

TECHNICAL REPORT

IEC TR 62157

First edition
2001-06

Cylindrical machined carbon electrodes – Nominal dimensions

*Electrodes cylindriques en carbone usiné –
Dimensions nominales*

IECNORM.COM : Click to view the full PDF of IEC TR 62157:2001



Reference number
IEC/TR 62157:2001(E)

Publication numbering

As from 1 January 1997 all IEC publications are issued with a designation in the 60000 series. For example, IEC 34-1 is now referred to as IEC 60034-1.

Consolidated editions

The IEC is now publishing consolidated versions of its publications. For example, edition numbers 1.0, 1.1 and 1.2 refer, respectively, to the base publication, the base publication incorporating amendment 1 and the base publication incorporating amendments 1 and 2.

Further information on IEC publications

The technical content of IEC publications is kept under constant review by the IEC, thus ensuring that the content reflects current technology. Information relating to this publication, including its validity, is available in the IEC Catalogue of publications (see below) in addition to new editions, amendments and corrigenda. Information on the subjects under consideration and work in progress undertaken by the technical committee which has prepared this publication as well as the list of publications issued, is also available from the following:

- **IEC Web Site** (www.iec.ch)

- **Catalogue of IEC publications**

The on-line catalogue on the IEC web site (www.iec.ch/catlg-e.htm) enables you to search by a variety of criteria including text searches, technical committees and date of publication. On-line information is also available on recently issued publications, withdrawn and replaced publications, as well as corrigenda.

- **IEC Just Published**

This summary of recently issued publications (www.iec.ch/JP.htm) is also available by email. Please contact the Customer Service Centre (see below) for further information.

- **Customer Service Centre**

If you have any questions regarding this publication or need further assistance, please contact the Customer Service Centre:

Email: custserv@iec.ch
Tel: +41 22 919 02 11
Fax: +41 22 919 03 00

TECHNICAL REPORT

IEC TR 62157

First edition
2001-06

Cylindrical machined carbon electrodes – Nominal dimensions

*Electrodes cylindriques en carbone usiné –
Dimensions nominales*

IECNORM.COM : Click to view the full PDF of IEC TR 62157:2001

© IEC 2001 — Copyright - all rights reserved

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

International Electrotechnical Commission 3, rue de Varembe Geneva, Switzerland
Telefax: +41 22 919 0300 e-mail: inmail@iec.ch IEC web site <http://www.iec.ch>



Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

PRICE CODE

G

For price, see current catalogue

INTERNATIONAL ELECTROTECHNICAL COMMISSION

CYLINDRICAL MACHINED CARBON ELECTRODES – NOMINAL DIMENSIONS

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this technical report may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

The main task of IEC technical committees is to prepare International Standards. However, a technical committee may propose the publication of a technical report when it has collected data of a different kind from that which is normally published as an International Standard, for example "state of the art".

Technical reports do not necessarily have to be reviewed until the data they provide are considered to be no longer valid or useful by the maintenance team.

IEC 62157, which is a technical report, has been prepared by IEC technical committee 27: Industrial electroheating equipment.

The text of this technical report is based on the following documents:

Enquiry draft	Report on voting
27/246/CDV	27/264/RVC

Full information on the voting for the approval of this technical report can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 3.

The committee has decided that the contents of this publication will remain unchanged until 2006. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

This document which is purely informative is not to be regarded as an International Standard.

A bilingual version of this publication may be issued at a later date.

IECNORM.COM : Click to view the full PDF of IEC TR 62157:2001

CYLINDRICAL MACHINED CARBON ELECTRODES – NOMINAL DIMENSIONS

1 Scope and object

This technical report applies to cylindrical carbon electrodes, manufactured from upgraded coal, for use in electric direct-arc and submerged-arc furnaces, for melting silicium and carbide and for other purposes.

This technical report covers

- dimensions and tolerances on the length and diameter of carbon electrodes;
- dimensions and thread details for carbon electrode heads and sockets.

2 Designation

Cylindrical carbon electrode with a diameter of 700 mm and a length of 2 400 mm; carbon electrode 700 mm × 2 400 mm.

3 Specific characteristics

3.1 Electrode surface

The surface of the electrode has to be machined.

3.2 Electrode structure

An electrode punched with a 200 g steel hammer should develop a clear tone, close to a metallic one. Places with attenuated tone are allowed at a distance of not less than 200 mm from the socket bottom or the bottom surface of the electrode head.

4 Dimensions

4.1 Electrode dimensions

Table 1 indicates tolerances in relation to the range of electrode dimensions.

Carbon electrodes are machined in order to obtain the desired diameter over the whole electrode length. It may happen that part of the surface remains untouched by the tool when machining the electrodes. This part is called a “low spot”. The depth of the low spot shall not be greater than the value given in table 1.

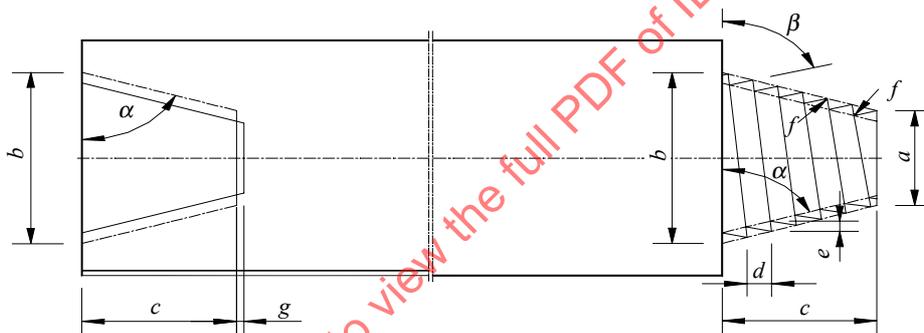
Table 1 – Tolerances of electrode dimensions

Electrode diameter mm	Diameter tolerances mm	Electrode length mm	Length tolerances mm	Admissible oval (low spot) mm
200 – 500	± 2	2 000 – 3 000	+40 -150	1
550 – 750	± 3			2
800 – 1 500	± 4			2

NOTE The length of the electrode is subject to agreement between manufacturer and user. Electrodes which are 10 % shorter are allowed in the lot but they should not be shorter than 1 500 mm.

4.2 Dimensions of the socket and conical head of cylindrical electrodes

The shape and standardized dimensions of sockets and cylindrical heads are shown in figure 1. The particular dimensions are given in table 2.



IEC 645/01

Figure 1 – Electrode shape and dimensions of the sockets and conical heads

Table 2 – Particular dimensions of the sockets and conical heads according to figure 1

<i>D</i> mm	<i>α</i>	<i>a</i> mm	<i>b</i> mm	<i>c</i> mm	<i>d</i> mm	<i>e</i> mm	<i>f</i> mm	<i>g</i> mm	<i>β</i>
200	70°	70	150	110	25	16	3	4	75°
225	70°	75	170	130	25	16	3	4	75°
250	70°	81	190	150	30	19	3	4	75°
285	70°	92	220	175	30	19	3	4	75°
300	70°	92	220	175	30	19	3	4	75°
325	70°	110	245	185	30	19	3	4	75°
350	70°	110	245	185	30	19	3	4	75°
360	70°	110	245	185	30	19	3	4	75°
400	70°	136	300	225	40	25	4	4	75°
450	70°	149	320	235	40	25	4	4	75°
500	70°	179	375	270	40	25	4	4	75°
550	70°	179	375	270	40	25	4	4	75°
600	70°	206	435	315	50	32	5	4	75°
650	70°	206	435	315	50	32	5	4	75°
700	70°	289	500	290	50	32	5	4	75°
750	70°	289	500	290	50	32	5	4	75°
800	70°	317	550	320	50	32	5	4	75°
850	70°	317	550	320	50	32	5	4	75°
900	70°	342	590	340	50	32	5	4	75°
950	70°	343	590	340	50	32	5	4	75°
1 000	70°	368	630	360	50	32	5	4	75°
1 100	70°	443	720	380	50	32	5	4	75°
500	55°18'13"	151	416	191	30	31,6	3	4	70°
550	55°18'13"	151	416	191	30	31,6	3	4	70°
600	55°18'13"	191	510	230	30	31,6	3	4	70°
650	55°18'13"	191	510	230	30	31,6	3	4	70°
700	55°18'13"	208	600	283	50	52,8	5	4	70°
750	55°18'13"	208	600	283	50	52,8	5	4	70°
800	55°18'13"	228	685	330	50	52,8	5	4	70°
850	55°18'13"	228	685	330	50	52,8	5	4	70°
900	55°18'13"	247	770	378	50	52,8	5	4	70°
950	55°18'13"	247	770	378	50	52,8	5	4	70°
1 000	55°18'13"	346	900	400	50	52,8	5	4	70°
1 050	55°18'13"	346	900	400	50	52,8	5	4	70°
1 100	55°18'13"	277	900	450	50	52,8	5	4	70°
1 200	55°18'13"	408	1 100	500	50	52,8	5	4	70°
1 300	55°18'13"	408	1 100	500	50	52,8	5	4	70°
1 400	55°18'13"	388	1 150	550	50	52,8	5	4	70°
1 500	55°18'13"	419	1 250	600	50	52,8	5	4	70°
700	55°18'18"	143	600	330	50	52,8	5	4	70°
750	55°18'18"	143	600	330	50	52,8	5	4	70°
850	55°18'18"	181,5	770	425	50	52,8	5	4	70°
900	55°18'18"	271,5	770	360	50	52,8	5	4	70°
1 050	55°18'18"	276,9	900	450	50	52,8	5	4	70°
850	55°18'18"	323,8	670	250	40	52,7	5	50	58°
900	55°18'18"	365	750	278	40	52,7	5	50	58°
1 050	55°18'18"	404,6	820	300	40	52,7	5	50	58°