



NSAI
Standards

Irish Standard
I.S. EN 50413:2008

Basic standard on measurement and calculation procedures for human exposure to electric, magnetic and electromagnetic fields (0 Hz - 300 GHz)

I.S. EN 50413:2008

Incorporating amendments/corrigenda issued since publication:

EN 50413:2008/A1:2013

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I.S. xxx: Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

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SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 50413/A1

October 2013

ICS 17.220.20; 33.100.01

English version

Basic standard on measurement and calculation procedures for human exposure to electric, magnetic and electromagnetic fields (0 Hz - 300 GHz)

Norme de base pour les procédures de mesures et de calculs pour l'exposition des personnes aux champs électriques, magnétiques et électromagnétiques (0 Hz - 300 GHz)

Grundnorm zu Mess- und Berechnungsverfahren der Exposition von Personen in elektrischen, magnetischen und elektromagnetischen Feldern (0 Hz bis 300 GHz)

This amendment A1 modifies the European Standard EN 50413:2008; it was approved by CENELEC on 2013-09-02. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment the status of a national standard without any alteration.

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CENELEC

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B - 1000 Brussels

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Foreword

This document (EN 50413:2008/A1:2013) has been prepared by CLC/TC 106X "Electromagnetic fields in the human environment".

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2014-09-02
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2016-09-02

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 50413

December 2008

ICS 17.220.20; 33.100.01

English version

**Basic standard on measurement and calculation procedures
for human exposure to electric, magnetic and electromagnetic fields
(0 Hz - 300 GHz)**

Norme de base
pour les procédures de mesures
et de calculs pour l'exposition
des personnes aux champs électriques,
magnétiques et électromagnétiques
(0 Hz - 300 GHz)

Grundnorm zu Mess- und
Berechnungsverfahren der Exposition
von Personen in elektrischen,
magnetischen und
elektromagnetischen Feldern
(0 Hz bis 300 GHz)

This European Standard was approved by CENELEC on 2008-09-01. 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.

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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

This European Standard was prepared by the Technical Committee CENELEC TC 106X, Electromagnetic fields in the human environment. The text of the draft was submitted to the formal vote and was approved by CENELEC as EN 50413 on 2008-09-01.

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at national level by publication of an identical
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with the EN have to be withdrawn | (dow) | 2011-09-01 |

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1 Scope

This European Standard gives elements to establish methods for measurement and calculation of quantities associated with the assessment of human exposure to electric, magnetic and electromagnetic fields (EMF) in the frequency range from 0 Hz to 300 GHz. The major intention of this Basic Standard is to give the common background and information to relevant EMF standards. This Basic Standard cannot go into details extensively due to the broad frequency range and the huge amount of possible applications. Therefore it is not possible to specify detailed calculation or measurement procedures in this Basic Standard. This standard provides general procedures only for those product and workplace categories for which there do not exist any relevant assessment procedures in any existing European EMF basic standard.

If there exists an applicable European EMF standard focused on specific product or workplace categories then the assessment shall follow that standard. If an applicable European EMF standard does not exist, but an applicable assessment procedure in another European EMF standard does exist, then that assessment procedure shall be used.

This standard deals with quantities that can be measured or calculated in free space, notably electric and magnetic field strength or power density, and includes the measurement and calculation of quantities inside the body that forms the basis for protection guidelines.

In particular the standard provides information on

- definitions and terminology,
- characteristics of electric, magnetic and electromagnetic fields,
- measurement of exposure quantities,
- instrumentation requirements,
- methods of calibration,
- measurement techniques and procedures for evaluating exposure,
- calculation methods for exposure assessment.

2 Normative references

Void.

3 Definitions

For the purpose of this document, the following terms and definitions apply.

3.1

action values

magnitude of directly measurable parameters, provided in terms of electric field strength (E), magnetic field strength (H), magnetic flux density (B) and power density (S), at which one or more of the specified measures in Directive 2004/40/EC must be undertaken. Compliance with these values will ensure compliance with the relevant exposure limit values (from 2004/40/EC)

3.2

antenna

device that serves as a transducer between a guided wave for example in a coaxial cable and a free space wave, or vice versa

3.3

basic restriction

restrictions on exposure to time-varying electric, magnetic, and electromagnetic fields that are based directly on established health effects (from ICNIRP guidelines)

3.4

contact current

current flowing into the body resulting from contact with a conductive object in an electromagnetic field. This is the localised current flow into the body (usually the hand, for a light brushing contact)

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