

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
- Heavy equipment
- Storage vessels
- Pressure vessels

WIRE TYPE: Copper-coated solid wire

RECOMMENDED FLUXES: HN-590, SWX 150, HN-521

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)
HN-590	As-Welded	A5.17/A5.17M	F7A6-EM14K H8	F49A5-EM14K H8
SWX 150	As-Welded	A5.17/A5.17M	F7A8-EM14K H8	F49A6-EM14K H8
	PWHT*	A5.17/A5.17M	F7P8-EM14K H8	F49P6-EM14K H8
HN-521	As-Welded	A5.17/A5.17M	F7A8-EM14K H8	F49A6-EM14K H8
	PWHT*	A5.17/A5.17M	F7P8-EM14K H8	F49P6-EM14K H8

Note: Stress-Relieved 1 Hr. @ 1150°F

TYPICAL WIRE CHEMICAL COMPOSITION*:

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*:

With Flux	% C	% Mn	% Si	% P	% S	% Cu	% Ti
HN-590	0.13	1.93	0.54	0.20	0.007	0.04	0.015
SWX 150	0.09	1.27	0.47	0.015	0.007	0.078	0.012
HN-521	0.07	1.21	0.51	0.011	0.004	0.060	0.015

Note: AWS Specification single values are maximums

*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 WELD METAL DIFFUSIBLE HYDROGEN (GAS CHROMATOGRAPHY PER AWS 4.3)*:

With Flux	Diffusible Hydrogen
HN-590	5.8ml/100 g
SWX 150	5.6 ml/100 g
HN-521	5.8 ml/100 g

TYPICAL MECHANICAL PROPERTIES*

With Flux	Condition	Tensile Strength	Yield Strength	Elongation % in 2" (50 mm)
HN-590	As-Welded	84,000 psi (577 MPa)	74,000 psi (507 MPa)	28%
SWX 150	As-Welded	81,000 psi (558 MPa)	70,000 psi (486 MPa)	27%
	PWHT*	80,000 psi (548 MPa)	66,000 psi (456 MPa)	27%
HN-521	As-Welded	80,600 psi (555 MPa)	68,400 psi (472 MPa)	30%
	PWHT*	78,200 psi (539 MPa)	63,400 psi (437 MPa)	32%

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)
HN-590	As-Welded	62 ft-lbs. (84 J)	-
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)
HN-521	As-Welded	145 ft-lbs. (196 J)	124 ft-lbs. (168 J)
	PWHT*	218 ft-lbs. (295 J)	127 ft-lbs. (172 J)

Note: Stress-Relieved 1 Hr. @ 1150°F

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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)	660-lb. (299kg) Drum
Inches (mm)	Wire Basket	
Net Pallet Weight	2310-lb. (1050 kg)	2640-lb. (1197 kg)
3/32 (2.4)	S295729-020	S295729-S66
1/8 (3.2)	S295743-020	S295743-S66
5/32 (4.0)	S295750-020	S295750-S66

CONFORMANCES AND APPROVALS:

With Flux	CWB
SWX 150	F49A6-EM14K-H8
	F49P6-EM14K-H8
HN-521	F49A6-EM14K-H8
	F49P6-EM14K-H8

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.

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