

SubCOR™ EM12K-S



AWS A5.17: EC1

FEATURES:

- Metal-cored wire can offer improved deposition rates compared to solid wires at comparable amperages
- Metal-cored wires offer broader penetration profiles compared to solid wires at comparable welding parameters
- Suitable for use with a wide variety of Hobart fluxes
- Nominal weld deposit composition specially formulated to be similar to EM12K solid wire

BENEFITS:

- Provides potential to increase travel speed for improved productivity
- Helps to prevent burn-through when welding at high currents on root passes and relatively thin materials.
- Provides versatility in procedure development and optimization of the welding application
- Suitable as a higher-productivity alternative in many applications currently using EM12K and EM13K solid wires

APPLICATIONS:

- Single and multi-pass welding
- Heavy equipment
- General fabrication
- Wheel fabrication
- Structural and bridge fabrication
- Storage tanks

WIRE TYPE: Wire Type

RECOMMENDED FLUXES: HA-495, HN-590, 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)
HA-495	As-Welded	A5.17/A5.17M	F7A2-EC1	F48A3-EC1
HN-590	As-Welded	A5.17/A5.17M	F7A6-EC1	F48A5-EC1
SWX 120	As-Welded	A5.17/A5.17M	F7A6-EC1	F48A5-EC1
SWX 150	As-Welded	A5.17/A5.17M	F7A4-EC1	F48A4-EC1

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

TYPICAL WELD DEPOSIT CHEMICAL COMPOSITION*:

With Flux	% C	% Mn	% Si	% P	% S	% Cu
HA-495	0.05	1.20	0.56	0.020	0.010	0.06
HN-590	0.07	1.39	0.33	0.020	0.010	0.07
SWX 120	0.05	1.21	0.24	0.015	0.009	0.06
SWX 150	0.05	0.91	0.24	0.012	0.005	0.05

*The information contained or otherwise referenced herein is presented only as "typical" without guarantee or warranty, and Hobart Brothers LLC 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)
HA-495	As-Welded	85 ksi (586 MPa)	76 ksi (524 MPa)	26%
HN-590	As-Welded	79 ksi (545 MPa)	68 ksi (469 MPa)	28%
SWX 120	As-Welded	70 ksi (483 MPa)	60 ksi (414 MPa)	32%
	PWHT*	67 ksi (462 MPa)	53 ksi (365 MPa)	33%
SWX 150	As-Welded	71 ksi (490 MPa)	60 ksi (414 MPa)	32%

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

TYPICAL CHARPY V-NOTCH IMPACT VALUES*:

With Flux	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)
HA-495	As-Welded	20 ft-lbs (27 J)	—	—	—
	PWHT*	—	—	—	—
HN-590	As-Welded	—	—	50 ft-lbs (68 J)	—
	PWHT*	—	—	—	—
SWX 120	As-Welded	—	—	110 ft-lbs (149 J)	90 ft-lbs (122 J)
	PWHT*	—	—	95 ft-lbs (129 J)	90 ft-lbs (122 J)
SWX 150	As-Welded	—	95 ft-lbs (129 J)	20 ft-lbs (27 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	28	85	(2.2)	8.7	(3.9)	1.25	(32)
3/32	(2.4)	400	29	125	(3.2)	12.8	(5.8)	1.25	(32)
3/32	(2.4)	500	31	175	(4.4)	17.8	(8.1)	1.25	(32)
3/32	(2.4)	600	33	240	(6.1)	24.3	(11.0)	1.25	(32)
3/32	(2.4)	650	34	270	(6.9)	27.7	(12.6)	1.25	(32)
1/8	(3.2)	400	28	65	(1.7)	10.4	(4.7)	1.25	(32)
1/8	(3.2)	500	30	87	(2.2)	14.7	(6.7)	1.25	(32)
1/8	(3.2)	600	32	115	(2.9)	20.0	(9.1)	1.25	(32)
1/8	(3.2)	700	34	155	(3.9)	25.7	(11.7)	1.25	(32)
1/8	(3.2)	800	36	200	(5.1)	35.0	(15.0)	1.25	(32)
5/32	(4.0)	400	28	45	(1.1)	12.2	(5.5)	1.5	(38)
5/32	(4.0)	500	30	58	(1.5)	14.5	(6.6)	1.5	(38)
5/32	(4.0)	600	32	69	(1.8)	18.5	(8.4)	1.5	(38)
5/32	(4.0)	700	34	90	(2.3)	23.8	(10.8)	1.5	(38)
5/32	(4.0)	800	36	115	(2.9)	29.8	(13.5)	1.5	(38)
5/32	(4.0)	900	38	143	(3.6)	38.7	(17.6)	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	60-lb. (27.2 kg) Coil	600 lb. (272 kg) Drum
3/32" (2.4 mm)	S282029-002	S282029-008
1/8" (3.2 mm)	S282043-002	S282043-008
5/32" (4.0 mm)	S282050-002	—

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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