

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

The European Standard EN 61308:2006 has the status of a
British Standard

ICS 25.180.10

National foreword

This British Standard is the official English language version of EN 61308:2006. It is identical with IEC 61308:2005. It supersedes BS EN 61308:1997 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PEL/27, Electroheating, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 14, an inside back cover and a back cover.

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**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)

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

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CENELEC

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

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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:

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|--|-------|------------|
| – 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.

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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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.