



# SDX S3Ni1Mo-EF3

**AWS A5.23: EF3**  
**EN ISO 14174: S3Ni1Mo**

**FEATURES:**

- Copper-coated wire
- Nominal 1%Ni/0.5% Mo composition
- Provides good low-temperature impact toughness

**BENEFITS:**

- Offers optimal consistency in electrode feeding and electrical transfer
- Suitable for welding a wide range of ~100 KSI high-strength low-alloy steels
- Helps to minimize risk of cracking in demanding service conditions

**APPLICATIONS:**

- Offshore structures
- Pressure vessel
- Heavy equipment
- ~100 KSI HSLA Steels with impact toughness requirements down to -60°C
- Oil & gas

**WIRE TYPE:** Copper-coated solid-wire

**RECOMMENDED FLUXES:** SWX 120, SWX 150, SWX 160, HN-590

**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)

**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)
SDX S3NiMo-EF3	As-Welded	A5.23/A5.23M	F10A8-EF3-F3	F69A6-EF3-F3
	PWHT*	A5.23/A5.23M	F10P6-EF3-F3	F69P5-EF3-F3
SDX S3NiMo-EF3	As-Welded	A5.23/A5.23M	F10A8-EF3-F3	F69A6-EF3-F3
	PWHT*	A5.23/A5.23M	F10P8-EF3-F3	F69P6-EF3-F3

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

**EN ISO CLASSIFICATIONS:**

With Wire	Condition	Specifications	Classification
SDX S3NiMo-EF3	As-Welded	EN ISO 14171-A	S 62 6 FB S3Ni1Mo

**TYPICAL WIRE CHEMICAL COMPOSITION\*:**

With Flux	% C	% Mn	% Si	% P	% S	% Cu	% Ni	% Mo
None (Wire Melt Button)	0.11	1.75	0.21	0.008	0.002	0.02	0.93	0.52

**TYPICAL WELD DEPOSIT CHEMICAL COMPOSITION\*:**

With Wire	% C	% Mn	% Si	% P	% S	% Cu	% Ni	% Mo
SWX 120	0.06	2.01	0.31	0.013	0.007	0.06	0.86	0.45
SWX 150	0.08	1.55	0.31	0.011	0.003	0.06	0.81	0.44

\*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.

# SDX S3Ni1Mo-EF3

## TYPICAL MECHANICAL PROPERTIES\*:

With Flux	Condition	Tensile Strength	Yield Strength	Elongation % in 2" (50 mm)
SWX 120	As-Welded	106 ksi (731 MPa)	92 ksi (634 MPa)	26%
	PWHT*	106 ksi (731 MPa)	86 ksi (593 MPa)	24%
SWX 150	As-Welded	106 ksi (731 MPa)	92 ksi (634 MPa)	26%
	PWHT*	106 ksi (731 MPa)	86 ksi (593 MPa)	24%

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	55 ft-lbs (75 J)	45 ft-lbs (61 J)	—
	PWHT*	35 ft-lbs (47 J)	35 ft-lbs (47 J)	—
SWX 150	As-Welded	85 ft-lbs (115 J)	95 ft-lbs (129 J)	70 ft-lbs (95 J)
	PWHT*	65 ft-lbs (88 J)	45 ft-lbs (61 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	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)

**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
Net Pallet Weight	2310-lb. (1050kg)
3/32" (2.4 mm)	840241025H
1/8" (3.2 mm)	840321025H

**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](mailto: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](http://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](http://www.hobartbrothers.com).

Because Hobart Brothers LLC is constantly improving products, Hobart reserves the right to change design and/or specifications without notice.

Revision Date: 201005 (Replaces 190909)

