

OK Autrod 12.64

A copper coated, G4Si1/ER70S-6 solid wire for GMAW of general structural and engineering unalloyed and low-alloyed carbon-manganese steels. Compared with OK Autrod 12.51, OK Autrod 12.64 has a slightly higher silicon and manganese content, which increases the weld metal strength. The high silicon content promotes low sensitivity to surface impurities and contributes to smooth, sound welds. The electrode may be welded with either a gas mixture or with pure CO₂ as the shielding gas. OK Autrod 12.64 can even be delivered in the unique Esab Octagonal Marathon Pac, which is an excellent choice in mechanised welding applications.

Specifications	
Classifications	EN ISO 636-A : W 46 3 4Si1 EN ISO 14341-A : G 42 3 C1 4Si1 EN ISO 14341-A : G 46 5 M20 4Si1 EN ISO 14341-A : G 46 5 M21 4Si1 EN ISO 636-A : W4Si1 EN ISO 14341-A : G 4Si1 SFA/AWS A5.18 : ER70S-6
Approvals	ABS : 3Y SA BV : SA3YM (C1,M21) CE : EN 13479 CWB : B-G 49A 3 C1 S6 DB : 42.039.11 DNV-GL : III YMS (C1, M21) LR : 3YS H15 (C1, M21) LR : 3YS H15 UKCA : EN 13479 VdTÜV : 04294

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

Alloy Type	Carbon-manganese steel (Mn/Si-alloyed)
Shielding Gas	M20, M21, C1 (EN ISO 14175)

Typical Tensile Properties			
Condition	Yield Strength	Tensile Strength	Elongation
AWS C1			
As Welded	450 MPa	550 MPa	30 %
EN M21			
Stress Relieved 15 hour(s) 620 °C	385 MPa	520 MPa	-
EN C1			
As Welded	460 MPa	570 MPa	28 %
EN M20			
As Welded	528 MPa	617 MPa	22 %
EN M21			
As Welded	490 MPa	590 MPa	29 %

Typical Charpy V-Notch Properties		
Condition	Testing Temperature	Impact Value
AWS C1		
As Welded	-30 °C	100 J
EN M21		
Stress Relieved 15 hour(s) 620 °C	20 °C	120 J
Stress Relieved 15 hour(s) 620 °C	-20 °C	90 J
EN C1		

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Typical Charpy V-Notch Properties

Condition	Testing Temperature	Impact Value
As Welded	20 °C	110 J
As Welded	-30 °C	75 J
EN M20		
As Welded	-50 °C	105 J
EN M21		
As Welded	20 °C	130 J
As Welded	-20 °C	120 J
As Welded	-30 °C	100 J
As Welded	-40 °C	90 J
As Welded	-50 °C	80 J

Typical Weld Metal Analysis %

C	Mn	Si	S	P
C1				
0.09	1.08	0.70	0.013	0.013
M20				
0.07	1.39	0.67	0.009	0.01
M21				
0.10	1.28	0.80	0.013	0.013

Typical Wire Composition %

C	Mn	Si
0.074	1.68	0.95

Deposition Data

Diameter	Current	Voltage	Wire Feed Speed	Deposition Rate
0.8 mm	60-185 A	18-24 V	3.2-10.0 m/min	0.8-2.5 kg/h
0.9 mm	70-250 A	18-26 V	3.0-12.0 m/min	0.8-3.3 kg/h
1.0 mm	80-300 A	18-32 V	2.7-15.0 m/min	1.0-5.5 kg/h
1.2 mm	120-380 A	18-35 V	2.3-15.0 m/min	1.2-8.0 kg/h
1.4 mm	150-420 A	22-36 V	2.5-12.0 m/min	1.7-8.5 kg/h
1.6 mm	225-550 A	28-38 V	2.3-12.0 m/min	2.1-11.4 kg/h
2.0 mm	300-650 A	32-44 V	4.0-15.0 m/min	3.2-12.5 kg/h