



# 316/316L Sterling® AP

AWS E316-16 & E316L-16

Replaces 000131

160-H, INDEX: 020520

## DESCRIPTION:

**316/316L Sterling® AP** possesses properties similar to 316/316H Sterling® AP except with a much lower carbon content which reduces susceptibility to sensitization during welding. The welds show high resistance to corrosion and fissuring. This makes it an outstanding choice for critical applications. Excellent for welding stainless steel types 316, 316-L and 318. It has a smooth running arc that results in a uniform weld bead that is flat to slightly convex.

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

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

Weld Metal Analysis		AWS Spec	
		E-316-16	E-316L-16
Carbon (C)	0.02	0.08 max	0.04 max
Chromium (Cr)	18.20	17.0 to 20.0	17.0 to 20.0
Nickel (Ni)	13.00	11.0 to 14.0	11.0 to 14.0
Molybdenum (Mo)	2.30	2.0 to 3.0	2.0 to 3.0
Manganese (Mn)	1.05	0.5 to 2.5	0.5 to 2.5
Silicon (Si)	0.48	0.90 max	0.90 max
Phosphorus (P)	0.015	0.04 max	0.04 max
Sulphur (S)	0.015	0.03 max	0.03 max
Copper (Cu)	0.20	0.75 max	0.75 max

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

		AWS Spec	
		E-316-16	E-316L-16
Tensile Strength	82,000 psi (566 Mpa)	75,000 psi	70,000 psi
Yield Strength	61,000 psi (421 Mpa)	not required	not required
Elongation % in 2"	42%	30%	30%
DeLong Ferrite Number Range	2-6	not required	not required
Schaeffler Number Range	2-6	not required	not required
WRC Number Range (1992)	2-6	not required	not required

## CONFORMANCES AND APPROVALS:

- AWS Spec A5.4, Class E316-16 & E316L-16
- 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.



# 316/316L Sterling<sup>®</sup> AP

## RECOMMENDED WELDING PROCEDURES:

<b>GENERAL:</b>	DCEP (electrode positive, work negative) or AC
<b>ARC LENGTH:</b>	Short (less than half the diameter of the electrode)
<b>FLAT &amp; HORIZONTAL:</b>	Angle electrode 10-15° from 90°
<b>VERTICAL-UP:</b>	Use weaving techniques or inverted V. Reduced amperage compared to flat position setting
<b>OVERHEAD:</b>	Use slight weaving motion within the puddle
<b>STORAGE:</b>	Sterling AP <sup>®</sup> electrodes have a high degree of moisture resistance; however, for critical applications, the electrodes should be held at 225° F after opening.
<b>RECONDITIONING:</b>	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	S482930-032	—
1/8	3.2	14	355	—	S482944-033
5/32	4.0	14	355	—	S482951-033
3/16	4.8	14	355	—	S482958-033