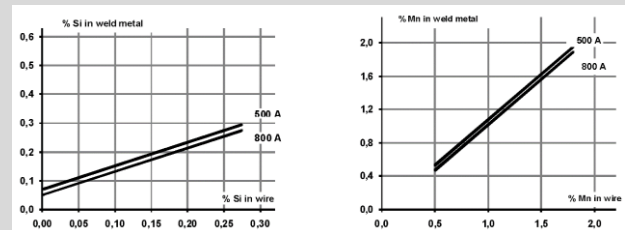
Flux type	Fluoride-Basic
Basicity index	3.3 (Boniszewski)
Alloy transfer	None
Density	~1.1 kg/litre
Grain size	0.2-2.0 mm / 10-70 mesh
HDM	< 5 ml/100 g weld metal
Current	DC+/AC
Re-drying unopened bag	Not required
Re-drying opened bag	See storage and handling recommendations

Flux Main Components

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

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

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Flux/Wire - Combination Classifications				Mechanical Properties - Typical Values									
With wire	EN ISO	AWS	Re/Rp 0.2 Mpa	Rm Mpa	A %	CVN J							
							0°C	-20°C	-30°C	-40°C	-50°C	-60°C	-70°C
SDX EM13K	AW	A5.17: F7A4-EM13K											
SDX S2Si-EM12K	AW 14171-A: S 38 5 FB S2Si	A5.17: F7A6-EM12K	420	500	22	130	85	65	35				
SDX S3Si-EH12K	AW 14171-A: S 46 6 FB S3Si	A5.17: F7A8-EH12K	490	560	29	140	115	80	60				
	SR ¹	A5.17: F7P8-EH12K	410	500	29	140	115	80	60				
SDX S4-EH14	AW 14171-A: S 50 4 FB S4		540	630	22	65	55	40					
	SR ¹		450	550	22	60	55	40					
SDX S2Mo-EA2	AW 14171-A: S 46 4 FB S2Mo	A5.23: F7A6-EA2-A2	485	570	23	75	55	40					
	SR ¹	A5.23: F7P6-EA2-A2	460	510	24	70	50	35					
SubCOR EM12K-S	AW	A5.17: F7A4-EC1											
SubCOR EM13K-S	AW	A5.17: F7A8-EC1											
	SR ¹	A5.17: F6P8-EC1											
SubCOR EM13K-S MOI	AW	A5.17: F7A8-EC1											
	SR ¹	A5.17: F7P8-EC1											
SubCOR SL 731	AW 14171: S 46 4 FB T3	A5.17: F8A6-EC1	490	600	29	140	110	80					
	SR ¹		460	570	28	110	90	70					
SDX S3Ni1Mo0.2-ENi5	AW 14171-A: S 46 6 FB S2Ni1Mo0.2	A5.23: F8A8-ENi5-Ni5	510	590	29		125	75					
	SR ¹	A5.23: F8P6-ENi5-Ni5	500	590	28			70					
SDX S3Ni1Mo-EF3	AW 14171-A: S 62 6 FB S3Ni1Mo	A5.23: F10A8-EF3-F3	640	730	22	110	75	60	50				
SDX S3Ni2.5CrMo	AW 26304: S 69 6 FB S3Ni2.5CrMo		710	800	18	95	75	65	55				
SubCOR 92-S	AW	A5.23: F8A10-ECM1-M1											
	SR ²	A5.23: F8P8-ECM1-M1											
SubCOR F2-S	AW	A5.23: F10A10-ECF2-F2											
	SR ¹	A5.23: F10P10-ECF2-F2											
SubCOR 100F3-S	AW	A5.23: F10A10-ECF3-F3											
	SR ¹	A5.23: F10P10-ECF3-F3											
SubCOR 120-S	AW	A5.23: F11A10-ECM4-M											
SubCOR SL 741	AW 26304: S 55 6 FB T3 Ni1Mo		550	700	18		80	60					
SubCOR SL 742	AW 26304: S 69 6 FB T3 Ni2.5CrMo	A5.23: F11A8-ECF5-F5	720	820	20	145	125	100					
	SR ³ 26304: S 69 6 FB T3 Ni2.5CrMo		700	790	20	135	115	70					
SubCOR SL 745	AW 16304: S 89 4 FB T3Ni2.5Cr1Mc		920	1060	15		47						
SDX S2Ni1-ENi1	AW 14171-A: S 42 4 FB S2Ni1	A5.23: F7A8-ENi1-Ni1	440	530	25	130	65	45					
	SR ¹	A5.23: F7P8-ENi1-Ni1	430	530	25	130	90	60	45				
SDX S2Ni2-ENi2	AW 14171-A: S 46 7 FB S2Ni2	A5.23: F8A10-ENi2-Ni2	480	570	27	145	115	95	75	60			
	SR ¹	A5.23: F8P10-ENi2-Ni2	480	580	27	145	115	90	60	40			
SubCOR Ni1-S	AW	A5.23: F7A8-ECNi1-Ni1											
	SR ¹	A5.23: F7P10-ECNi1-Ni1											
SubCOR W-S	AW	A5.23: F7A6-ECW-W											
SDX CrMo1-EB2R	SR ⁴ 24598: S S CrMo1 FB	A5.23: F8P2-EB2R-B2	490	620	22	100	80						
SDX CrMo2-EB3R	SR ⁴ 24598: S S CrMo2 FB	A5.23: F8P0-EB3R-B3	530	630	22	110	80						
SubCOR B2-S	SR ⁴	A5.23: F8P2-ECB2-B2											
SubCOR B3-S	SR ⁴	A5.23: F9P2-ECB3-B3											
SubCOR SL P1	SR ⁴ 24598: S T Mo FB		480	560	22	220	200	180					
SubCOR SL P1 MOD	SR ⁴ 24598: S T MoV FB		420	530	22	70	40						
SubCOR SL P11	SR ⁴ 24598: S T CrMo1 FB		510	600	26	200	150						
SubCOR SL P12 MOD	SR ⁴ 24598: ~S T CrMoV1 FB		540	630	17	20	60						
SubCOR SL P36	SR ¹ 24598: S T Z FB		550	640	18	80	60	50					
SubCOR SL P22	SR ⁴ 24598: S T CrMo2 FB		560	640	20	180	60						
SubCOR SL P24	SR ⁴ 24598: S T Z FB		650	720	18	120	60						
SubCOR SL P5	SR ⁵ 24598: S T CrMo5 FB		470	590	25	200	150						

AW: as welded, all weld metal. SR: stress relieved, all weld metal. SR¹: PWHT 620 °C (1150 °F)/1h, SR²: PWHT 605 °C (1125 °F)/1h, SR³: PWHT 565 °C (1050 °F)/1h, SR⁴: PWHT 690 °C (1275 °F)/1h, SR⁵: PWHT 745 °C (1375 °F)/1h. Metric values are typical of EN ISO testing and imperial values are typical of AWS testing.

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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				
							0°F	-20°F	-40°F	-60°F
SDX EM13K	AW	A5.17: F7A4-EM13K	68	74	27		42	28		
SDX S2Si-EM12K	AW 14171-A: S 38 5 FB S2Si	A5.17: F7A6-EM12K	68	77	31		90	27		
SDX S3Si-EH12K	AW 14171-A: S 46 6 FB S3Si	A5.17: F7A8-EH12K	74	83	31			142	122	
	SR ¹	A5.17: F7P8-EH12K	65	80	31			219	129	
SDX S4-EH14	AW 14171-A: S 50 4 FB S4									
	SR ¹									
SDX S2Mo-EA2	AW 14171-A: S 46 4 FB S2Mo	A5.23: F7A6-EA2-A2	76	84	27		106	44		
	SR ¹	A5.23: F7P6-EA2-A2	72	82	30		109	60		
SubCOR EM12K-S	AW	A5.17: F7A4-EC1	60	71	32		97			
SubCOR EM13K-S	AW	A5.17: F7A8-EC1	64	73	30			160		
	SR ¹	A5.17: F6P8-EC1	52	67	35				154	
SubCOR EM13K-S MOI	AW	A5.17: F7A8-EC1	70	79	29				103	
	SR ¹	A5.17: F7P8-EC1	65	78	32				36	
SubCOR SL 731	AW 14171: S 46 4 FB T3	A5.17: F8A6-EC1	112	122	22				55	36
	SR ¹									
SDX S3Ni1Mo0.2-ENi5	AW 14171-A: S 46 6 FB S2Ni1Mo0.2	A5.23: F8A8-ENi5-Ni5	82	90	27			146		
	SR ¹	A5.23: F8P6-ENi5-Ni5	77	89	28			134	100	
SDX S3Ni1Mo-EF3	AW 14171-A: S 62 6 FB S3Ni1Mo	A5.23: F10A8-EF3-F3	98	107	24				99	72
SDX S3Ni2.5CrMo	AW 26304: S 69 6 FB S3Ni2.5CrMo									
SubCOR 92-S	AW	A5.23: F8A10-ECM1-M1	78	88	26			91	78	
	SR ²	A5.23: F8P8-ECM1-M1	76	88	27			123	106	
SubCOR F2-S	AW	A5.23: F10A10-ECF2-F2	95	104	23			86	58	
	SR ¹	A5.23: F10P10-ECF2-F2	91	101	25			39	28	
SubCOR 100F3-S	AW	A5.23: F10A10-ECF3-F3	101	109	24			57	44	
	SR ¹	A5.23: F10P10-ECF3-F3	98	108	25			59	35	
SubCOR 120-S	AW	A5.23: F11A10-ECM4-M	111	118	23			77	52	
SubCOR SL 741	AW 26304: S 55 6 FB T3 Ni1Mo									
SubCOR SL 742	AW 26304: S 69 6 FB T3 Ni2.5CrMo	A5.23: F11A8-ECF5-F5	112	122	22			34	33	
	SR ³ 26304: S 69 6 FB T3 Ni2.5CrMo									
	AW 16304: S 89 4 FB T3Ni2.5Cr1Mc									
SDX S2Ni1-ENi1	AW 14171-A: S 42 4 FB S2Ni1	A5.23: F7A8-ENi1-Ni1	70	80	29			135	108	
	SR ¹	A5.23: F7P8-ENi1-Ni1	65	77	30			177	135	
SDX S2Ni2-ENi2	AW 14171-A: S 46 7 FB S2Ni2	A5.23: F8A10-ENi2-Ni2	74	85	27			143	127	
	SR ¹	A5.23: F8P10-ENi2-Ni2	70	83	28			149	138	
SubCOR Ni1-S	AW	A5.23: F7A8-ECNi1-Ni1	61	73	26			104		
	SR ¹	A5.23: F7P10-ECNi1-Ni1	58	71	33			127	191	
SubCOR W-S	AW	A5.23: F7A6-ECW-W	71	80	28		129	66		
SDX CrMo1-EB2R	SR ⁴ 24598: S S CrMo1 FB	A5.23: F8P2-EB2R-B2	80	91	25		129	88		
SDX CrMo2-EB3R	SR ⁴ 24598: S S CrMo2 FB	A5.23: F8P0-EB3R-B3	82	97	24	92	20			
SubCOR B2-S	SR ⁴	A5.23: F8P2-ECB2-B2	93	96	23		92	18		
SubCOR B3-S	SR ⁴	A5.23: F9P2-ECB3-B3	103	117	18		25			
SubCOR SL P1	SR ⁴ 24598: S T Mo FB									
SubCOR SL P1 MOD	SR ⁴ 24598: S T MoV FB									
SubCOR SL P11	SR ⁴ 24598: S T CrMo1 FB									
SubCOR SL P12 MOD	SR ⁴ 24598: ~S T CrMoV1 FB									
SubCOR SL P36	SR ¹ 24598: S T Z FB									
SubCOR SL P22	SR ⁴ 24598: S T CrMo2 FB									
SubCOR SL P24	SR ⁴ 24598: S T Z FB									
SubCOR SL P5	SR ⁵ 24598: S T CrMo5 FB									

AW: as welded, all weld metal. SR: stress relieved, all weld metal. SR¹: PWHT 1150 °F (620 °C)/1h, SR²: PWHT 1125 °F (605 °C)/1h, SR³: PWHT 1050 °F (565 °C)/1h, SR⁴: PWHT 1275 °F (690 °C)/1h, SR⁵: PWHT 1375 °F (745 °C)/1h. Metric values are typical of EN ISO testing and imperial values are typical of AWS testing.

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Chemical Composition All Weld Metal - Typical Values

With wire	%C	%Si	%Mn	%Cr	%Ni	%Mo	%V	%Cu
SDX EM13K	0.07	0.2	1					
SDX S2Si-EM12K	0.07	0.3	0.9					
SDX S3Si-EH12K	0.09	0.3	1.5					
SDX S4-EH14	0.09	0.15	1.9					
SDX S2Mo-EA2	0.07	0.2	0.9			0.5		
SDX S2Ni1-ENi1	0.07	0.2	0.9		0.9			
SDX S2Ni2-ENi2	0.08	0.2	1		2.1			
SDX S3Ni1Mo0.2-ENi5	0.09	0.25	1.4		0.9	0.2		
SDX S3Ni1Mo-EF3	0.09	0.2	1.5		0.9	0.5		
SDX S3Ni2.5CrMo	0.07	0.2	1.4	0.5	2.5	0.5		
SDX CrMo1-EB2R	0.07	0.3	0.9	1.1		0.5		
SDX CrMo2-EB3R	0.07	0.3	0.6	2.2		1		
SubCOR EM12K-S	0.05	0.2	0.9					
SubCOR EM13K-S	0.07	0.2	1					
SubCOR EM13K-S MOD	0.09	0.3	0.9					
SubCOR 92-S	0.05	0.2	1		1.6	0.2		
SubCOR F2-S	0.07	0.35	1.4		0.7	0.4		
SubCOR 100F3-S	0.09	0.3	1.5		0.8	0.5		
SubCOR 120-S	0.06	0.3	1.5	0.3	2.4	0.4		
SubCOR Ni1-S	0.05	0.2	1		1.6	0.2		
SubCOR W-S	0.03	0.4	0.6	0.5	0.5			0.4
SubCOR B2-S	0.07	0.4	0.4	1.2		0.5		
SubCOR B3-S	0.1	0.4	0.4	2.3		1		
SubCOR SL 731	0.08	0.6	1.7					
SubCOR SL 741	0.06	0.3	1.2		0.9	0.5		
SubCOR SL 742	0.07	0.35	1.6	0.4	2.1	0.4		
SubCOR SL 745	0.08	0.4	1.6	1	2.2	0.5		
SubCOR SL P1	0.06	0.2	1.2			0.5		
SubCOR SL P1 MOD	0.05	0.3	1	0.4	0.2	0.55	0.3	
SubCOR SL P11	0.07	0.3	1.1	1.2		0.5		
SubCOR SL P12 MOD	0.1	0.5	0.9	1.1	0.3	1.2	0.25	
SubCOR SL P36	0.05	0.3	1.3			0.5		
SubCOR SL P22	0.09	0.3	1.1	2.3		1.1		
SubCOR SL P24	0.1	0.3	1.2	2.5		1	0.2	
SubCOR SL P5	0.05	0.4	1.1	5		0.6		

Standard Packages

Description	Item number	No of bags/pallet	Net weight/pallet
22.7 kg (50 lbs) Aluminium/PE Bag EAE	150022300H	42	953 kg (2100 lbs)
950 kg (2090 lbs) Double Bag	150071T00H	1	950 kg (2090 lbs)

Approvals

With wire	ABS	BV	DNV	GL	LR	CWB	DB	TÜV	CE
SWX 150							√		
SDX S2	3YM	3YM	II YM	3YM	BF 3YM NR			√	√
SDX S2Si-EM12K					BF 5Y46M H5 F49A6-EM12K				√
SDX S2Mo-EA2					F8A4-EA2-A4			√	√
SDX S3Si-EH12K	5YQ460	A5Y46M H5	VY46(H5)	6Y46MH5	BF 5Y46M H5 F49A6-EH12K			√	√
SubCOR SL 731	3YM	3YM	III YM	3YM	5Y46		√	√	√
SubCOR SL 742	5YQ690M H5	5Y69M H5	IV Y69 MS H5	6Y69 H5	BF 5Y69M H5			√	√

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

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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 of 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.

Because Hobart Brothers Company is constantly improving products, Hobart reserves the right to change design and/or specifications without notice.

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Specification: PDS150 // **Type Number:** 150 // **Revision:** 7 // **Replaces:** 6 // **Approved By:** R.Fox, P.Jeirud

Prepared By: I.Oziewicz // **Reason For Issue:** Change of classification for SubCOR B2-S.