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**Neporušitvene preiskave - Oprema za preiskave z vrtinčnimi tokovi - 1. del:
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Non-destructive testing - Equipment for eddy current examination - Part 1: Instrument characteristics and verification (ISO 15548-1:2013)

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Zerstörungsfreie Prüfung - Technische Ausrüstung für die Wirbelstromprüfung - Teil 1:
Kenngrößen von Prüfgeräten und deren Verifizierung (ISO 15548-1:2013)

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Essais non destructifs - Appareillage pour examen par courants de Foucault - Partie 1:
Caractéristiques de l'appareil et vérifications (ISO 15548-1:2013)

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Non-destructive testing - Equipment for eddy current examination - Part 1: Instrument characteristics and verification (ISO 15548-1:2013)

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This European Standard was approved by CEN on 11 November 2013.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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

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Foreword

This document (EN ISO 15548-1:2013) has been prepared by Technical Committee ISO/TC 135 “Non-destructive testing” in collaboration with Technical Committee CEN/TC 138 “Non-destructive testing” the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2014, and conflicting national standards shall be withdrawn at the latest by June 2014.

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

This document supersedes EN ISO 15548-1:2008.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 15548-1:2013 has been approved by CEN as EN ISO 15548-1:2013 without any modification.

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INTERNATIONAL
STANDARD

ISO
15548-1

Second edition
2013-12-01

**Non-destructive testing — Equipment
for eddy current examination —**

**Part 1:
Instrument characteristics and
verification**

iTeh STANDARD PREVIEW
*Essais non destructifs — Appareillage pour examen par courants
de Foucault —*
(standards.iteh.ai)
Partie 1: Caractéristiques de l'appareil et vérifications

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ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
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ISO 15548-1:2013(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2. www.iso.org/directives

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received. www.iso.org/patents

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

The committee responsible for this document is ISO/TC 135, *Non-destructive Testing*, Subcommittee SC 4, *Eddy current methods*.

This second edition cancels and replaces the first edition (ISO 15548-1:2008), of which it constitutes a minor revision. It also incorporates the Correction ISO 15548-1:2008/Cor 1:2010.

ISO 15548 consists of the following parts, under the general title *Non-destructive testing — Equipment for eddy current examination*:

- Part 1: *Instrument characteristics and verification*
- Part 2: *Probe characteristics and verification*
- Part 3: *System characteristics and verification*

Non-destructive testing — Equipment for eddy current examination —

Part 1: Instrument characteristics and verification

1 Scope

This part of ISO 15548 identifies the functional characteristics of a general-purpose eddy current instrument and provides methods for their measurement and verification.

The evaluation of these characteristics permits a well-defined description and comparability of eddy current equipment.

By careful choice of the characteristics, a consistent and effective eddy current examination system can be designed for a specific application.

Where accessories are used, these are characterised using the principles of this part of ISO 15548.

This part of ISO 15548 gives neither the extent of verification nor acceptance criteria for the characteristics. They are given in the application documents.

2 Normative references

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

ISO 12718, *Non-destructive testing — Eddy current testing — Vocabulary*

ISO 15549, *Non-destructive testing — Eddy current testing — General principles*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 12718 apply.

4 Eddy current instrument characteristics

4.1 General characteristics

4.1.1 Type of instrument

- a) An instrument has a general-purpose application when the relationship between the measured quantity and the display or output is established by the user. A range of probes can be connected to the instrument. The instrument manufacturer shall provide details of the internal electrical characteristics, in order that the user can design the examination system. The examination system shall be in accordance with ISO 15549. The user shall be able to vary the value of frequency, gain, balance (unless an automatic balance is used), phase, filters and gain and zero of the display.

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- b) An instrument is of specific application when the relationship between the measured quantity and the display or output is explicitly defined in the range of application. The probe is specific to the instrument. For this type of instrument, this part of ISO 15548 may be partially applied.

4.1.2 Power supply

The instrument can be powered by batteries or by the local AC power supply. The nominal values of voltage, frequency and power consumption shall be stated, together with the tolerance for correct operation.

4.1.3 Safety

The instrument and its accessories shall meet the applicable safety regulations, for example, electrical hazard, surface temperature, explosion, etc.

4.1.4 Technology

The instrument can be wholly analogue or partly analogue and partly digital.

The excitation can be single frequency, multifrequency, swept frequency or pulsed.

The instrument can be single or multichannel.

The instrument settings can be manual, remote controlled, stored or preset.

The instrument shall have component outputs and can be with or without a self-contained display.

4.1.5 Physical presentation

The instrument can be portable, cased or rack mounted, with the component parts integrated or modular.

The weight and size shall be specified for the instrument and its accessories.

The plugs and sockets shall be specified regarding type and pin interconnections.

The instrument model number and the serial number shall be clearly readable and located in a readily accessible place.

4.1.6 Environmental effects

The warm-up time necessary for the instrument to reach stable operating conditions within specified limits shall be stated.

The temperature, humidity and vibration ranges for normal use, storage and transport shall be specified for the instrument and its accessories.

The instrument shall conform to relevant electromagnetic compatibility (EMC) regulations.

4.2 Electrical characteristics**4.2.1 General**

The electrical characteristics of an instrument shall be evaluated after the warm-up time has elapsed.

The electrical characteristics are only valid for the stated operating conditions.

When relevant, the stability of the specified values with time, for specified environmental conditions, shall be stated.