

OK Autrod 309LSi

A continuous solid corrosion resistant chromium-nickel wire for welding of similar steels, wrought and cast steels of 23% Cr-12% Ni types. The alloy is also used for welding of buffer layers on CMn steels and welding of dissimilar joints. When using the wire for buffer layers and dissimilar joints it is necessary to control the dilution of the weld. OK Autrod 309LSi has a good general corrosion resistance. The higher silicon content improves the welding properties, such as wetting.

| Specifications | |
|------------------------|---|
| Classifications | EN ISO 14343-A : G 23 12 L Si SFA/AWS A5.9 : ER309LSi |
| Approvals | CE : EN 13479 CWB : ER309LSi DB : 43.039.16 NAKS/HAKC : 1.0MM-1.2MM VdTÜV : 10020 |

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

| | |
|----------------------|---|
| Alloy Type | Austenitic (with approx. 8 % ferrite) 24 % Cr - 13 % Ni - Low C |
| Shielding Gas | M12, M13 (EN ISO 14175) |

| Typical Tensile Properties | | | |
|----------------------------|--------------------|--------------------|------------|
| Condition | Yield Strength | Tensile Strength | Elongation |
| As Welded | 440 MPa (64 ksi) | 600 MPa (87 ksi) | 35 % |

| Typical Charpy V-Notch Properties | | |
|-----------------------------------|---------------------|--------------------|
| Condition | Testing Temperature | Impact Value |
| As Welded | 20 °C (68 °F) | 120 J (89 ft-lb) |
| As Welded | -50 °C (-58 °F) | 110 J (81 ft-lb) |

| Typical Wire Composition % | | | | | | | | | |
|----------------------------|-----|-----|-------|-------|------|------|-----|-----|------|
| C | Mn | Si | S | P | Ni | Cr | Mo | Cu | N |
| 0.016 | 1.9 | 0.7 | 0.004 | 0.019 | 13.7 | 23.3 | 0.1 | 0.1 | 0.09 |

| Typical Wire Composition % | | | | | | | | | |
|----------------------------|--|--|--|--|--|--|--|--|--|
| FN WRC-92 | | | | | | | | | |
| 9 | | | | | | | | | |

| Typical Weld Metal Analysis % | | | | | | | | | |
|-------------------------------|-----|-----|-------|-------|------|----|-----|-----|------|
| C | Mn | Si | S | P | Ni | Cr | Mo | Cu | N |
| 0.02 | 1.8 | 0.7 | 0.003 | 0.015 | 13.5 | 23 | 0.1 | 0.1 | 0.07 |

| Typical Weld Metal Analysis % | |
|-------------------------------|-----------|
| Nb | FN WRC-92 |
| 0.01 | 7 |

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

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Deposition Data

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

Recommended Welding Parameters

Wire Diameter

1.14 mm (0.045 in.)