Elektri rakendused majapidamises ja muudel taolistel juhtudel. Elektromagnetilised väljad. Hindamis- ja mõõtmismeetodid

Household and similar electrical appliances - Electromagnetic fields - Methods for evaluation and measurement

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 50366:2005 sisaldab Euroopa standardi EN 50366:2003 ingliskeelset teksti.	This Estonian standard EVS-EN 50366:2005 consists of the English text of the European standard EN 50366:2003.
Standard on kinnitatud Eesti Standardikeskuse 17.07.2003 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 17.07.2003 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.
Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 28.05.2003.	Date of Availability of the European standard text 28.05.2003.
Standard on kättesaadav Eesti standardiorganisatsioonist.	The standard is available from Estonian standardisation organisation.

ICS 17.220.20

EUROPEAN STANDARD **EN 50366**

NORME EUROPÉENNE

EUROPÄISCHE NORM May 2003

ICS 17.220.20

English version

Household and similar electrical appliances – Electromagnetic fields – Methods for evaluation and measurement

Appareils électrodomestiques et analogues – Champs électromagnétiques – Méthodes d'évaluation et de mesure

Elektrische Geräte für den Hausgebrauch und ähnliche Zwecke – Elektromagnetische Felder – Verfahren zur Bewertung und Messung

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

Ref. No. EN 50366:2003 E

Foreword

A proposal for a standard dealing with the evaluation and measurement of electromagnetic fields around household and similar electrical appliances was prepared by a joint group of experts representing TC 61, Safety of household and similar electrical appliances, and TC 106X, Electromagnetic fields in the human environment. Document CLC/TC 61(Sec)1292, was circulated under the enquiry procedure in October 2000. The results of the enquiry were discussed during the Delft meeting in May 2001, when it was decided to prepare a new draft. This new draft, document CLCL/TC 61(Sec)1335, was discussed during the Paris meeting in November 2001, when it was decided to submit a new draft to the Unique Acceptance Procedure.

This draft was circulated in April 2002 and was approved by CENELEC as EN 50366 on 2003-02-01.

The following dates are applicable:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2004-02-01

- date on which national standards conflicting with the EN have to be withdrawn (dow) 2006-02-01

This European Standard has been prepared under mandate M/305 given to CENELEC by the European Commission and the European Free Trade Association and supports the principal objectives of the Low Voltage Directive 73/23/EEC.

Annexes A and C are normative and annexes B, D, E and F are informative.

NOTE Words in **bold** in the text are defined in Clause 3. When a definition concerns an adjective, the adjective and the associated noun are also in bold.

Contents

INTRODUCTION

This standard establishes a suitable evaluation method for determining the electromagnetic fields in the space around household and similar electrical appliances and defines standardized operating conditions and **measuring distances**. It provides a method to show compliance with the European Council Recommendation 1999/519/EC concerning human exposure to electromagnetic fields.

NOTE 1 The fact that magnetic fields in the surrounding space of a household appliance are non-homogeneous has to be taken into account. For household appliances, magnetic flux densities are at their highest on the appliance surfaces and decrease with increasing distance r from the appliance surface by at least $1/r$.

For evaluating the risk of magnetic flux densities the $1/r$ reduction in magnitude represents a worst-case assumption. The magnetic flux density is obtained by:

$$B(r) = \frac{c}{r + r_0}$$

where

$B(r)$ is the magnetic flux density,

c is a constant,

r is the distance from the appliance surface,

r_0 is the distance between the field source and the appliance surface.

NOTE 2 The reference levels of the recommendation are derived for homogeneous fields and for whole-body exposure to larger field sources, such as high voltage transmission lines. The magnetic fields surrounding household appliances are restricted to small parts of the body, e.g. hands and limbs.

It has been assumed in the drafting of this European Standard that the execution of its provisions is entrusted to appropriately qualified and experienced persons.

1 Scope

This European Standard deals with electromagnetic fields and defines methods for evaluating the electric field and the magnetic field for frequencies up to 300 GHz around household and similar electrical appliances.

The methods also apply to appliances not intended for normal household use, but which nevertheless may be accessible to the general public, such as appliances intended to be used by laymen in shops, in light industry and on farms.

NOTE The methods are not suitable for comparing the fields from different appliances.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 60335 series, Household and similar electrical appliances - Safety

3 Definitions

For the purpose of this standard the following definitions apply.

3.1
basic restriction
restriction, based on established health effects, of exposure to time-varying electric fields and magnetic fields

3.2
reference level
r.m.s. value of the magnetic field strength of homogeneous fields, derived from the **basic restriction**, to which a person may be exposed without adverse effects

3.3
measuring distance
distance between the surface of the appliance and the closest point of the sensor surface

3.4
operator distance
distance between the surface of the appliance and the closest point of the head or torso of the operator

3.5
hot spot
localized area of high magnetic field due to irregularities of the field distribution

3.6
coupling factor
factor taking into account the irregularities of the magnetic fields around appliances and the dimensions of a part of the human body