



# 309L Sterling®

**AWS E-309L-17**

Replaces 020903

150-E, INDEX: 060131

## DESCRIPTION:

**309L Sterling®** is used for weld overlay or for welding Type 309 stainless steel to mild or low alloy steels. It has a low carbon content which helps to reduce the weld's susceptibility to sensitization during high temperature service. It yields a concave weld bead that is smooth and refined.

Note: Actual certs are included in every master carton of stainless stick electrodes at no charge.

Features	Benefits
----------	----------

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>• Easy strike and re-strike</li> <li>• Spray arc transfer</li> <li>• Self-detaching slag</li> <li>• Extremely high moisture resistance</li> <li>• Directional arc</li> <li>• Limited all-position</li> </ul> | <ul style="list-style-type: none"> <li>• Easy to use, less chance of starting defects</li> <li>• Low spatter and less clean-up</li> <li>• Less chance of slag inclusions</li> <li>• Extends shelf life of product in open environments</li> <li>• Metal goes where directed</li> <li>• Welds extremely well in flat, horizontal and limited capability in vertical (up) and overhead positions</li> </ul> |
|---|---|

## TYPICAL WELD METAL PROPERTIES\* (CHEM PAD):

Weld Metal Analysis		AWS
Carbon (C)	0.03	0.04 max
Manganese (Mn)	1.32	0.5 to 2.5
Phosphorus (P)	0.025	0.04 max
Sulphur (S)	0.016	0.03 max
Silicon (Si)	0.41	0.90 max
Chromium (Cr)	23.00	22.0 to 25.0
Nickel (Ni)	13.50	12.0 to 14.0
Molybdenum (Mo)	0.10	0.75 max
Copper (Cu)	0.10	0.75 max

## TYPICAL MECHANICAL PROPERTIES\* (AS WELDED):

		AWS
Tensile Strength	79,000 psi (545 MPa)	75,000 psi
Yield Strength	64,000 psi (442 MPa)	not required
Elongation % in 2"	41%	30%
DeLong Ferrite Number Range	6-15	not required
Schaeffler Number Range	6-15	not required
WRC Number Range (1992)	6-15	not required

Note: Nitrogen (N) assumed to be 0.06% for calculation purposes.

## CONFORMANCES AND APPROVALS:

- AWS Spec A5.4, Class E309L-17 • ASME SFA5.4

\*The information contained or otherwise referenced herein is presented only as "typical" without guarantee or warranty, and McKay expressly disclaims any liability incurred from any reliance thereon. Typical data are obtained when welded and tested in accordance with 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 McKay.



# 309L Sterling®

## RECOMMENDED WELDING PROCEDURES:

- GENERAL:** DCEP (electrode positive, work negative) or AC
- ARC LENGTH:** Short (less than half the diameter of the electrode)
- FLAT & HORIZONTAL:** Angle electrode 10-15° from 90°
- VERTICAL-UP:** Use weaving techniques. Reduced amperage compared to flat position setting
- OVERHEAD:** Use slight weaving motion within the puddle
- STORAGE:** Sterling electrodes have a high degree of moisture resistance; however, for critical applications, the electrodes should be held at 225°F after opening.
- RECONDITIONING:** If exposed to atmosphere for extended periods, recondition at 500° F for 1 hour

## RECOMMENDED OPERATING PARAMETERS:

### FLAT & HORIZONTAL

Diameter		Type of Power	Minimum Amps	Optimum Amps	Maximum Amps
Inches	mm				
3/32	2.4	DCEP or AC	45	65	80
1/8	3.2	DCEP or AC	55	105	120
5/32	4.0	DCEP or AC	65	140	170
3/16	4.8	DCEP or AC	160	170	205

## AVAILABLE DIAMETERS AND PACKAGES:

Diameter		Length		6-lb. Can	10-lb. Can
Inches	mm	Inches	mm		
3/32	2.4	10	254	S493430-032	—
1/8	3.2	14	355	—	S493444-033
5/32	4.0	14	355	—	S493451-033
3/16	4.8	14	355	—	S493458-033

Material Safety Data Sheets on any McKay product may be obtained from McKay Customer Service.

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