

OK Aristorod 12.50

OK Aristorod 12.50 is a bare Mn-Si-alloyed G3Si1/ER70S-6 solid wire for the GMAW of non-alloyed steels, as used in general construction, automotive components, pressure vessel fabrication and shipbuilding. OK Aristorod 12.50 is treated with ESAB's unique Advanced Surface Characteristics (ASC) technology, taking MAG welding operations to new levels of performance and all-round efficiency, especially in robotic and mechanised welding. Characteristic features include excellent start properties; trouble-free feeding at high wire speeds and lengthy feed distances; a very stable arc at high welding currents; extremely low levels of spatter; low fume emission; reduced contact tip wear and improved protection against corrosion of the wire.

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|---------------------------------------|---|
| Classifications Weld Metal | EN ISO 14341-A : G 38 3 C1 3Si1 EN ISO 14341-A : G 42 4 M20 3Si1 EN ISO 14341-A : G 42 4 M21 3Si1 |
| Classifications Wire Electrode | EN ISO 14341-A : G 3Si1 SFA/AWS A5.18 : ER70S-6 CSA W48 : B-G 49A 3 C1 S6 JIS Z 3312 : YGW 12 (C1) |
| Approvals | ABS 3Y SA CWB B-G 49A 3 C1 S6 |

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

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| Alloy Type | Carbon-manganese steel (Mn/Si-alloyed) |
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Typical Tensile Properties

| Condition | Yield Strength | Tensile Strength | Reduction in Area | Elongation |
|------------------------------------|------------------|------------------|-------------------|------------|
| 90% Ar - 10% CO₂ | | | | |
| As Welded | 510 MPa (74 ksi) | 586 MPa (85 ksi) | 56 % | 30 % |
| 75% Ar - 25% CO₂ | | | | |
| As Welded | 455 MPa (66 ksi) | 565 MPa (82 ksi) | 61 % | 28 % |
| 100% CO₂ | | | | |
| As Welded | 448 MPa (65 ksi) | 538 MPa (78 ksi) | 70 % | 25 % |

Typical Charpy V-Notch Properties

| Condition | Testing Temperature | Impact Value |
|-----------|---------------------|-----------------|
| As Welded | -40 °C (-40 °F) | 60 J (44 ft-lb) |
| As Welded | -20 °C (-4 °F) | 90 J (70 ft-lb) |
| As Welded | -30 °C (-22 °F) | 70 J (51 ft-lb) |

Typical Wire Composition %

| C | Mn | Si | S | P | Ni | Cr | Mo | Cu |
|------|------|------|-------|-------|------|------|------|------|
| 0.08 | 1.46 | 0.85 | 0.012 | 0.013 | 0.04 | 0.03 | 0.01 | 0.07 |

Deposition Data

| Diameter | Current | Deposition Rate | Efficiency % |
|----------------------------|---------|----------------------|--------------|
| 100% CO₂ | | | |
| 0.8 mm (.030 in.) | 100 A | 1.13 kg/h (2.5 lb/h) | 93 % |
| 0.8 mm (.030 in.) | 150 A | 1.77 kg/h (3.9 lb/h) | 93 % |
| 0.8 mm (.030 in.) | 200 A | 2.95 kg/h (6.5 lb/h) | 93 % |
| 0.8 mm (.030 in.) | 75 A | 0.82 kg/h (1.8 lb/h) | 93 % |
| 0.9 mm (.035 in.) | 100 A | 1.18 kg/h (2.6 lb/h) | 93 % |
| 0.9 mm (.035 in.) | 150 A | 1.81 kg/h (4.0 lb/h) | 93 % |
| 0.9 mm (.035 in.) | 200 A | 2.68 kg/h (5.9 lb/h) | 93 % |
| 0.9 mm (.035 in.) | 250 A | 3.90 kg/h (8.6 lb/h) | 93 % |
| 0.9 mm (.035 in.) | 80 A | 0.91 kg/h (2.0 lb/h) | 93 % |

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| Deposition Data | | | |
|------------------------------------|---------|--------------------------|--------------|
| Diameter | Current | Deposition Rate | Efficiency % |
| 1.2 mm (.045 in.) | 100 A | 0.86 kg/h (1.9 lb/h) | 93 % |
| 1.2 mm (.045 in.) | 125 A | 1.22 kg/h (2.7 lb/h) | 93 % |
| 1.2 mm (.045 in.) | 150 A | 1.54 kg/h (3.4 lb/h) | 93 % |
| 1.2 mm (.045 in.) | 200 A | 2.40 kg/h (5.3 lb/h) | 93 % |
| 1.2 mm (.045 in.) | 250 A | 3.36 kg/h (7.4 lb/h) | 93 % |
| 1.2 mm (.045 in.) | 300 A | 4.40 kg/h (9.7 lb/h) | 93 % |
| 1.2 mm (.045 in.) | 350 A | 5.67 kg/h (12.5 lb/h) | 93 % |
| 1.6 mm (1/16 in.) | 250 A | 2.81 kg/h (6.2 lb/h) | 93 % |
| 1.6 mm (1/16 in.) | 275 A | 3.31 kg/h (7.3 lb/h) | 93 % |
| 1.6 mm (1/16 in.) | 300 A | 3.86 kg/h (8.5 lb/h) | 93 % |
| 1.6 mm (1/16 in.) | 350 A | 4.85 kg/h (10.7 lb/h) | 93 % |
| 1.6 mm (1/16 in.) | 400 A | 6.03 kg/h (13.3 lb/h) | 93 % |
| 1.6 mm (1/16 in.) | 450 A | 7.48 kg/h (16.5 lb/h) | 93 % |
| 75% Ar - 25% CO₂ | | | |
| 0.8 mm (.030 in.) | 100 A | 1.18 kg/h (2.6 lb/h) | 96 % |
| 0.8 mm (.030 in.) | 150 A | 1.81 kg/h (4.0 lb/h) | 96 % |
| 0.8 mm (.030 in.) | 200 A | 3.04 kg/h (6.7 lb/h) | 96 % |
| 0.8 mm (.030 in.) | 75 A | 0.86 kg/h (1.9 lb/h) | 96 % |
| 0.9 mm (.035 in.) | 100 A | 1.22 kg/h (2.7 lb/h) | 96 % |
| 0.9 mm (.035 in.) | 150 A | 1.86 kg/h (4.1 lb/h) | 96 % |
| 0.9 mm (.035 in.) | 200 A | 2.72 kg/h (6.0 lb/h) | 96 % |
| 0.9 mm (.035 in.) | 250 A | 3.99 kg/h (8.8 lb/h) | 96 % |
| 0.9 mm (.035 in.) | 80 A | 0.95 kg/h (2.1 lb/h) | 96 % |
| 1.2 mm (.045 in.) | 100 A | 0.91 kg/h (2.0 lb/h) | 96 % |
| 1.2 mm (.045 in.) | 125 A | 1.27 kg/h (2.8 lb/h) | 96 % |
| 1.2 mm (.045 in.) | 150 A | 1.59 kg/h (3.5 lb/h) | 96 % |
| 1.2 mm (.045 in.) | 200 A | 2.49 kg/h (5.5 lb/h) | 96 % |
| 1.2 mm (.045 in.) | 250 A | 3.45 kg/h (7.6 lb/h) | 96 % |
| 1.2 mm (.045 in.) | 300 A | 4.53 kg/h (10.0 lb/h) | 96 % |
| 1.2 mm (.045 in.) | 350 A | 5.85 kg/h (12.9 lb/h) | 96 % |
| 1.6 mm (1/16 in.) | 250 A | 2.90 kg/h (6.4 lb/h) | 96 % |
| 1.6 mm (1/16 in.) | 275 A | 3.45 kg/h (7.6 lb/h) | 96 % |
| 1.6 mm (1/16 in.) | 300 A | 3.99 kg/h (8.8 lb/h) | 96 % |

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|------------------------|---------|--------------------------|--------------|
| Diameter | Current | Deposition Rate | Efficiency % |
| 1.6 mm (1/16 in.) | 350 A | 4.99 kg/h (11.0 lb/h) | 96 % |
| 1.6 mm (1/16 in.) | 400 A | 6.21 kg/h (13.7 lb/h) | 96 % |
| 1.6 mm (1/16 in.) | 450 A | 7.76 kg/h (17.1 lb/h) | 96 % |
| 92% Ar - 8% CO2 | | | |
| 0.8 mm (.030 in.) | 100 A | 1.18 kg/h (2.6 lb/h) | 98 % |
| 0.8 mm (.030 in.) | 150 A | 1.86 kg/h (4.1 lb/h) | 98 % |
| 0.8 mm (.030 in.) | 200 A | 3.08 kg/h (6.8 lb/h) | 98 % |
| 0.8 mm (.030 in.) | 75 A | 0.91 kg/h (2.0 lb/h) | 98 % |
| 0.9 mm (.035 in.) | 100 A | 1.22 kg/h (2.7 lb/h) | 98 % |
| 0.9 mm (.035 in.) | 150 A | 1.90 kg/h (4.2 lb/h) | 98 % |
| 0.9 mm (.035 in.) | 200 A | 2.81 kg/h (6.2 lb/h) | 98 % |
| 0.9 mm (.035 in.) | 250 A | 4.08 kg/h (9.0 lb/h) | 98 % |
| 0.9 mm (.035 in.) | 80 A | 1.00 kg/h (2.2 lb/h) | 98 % |
| 1.2 mm (.045 in.) | 100 A | 0.95 kg/h (2.1 lb/h) | 98 % |
| 1.2 mm (.045 in.) | 125 A | 1.27 kg/h (2.8 lb/h) | 98 % |
| 1.2 mm (.045 in.) | 150 A | 1.63 kg/h (3.6 lb/h) | 98 % |
| 1.2 mm (.045 in.) | 200 A | 2.54 kg/h (5.6 lb/h) | 98 % |
| 1.2 mm (.045 in.) | 250 A | 3.58 kg/h (7.8 lb/h) | 98 % |
| 1.2 mm (.045 in.) | 300 A | 4.63 kg/h (10.2 lb/h) | 98 % |
| 1.2 mm (.045 in.) | 350 A | 5.99 kg/h (13.2 lb/h) | 98 % |
| 1.6 mm (1/16 in.) | 250 A | 2.95 kg/h (6.5 lb/h) | 98 % |
| 1.6 mm (1/16 in.) | 275 A | 3.49 kg/h (7.7 lb/h) | 98 % |
| 1.6 mm (1/16 in.) | 300 A | 4.08 kg/h (9.0 lb/h) | 98 % |
| 1.6 mm (1/16 in.) | 350 A | 5.13 kg/h (11.3 lb/h) | 98 % |
| 1.6 mm (1/16 in.) | 400 A | 6.35 kg/h (14.0 lb/h) | 98 % |
| 1.6 mm (1/16 in.) | 450 A | 7.89 kg/h (17.4 lb/h) | 98 % |