SWX 120

EN ISO 14174: S A AB 1 57 AC H5

FEATURES:	BENEFITS:
• Moderate-basicity flux	• Provides excellent balance between good weldability and mechanical properties
• High current-carrying capacity	• Allows the use of high productivity parameters and multiple torch configurations
• Excellent slag detachment	• Suitable for narrow-groove welding, reduces clean-up time for improved productivity
• Supplied in moisture-proof packaging	• Eliminates the need to re-dry unopened product

APPLICATIONS:

- Single and multi-pass welding
- Storage tanks
- Wind towers
- Heavy equipment
- Pressure vessels
- Shipbuilding

FLUX TYPE: Agglomerated aluminate-basic

BASICITY INDEX: 1.9 (Boniszewski)

ALLOY TRANSFER: Slightly Mn alloying
Typical AWS Wall Neutrality Number: 18 (Neutral)

DENSITY: ~1.2 kg/L

MESH SIZE: 0.2 - 2.0 mm/10 - 70 mesh

CURRENT: Direct Current Electrode Positive (DCEP), Direct Current Electrode Negative (DCEN), Alternating Current (AC)

STORAGE: Product in undamaged packaging can be used without re-drying. Re-dried flux must be stored at 300±45°F (150±25°C) before use.

RE-DRYING: If the flux packaging has been opened and the flux has been exposed to moist conditions, re-drying is recommended. The flux should be re-dried at a temperature of 570-660°F (300-350°C) for a minimum of 2 hours. Re-drying should be made a maximum of three times.

RECYCLING: The flux recycling system must be free from moisture and oil. Slag and mill scale must be removed from the recycled flux. At least one part of new flux must be added to three parts of recycled flux.

TYPICAL FLUX COMPOSITION*:

Al_2O_3 + MnO	CaO + MgO	SiO_2 + TiO_2	CaF_2
~35%	~25%	~20%	~20%

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AWS CLASSIFICATIONS:

With Wire	Condition	Specifications	Classification (US Customary Units)	Classification (SI Units)
SDX S2Si-EM12K	As-Welded	A5.17/A5.17M	F7A6-EM12K	F48A5-EM12K
	PWHT*	A5.17/A5.17M	F7P8-EM12K	F48P6-EM12K
SDX EM13K	As-Welded	A5.17/A5.17M	F7A4-EM13K	F48A4-EM13K
	PWHT*	A5.17/A5.17M	F7P8-EM13K	F48P6-EM13K
SDX S3Si-EH12K	As-Welded	A5.17/A5.17M	F7A6-EH12K	F48A5-EH12K
	PWHT*	A5.17/A5.17M	F7P8-EH12K	F48A6-EH12K
SDX S3NiMo-EF3	As-Welded	A5.23/A5.23M	F10A8-EF3-F3	F69A6-EF3-F3
	PWHT*	A5.23/A5.23M	F10P6-EF3-F3	F69P5-EF3-F3
SubCOR EM12K-S	As-Welded	A5.17/A5.17M	F7A6-EC1	F48A5-EC1
	PWHT*	A5.17/A5.17M	F6P8-EC1	F43P6-EC1
SubCOR EM13K-S	As-Welded	A5.17/A5.17M	F7A8-EC1 H8	F48A6-EC1 H8
	PWHT*	A5.17/A5.17M	F7P8-EC1 H8	F48P6-EC1 H8
SubCOR EM13K-S MOD	As-Welded	A5.17/A5.17M	F7A8-EC1	F48A6-EC1
	PWHT*	A5.17/A5.17M	F7P8-EC1	F48P6-EC1
SubCOR N1-S	As-Welded	A5.23/A5.23M	F7A10-ECNi1-Ni1	F49A7-ECNi1-Ni1
SubCOR 92-S	As-Welded	A5.23/A5.23M	F8A10-ECM1-M1	F55A7-ECM1-M1
	PWHT*	A5.23/A5.23M	F8P8-ECM1-M1	F55P6-ECM1-M1
SubCOR 100F3-S	As-Welded	A5.23/A5.23M	F10A10-ECF3-F3	F69A7-ECF3-F3
	PWHT*	A5.23/A5.23M	F10P8-ECF3-F3	F69P6-ECF3-F3

Note: Stress-Relieved 1 Hr. @ 1150°F (620°C)

EN ISO CLASSIFICATIONS:

With Wire	Condition	Specification	Classification
SDX S2Si-EM12K	As-Welded	EN ISO 14171-A	S 38 5 AB S2Si
SDX S3Si-EH12K	As-Welded	EN ISO 14171-A	S 46 4 AB S3Si
	Two-Run	EN ISO 14171-A	S 3T 2 AB S3Si

TYPICAL MECHANICAL PROPERTIES*:

With Wire	Condition	Tensile Strength	Yield Strength	Elongation % in 2" (50 mm)
SDX S2Si-EM12K	As-Welded	78 ksi (538 MPa)	66 ksi (455 MPa)	27%
	PWHT*	78 ksi (538 MPa)	64 ksi (441 MPa)	28%
SDX EM13K	As-Welded	87 ksi (600 MPa)	77 ksi (531 MPa)	29%
	PWHT*	83 ksi (572 MPa)	68 ksi (469 MPa)	28%
SDX S3Si-EH12K	As-Welded	84 ksi (579 MPa)	73 ksi (503 MPa)	30%
	PWHT*	83 ksi (572 MPa)	67 ksi (462 MPa)	28%
SDX S3NiMo-EF3	As-Welded	106 ksi (731 MPa)	92 ksi (634 MPa)	26%
	PWHT*	106 ksi (731 MPa)	86 ksi (593 MPa)	24%

Note: Stress-Relieved 1 Hr. @ 1150°F (620°C)

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TYPICAL MECHANICAL PROPERTIES* CONTINUED:

With Wire	Condition	Tensile Strength	Yield Strength	Elongation % in 2" (50 mm)
SubCOR EM12K-S	As-Welded	70 ksi (483 MPa)	60 ksi (414 MPa)	32%
	PWHT*	67 ksi (462 MPa)	53 ksi (365 MPa)	33%
SubCOR EM13K-S	As-Welded	76 ksi (524 MPa)	65 ksi (448 MPa)	30%
	PWHT*	73 ksi (503 MPa)	60 ksi (414 MPa)	32%
SubCOR EM13K-S MOD	As-Welded	82 ksi (565 MPa)	72 ksi (496 MPa)	29%
	PWHT*	80 ksi (552 MPa)	67 ksi (462 MPa)	29%
SubCOR N1-S	As-Welded	73 ksi (503 MPa)	62 ksi (427 MPa)	28%
SubCOR 92-S	As-Welded	93 ksi (641 MPa)	79 ksi (545 MPa)	26%
	PWHT*	84 ksi (579 MPa)	71 ksi (490 MPa)	27%
SubCOR 100F3-S	As-Welded	108 ksi (745 MPa)	98 ksi (676 MPa)	24%
	PWHT*	105 ksi (724 MPa)	95 ksi (655 MPa)	25%

Note: Stress-Relieved 1 Hr. @ 1150°F (620°C)

TYPICAL CHARPY V-NOTCH IMPACT VALUES*:

With Wire	Condition	Avg. at -20°F (-30°C)	Avg. at -40°F (-40°C)	Avg. at -60°F (-50°C)	Avg. at -80°F (-60°C)	Avg. at -100°F (-70°C)
SDX S2Si-EM12K	As-Welded	—	—	75 ft-lbs (102 J)	65 ft-lbs (88 J)	—
	PWHT*	—	—	60 ft-lbs (81 J)	45 ft-lbs (61 J)	—
SDX EM13K	As-Welded	—	—	—	40 ft-lbs (54 J)	24 ft-lbs (32 J)
	PWHT*	—	—	59 ft-lbs (80 J)	48 ft-lbs (65 J)	—
SDX S3Si-EH12K	As-Welded	—	—	50 ft-lbs (68 J)	35 ft-lbs (47 J)	—
	PWHT*	—	—	—	82 ft-lbs (111 J)	80 ft-lbs (108 J)
SDX S3NiMo-EF3	As-Welded	—	—	55 ft-lbs (75 J)	45 ft-lbs (61 J)	—
	PWHT*	—	—	35 ft-lbs (47 J)	35 ft-lbs (47 J)	—
SubCOR EM12K-S	As-Welded	—	—	110 ft-lbs (149 J)	90 ft-lbs (122 J)	—
	PWHT*	—	—	95 ft-lbs (129 J)	90 ft-lbs (122 J)	—
SubCOR EM13K-S	As-Welded	—	—	—	80 ft-lbs (108 J)	65 ft-lbs (88 J)
	PWHT*	—	—	—	140 ft-lbs (190 J)	65 ft-lbs (88 J)
SubCOR EM13K-S MOD	As-Welded	—	—	—	160 ft-lbs (217 J)	105 ft-lbs (142 J)
	PWHT*	—	220 ft-lbs (298 J)	—	130 ft-lbs (176 J)	—
SubCOR N1-S	As-Welded	—	—	—	105 ft-lbs (142 J)	90 ft-lbs (122 J)

Note: Stress-Relieved 1 Hr. @ 1150°F (620°C)

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TYPICAL CHARPY V-NOTCH IMPACT VALUES* CONTINUED:

With Wire	Condition	Avg. at -20°F (-30°C)	Avg. at -40°F (-40°C)	Avg. at -60°F (-50°C)	Avg. at -80°F (-60°C)	Avg. at -100°F (-70°C)
SubCOR 92-S	As-Welded	—	—	—	85 ft-lbs (115 J)	50 ft-lbs (68 J)
	PWHT*	—	—	100 ft-lbs (136 J)	75 ft-lbs (102 J)	—
SubCOR 100F3-S	As-Welded	—	—	—	55 ft-lbs (75 J)	45 ft-lbs (61 J)
	PWHT*	—	—	35 ft-lbs (47 J)	40 ft-lbs (54 J)	—

STANDARD PACKAGING: For a complete list of diameters and packaging, please contact Hobart Brothers at (800) 424-1543 or (937) 332-5188 for International Customer Service.

50 lb. (23 kg) Bag
S669210-055

TECHNICAL QUESTIONS? For technical support of Hobart Filler Metals products, contact the Applications Engineering department by phone toll-free at 1-800-532-2618 or by e-mail at Applications.Engineering@hobartbrothers.com

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 36th St., Miami, FL 33166 (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 LLC product may be obtained from Hobart Customer Service or at www.hobartbrothers.com.

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

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