



Product Data Sheet

G 'Gas-shielded metal-arc welding'

OK Autrod 12.51 HP

Prepared by	Qualified by	Approved by	Reg no	Cancelling	Reg date	Page
Magnus Johansson	P-O Oskarsson	Raj Kumar Singh	EN011843	None	2025-04-14	1 (2)

REASON FOR ISSUE

CE and UKCA approval added.

GENERAL

A copper coated, G3Si1/ER70S-6 solid wire for GMAW of all general structural and engineering unalloyed and low-alloyed carbon-manganese steels. The electrode may be welded with either a gas mixture or with pure CO₂ as the shielding gas.

OK Autrod 12.51 HP delivered in the unique Esab Octagonal Marathon Pac is an excellent choice in mechanised welding applications

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

CLASSIFICATIONS Weld Metal

EN ISO 14341-A	G 38 3 C1 3Si1
EN ISO 14341-A	G 46 4 M20 3Si1
EN ISO 14341-A	G 46 4 M21 3Si1

APPROVALS

CE	EN 13479
UKCA	EN 13479
VdTÜV	20302

CLASSIFICATIONS Wire Electrode

EN ISO 14341-A	G 3Si1
SFA/AWS A5.18	ER70S-6

CHEMICAL COMPOSITION

Wire/Strip (%)

	Min	Max
C	0.07	0.14
Si	0.80	1.00
Mn	1.40	1.60
P		0.020
S		0.025

MECHANICAL PROPERTIES OF WELD METAL

All Weld Metal

Standard	Shielding Gas	Condition	Rp0.2 [MPa/ksi]		ReL [MPa/ksi]		Rm [MPa/ksi]			A4 [%]		A5 [%]	
			Min	Typ	Min	Typ	Min	Max	Typ	Min	Typ	Min	Typ
AWS	C1	As welded	400/58				480/70			22			
EN	M21	As welded			460/67	510/74	530/77	680/99	600/87			20	27
EN	M20	As welded			460/67	520/75	530/77	680/99	610/88			20	25
EN	C1	As welded			380/55	480/70	470/68	600/87	580/84			20	28

Comments:



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MECHANICAL PROPERTIES OF WELD METAL

Standard	Shielding Gas	Condition	Temp [°C/°F]	Charpy V [J/ft-lb]	
				Min	Typ
AWS	C1	As welded	-30/-22 -40/-40	27/20	
EN	M21	As welded	-30/-22 -40/-40	47/35	125/93
EN	M20	As welded	-30/-22 -40/-40	47/35	125/93
EN	C1	As welded	-30/-22 -40/-40	47/35	100/74

Comments:

ECONOMICS & CURRENT DATA

Dimension	Current (A)		W	η	H			Feed			U		
	Min	Max	Nom	Nom	Min	Max	Nom	Min	Max	Nom	Min	Max	Nom
1.0 mm (0.040 in.)	80	300	16		1.0 kg/h (2.2 lb/h)	5.5 kg/h (12.1 lb/h)		2.7 m/min (106 in/min)	15.0 m/min (591 in/min)		18	32	
1.2 mm (0.047 in.)	120	380	18		1.3 kg/h (2.9 lb/h)	8.0 kg/h (17.6 lb/h)		2.5 m/min (98 in/min)	15.0 m/min (591 in/min)		18	35	

- W** = Gas consumption (l/min)
- η** = Filler metal efficiency (g weld metal x 100 / g wire)(%)
- H** = Deposition rate (kg weld metal/hour arc time)
- Feed** = Wire feed speed (m/min)
- U** = Arc voltage (V)