

SubCOR™ 100F3-S



AWS A5.23: ECF3

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
- Weld deposit chemical composition requirements are identical to those of EF3 solid wires
- Weld deposit chemical composition consists of less than 1% nickel
- Very good low-temperature impact toughness in both the as-welded and stress-relieved conditions

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.
- Suitable as a higher-productivity alternative in many applications currently using EF3 solid wire
- Suitable for use in sour gas applications where stress-corrosion cracking due to hydrogen-sulfide is a concern
- Helps minimize the risk of cracking in critical applications and harsh service environments

APPLICATIONS:

- High-strength low-alloy steels
- Offshore fabrication
- Heavy equipment fabrication
- Sour gas applications
- Oil & gas

WIRE TYPE: Metal-powder, metal-cored wire

RECOMMENDED FLUXES: HN-590, SWX 120, SWX 150

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

STANDARD DIAMETERS: 3/32" (2.4 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)
HN-590	As-Welded	A5.23/A5.23M	F10A6-EF3-F3	F69A5-EF3-F3
	PWHT*	A5.23/A5.23M	F10P2-EF3-F3	F69P2-EF3-F3
SWX 120	As-Welded	A5.23/A5.23M	F10A10-ECF3-F3	F69A7-ECF3-F3
	PWHT*	A5.23/A5.23M	F10P8-ECF3-F3	F69P6-ECF3-F3
SWX 150	As-Welded	A5.23/A5.23M	F10A10-ECF3-F3	F69A7-ECF3-F3
	PWHT*	A5.23/A5.23M	F10P10-ECF3-F3	F69P7-ECF3-F3

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

TYPICAL WELD DEPOSIT CHEMICAL COMPOSITION*:

With Flux	% C	% Mn	% Si	% P	% S	% Cu	% Cr	% Ni	% Mo
HN-590	0.06	1.90	0.42	0.023	0.008	0.06	0.04	0.90	0.54
SWX 120	0.08	2.01	0.46	0.015	0.011	0.05	0.03	0.87	0.45
SWX 150	0.09	1.43	0.36	0.020	0.009	0.06	0.03	0.84	0.56

*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 A5.23 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)
HN-590	As-Welded	112 ksi (772 MPa)	101 ksi (696 MPa)	23%
	PWHT*	108 ksi (745 MPa)	94 ksi (648 MPa)	22%
SWX 120	As-Welded	108 ksi (745 MPa)	98 ksi (676 MPa)	24%
	PWHT*	105 ksi (724 MPa)	95 ksi (655 MPa)	25%
SWX 150	As-Welded	108 ksi (745 MPa)	100 ksi (689 MPa)	23%
	PWHT*	104 ksi (717 MPa)	96 ksi (662 MPa)	24%

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

TYPICAL CHARPY V-NOTCH IMPACT VALUES*:

With Flux	Condition	Avg. at -20°F (-29°C)	Avg. at -60°F (-50°C)	Avg. at -80°F (-60°C)	Avg. at -100°F (-70°C)
HN-590	As-Welded	—	40 ft-lbs (60 J)	—	—
	PWHT*	52 ft-lbs (70 J)	—	—	—
SWX 120	As-Welded	—	—	55 ft-lbs (75 J)	45 ft-lbs (61 J)
	PWHT*	—	35 ft-lbs (47 J)	40 ft-lbs (54 J)	—
SWX 150	As-Welded	—	—	55 ft-lbs (75 J)	35 ft-lbs (47 J)
	PWHT*	—	—	55 ft-lbs (75 J)	25 ft-lbs (34 J)

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

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)

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
3/32" (2.4 mm)	S659929-002

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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