

OK Autrod 318Si

A continuous solid corrosion resisting stabilized chromium-nickel-molybdenum wire for welding of Cr-Ni-Mo and Cr-Ni stabilized or non-stabilized steels. OK Autrod 318Si has a good general corrosion resistance. The alloy is stabilized with niobium to improve the resistance against intergranular corrosion of the weld metal. The higher silicon content improves the welding properties, such as wetting. Due to stabilization of niobium this alloy is recommended for service temperatures up to 400 °C.

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|---------------------------------------|---|
| Classifications Wire Electrode | SFA/AWS A5.9 : ER318 (mod) EN ISO 14343-A : G 19 12 3 Nb Si Werkstoffnummer : ~1.4576 |
| Approvals | CE EN 13479 DB 43.039.14 NAKS/HAKC 1.2MM VdTUV 09735 |

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

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|----------------------|---|
| Alloy Type | Austenitic (with approx. 7 % ferrite) 19% Cr - 12% Ni - 3 % Mo - Nb |
| Shielding Gas | M12, M13 (EN ISO 14175) |

Typical Tensile Properties

| Condition | Yield Strength | Tensile Strength | Elongation |
|-------------------------|------------------|------------------|------------|
| As Welded | 460 MPa (67 ksi) | 615 MPa (89 ksi) | 35 % |
| Tested at 400°C. | | | |
| As Welded | 400 MPa (58 ksi) | 540 MPa (78 ksi) | 35 % |

Typical Charpy V-Notch Properties

| Condition | Testing Temperature | Impact Value |
|-----------|---------------------|------------------|
| As Welded | 20 °C (68 °F) | 100 J (74 ft-lb) |
| As Welded | -60 °C (-76 °F) | 70 J (52 ft-lb) |

Typical Weld Metal Analysis %

| C | Mn | Si | S | P | Ni | Cr | Mo | Cu | Nb |
|------|-----|-----|-------|-------|----|----|-----|-----|-----|
| 0.04 | 1.3 | 0.8 | 0.010 | 0.015 | 12 | 19 | 2.8 | 0.1 | 0.7 |

Typical Wire Composition %

| C | Mn | Si | Ni | Cr | Mo | Cu | Nb |
|------|-----|-----|------|------|------|------|------|
| 0.05 | 1.7 | 0.8 | 11.9 | 18.8 | 2.60 | 0.10 | 0.50 |

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 lb/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. lb/h) |
| 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. lb/h) |