Product Data Sheet

E 'Manual metal-arc welding'

OK Ni-CI

Former OK 92.18

Prepared by	Qualified by	Approved by	Reg no	Cancelling	Reg date	Page
A-C Thorsson	Tero Borg	Tapio Huhtala	EN007090	EN006249	2016-02-18	1 (2)

REASON FOR ISSUE

Product description revised. Cu and Al added to chemical composition.

GENERAL

OK Ni-CI is a nickel cored electrode for joining normal grades of cast iron, such as grey-, ductile- and malleable irons. It is also suitable for rectification and repair of these grades and for joining them to steel. Deposition is done on cold or slightly preheated cast iron. Weld metal is well machinable.

Typical applications are repair of cast iron parts such as cracks in engine blocks, pump housings, gear boxes, frames as well as foundry defects.

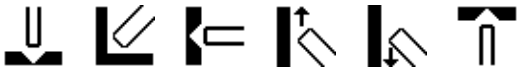
Min AC OCV: 50

Polarity: AC, DC+-

Alloy Type: Ni-base alloy

Coating Type: Basic Special high graphite

WELDING POSITIONS



1 2 3 4 5 6

CLASSIFICATIONS Electrode

SFA/AWS A5.15	ENi-CI
EN ISO 1071	E C Ni-CI 3

APPROVALS

Not applicable

CHEMICAL COMPOSITION

All Weld Metal (%)

	Min	Max
C	0.7	1.1
Si		0.9
Mn		0.6
P		0.01
S		0.01
Ni	92	
Cu	0.2	0.6
Al	0.05	0.6
Fe	2.0	5.0

MECHANICAL PROPERTIES OF WELD METAL

	AWS
	As welded
Properties	**Typ**
Rm (MPa)	300

Comments:

Rm value is approximate. Hardness: 130 - 170 HB.

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ECONOMICS & CURRENT DATA

Dimension (mm) Ø x Length	Current (A) Min	Current (A) Max	W	η	N	B	H	T	U	Welding Positions
2.5 x 300	55	110	1.7	107	0.71	83	0.9	46	21	1,2,3,4,5,6
3.2 x 350	80	140	3.3	105	0.68	45	1.2	66	20	1,2,3,4,5,6
4.0 x 350	100	190	4.9	106	0.70	29	1.7	71	19	1,2,3

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)

OTHER DATA

Welding procedure recommendations for cast iron:

Dirt, cast skin, paint, oil and grease should be removed.

Parts impregnated with oil may be treated by high pressure steam, chemically or by heating to ca 450 °C for 1 h. Gouging with OK GPC might also be a solution, by local burn out of the oil.

When butt welding, joint angles should be wider than for mild steel, around 70 degrees for V-joints and 30 degrees for U-joints.

Sharp corners shall be removed to avoid heat concentrations and local spots of high dilution when welding.

Cracks must be fully opened to allow accessibility. OK GPC is very efficient for gouging out cracks. To prevent them from propagating it is recommended to drill holes at the ends before any action.

Cold welding can be applied in most cases when using this electrode. However a preheat and interpass temperature of ca 250 °C could be beneficial.

The following actions have also been found useful:

To apply moderate amperage ands shortest possible arc length.

To deposit stringer beads (no weaving). Maximum length 50 mm.

To hammer the bead immedeately after welding while it is still dull red.

To cool slowly after welding is completed, in saw dust, vermiculite or oven.

Machinability: Good

Redrying of the electrodes: 200 °C, 2 hours.