



# Product Data Sheet

E 'Manual metal-arc welding'

# OK Tooltrode 60

Former OK 85.65

Prepared by A-C Thorsson	Qualified by Tero Borg	Approved by Tapio Huhtala	Reg no EN007065	Cancelling EN006251	Reg date 2016-02-15	Page 1 (2)
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## REASON FOR ISSUE

Description and information under Other Data revised.

## GENERAL

Hardfacing electrode of the high-speed steel for repair welding of cutting tools, drills, stamping machines etc. The weld metal obtains its maximum hardness by double tempering. Suitable for step welding.

To avoid issues with cracking, the working temperature should be preferably 400-500°C.

**Min AC OCV:** 65

**Alloy Type:** Tool steel

**Polarity:** AC, DC+

**Coating Type:** Lime Basic

## WELDING POSITIONS



## CLASSIFICATIONS Electrode

EN 14700

E Fe4

## CHEMICAL COMPOSITION

### All Weld Metal (%)

	Min	Max
C	0.70	1.00
Si	1.20	1.80
Mn	0.90	1.70
P		0.03
S		0.02
Cr	3.80	5.20
Mo	7.0	8.0
W	1.30	2.20
V	1.10	1.90

## ECONOMICS & CURRENT DATA

Dimension (mm) Ø x Length	Current (A)		W	η	N	B	H	T	U	Welding Positions
	Min	Max								
2.5 x 350	80	110	2.7	120	0.55	67	0.8	67	23	1,2,3
3.2 x 350	100	150	4.4	125	0.57	40	1.1	82	23	1,2,3
4.0 x 350	120	190	6.5	130	0.58	27	1.4	97	25	1,2

**W** = Weight (kg / 100 electrodes)

**η** = Efficiency (g weld metal x 100 / g core wire)

**N** = Effective value (kg weld metal / kg electrodes)

**B** = Changes (number of electrodes / kg weld metal)

**H** = Deposit rate at 90% of max current (kg weld metal / hour arc time)

**T** = Fusion time at 90% of max current (s / electrode)

**U** = Arc voltage (V)



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## OTHER DATA

Heat treatment data:

- Hardening at 1230-1250 °C, cooling in air.
- Tempering at 525 °C, 2\*1 h, cooling in air.
- Soft annealing at 750-775 °C, 2-3 h, cooling in air.

Hardness:

Typical, top of a 3-layer deposit on mild steel:

- As welded, 59-61 HRC (preheat and interpass temperature ca 450 °C).
- Tempered, 65-67 HRC.
- Soft annealed, 37-40 HRC.

Tempering resistance:

° C...HRC (tempering 1h)...HRC (tempering 2\*1 h).

20.....60.....60
100.....60.....60
300.....60.....60
400.....58.....58
550.....62.....66
700.....40.....40

Machinability: Grinding only

Abrasion resistance: Very good

High temperature wear resistance: Very good

Redrying: 200 °C, 2 h.

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