



**NATIONAL STANDARD OF THE  
PEOPLE'S REPUBLIC OF CHINA**

**GB/T 21355-2022**

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**Non-destructive testing - Industrial computed radiography with  
storage phosphor imaging plates - Classification of systems**

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### foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1. Structure and Drafting Rules of Standardization Documents"

drafted.

This document replaces GB/T 21355-2008 "Classification of Computerized Radiography Systems for Nondestructive Testing". Compatible with GB/T 21355-2008

In addition to structural adjustments and editorial changes, the main technical changes are as follows.

- a) changed the scope (see Chapter 1, Chapter 1 of the.2008 edition);
- b) Added some terms and definitions (see Chapter 3);
- c) personnel qualifications have been added (see Chapter 4);
- d) Deleted "opinions and uses" and "devices" (see Chapters 4 and 5 of the.2008 edition);
- e) Added "CR Quality Indicator" (see Chapter 5);
- f) Changed contrast sensitivity measurement, MTF method and convergent line-to-image quality measurement method to measure unsharpness and other specific test methods Law (see Chapter 6, Chapter 6 of the.2008 edition);
- g) increase the basic spatial resolution measurement of the system and the relationship between ISO sensitivity and system classification (see Chapter 7);
- h) Added informative appendix "CR Module Example" (see Appendix B).

This document is identical to ISO 16371-1.2011 "Non-Destructive Testing Industrial Computed Radiographic Testing Based on Storage Phosphorescent Imaging Plates" Part 1. Systematic Classification".

The following minimal editorial changes have been made to this document.

--- In order to harmonize with existing standards, the name of the standard was changed to "Non-destructive testing of industrial computerized radiography based on storage phosphorescent imaging plates.

Classification of Detection Systems.

Please note that some content of this document may be patented. The issuing agency of this document assumes no responsibility for identifying patents.

## 1 Scope

This document specifies the basic performance parameters of a computerized radiography system in order to obtain test results that meet the requirements in an economical and repeatable manner.

fruit. The technique is based on testing basic theory and experimental measurements. This document specifies the performance of a computed radiography (CR) system and

Corresponding performance parameter measurements of system scanners and storage phosphorimaging plates (IPs). This document establishes the relationship between computed radiography systems and industrial radiography.

Classification of metal screens for radiography to ensure the quality of the image (image quality is affected by the scanner-IP system) in accordance with ISO 16371-2

Require. This document relates to the requirements for film radiographic techniques specified in ISO 11699-1.

This document defines test methods for systems of different levels, and specifies more complex measurement tests to accurately determine system performance parameters.

Book

The file is suitable for classifying systems from different vendors, enabling users to obtain data that is horizontally comparable across devices. These tests are designated as manufacturing

Commercial tests, some of which require special equipment that is not normally available in the user's laboratory. Therefore, this document also provides

Relatively simple user test to quickly test the quality and long-term stability of a CR system.

Factors affecting CR image quality include geometric unsharpness, signal-to-noise ratio (SNR), scatter ratio, and contrast sensitivity. other factors

(e.g. scan parameters) affect the precise reading of the image on the exposed IP by the laser scanner.

This document describes the manufacturer's test method for the most accurate determination of system quality elements. To ensure quality in use, this document describes

the

Individual test methods recommended by actual users. These tests can be carried out individually or using the CR module test (see Appendix B). CR

The module contains many basic quality assessment methods and functional verification of correct CR systems, including scanners reading exposed IP information and correct

Erase IP residual information for subsequent use.

The classification of the CR system established in this document does not refer to imaging plates from any given manufacturer. CR system classification by the specific imaging plate used

and exposure conditions (explicit all exposure conditions), scanner type and scanning parameters are comprehensively determined.

## 2 Normative references

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, dated citations

documents, only the version corresponding to that date applies to this document; for undated references, the latest edition (including all amendments) applies to this document.

ISO 11699-1 Non-destructive testing of industrial radiographic films - Part 1. Classification of industrial radiographic film systems (Non-destructive radiography)

Note. GB/T 19348.1-2014 Non-destructive testing of industrial radiographic films - Part 1. Classification of industrial radiographic film systems (ISO 11669-1:2008, MOD)

ISO 19232-5 Non-destructive testing - Radiographic testing of image quality - Part 5. Determination of image unsharpness with twin-wire IQI

Note. GB/T 23901.5-2019 Non-destructive testing radiographic testing image quality-Part 5. Determination of image unsharpness with double-wire image quality meter (ISO 19232-5:2018, IDT)

## 3 Terms and Definitions

The following terms and definitions apply to this document.