



SDX S3Si-EH12K

AWS A5.17: EH12K
EN ISO 14171: S3Si

FEATURES:

- Copper-coated wire
- High manganese content
- High toughness carbon -steel wire

BENEFITS:

- Offers optimal consistency in electrode feeding and electrical transfer
- Provides improved weld metal toughness compared to EM12K or EM13K solid wires
- Suitable for welding a wide range of moderate tensile strength non-alloyed steels in critical applications

APPLICATIONS:

- Structural and bridge fabrication
- Pressure vessels
- Offshore fabrication
- Wind tower
- Heavy equipment

WIRE TYPE: Wire Type

RECOMMENDED FLUXES: SWX 120, SWX 150

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

STANDARD DIAMETERS: 5/64" (2.0 mm), 3/32" (2.4 mm), 1/8" (3.2 mm), 5/32" (4.0 mm)

STORAGE: Product should be stored in a dry, enclosed environment, and in its original intact packaging

RE-DRYING: Not recommended

AWS CLASSIFICATIONS:

With Flux	Condition	Specifications	Classification (US Customary Units)	Classification (SI Units)
SWX 120	As-Welded	A5.17/A5.17M	F7A6-EH12K	F48A5-EH12K
SWX 150	As-Welded	A5.17/A5.17M	F7A8-EH12K	F48A6-EH12K
	PWHT*	A5.17/A5.17M	F7P8-EH12K	F48P6-EH12K

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

EN ISO CLASSIFICATIONS:

With Wire	Condition	Specification	Classification
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
SDX S3Si-EH12K	As-Welded	EN ISO 14171-A	S 46 6 FB S3Si

TYPICAL WIRE CHEMICAL COMPOSITION*:

With Flux	% C	% Mn	% Si	% P	% S	% Cu
None (Wire Melt Button)	0.10	1.68	0.32	0.008	0.003	0.04

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TYPICAL WELD DEPOSIT CHEMICAL COMPOSITION*:

With Flux	% C	% Mn	% Si	% P	% S	% Cu
SWX 120	0.07	1.72	0.27	0.014	0.004	0.07
SWX 150	0.08	1.45	0.35	0.011	0.002	0.07

TYPICAL MECHANICAL PROPERTIES*:

With Flux	Condition	Tensile Strength	Yield Strength	Elongation % in 2" (50 mm)
SWX 120	As-Welded	84 ksi (579 MPa)	73 ksi (503 MPa)	30%
	PWHT*	83 ksi (572 MPa)	67 ksi (462 MPa)	28%
SWX 150	As-Welded	83 ksi (572 MPa)	74 ksi (510 MPa)	31%
	PWHT*	80 ksi (552 MPa)	65 ksi (448 MPa)	31%

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

TYPICAL CHARPY V-NOTCH IMPACT VALUES*:

With Flux	Condition	Avg. at -60°F (-50°C)	Avg. at -80°F (-60°C)	Avg. at -100°F (-70°C)
SWX 120	As-Welded	50 ft-lbs (68 J)	35 ft-lbs (47 J)	—
	PWHT*	—	82 ft-lbs (111 J)	80 ft-lbs (108 J)
SWX 150	As-Welded	—	140 ft-lbs (190 J)	120 ft-lbs (163 J)
	PWHT*	—	215 ft-lbs (291 J)	125 ft-lbs (169 J)

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

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TYPICAL OPERATING PARAMETERS*:

Diameter		Amps	Volts	Wire Feed Speed		Deposition Rate		Contact Tip to Work Distance	
Inches	(mm)			Inches	(m/min)	lbs/hr	(kg/hr)	Inches	(mm)
3/32	(2.4)	300	29	70	(1.78)	8.1	(3.7)	1.25	(32)
3/32	(2.4)	400	30	90	(2.29)	10.6	(4.8)	1.25	(32)
3/32	(2.4)	500	37	120	(3.05)	14.8	(6.7)	1.25	(32)
3/32	(2.4)	600	38	155	(3.94)	18.9	(8.6)	1.25	(32)
1/8	(3.2)	400	31	54	(1.37)	11.4	(5.2)	1.25	(32)
1/8	(3.2)	500	32	68	(1.73)	13.1	(5.9)	1.25	(32)
1/8	(3.2)	600	35	80	(2.03)	15.6	(7.1)	1.25	(32)
1/8	(3.2)	700	37	90	(2.41)	19.3	(8.8)	1.25	(32)
5/32	(4.0)	400	30	38	(0.97)	10.3	(4.9)	1.5	(38)
5/32	(4.0)	500	33	48	(1.22)	14.0	(6.4)	1.5	(38)
5/32	(4.0)	600	35	55	(1.40)	17.2	(7.8)	1.5	(38)
5/32	(4.0)	700	38	65	(1.65)	19.6	(8.9)	1.5	(38)
5/32	(4.0)	800	40	75	(1.91)	23.5	(10.7)	1.5	(38)
5/32	(4.0)	900	42	88	(2.24)	28.2	(12.8)	1.5	(38)

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

Parameters are provided for informational purposes only. All values are approximate. The optimal voltage may vary (typically ± 2 volts) depending on the choice of flux, material thickness, joint design, and other variables specific to the application.

Likewise, actual deposition rate may vary depending on choice of flux and contact tip to work distance.

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.

Diameter	55-lb. (25 kg) Wire Basket	1000 lb. (454 kg) Drum
Net Pallet Weight	2310-lb. (1050kg)	2000-lb. (907kg)
5/64" (2.0 mm)	732201025H	—
3/32" (2.4 mm)	732241025H	—
1/8" (3.2 mm)	732321025H	73232414FH
5/32" (4.0 mm)	732401025H	—

CONFORMANCES AND APPROVALS:

With Flux	With Wire	ABS	CE	CWB	DNV-GL
SWX 150	(2X) SDX S3Si-EH12K	—	—	—	VI Y46MH5
SWX 150	SDX S3Si-EH12K	5YQ460M H5	X	F55A6-EH12K-G-H8 (F8A8-EH12K-G-H8)	V Y46(H5)

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

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.