



# 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/CO<sub>2</sub> mixed shielding gas or with pure CO<sub>2</sub> gas.

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 Marathon Pac™ system containing 250 to 500 kg 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 can be found on our homepage, [www.esab.com](http://www.esab.com) in multiple languages.



## Classification Wire

| EN                   |
|----------------------|
| EN ISO 14341-A G3Si1 |

## Classification Weld Metal

| EN                              |
|---------------------------------|
| EN ISO 14341-A: G 38 3 C1 3Si1  |
| EN ISO 14341-A: G 42 4 M21 3Si1 |

## Approvals (extract)

| Society |           |
|---------|-----------|
| CE      | EN 13479  |
| DB      | 42.039.06 |
| VdTÜV   | 00899     |

Contact your ESAB representative for a complete list of approvals.

## Chemical composition

| Wire (%) | Min  | Max   |
|----------|------|-------|
| C        | 0.06 | 0.14  |
| Si       | 0.80 | 1.00  |
| Mn       | 1.40 | 1.60  |
| P        |      | 0.025 |
| S        |      | 0.025 |

## Packaging

| Existing   | Product                    | Spooltype | EAN code      |
|------------|----------------------------|-----------|---------------|
| 1251084600 | OK Autrod 12.51 0.8mm 5kg  | S 200     | 7330129087471 |
| 1251086700 | OK Autrod 12.51 0.8mm 15kg | BS 300    | 7330129147472 |
| 1251087700 | OK Autrod 12.51 0.8mm 15kg | B 300     | 7330129087501 |
| 1251096710 | OK Autrod 12.51 0.9mm 18kg | BS 300    | 7330129147533 |
| 1251104600 | OK Autrod 12.51 1.0mm 5kg  | S 200     | 7330129087570 |
| 1251106710 | OK Autrod 12.51 1.0mm 18kg | BS 300    | 7330129147649 |
| 1251107700 | OK Autrod 12.51 1.0mm 15kg | B 300     | 7330129087600 |
| 1251107710 | OK Autrod 12.51 1.0mm 18kg | B 300     | 7330129087617 |
| 1251126710 | OK Autrod 12.51 1.2mm 18kg | BS 300    | 7330129147755 |
| 1251127700 | OK Autrod 12.51 1.2mm 15kg | B 300     | 7330129087662 |
| 1251127710 | OK Autrod 12.51 1.2mm 18kg | B 300     | 7330129087679 |
| 1251166710 | OK Autrod 12.51 1.6mm 18kg | BS 300    | 7330129147946 |
| 1251167710 | OK Autrod 12.51 1.6mm 18kg | B 300     | 7330129087723 |

## Mechanical Properties of weld metal

| All weld metal                            | ReL Min (MPa) | ReL (MPa) | ReH (MPa) | R <sub>m</sub> (MPa) | UTS/RM (MPa) Max | A <sub>4</sub> -A <sub>5</sub> (%) | Z (%) | CVN 20°C (J) | -20°C (J) | -30°C (J)  | -40°C (J)  |
|---|---------------|-----------|-----------|----------------------|------------------|------------------------------------|-------|--------------|-----------|------------|------------|
| As welded EN 80Ar/20CO <sub>2</sub> (M21) | 420           | 470       | 480       | 560                  | 640              | 26                                 | 68    | 130          | 130       | 90         | 90 Min. 47 |
| (M21)+Stress relieved 620°C 15h           |               | 370       | 380       | 495                  |                  | 28                                 | 73    | 120          | 90        |            |            |
| As welded EN CO <sub>2</sub> (C1)         | 380           | 440       | 450       | 540                  | 600              | 25                                 | 70    | 110          | 105       | 80 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 - 24 |
| 1.0    | 80 - 300  | 16  | 96  | 1.0 - 5.6  | 2.7 - 15 | 18 - 32 |
| 1.2    | 120 - 380 | 18  | 97  | 1.3 - 8.0  | 2.5 - 15 | 18 - 34 |
| 1.6    | 225 - 550 | 20  | 98  | 2.1 - 11.4 | 2.3 - 12 | 28 - 38 |

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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COMPANY WITH  
MANAGEMENT SYSTEM  
CERTIFIED BY DNV  
= ISO 9001 =  
= ISO 14001 =  
= OHSAS 18001 =