



SLOVENSKI STANDARD
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High-frequency dielectric heating installations - Test methods for the determination of power output

Hochfrequente dielektrische Erwärmungsanlagen - Prüfverfahren für die Bestimmung der Ausgangsleistung

Installations de chauffage diélectrique haute fréquence. Méthodes d'essai pour la détermination de la puissance de sortie

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English version

**High-frequency dielectric heating installations -
Test methods for the determination of power output
(IEC 61308:2005)**

Installations de chauffage diélectrique
haute fréquence -
Méthodes d'essai pour la détermination
de la puissance de sortie
(CEI 61308:2005)

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Erwärmungsanlagen -
Prüfverfahren für die Bestimmung
der Ausgangsleistung
(IEC 61308:2005)

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This European Standard was approved by CENELEC on 2005-12-01. 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, 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: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 27/495/FDIS, future edition 2 of IEC 61308, prepared by IEC TC 27, Industrial electroheating equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61308 on 2005-12-01.

This European Standard supersedes EN 61308:1996.

Significant changes with respect to EN 61308:1996 are as follows:

- the equipment under test has been classified into two types: A and B, according to their design;
- test methods have been supplemented by the wet-sand load method and the description of the lamp load by an example;
- evaluation of the output power for dielectric plastic welders has been added;
- 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) 2006-11-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2008-12-01

This European Standard makes reference to International Standards. Where the International Standard referred to has been endorsed as a European Standard or a home-grown European Standard exists, this European Standard shall be applied instead. Pertinent information can be found on the CENELEC web site.

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Endorsement notice

The text of the International Standard IEC 61308:2005 was approved by CENELEC as a European Standard without any modification.

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STANDARD

CEI
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61308

Deuxième édition
Second edition
2005-12

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haute fréquence –
Méthodes d'essai pour la détermination
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International Electrotechnical Commission
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CONTENTS

FOREWORD.....	5
1 Scope and object.....	9
2 Normative references	11
3 Terms and definitions.....	11
4 Test loads	13
4.1 General	13
4.2 Calorimeter load.....	13
4.3 Lamp load	13
4.4 Matched resistive load.....	13
4.5 Wet-sand load	13
5 Description of tests.....	13
5.1 General	13
5.2 Calorimeter-load method	15
5.3 Lamp-load temperature method.....	19
5.4 Matched resistive load method	23
5.5 Wet-sand load method.....	23
5.6 Evaluation of the output power for high-frequency dielectric plastic welders	25
5.7 Evaluation of the output power for type B equipment.....	27
Annex A (informative) Recommended test circuit for the lamp-load method	29
Figure 1 – Example of a calorimeter load.....	17
Figure 2 – Example of a short tubular calorimeter load	19
Figure 3 – Lamp-load circuit	19
Figure 4 – Example of a lamp load.....	21
Figure 5 – Detail of the lamp load	23
Figure 6 – Plastic welding test electrode.....	27
Figure A.1 – Recommended test circuit for the lamp-load method	29

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**HIGH-FREQUENCY DIELECTRIC HEATING INSTALLATIONS –
TEST METHODS FOR THE DETERMINATION
OF POWER OUTPUT**

FOREWORD

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International Standard IEC 61308 has been prepared by IEC technical committee 27: Industrial electroheating equipment.

This second edition cancels and replaces the first edition published in 1994 and constitutes a technical revision. Significant changes with respect to the previous edition are as follows:

- the equipment under test has been classified into two types: A and B, according to their design;
- test methods have been supplemented by the wet-sand load method and the description of the lamp load by an example;
- evaluation of the output power for dielectric plastic welders has been added;
- definitions have been brought into line with the second edition of IEC 60050-841:2004.

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

FDIS	Report on voting
27/495/FDIS	27/508/RVD

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.

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.

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HIGH-FREQUENCY DIELECTRIC HEATING INSTALLATIONS – TEST METHODS FOR THE DETERMINATION OF POWER OUTPUT

1 Scope and object

This International Standard is applicable to industrial high-frequency dielectric heating installations used for the purpose of thermal applications such as melting, drying, welding, insect extermination, and gluing of partially conductive or non-conductive materials such as plastics, wood, rubber, textiles, glass, ceramic, paper, bamboo or foodstuffs, in both normal and protective atmospheres, using, for example, inert gases or vacuum.

This standard relates to high-frequency dielectric heating installations with nominal dielectric heating frequency in the range from 1 MHz to 300 MHz with rated useful output power greater than 50 W.

The main purpose of this standard is to assist in compliance with the requirements set out in 6.4 of IEC 60519-9 when testing electroheating power sources. It is not primarily intended as a means of representing a potential high-frequency heating application for the requirement of the user. Due to the large variety of dielectric heating applications, any output power value obtained as a result of these tests should not always be taken as representing the power that can be dissipated in a particular dielectric heating installation, but, in certain instances, the output power value could be used as an indication of performance.

The power required to heat a charge is dependent, for example, on the type of material heated, the temperature of heating and ambient moisture and on the construction of the electrode system.

NOTE Heating a charge with dielectric parameters deeply changing in time and/or temperature the value of the output power obtained with the actual charge may be different from that obtained in standard test conditions.

For equipment working outside the ITU-designated bands, the frequency of the generator follows the resonant frequency of the output circuit, thus the output power can remain fairly stable during the work cycle, even with hand tuning of the output circuit. Therefore, according to this standard, the test well represents the actual output power in practical work conditions.

For equipment working in ITU-designated bands, the frequency of the generator remains stable, but the resonant frequency of the output circuit varies with the change of dielectric parameters of the load. Therefore, the value of the mean output power in the work cycle can be much lower than the value obtained in the test conditions. This value depends on the time response of the eventual automatic tuning system.

This standard relates to equipment normally operating under continuous rated conditions.