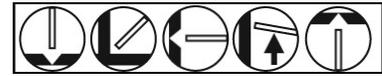


# 309/309L Sterling® AP



AWS A5.4: E309-16 & 309L-16

WELDING POSITIONS:



**FEATURES:**

- Easy strike and re-strike
- Spray-like arc transfer
- Self-detaching slag
- Directional arc
- All-position

**BENEFITS:**

- Easy to use, less chance of starting defects
- Low spatter and less clean-up
- Less chance of slag inclusions
- Metal goes where directed
- Welds extremely well in flat, horizontal, vertical (up) and overhead positions

**TYPE OF CURRENT:** Direct Current Electrode Positive (DCEP) or AC

**RECOMMENDED WELDING PROCEDURES:**

**ARC LENGTH:** Short (less than 1/2 the diameter of the electrode)

**FLAT & HORIZONTAL:** Angle electrode 10-15° from 90°

**VERTICAL-UP:** Use weaving techniques or inverted V. Reduced amperage compared to flat position setting

**VERTICAL-DOWN:** Not recommended

**OVERHEAD:** Use slight weaving motion within the puddle

**STORAGE:** Sterling AP® electrodes have a high degree of moisture resistance; however, for critical applications, the electrodes should be held at 215°F - 300°F after opening.

**RECONDITIONING:** If exposed to atmosphere for extended periods, recondition at 660°F for 2 hours.

**TYPICAL WELD METAL PROPERTIES\* (Chem Pad):**

Weld Metal Analysis (%)		AWS Spec	
		E309-16	E309L-16
Carbon (C)	0.02	0.15 max	0.04 max
Manganese (Mn)	0.80	0.5 to 2.5	0.5 to 2.5
Phosphorus (P)	0.020	0.04 max	0.04 max
Sulphur (S)	0.02	0.03 max	0.03 max
Silicon (Si)	0.70	0.90 max	0.90 max
Copper (Cu)	0.10	0.75 max	0.75 max
Chromium (Cr)	23.00	22.0 to 25.0	22.0 to 25.0
Nickel (Ni)	13.0	12.0 to 14.0	12.0 to 14.0
Molybdenum (Mo)	0.10	0.75 max	0.75 max

**TYPICAL MECHANICAL PROPERTIES\* (As Welded):**

Mechanical Tests		AWS Spec	
		E309-16	E309L-16
Tensile Strength	79,300 psi (547 MPa)	80,000 psi	75,000 psi
Yield Strength	66,700 psi (460 MPa)	Not required	Not required
Elongation % in 2" (50 mm)	36%	30%	30%
DeLong Ferrite Number Range	8-16	Not required	Not required
Schaeffler Number Range	8-16	Not required	Not required
WRC Number Range (1992)	8-16	Not required	Not required

\*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 A5.4 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 Company.

# 309/309L Sterling® AP

Diameter		Weld Positions	Type of Current	Amperage Range	
Inches	(mm)			Min.	Max.
3/32	(2.5)	Flat & Horizontal	DCEP or AC	60	80
1/8	(3.2)	Flat & Horizontal	DCEP or AC	80	100
5/32	(4.0)	Flat & Horizontal	DCEP or AC	100	140
3/16	(5.0)	Flat & Horizontal	DCEP or AC	140	220

- Maintaining a proper welding procedure - including pre-heat and interpass temperatures - may be critical depending on the type and thickness of steel being welded.

## AVAILABLE DIAMETERS AND PACKAGES:

Diameter		Length		5-Lb. Can	6-Lb. Can	7-Lb. Can
Inches	(mm)	Inches	(mm)			
3/32	(2.5)	12	(300)	S483931-036	—	—
1/8	(3.2)	14	(350)	—	S483944-032	—
5/32	(4.0)	14	(350)	—	S483951-032	—
3/16	(5.0)	14	(350)	—	—	S483958-039

## CONFORMANCES AND APPROVALS:

- AWS A5.4, Class E309-16 & E309L-16
- ASME SFA 5.4
- CWB

**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 Company product may be obtained from Hobart Customer Service or at [www.hobartbrothers.com](http://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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Revision Date: 160606 (Replaces 160216)

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