



OK Autrod 12.51

Premium quality copper-coated wire

OK Autrod 12.51 is ESAB's premium quality copper-coated MAG welding wire. A carefully controlled wire surface condition and cleanliness, in combination with a continuous copper-layer with optimum thickness, results in reduced contamination of the feeding system with copper flakes, compared with low cost MAG wires. It guarantees longer periods of low force feeding, arc stability and low spatter between cleaning and maintenance intervals and provides an excellent weld quality. The chemistry of the wire is carefully controlled for consistently high mechanical properties of the weld.

Typical applications are found in general steel construction, the automotive and transportation industries, white goods and furniture manufacture, and pipeline welding. Within these industries, it is successfully applied for manual, mechanized and robotic welding, enabled by the excellent wire quality.

It is suited for producing (multi-layer) fillet and butt welds in all welding positions and can be welded with Ar/CO₂ mixed shielding gas or with pure CO₂.

The wire is always layer-wound on copper-coated BS300 or K300 wire baskets to ensure wire pay-off without entanglement. Spools are sealed in plastic with moisture absorbing paper included, for a long shelf life without the formation of rust. The wire baskets can be easily recycled together with waste steel, avoiding more complex disposal, such as with plastic spools.

Like all premium quality welding wires from ESAB, OK Autrod 12.51 is available in the octagonal Marathon Pac™ system containing 250 or 475kg of wire. The combination of long intervals of problem-free welding and minimal downtime for spool exchange, results in optimum welding efficiency and cost-efficient production. OK Autrod 12.51 is also available in the Endless Marathon Pac system, where drums are connected during welding, to form a continuous supply of welding wire.

The Safety Data Sheet complies with Regulation (EC) No 1907/2006, ISO 11014-1 and ANSI Z400.1 and can be found on our homepage www.esab.com Products - Safety Datasheet (SDS number:1766/01), in ten different languages.



Classification Wire

EN

ISO 14341-A G3Si1

Classification Weld Metal

EN

ISO 14341-A G 38 2 C G3Si1

ISO 14341-A G 42 3 M G3Si1

Chemical compositions

Wire (%)	Min	Max
C	0.06	0.14
Si	0.70	1.00
Mn	1.30	1.60
P		0.025
S		0.025

Approvals

Shielding Gas	Alloy Type	CE
M21, C1 (EN ISO 14175)	Carbon-manganese steel (Mn/Si-alloyed)	marking with EN 13479

Packaging

Existing	Product	Spooling	Spooltype	EAN code
2321086700	OK Autrod 12.51 0.8mm 15kg	Layer	BS300	7330129248346
2321087600	OK Autrod 12.51 0.8mm 15kg	Random	K300*	7330129248315
2321106710	OK Autrod 12.51 1.0mm 18kg	Layer	BS300	7330129251490
2321107610	OK Autrod 12.51 1.0mm 18kg	Random	K300*	7330129253128
2321126710	OK Autrod 12.51 1.2mm 18kg	Layer	BS300	7330129251506
2321127610	OK Autrod 12.51 1.2mm 18kg	Random	K300*	7330129253142
2321086600	OK Autrod 12.51 0.8mm 15kg	Random	BS300	7330129248377
2321106610	OK Autrod 12.51 1.0mm 18kg	Random	BS300	7330129253111
2321126610	OK Autrod 12.51 1.2mm 18kg	Random	BS300	7330129253135

* Requires adaptor

Typical weld metal mechanical properties

All weld Metal	ReL Min	ReL (MPa)	ReH (MPa)	RM (MPa)	UTS/RM (MPa) Max	A4-A5 (%)	Z (%)	CVN 20°C (J)	-20°C (J)	-30°C (J)
As welded EN 80Ar/20CO ₂ (M21)	420	470	480	560	640	26	68	130	90	70 Min. 47
(M21) + Normalized 920°C 0.5h		310	320	455		32	71	100	75	
(M21)+Stress relieved 620°C 15h		370	380	495		28	73	120	90	
As welded EN CO ₂ (C1)	380	440	450	540	600	25	70	110	70 Min. 47	

Welding Current and economy data

Ø (mm)	Current A	W	η	H	Feed	U
		Nom	Nom			
0.8	60 - 200	14	95	0.8 - 3.0	3.2 - 13	18 - 22
1.0	80 - 300	16	96	1 - 5.6	2.7 - 15	18 - 32
1.2	120 - 380	18	97	1.3 - 8	2.3 - 15	18 - 34

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)

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