

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 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)
 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 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	-20 °C	90 J
Stress Relieved	20 °C	120 J
EN C1		
As Welded	-30 °C	75 J
As Welded	20 °C	110 J
EN M21		
As Welded	-50 °C	80 J
As Welded	-20 °C	120 J

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Typical Charpy V-Notch Properties

Condition	Testing Temperature	Impact Value
As Welded	-40 °C	90 J
As Welded	-30 °C	100 J
As Welded	20 °C	130 J

Typical Wire Composition %

C	Mn	Si
0.074	1.68	0.95

Typical Weld Metal Analysis %

C	Mn	Si	S	P
0.10	1.28	0.80	0.013	0.013

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