

Non-destructive testing - Thermographic testing -
Active thermography with laser excitation

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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English Version

Non-destructive testing - Thermographic testing - Active thermography with laser excitation

Essais non destructifs - Analyse thermographique -
Thermographie active avec excitation laser

Zerstörungsfreie Prüfung - Thermografische Prüfung -
Aktive Thermografie mit Laser-Anregung

This European Standard was approved by CEN on 20 April 2022.

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European foreword

This document (EN 17501:2022) 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of an identical text or by endorsement, at the latest by December 2022, and conflicting national standards shall be withdrawn at the latest by December 2022.

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1 Scope

This document specifies a method and establishes guidelines for non-destructive testing using active thermography with laser excitation.

Active thermography with laser excitation is mainly applicable, but not limited, to different materials (e.g. composites, metals, ceramics) and to:

- the detection of surface-breaking discontinuities, particularly cracks;
- the detection of discontinuities located just below the surface or below coatings with an efficiency that diminishes rapidly with a few mm depth;
- the detection of disbonds and delamination parallel to the examined surface;
- the measurement of thermal material properties, like thermal diffusivity;
- the measurement of coating thickness.

The requirements for the equipment, for the verification of the system, for the surface condition of the test object, for the scanning conditions, for the recording, the processing and the interpretation of the results are specified. This document does not apply to the definition of acceptance criteria.

Active thermography with laser excitation can be applied in industrial production as well as in maintenance and repair (vehicle parts, engine parts, power plant, aerospace, etc.).

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 12464-1, *Light and lighting - Lighting of work places - Part 1: Indoor work places*

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 17119, *Non-destructive testing - Thermographic testing - Active thermography*

EN ISO 9712, *Non-destructive testing - Qualification and certification of NDT personnel (ISO 9712)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 16714-3 and EN 17119 and the following apply.

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

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