



316/316H Sterling®

AWS E316-17 & 316H-17

REPLACES: 020520

150-F, INDEX: 060208

DESCRIPTION:

316/316H Sterling® is formulated for the welding of 316-type steels as well as for those applications where increased temperature corrosion-resistance of molybdenum-bearing steels are necessary. Having a carbon content of at least .04 to provide increased high temperature strength, this fully alloyed core wire also features a rutile coating. 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"> Limited all-position Spray arc transfer Directional arc Easy strike and re-strike Self-detaching slag Extremely high moisture resistance | <ul style="list-style-type: none"> Welds extremely well in flat, horizontal and limited capability in vertical (up) and overhead positions Low spatter and less clean-up Metal goes where directed Easy to use, less chance of starting defects Less chance of slag inclusions Extends shelf life of product in open environments |

TYPICAL WELD METAL PROPERTIES* (CHEM PAD):

| WELD METAL ANALYSIS | | E316-17 | AWS Spec | E316H-17 |
|---------------------|-------|--------------|----------|------------------|
| Carbon (C) | 0.07 | 0.08 max | | 0.04 to 0.08 max |
| Manganese (Mn) | 1.63 | 0.5 to 2.5 | | 0.5 to 2.5 |
| Phosphorus (P) | 0.015 | 0.04 max | | 0.04 max |
| Sulphur (S) | 0.015 | 0.03 max | | 0.03 max |
| Silicon (Si) | 0.40 | 0.90 max | | 0.90 max |
| Copper (Cu) | 0.20 | 0.75 max | | 0.75 max |
| Chromium (Cr) | 18.50 | 17.0 to 20.0 | | 17.0 to 20.0 |
| Nickel (Ni) | 12.40 | 11.0 to 14.0 | | 11.0 to 14.0 |
| Molybdenum (Mo) | 2.21 | 2.0 to 3.0 | | 2.0 to 3.0 |

TYPICAL MECHANICAL PROPERTIES* (AS WELDED):

| | | E316-17 | AWS Spec | E316H-17 |
|-----------------------------|----------------------|---------|--------------|--------------|
| Tensile Strength | 85,000 psi (587 MPa) | | 75,000 psi | 75,000 psi |
| Yield Strength | 68,000 psi (469 MPa) | | not required | not required |
| Elongation % in 2" | 45% | | 30% | 30% |
| DeLong Ferrite Number Range | 4-10 | | not required | not required |
| Schaeffler Number Range | 4-10 | | not required | not required |
| WRC Number Range (1992) | 4-10 | | not required | not required |

CONFORMANCES AND APPROVALS:

- AWS Spec A5.4, Class E316-17 & E316H-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.



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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 | S494430-032 | — |
| 1/8 | 3.2 | 14 | 355 | — | S494444-033 |
| 5/32 | 4.0 | 14 | 355 | — | S494451-033 |
| 3/16 | 4.8 | 14 | 355 | — | S494458-033 |

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.

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