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Non-destructive testing - Thermographic testing - Active thermography

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 17119:2018 sisaldab Euroopa standardi EN 17119:2018 ingliskeelset teksti.	This Estonian standard EVS-EN 17119:2018 consists of the English text of the European standard EN 17119:2018.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
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EUROPEAN STANDARD

EN 17119

NORME EUROPÉENNE

EUROPÄISCHE NORM

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English Version

Non-destructive testing - Thermographic testing - Active thermography

Essais non destructifs - Analyse thermographique -
Thermographie active

Zerstörungsfreie Prüfung - Thermografische Prüfung -
Aktive Thermografie

This European Standard was approved by CEN on 20 April 2018.

CEN 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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

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European foreword

This document (EN 17119:2018) has been prepared by 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 February 2019, and conflicting national standards shall be withdrawn at the latest by February 2019.

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

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This document defines the procedures for non-destructive testing using active thermography.

These testing procedures can be applied to different materials (e.g. composites, metals and coatings) and are appointed, but not limited to the:

- detection of discontinuities (e.g. voids, cracks, inclusions, delaminations);
- determination of layer or part thicknesses;
- determination and comparison of thermophysical properties.

This standard is describing data acquisition and analysis principles for active thermography and is giving an informative guideline for appropriate selection of the excitation source. Acceptance criteria are not defined in this standard.

Active thermography is applied in industrial production (e.g. compound materials, vehicle parts, engine parts, power plant parts, joining technology, electronic devices) and in maintenance and repair (e.g. aerospace, power plants, civil engineering).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 16714-1, *Non-destructive testing - Thermographic testing - Part 1: General principles*

EN 16714-2, *Non-destructive testing - Thermographic testing - Part 2: Equipment*

EN 16714-3, *Non-destructive testing - Thermographic testing - Part 3: Terms and definitions*

EN 15042-2:2006, *Thickness measurement of coatings and characterization of surfaces with surface waves - Part 2: Guide to the thickness measurement of coatings by photothermic method*

CEN/TR 14748, *Non-destructive testing - Methodology for qualification of non-destructive tests*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 16714-3, EN 15042-2:2006 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1

amplitude image

image of the spatial distribution of the amount of radiation emitted by the body at a frequency f

3.2

derivative image

image of the spatial distribution of the first or higher order temporal derivative of the temperature response to excitation