

ICS 19.100

English Version

Non-destructive testing - Lighting in penetrant and magnetic particle testing, good practice

Essais non destructifs - Bonnes pratiques d'éclairage
lors des contrôles par ressuage et par magnétoscopie

Zerstörungsfreie Prüfung - Beleuchtung in Eindring-
und Magnetpulverprüfung, bewährte Verfahren

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European foreword

This document (CEN/TR 17108:2017) has been prepared by Technical Committee CEN/TC 138 “Non-destructive testing”, the secretariat of which is held by AFNOR.

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.

1 Scope

This Technical Report describes the good practices of lighting under UV-A radiation and in white light as used for penetrant testing (PT) and magnetic particle testing (MT) for improved probability of detection (POD).

This informative document deals with the irradiance and the illuminance used in PT and MT. It is intended for:

- manufacturers, who are encouraged to supply the criteria and the restrictions on use of their products, as well as detailed characteristics for the appropriate choice and the optimum use of sources available on the market;
- users, to enable them to make the best use of lighting sources for efficient inspection in working conditions;
- supervision and training personnel, who may design and optimally arrange inspection areas, recommend the principles of visual ergonomics for ensuring inspector efficiency, comfort and safety.

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.

EN 170, *Personal eye-protection — Ultraviolet filters — Transmittance requirements and recommended use*

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

CEN/TR 16638, *Non-destructive testing — Penetrant and magnetic particle testing using blue light*

EN 62471, *Photobiological safety of lamps and lamp systems (IEC 62471)*

EN ISO 12706, *Non-destructive testing — Penetrant testing — Vocabulary (ISO 12706)*

EN ISO 12707, *Non-destructive testing — Magnetic particle testing — Vocabulary (ISO 12707)*

ISO/CIE 19476 (CIE S 023/E), *Characterization of the performance of illuminance meters and luminance meters*

3 Terms and definitions

For the purpose of this document, the terms and definitions given in EN ISO 12706, EN ISO 12707 and the following apply.

3.1
centroid wavelength
mathematically weighted mean output wavelength sharing in two equal parts the spectrum emitted by a source