



Product Data Sheet

G 'Gas-shielded metal-arc welding'

OK Autrod 12.64

Signed by Mats Linde	Approved by Peter Jeirud/Barbro Karlström	Reg no EN002437	Cancelling EN001021	Reg date 2004-09-28	Page 1 (2)
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REASON FOR ISSUE

General text updated.

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 delivered in the unique Esab Octagonal Marathon Pac 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 440	G 42 2 C G4Si1
EN 440	G 46 3 M G4Si1

CLASSIFICATIONS Wire Electrode

EN 440	G4Si1
SFA/AWS A5.18	ER70S-6

APPROVALS

Ü	42.039/1
ABS	3SA, 3YSA
BV	SA3YM
CL	EN 440
DB	42.039.11
DNV	III YMS
DS	EN 440
GL	3YS
LR	3 3YS
RINA	SG56A3; SG56A2
RS	3YMS
Sepros	UNA 485178
SFS	EN 440
SS	EN 440
UDT	DIN 8559
VdTÜV	04294

CHEMICAL COMPOSITION

	All Weld Metal (%)		Wire/Strip (%)	
	80Ar/20CO ₂ (M21)	CO ₂ (C1)	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)	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
0.6	50	100	12	95	0,7	1,7	5	13	16	20
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

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)