

# OK Autrod 12.51

OK Autrod 12.51 is a copper-coated solid wire with higher levels of deoxidizers (manganese and silicon). The high content of deoxidizers allow welding over heavier amounts of dirt, rust, and mill scale while providing a more fluid puddle and smoother bead profile.

<b>Classifications Weld Metal:</b>	EN ISO 14341-A:G 38 3 C1 3Si1, EN ISO 14341-A:G 42 4 M21 3Si1
<b>Classifications Wire Electrode:</b>	EN ISO 14341-A:G 3Si1, SFA/AWS A5.18:ER70S-6, CAN/CSA-ISO 14341-B:G 49A 3 C1 S6, JIS Z 3312:YGW 12(C1)
<b>Approvals:</b>	CE EN 13479, DNV III YMS (M21), VdTÜV 00899, BV SA3YM (M21), JIS YGW12, CWB B-G 49A 3 C1 S6 (B-G 49A 3 C G6), DNV III YMS (C1), GL 3YS (C1), BV SA3YM (C1), DB 42.039.06, RINA 3YS (C1), RINA 3YS (M21), NAKS/HAKC 1.0MM-2.0MM, NAKS/HAKC 1.2MM-1.6MM, ABS 3YSA (C1 & M21), LR 3YS H15 (C1 & M21), PRS 3YS (C1 & M21), RS 3YMS (C1 & M21)

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

<b>Alloy Type:</b>	Carbon-manganese steel (Mn/Si-alloyed)
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## Typical Tensile Properties

Condition	Yield Strength	Tensile Strength	Elongation
<b>EN 80Ar 20CO2</b>			
As welded	480 MPa	560 MPa	26 %
Stress relieved 15 hr 620 °C	380 MPa	495 MPa	28 %

## Typical Charpy V-Notch Properties

Condition	Testing Temperature	Impact Value
<b>EN 80Ar 20CO2</b>		
As welded	20 °C	130 J
As welded	-20 °C	130 J
As welded	-30 °C	90 J
As welded	-40 °C	90 J
Stress relieved 15 hr 620 °C	20 °C	120 J
Stress relieved 15 hr 620 °C	-20 °C	90 J

## Typical Wire Composition %

C	Mn	Si
0.078	1.46	0.85

## Deposition Data

Diameter	Current	Voltage	Wire Feed Speed	Deposition Rate
0.6 mm	30-100 A	15-20 V	5,5-13 m/min	0,7-1,7 kg/h
0.8 mm	60-200 A	18-24 V	3,2-13 m/min	0,8-3,0 kg/h
0.9 mm	70-250 A	18-26 V	3,0-12 m/min	0,9-3,6 kg/h
1.0 mm	80-300 A	18-32 V	2,7-15 m/min	1,0-5,6 kg/h
1.2 mm	120-380 A	18-34 V	2,5-15 m/min	1,3-8,0 kg/h
1.4 mm	150-420 A	22-36 V	2,3-12 m/min	1,6-8,7 kg/h
1.6 mm	225-550 A	28-38 V	2,3-12 m/min	2,1-11,4 kg/h
2.0 mm	300-650 A	32-44 V	4-15 m/min	3,2-12,5 kg/h