



NSAI
Standards

Irish Standard
I.S. EN 60519-21:2009

Safety in electroheat installations -- Part 21: Particular requirements for resistance heating equipment - Heating and melting glass equipment (IEC 60519-21:2008 (EQV))

I.S. EN 60519-21:2009

Incorporating amendments/corrigenda issued since publication:

<i>This document replaces:</i> I.S. EN 60519-21:1999	<i>This document is based on:</i> EN 60519-21:2009 EN 60519-21:1998	<i>Published:</i> 23 January, 2009 14 May, 1999
This document was published under the authority of the NSAI and comes into effect on: 22 April, 2009		ICS number: 25.180.10
NSAI 1 Swift Square, Northwood, Santry Dublin 9	T +353 1 807 3800 F +353 1 807 3838 E standards@nsai.ie W NSAI.ie	Sales: T +353 1 857 6730 F +353 1 857 6729 W standards.ie
Price Code: H		
Údarás um Chaighdeáin Náisiúnta na hÉireann		

English version

**Safety in electroheat installations -
Part 21: Particular requirements for resistance heating equipment -
Heating and melting glass equipment
(IEC 60519-21:2008)**

Sécurité dans les installations
électrothermiques -
Partie 21: Exigences particulières
pour les installations de chauffage
par résistance -
Installations électrothermiques
de fusion de verre
(CEI 60519-21:2008)

Sicherheit in Elektrowärmeanlagen -
Teil 21: Besondere Anforderungen
an Einrichtungen
mit Widerstandserwärmung -
Einrichtungen zum Erwärmen
und Schmelzen von Glas
(IEC 60519-21:2008)

This European Standard was approved by CENELEC on 2008-12-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: avenue Marnix 17, B - 1000 Brussels

I.S. EN 60519-21:2009

EN 60519-21:2009

– 2 –

Foreword

The text of document 27/630/CDV, future edition 2 of IEC 60519-21, prepared by IEC TC 27, Industrial electroheating equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60519-21 on 2008-12-01.

This European Standard supersedes EN 60519-21:1998.

The significant changes with respect to EN 60519-21:1998 are as follows:

- EN 60519-1:2003 and EN 60519-2:2006 have been taken into account;
- definitions have been brought into line with IEC 60050-841:2004.

The following dates were fixed:

- latest date by which the EN has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 2009-09-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2011-12-01

This standard is to be used in conjunction with EN 60519-2:2006. It is intended to specify particular requirements for resistance heating and melting glass equipment. This Part 21 supplements or modifies the corresponding clauses of EN 60519-2, so as to convert it into a European Standard.

Where a particular subclause of Part 2 is not mentioned in this Part 21, that subclause applies as far as is reasonable. Where this standard states "addition", "modification" or "replacement", the relevant text of Part 2 is to be adapted accordingly.

NOTE Subclauses and notes which are additional to those in Part 2 are numbered starting from 101.

Endorsement notice

The text of the International Standard IEC 60519-21:2008 was approved by CENELEC as a European Standard without any modification.



INTERNATIONAL STANDARD

NORME INTERNATIONALE

Safety in electroheat installations –

Part 21: Particular requirements for resistance heating equipment – Heating and melting glass equipment

Sécurité dans les installations électrothermiques –

Partie 21: Exigences particulières pour les installations de chauffage par résistance – Installations électrothermiques de fusion de verre



THIS PUBLICATION IS COPYRIGHT PROTECTED

Copyright © 2008 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, 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 either IEC or IEC's member National Committee in the country of the requester.

If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

Droits de reproduction réservés. Sauf indication contraire, aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de la CEI ou du Comité national de la CEI du pays du demandeur.

Si vous avez des questions sur le copyright de la CEI ou si vous désirez obtenir des droits supplémentaires sur cette publication, utilisez les coordonnées ci-après ou contactez le Comité national de la CEI de votre pays de résidence.

IEC Central Office
3, rue de Varembe
CH-1211 Geneva 20
Switzerland
Email: inmail@iec.ch
Web: www.iec.ch

About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigenda or an amendment might have been published.

- Catalogue of IEC publications: www.iec.ch/searchpub

The IEC on-line Catalogue enables you to search by a variety of criteria (reference number, text, technical committee,...). It also gives information on projects, withdrawn and replaced publications.

- IEC Just Published: www.iec.ch/online_news/justpub

Stay up to date on all new IEC publications. Just Published details twice a month all new publications released. Available on-line and also by email.

- Electropedia: www.electropedia.org

The world's leading online dictionary of electronic and electrical terms containing more than 20 000 terms and definitions in English and French, with equivalent terms in additional languages. Also known as the International Electrotechnical Vocabulary online.

- Customer Service Centre: www.iec.ch/webstore/custserv

If you wish to give us your feedback on this publication or need further assistance, please visit the Customer Service Centre FAQ or contact us:

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

A propos de la CEI

La Commission Electrotechnique Internationale (CEI) est la première organisation mondiale qui élabore et publie des normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

A propos des publications CEI

Le contenu technique des publications de la CEI est constamment revu. Veuillez vous assurer que vous possédez l'édition la plus récente, un corrigendum ou amendement peut avoir été publié.

- Catalogue des publications de la CEI: www.iec.ch/searchpub/cur_fut-f.htm

Le Catalogue en-ligne de la CEI vous permet d'effectuer des recherches en utilisant différents critères (numéro de référence, texte, comité d'études,...). Il donne aussi des informations sur les projets et les publications retirées ou remplacées.

- Just Published CEI: www.iec.ch/online_news/justpub

Restez informé sur les nouvelles publications de la CEI. Just Published détaille deux fois par mois les nouvelles publications parues. Disponible en-ligne et aussi par email.

- Electropedia: www.electropedia.org

Le premier dictionnaire en ligne au monde de termes électroniques et électriques. Il contient plus de 20 000 termes et définitions en anglais et en français, ainsi que les termes équivalents dans les langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International en ligne.

- Service Clients: www.iec.ch/webstore/custserv/custserv_entry-f.htm

Si vous désirez nous donner des commentaires sur cette publication ou si vous avez des questions, visitez le FAQ du Service clients ou contactez-nous:

Email: csc@iec.ch
Tél.: +41 22 919 02 11
Fax: +41 22 919 03 00



IEC 60519-21

Edition 2.0 2008-09

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Safety in electroheat installations –

Part 21: Particular requirements for resistance heating equipment – Heating and melting glass equipment

Sécurité dans les installations électrothermiques –

Partie 21: Exigences particulières pour les installations de chauffage par résistance – Installations électrothermiques de fusion de verre

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

PRICE CODE
CODE PRIX

H

ICS 25.180.10

ISBN 2-8318-1001-9

CONTENTS

FOREWORD.....	3
1 Scope and object.....	5
2 Normative references	5
3 Terms and definitions	5
4 Classification of electroheat equipment according to voltage bands.....	6
5 Classification of electroheat equipment according to frequency bands.....	6
6 General requirements	6
7 Isolation and switching	6
8 Connection to the supply network and internal connections	6
9 Protection against electric shock	6
10 Protection against overcurrent.....	7
11 Equipotential bonding	7
12 Control circuits and control functions	7
13 Protection against thermal influences	7
14 Risk of fire and danger of explosion.....	7
15 Marking, labelling and technical documentation	7
16 Information on inspection and commissioning and instructions for utilization and maintenance of electroheat installations	7

INTERNATIONAL ELECTROTECHNICAL COMMISSION

SAFETY IN ELECTROHEAT INSTALLATIONS –

Part 21: Particular requirements for resistance heating equipment – Heating and melting glass equipment

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of 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, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as “IEC Publication(s)”). 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. 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 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 IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with an IEC Publication.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60519-21 has been prepared by IEC technical committee 27: Industrial electroheating equipment.

This second edition cancels and replaces the first edition published in 1998 and constitutes a technical revision. The significant changes with respect to the previous edition are as follows:

- The latest editions of IEC 60519-1:2003 and IEC 60519-2:2006 have been taken into account.
- Definitions have been brought into line with the second edition of IEC 60050-841:2004.

This standard is to be used in conjunction with IEC 60519-2:2006. It is intended to specify particular requirements for resistance heating and melting glass equipment. This Part 21 supplements or modifies the corresponding clauses of IEC 60519-2, so as to convert it into an IEC standard.

I.S. EN 60519-21:2009

– 4 –

60519-21 © IEC:2008

Where a particular subclause of Part 2 is not mentioned in this Part 21, that subclause applies as far as is reasonable. Where this standard states "addition", "modification" or "replacement", the relevant text of Part 2 is to be adapted accordingly.

NOTE Subclauses and notes which are additional to those in Part 2 are numbered starting from 101.

The text of this standard is based on the following documents:

CDV	Report on voting
27/630/CDV	27/649/RVC

Full information on the voting for the approval of this standard 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 2.

A list of all parts of IEC 60519 series, under the general title *Safety in electroheat installations*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

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

SAFETY IN ELECTROHEAT INSTALLATIONS –

Part 21: Particular requirements for resistance heating equipment – Heating and melting glass equipment

1 Scope and object

Replacement:

This part of IEC 60519 is applicable to indirect resistance heating equipment for the heating and melting of glass, operating in voltage bands 1 and 2. These particular requirements also apply to equipment for direct resistance heating and melting of glass by means of current introduced by electrodes passing through the charge to be heated.

The object of this standard is the determination of safety requirements for both indirect and direct resistance heating equipment for the heating and melting of glass.

NOTE Extraction of liquid glass or a similar material at the extraction point is part of the production process and does not constitute part of the operation of the electroheat equipment.

This standard covers the safety aspects of electrical parts also in the case when electrical heating is combined with other means of heating, for example liquid fuel heating.

These requirements do not apply to equipment for direct resistance heating, where, owing to the technology used, IEC 60519-3, IEC 60519-4 and IEC 60519-8 are applicable.

2 Normative references

This Clause of part 2 is applicable.

3 Terms and definitions

This Clause of part 2 applies except as follows:

Addition:

3.101

glass-melting furnace (indirect resistance heating)
furnace in which glass is melted by means of indirect resistance heating

3.102

pot furnace
melting equipment in which the batch is melted by means of indirect electrical heating in vessels called “pots” made of a fire-proof material and placed in the furnace

3.103

filling machine
machine which feeds the batch into the glass furnaces

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

-
- Looking for additional Standards? Visit Intertek Inform Infostore
 - Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation
-