

## OK Autrod 316LSi

A continuous solid corrosion resisting chromium-nickel-molybdenum wire for welding of austenitic stainless alloys of 18% Cr - 8% Ni and 18% Cr - 10% Ni - 3% Mo types. OK Autrod 316LSi has a good general corrosion resistance, in particular the alloy has very good resistance against corrosion in acid and chlorinated environments. The alloy has a low carbon content which makes it particularly recommended where there is a risk of intergranular corrosion. The higher silicon content improves the welding properties, such as wetting. The alloy is widely used in the chemical and food processing industries as well as in ship building and various types of architectural structures.

### Specifications

|                        |                                                                                                                                                                                         |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Classifications</b> | EN ISO 14343-A : G 19 12 3 L Si<br>SFA/AWS A5.9 : ER316LSi<br>Werkstoffnummer : ~1.4430                                                                                                 |
| <b>Approvals</b>       | ABS : ER316LSi<br>CE : EN 13479<br>CWB : ER316LSi<br>DB : 43.039.05<br>DNV-GL : VL 316 L (M13)<br>DNV-GL : VL 316 L (M13)<br>UKCA : EN 13479<br>VdTÜV : 04268<br>NAKS/HAKC : 0.8-1.2 mm |

Approvals are based on factory location. Please contact ESAB for more information.

|                   |                                                                                 |
|-------------------|---------------------------------------------------------------------------------|
| <b>Alloy Type</b> | Austenitic (with approx. 8 % ferrite) 19% Cr - 12% Ni - 3% Mo - Low C - High Si |
|-------------------|---------------------------------------------------------------------------------|

### Typical Tensile Properties

| Condition               | Yield Strength     | Tensile Strength   | Elongation |
|-------------------------|--------------------|--------------------|------------|
| As Welded               | 400 MPa ( 58 ksi ) | 560 MPa ( 81 ksi ) | 37 %       |
| <b>Tested at 350°C.</b> |                    |                    |            |
| As Welded               | 340 MPa ( 49 ksi ) | 440 MPa ( 64 ksi ) | 26 %       |

### Typical Charpy V-Notch Properties

| Condition | Testing Temperature | Impact Value       |
|-----------|---------------------|--------------------|
| As Welded | 20 °C ( 68 °F )     | 120 J ( 89 ft-lb ) |
| As Welded | -60 °C ( -76 °F )   | 95 J ( 70 ft-lb )  |
| As Welded | -110 °C ( -166 °F ) | 70 J ( 52 ft-lb )  |
| As Welded | -196 °C ( -321 °F ) | 45 J ( 33 ft-lb )  |

### Typical Wire Composition %

| C    | Mn  | Si  | Ni   | Cr   | Mo   | Cu   |
|------|-----|-----|------|------|------|------|
| 0.01 | 1.8 | 0.9 | 12.2 | 18.4 | 2.60 | 0.12 |

### Typical Weld Metal Analysis %

| C    | Mn  | Si  | S     | P     | Ni | Cr   | Mo  | Cu  |
|------|-----|-----|-------|-------|----|------|-----|-----|
| 0.02 | 1.8 | 0.8 | 0.015 | 0.015 | 12 | 18.5 | 2.7 | 0.1 |

### Deposition Data

| Diameter                | Current  | Voltage | Wire Feed Speed                        | Deposition Rate                   |
|-------------------------|----------|---------|----------------------------------------|-----------------------------------|
| 0.8 mm<br>( 0.030 in. ) | 55-160 A | 12-24 V | 4.0-17.0 mm/min<br>( 157-669 in./min ) | 1.0-4.1 kg/h<br>( 2.2-9.0 lbs/h ) |
| 0.9 mm<br>( 0.035 in. ) | 65-220 A | 15-28 V | 3.5-18.0 mm/min<br>( 138-709 in./min ) | 1.1-5.4 kg/h<br>( 2.4-11. lbs/h ) |
| 1.0 mm<br>( 0.040 in. ) | 80-240 A | 15-28 V | 4.0-16.0 mm/min<br>( 157-630 in./min ) | 1.5-6.0 kg/h<br>( 3.3-13. lbs/h ) |

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| Diameter                | Current   | Voltage | Wire Feed Speed                        | Deposition Rate                    |
|-------------------------|-----------|---------|----------------------------------------|------------------------------------|
| 1.2 mm<br>( 0.047 in. ) | 100-300 A | 15-29 V | 3.0-14.0 mm/min<br>( 118-551 in./min ) | 1.6-7.5 kg/h<br>( 3.5-16. lbs/h )  |
| 1.6 mm<br>( 1/16 in. )  | 230-375 A | 23-31 V | 5.5-9.0 mm/min<br>( 217-354 in./min )  | 5.2-8.6 kg/h<br>( 11.5-19. lbs/h ) |

### Recommended Welding Parameters

#### Wire Diameter

1.14 mm ( 0.045 in. )

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