

SWX 160

EN ISO 14174: S A FB 1 55 AC H5

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Type no: 160

Features

- Agglomerated flux
- Fluoride-basic type
- Non alloying
- For single and multi wire applications
- High purity flux for X-factor requirements
- For creep resistant steels, incl step cooling applications
- For high strength steels

Benefits

- High impact toughness
- Excellent slag detachability also in narrow gap applications
- High purity weld metal
- Supplied in moisture proof packaging

Applications

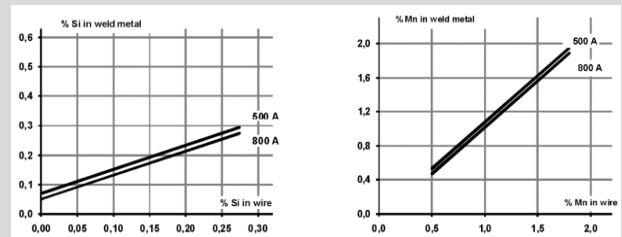
- Pressure vessel fabrication
- Nuclear applications
- High strength applications
- Offshore construction

Flux Characteristics

Flux type	Fluoride-Basic
Basicity index	2.7 (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

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
~20%	~35%	~15%	~25%

Flux/Wire - Combination Classifications

With wire		EN ISO	AWS	Mechanical Properties - Typical Values				
				Re/Rp 0.2 Mpa	Rm Mpa	A %	CVN J	
								0 °C -20 °C -30 °C -40 °C -50 °C -60 °C
SDX S3-EH10K	AW	14171-A: S 42 5 FB S3	A5.17: F7A6-EH10K	450	540	24		100 70
	SR ¹	14171-A: S 42 5 FB S3	A5.17: P6A6-EH10K	400	510	24		110 80
SDX S3Si-EH12K	SR ¹	14171-A: S 38 6 FB S3Si	A5.17: F7P8-EH12K	410	500	28		110 70
SDX CrMo1-EB2R	SR ²	24598-A: S S CrMo1 FB	A5.23: F8P2-EB2R-B2R	480	590	22	110	90
	SR ³			480	580	22	110	90
SDX CrMo2-EB3R *)	SR ²	24598-A: S S CrMo2 FB	A5.23: F8P2-EB3R-B3R	530	630	22	100	90
	SR ³			500	590	22	100	90
SubCOR SL P91	SR ⁴	24598-A: S T CrMo91 FB		560	670	20	50	
SDX S3Ni2.5CrMo	AW	26304-A: S 79 6 FB S3Ni2.5CrMo		820	880	18		90 60
SubCOR 120-S	AW		A5.23: F11A6-ECM4-M4	770	830	19		80
SubCOR SL 742	AW	26304-A: S 69 6 FB T3 Ni2.5CrMo	A5.23: F11A8-ECF5-F5	730	830	17		120 90

AW: as welded, all weld metal. SR: stress relieved, all weld metal. SR¹: PWHT 620 °C (1150 °F)/1h. SR²: PWHT 690 °C (1275 °F)/1h. SR³: 665 °C (1230 °F)/2h. SR⁴: PWHT 760 °C (1400 °F)/3h.

*) Step cooling data available.

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 -80°F
SDX S3-EH10K	AW	14171-A: S 42 5 FB S3	A5.17: F7A6-EH10K	65	77	23		73 51
	SR ¹	14171-A: S 42 5 FB S3	A5.17: P6A6-EH10K	58	74	23		80 58
SDX S3Si-EH12K	SR ¹	14171-A: S 38 6 FB S3Si	A5.17: F7P8-EH12K	60	75	28		80 50
SDX CrMo1-EB2R	SR ²	24598-A: S S CrMo1 FB	A5.23: F8P2-EB2R-B2R	70	85	22	80	65
	SR ³			70	85	22	80	65
SDX CrMo2-EB3R *)	SR ²	24598-A: S S CrMo2 FB	A5.23: F8P2-EB3R-B3R	80	90	22	75	65
	SR ³			75	85	22	75	65
SubCOR SL P91	SR ⁴	24598-A: S T CrMo91 FB		120	130	18		65 45
SDX S3Ni2.5CrMo	AW	26304-A: S 79 6 FB S3Ni2.5CrMo		110	120	19		60
SubCOR 120-S	AW		A5.23: F11A6-ECM4-M4	105	120	17		90 65
SubCOR SL 742	AW	26304-A: S 69 6 FB T3 Ni2.5CrMo	A5.23: F11A8-ECF5-F5					
SDX S2Ni1Cu	AW	14171-A: S 46 3 AB S2Ni1Cu						

AW: as welded, all weld metal. SR: stress relieved, all weld metal. SR¹: PWHT 1150 °F (620 °C)/1h. SR²: PWHT 1275 °F (690 °C)/1h. SR³: 1230 °F (665 °C)/2h. SR⁴: PWHT 1400 °F (760 °C)/3h.

*) Step cooling data available.

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	%P	%S	%Cr	%Ni	%Mo	%V	X ppm
SDX S3-EH10K	0.08	0.3	1.4	0.012	0.008					
SDX S3Si-EH12K	0.09	0.4	1.5	0.004	0.002					
SDX CrMo1-EB2R	0.09	0.3	0.9	0.006	0.003	1.2		0.4		7
SDX CrMo2-EB3R	0.09	0.3	0.7	0.007	0.003	2.3		1.0		8
SubCOR SL P91	0.10	0.4	1.0	0.018	0.011	8.4	0.3	0.9	0.1	
SDX S3Ni2.5CrMo	0.08	0.4	1.5	0.010	0.003	0.5	2.3	0.5		
SubCOR 120-S	0.07	0.4	1.6	0.009	0.005	0.3	2.4	0.5		
SubCOR SL 742	0.08	0.4	1.7	0.012	0.007	0.4	2.0	0.4		

Standard Packages				
Description	Item number	No of bags/pallet	Net weight/pallet	
22.7 kg (50 lbs) Aluminium/PE Bag EAE	160022300H	42	953 kg (2100 lbs)	

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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:

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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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Specification: PDS160 // **Type Number:** 160 // **Revision:** 2 // **Replaces:** 1 // **Approved By:** A. Holzner, G. Hiereth, P.Jeirud
Prepared By: I.Oziewicz // **Reason For Issue:** Flux and wire combinations added.