Product Data Sheet

SWX 150

EN ISO 14174: S A FB 1 55 AC H5

Specification:	PS150	Reason for issue:	General update of entire Data Sheet. New Specification no.
Revision:	5	Issued by:	Lars Andersson, Peter Jeirud.
Type No:	150	Page:	1 / 4

Features:

- Agglomerated flux
- Fluoride-basic type
- 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

Main applications:

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

Miscellaneous:

- Non alloying
- Supplied in moisture proof packaging

Flux characteristics

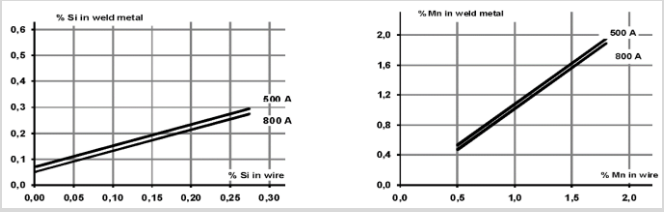
Flux type	Fluoride-Basic
Basicity index	3.3 (Boniszewski)
Alloy transfer	None
Density	~1.1 kg/litre
Grain size	0.2-2.0 mm / 10-65 mesh
HDM	< 5 ml/100 g weld metal
Current	DC+/AC
Re-drying unopened bag	Not required
Re-drying opened bag	See storage and handling recommendations

Flux main components

Al_2O_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 SWX 150 - Classifications				Mechanical properties									
With wire		EN ISO	AWS	Re/Rp0.2 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	550	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 MOD	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-M4										
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 T3Ni2.5Cr1Mo		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: F9P2-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°C: 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						
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. SR[1]: PWHT 1150°F (620°C)/1h, SR[2]: PWHT 1125°F (605°C)/1h, SR[3]: PWHT 1050°F (565°C)/1h, SR[4]: PWHT 1275°F (690°C)/1h, SR[5]: PWHT 1375°F (745°C)/1h.

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Flux SWX 150 - Classifications				Mechanical properties									
With wire		EN ISO	AWS	YS ksi	TS ksi	E %	CVN ft-lbf						
							0°F	-20°F	-40°F	-60°F	-80°F	-100°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 MOD	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-M4	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											
SubCOR SL 745	AW	16304: S 89 4 FB T3Ni2.5Cr1Mo											
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: F9P2-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. SR[1]: PWHT 1150°F (620°C)/1h, SR[2]: PWHT 1125°F (605°C)/1h, SR[3]: PWHT 1050°F (565°C)/1h, SR[4]: PWHT 1275°F (690°C)/1h, SR[5]: PWHT 1375°F (745°C)/1h.

HOBART FILLER METALS

Product Data Sheet

SWX 150

EN ISO 14174: S A FB 1 55 AC H5

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Revision:	5	Issued by:	Lars Andersson, Peter Jeirud.
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Flux SWX 150 - Chemical composition all weld metal, typical values

With wire	%C	%Si	% Mn	%Cr	%Ni	%Mo	%V	%Cu
SDX EM13K	0,07	0,2	1,0					
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	1,0		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		1,0		
SubCOR EM12K-S	0,05	0,2	0,9					
SubCOR EM13K-S	0,07	0,2	1,0					
SubCOR EM13K-S MOD	0,09	0,3	0,9					
SubCOR 92-S	0,05	0,2	1,0		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	1,0		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		1,0		
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	1,0	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	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	0,10	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	0,10	0,3	1,2	2,5		1,0	0,2	
SubCOR SL P5	0,05	0,4	1,1	5		0,6		

Approvals

With wire	CE	ABS	BV	CWB	DNV	GL	LR	DB	TÜV
SWX 150								√	
SDX S2	√	3YM	3YM		II YM	3YM	BF 3YM NR		√
SDX S2Si-EM12K	√			F49A6-EM12K			BF 5Y46M H5		
SDX S2Mo-EA2	√			F8A4-EA2-A4					√
SDX S3Si-EH12K	√	5YQ460	A5Y46M H5	F49A6-EH12K	VY46(H5)	6Y46MH5	BF 5Y46M H5		√
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		√

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.