SDX EM14K

AWS A5.17: EM14K

Features:

- Copper-coated wire
- Moderate manganese, silicon and titanium levels
- Provides good low-temperature impact toughness

Benefits

- Offers optimal consistency of electrode feeding and electrical transfer
- Improves strength and CVN toughness under certain conditions of high heat input welding or PWHT
- Helps minimize risk of cracking in demanding service conditions

Applications:

- Structural and bridge fabrication
- Storage vessels
- Heavy equipment
- Pressure vessels

Wire Type: Copper-coated solid wire
Recommended Fluxes: SWX 150
Type of Current: Direct Current Electrode Positive (DCEP), Direct Current Electrode Negative (DCEN)
Alternating Current (AC)
Standard Diameters: 3/32" (2.4 mm), 1/8" (3.2 mm), 5/32" (4.0mm)
Re-Drying: Not Recommended
Storage: Product should be stored in a dry, enclosed environment and in its original intact packaging

AWS Classifications

With Flux	Condition	Specifications	Classification (US Customary Units)	Classification (SI Units)
SWX 150	As-Welded	A5.17/A5.17M	F7A8-EM14K	F48A6-EM14K
	PWHT*	A5.17/A5.17M	F7P8-EM14K	F48P6-EM14K

Note: Stress-Relieved 1 Hr. @ 1150°F

Typical Wire Chemical Composition* (Chem Pad):

With Flux	% C	% Mn	% Si	% P	% S	% Cu	% Ti
None (Wire Melt Button)	0.09	1.20	0.42	0.007	0.003	0.001	0.07
AWS A5.17 EM14K Requirements*	0.06—0.19	0.90—1.40	0.35—0.75	0.025	0.025	0.035	0.03—0.17

Note: AWS Specification single values are maximums

Typical Weld Deposit Chemical Composition* (Chem Pad):

With Flux	% C	% Mn	% Si	% P	% S	% Cu	% Ti
SWX 150	0.09	1.27	0.47	0.015	0.007	0.078	0.012

Note: AWS Specification single values are maximums

Typical Weld Metal Diffusible Hydrogen (Gas Chromatography per AWS 4.3)*:

With Flux	Diffusible Hydrogen
SWX 150	5.6 ml/100 g

*The information contained or otherwise referenced herein is presented only as "typical" without guarantee or warranty, and Hobart Brothers Company expressly disclaims any liability incurred from any reliance thereon. Typical data are those obtained when welded and tested in accordance with the AWS A5.17 specification. Other tests and procedures may produce different results. No data is to be construed as a recommendation for any welding condition or technique not controlled by Hobart Brothers LLC.

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Typical Mechanical Properties*

With Flux	Condition	Tensile Strength	Yield Strength	Elongation % in 2" (50 mm)
SWX 150	As-Welded	87,000 psi (600 MPa)	78,000 psi (538 MPa)	27%
	PWHT*	84,000 psi (579 MPa)	71,000 psi (490 MPa)	27%

Note: Stress-Relieved 1 Hr. @ 1150°F

Typical Charpy V-Notch Impact Values* (As Welded):

With Flux	Condition	Avg. at –60°F (-50°C)	Avg. at –80°F (-60°C)
SWX 150	As-Welded	92 ft-lbs. (125 J)	87 ft-lbs. (110 J)
	PWHT*	90 ft-lbs. (122 J)	73 ft-lbs. (99 J)

Note: Stress-Relieved 1 Hr. @ 1150°F

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HOBART FILLER METALS

SDX EM14K

TYPICAL OPERATING PARAMETERS*:

Diameter		Amps	Volts	Wire Feed Speed		Deposition Rate		Contact Tip to Work Distance	
Inches	(mm)			in/min	(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 the 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.
- Actual deposition rate may vary depending on choice of flux and contact tip to work distance.

AVAILABLE DIAMETERS AND PACKAGES: For a complete list of diameters and packaging, please contact Hobart Brothers at (800) 424-1543 or (937) 332-5188

Diameter		55-lb. (25 kg) Wire Basket
Inches	(mm)	
Net Pallet Weight		2310-lb. (1050 kg)
3/32	(2.4)	S295729-020
1/8	(3.2)	S295743-020
5/32	(4.0)	S295750-020

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 36 St, 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 LLC 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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