



Product Data Sheet

G 'Gas-shielded metal-arc welding'

OK Autrod 12.64

Signed by Mats Linde	Approved by M Bergenstråhle/Christos Skodras	Reg no EN004644	Cancelling EN003300	Reg date 2008-12-04	Page 1 (2)
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REASON FOR ISSUE

EN 440 was replaced by EN ISO 14341-A

GENERAL

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.

Shielding Gas: M21, C1 (EN 439)

Alloy Type: Carbon-manganese steel (Mn/Si-alloyed)

CLASSIFICATIONS Weld Metal

EN ISO 14341-A G 42 2 C G4Si1

EN ISO 14341-A G 46 3 M G4Si1

CLASSIFICATIONS Wire Electrode

EN ISO 14341-A G4Si1

SFA/AWS A5.18 ER70S-6

APPROVALS

ABS 3YSA

BV SA3YM

CE EN 13479

DB 42.039.11

DNV III YMS

GL 3YS

LR 3 3YS

RS 3YMS

VdTÜV 04294

CHEMICAL COMPOSITION

	All Weld Metal (%)		Wire/Strip (%)	
	80Ar/20CO ₂ (M21) Nom	CO ₂ (C1) Nom	Min	Max
C	0.10	0.09	0.06	0.14
Si	0.80	0.70	0.80	1.15
Mn	1.28	1.08	1.60	1.85
P	0.013	0.013		0.025
S	0.013	0.013		0.025



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MECHANICAL PROPERTIES OF WELD METAL

All Weld Metal

Properties	AWS	EN			EN		EN		EN		
	CO2 (C1)	80Ar/20CO2 (M21)	80Ar/20CO2 (M21)	80Ar/20CO2 (M21)	80Ar/20CO2 (M21)	80Ar/20CO2 (M21)	80Ar/20CO2 (M21)	80Ar/20CO2 (M21)	CO2 (C1)		
	As welded	As welded			Normalized 920°C 0.5h	Normalized 920°C 0.5h	Stress relieved 620°C 15h	Stress relieved 620°C 15h	As welded		
	Min	Min	Max	Typ	Typ	Typ	Typ	Min	Max	Typ	
Rp0.2 (MPa)	400										
ReL (MPa)		460		525	320	320	385	385	420	475	
ReH (MPa)				535	330	330	395	395	485		
Rm (MPa)	480	530	680	595	465	465	520	520	500	640 570	
A4-A5 (%)	22	20		26	32	32	28	28	20	25	
Z (%)				68	71	71	73	73		70	
Charpy V at 20°C (J)				130	100	100	120	120		110	
Charpy V at -20°C (J)		90			75	75	90	90	47	70	
Charpy V at -29°C (J)	27										
Charpy V at -30°C (J)		47		70							

ECONOMICS & CURRENT DATA

Dimension (mm)	Current (A)		W	η	H		Feed		U	
	Min	Max			Min	Max	Min	Max	Min	Max
\emptyset			Nom	Nom	Min	Max	Min	Max	Min	Max
0.8	60	185	14	95	0,8	2,5	3,2	10	18	24
0.9	70	250	15	96	0,8	3,3	3	12	18	26
1.0	80	300	16	96	1	5,5	2,7	15	18	32
1.2	120	380	18	97	1,2	8	2,3	15	18	35
1.4	150	420	19	97	1,7	8,5	2,5	12	22	36
1.6	120	380	20	98	1,2	8	2,3	15	18	35
2.0	120	380	20	98	1,2	8	2,3	15	18	35

W = Gas consumption (l / min)

η = Recovery, g weld metal / 100g wire (%)

H = Deposit rate (kg weld metal / hour arc time)

Feed = Feeding rate (m/min)

U = Arc voltage (V)