

Assessment of workers' exposure to electric and magnetic fields of industrial induction heating equipment

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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**Assessment of workers' exposure to electric and magnetic fields
of industrial induction heating equipment**

Evaluation de l'exposition des travailleurs
aux champs électriques et magnétiques
produits par les équipements industriels
de chauffage par induction

Beurteilung der Exposition
von Arbeitnehmern gegenüber
elektrischen und magnetischen Feldern
von industriellen induktiven
Elektrowärmeanlagen

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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

This European Standard was prepared by WG 9 WP 1 “Induction Heaters” of the Technical Committee CENELEC TC 106X, Electromagnetic fields in the human environment.

The text of the draft was submitted to the formal vote in February 2009. On the basis of the established voting results, CLC/TC 106X decided to prepare an amendment for inclusion in the standard to make it fully protective for doing workers exposure assessments in all eventualities.

The text of the draft amendment (FprAA) was submitted to the Unique Acceptance Procedure and the combined text was approved by CENELEC as EN 50519 on 2010-02-01.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN and CENELEC shall not be held responsible for identifying any or all such patent rights.

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) 2011-02-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2013-02-01

This European Standard has been prepared under Mandate M/351 given to CENELEC by the European Commission and the European Free Trade Association and covers essential requirements of EC Directive 2004/40/EC.

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1 Scope

This European Standard specifies procedures for assessment of electric, magnetic and electromagnetic fields produced by industrial and professional induction heating equipment.

NOTE This European Standard does not apply to household appliances.

Typical induction heating applications are for example:

- melting;
- zone-melting;
- heating before hot forming;
- heating by tunnel-inductor;
- hardening / coaxial transformer handheld devices;
- tube welding;
- tube annealing;
- hardening;
- soldering;
- hard-soldering /brazing;
- bonding;
- annealing;
- metal-strip and wire heating;
- tempering;
- sintering;
- shrinking.

This product standard covers the frequency range up to 30 MHz taking into account the specific characteristics of industrial and professional induction heating equipment and its usage.

This European Standard may also be used for assessment regarding the requirements of Directive 2004/40/EC [1] *on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (electromagnetic fields)*, provided that no other relevant field sources are present in close proximity. If other field sources are present, additional assessment according to EN 50499:2008 is necessary.

This European Standard does not cover protective measures for people with active implants.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 50413:2008, *Basic standard on measurement and calculation procedures for human exposure to electric, magnetic and electromagnetic fields (0 Hz – 300 GHz)*

EN 50499:2008, *Procedure for the assessment of the exposure of workers to electromagnetic fields*

EN 12198-1, *Safety of machinery - Assessment and reduction of risks arising from radiation emitted by machinery - Part 1: General principles*

IEC 60050-841:2004, *International Electrotechnical Vocabulary - Part 841: Industrial electroheat*