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Non-destructive testing — Radiation methods for computed tomography —

Part 2: Principles, equipment and samples

Essais non destructifs — Méthodes par rayonnements pour la tomographie informatisée —

Partie 2: Principes, équipements et échantillons

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Foreword

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This document was prepared by Technical Committee ISO/TC 135, *Non-destructive testing*, Subcommittee SC 5, *Radiographic testing*., in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 138, *Non-destructive testing,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 15708-2:2017), which has been technically revised.

The main changes are as follows:

— addition of normative references;

— correction of the vacuum level for activating the turbo pump in A.1.1;

— addition of photon counting as an example under semiconductors in A.2.3;

— editorial changes.

A list of all parts in the ISO 15708 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Non-destructive testing — Radiation methods for computed tomography —

Part 2: Principles, equipment and samples

1 Scope

This document specifies the general principles of X-ray computed tomography (CT), the equipment used and basic considerations of sample, materials and geometry.

This document is applicable only to industrial imaging (i.e. non-medical applications) and provides a consistent set of definitions of CT performance parameters, including the relationship between these performance parameters and CT system specifications.

This document is applicable to industrial computed tomography.

This document does not apply to other techniques of tomography, such as translational tomography and tomosynthesis.

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.

ISO 15708-1, *Non-destructive testing — Radiation methods for computed tomography — Part 1: Terminology*

ISO 15708-3, *Non-destructive testing — Radiation methods for computed tomography — Part 3: Operation and interpretation*

ISO 15708-4, *Non-destructive testing — Radiation methods for computed tomography — Part 4: Qualification*

ISO 9712, *Non-destructive testing — Qualification and certification of NDT personnel*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 15708-1 apply.

ISO and IEC maintain terminology 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/

4 General principles

4.1 Basic principles

Computed tomography (CT) is a radiographic inspection method which delivers three-dimensional information on an object from a number of radiographic projections either over cross-sectional planes (CT

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