

TECHNICAL
DATA SHEET



OK Aristorod 12.50 Mild Steel Wire

Art. No. 984.1A50...

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PRODUCT DESCRIPTION

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.

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	SFA/AWS A5.18 : ER70S-6 EN ISO 14341-A : G 3Si1 CSA W48 : B-G 49A 3 C1 S6 JIS Z 3312 : YGW 12 (C1)
Approvals	ABS 3Y SA BV SA3YM CE EN 13479 DB 42.039.29 DNV-GL III YMS LR 3YS H15 PRS 3YS RS 3YMS VdTÜV 10052 CWB B-G 49A 3 C1 S6 JIS YGW12 (C1) NAKS/HAKC 1.0-1.6 mm NAKS/HAKC 1.2-1.6 mm RINA 3Y S RINA 3Y S

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

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

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Deposition Data

100% CO2			
Diameter	Current	Deposition Rate	Deposition Efficiency %
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 %
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			
Diameter	Current	Deposition Rate	Deposition Efficiency %
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 %
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 %

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92% Ar - 8% CO ₂			
Diameter	Current	Deposition Rate	Deposition Efficiency %
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 %

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2021

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