



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

**GB/T 12604.12-2021**

---

**Non-destructive testing - Terminology - Part 12: Radiation  
methods for industrial computed tomography**

**Issued on: December 31, 2021**

**Implemented on: July 1, 2022**

---

**Issued by: State Administration for Market Regulation, China National  
Standardization Administration**

## Table of Contents

foreword

2017 chapter number comparison list:

Introduction

1 Scope

2 Normative references

3 Terms and Definitions

### 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 is part 12 of GB/T 12604 "Nondestructive Testing Terminology": GB/T 12604 has released the following parts:

- GB/T 12604:1 Nondestructive testing term ultrasonic testing;
- GB/T 12604:2 Non-destructive testing term radiographic testing;
- GB/T 12604:3 Non-destructive testing terminology penetrant testing;
- GB/T 12604:4 Nondestructive testing term acoustic emission testing;
- GB/T 12604:5 Non-destructive testing term magnetic particle testing;
- GB/T 12604:6 Non-destructive testing term eddy current testing;
- GB/T 12604:7 Non-destructive testing term leak detection;
- GB/T 12604:8 Non-destructive testing term neutron testing;
- GB/T 12604:9 Non-destructive testing term infrared thermal imaging;
- GB/T 12604:10 Non-destructive testing term magnetic memory testing;
- GB/T 12604:11 Non-destructive testing term X-ray digital imaging testing;
- GB/T 12604:12 Non-destructive testing terminology Part 12: Industrial ray computed tomography testing;

This document replaces GB/T 34365-2017 "Non-destructive testing terminology industrial computer tomography (CT) testing", and

Compared with GB/T 34365-2017, in addition to structural adjustment and editorial modification, the main technical changes are as follows:

- a) Some terms are deleted (see Appendix A);
- b) Added some terms (see Appendix B);
- c) Some terms have been changed (see Appendix C):

This document is modified to adopt ISO 15708-1:2017 "Non-Destructive Testing Radiographic Computed Tomography Testing - Part 1: Terminology":

Compared with ISO 15708-1:2017, this document has more structural adjustments: Appendix D gives this document and ISO 15708-1:

### **2017 chapter number comparison list:**

Compared with ISO 15708-1:2017, this document has many technical differences: In the outer margins of the clauses involved, vertical

The straight single line ( ) is marked: See Appendix E for a list of these technical differences and their reasons: Increased compared to ISO 15708-1:2017

terms, see Appendix F:

The following editorial changes have been made to this document:

- Changed the standard name to be consistent with the existing series of standards;
- Added informative Appendix A~Appendix F;
- Added index for ease of use:

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

## **Introduction**

Non-destructive testing technology is an indispensable tool for human industrialization and social development, and it is also an important tool for product quality control and ensuring the safety of equipment and facilities:

The main means of full operation, it also provides feedback on the production process: Nondestructive testing utilizes the properties of heat, force, sound, light, electricity and magnetism of matter,

Detect, locate and measure defects or anomalies in materials and components, evaluate their performance,

organization and integrity: The application of non-destructive testing covers machinery

manufacturing, chemical industry, medicine and medical treatment, energy, transportation, metallurgy, construction, water conservancy, marine engineering

Engineering, weapons, aviation, aerospace, nuclear industry, hygienic food, smuggling and anti-terrorism and public safety and other fields:

There are many methods and techniques of non-destructive testing, which are widely used: A common term that establishes the basis for various methods and techniques of nondestructive testing, is

The primary task of various non-destructive testing standardization organizations at home and abroad to carry out non-destructive testing standardization activities: GB/T 12604 "Non-destructive testing technique

"Language" is the basic and general standard to guide the standardization activities of non-destructive testing in my country: GB/T 12604 "Nondestructive Testing Terminology" aims to establish

A term generally applied to a standardization document for non-destructive testing, consisting of twelve parts:

- GB/T 12604:1 Nondestructive testing term ultrasonic testing;
- GB/T 12604:2 Non-destructive testing term radiographic testing;
- GB/T 12604:3 Non-destructive testing terminology penetrant testing;
- GB/T 12604:4 Nondestructive testing term acoustic emission testing;
- GB/T 12604:5 Non-destructive testing term magnetic particle testing;
- GB/T 12604:6 Non-destructive testing term eddy current testing;
- GB/T 12604:7 Non-destructive testing term leak detection;
- GB/T 12604:8 Non-destructive testing term neutron testing;
- GB/T 12604:9 Non-destructive testing term infrared thermal imaging;
- GB/T 12604:10 Non-destructive testing term magnetic memory testing;
- GB/T 12604:11 Non-destructive testing term X-ray digital imaging testing;
- GB/T 12604:12 Non-destructive testing terminology Part 12: Industrial ray computed tomography testing:

This document is part 12 of GB/T 12604, which defines the terminology of industrial radiography computed tomography (CT): this time

Revise GB/T 34365-2017 and incorporate it into the GB/T 12604 terminology document system, clarify commonly used terms and definitions, and

There is a basis for formulating industrial CT inspection methods and product documents, so as to give full play to the basic and general support function of terminology documents, and to better promote

NDT trade, exchange and technical cooperation:

NDT terminology

Part 12: Industrial X-ray Computed Tomography Inspection

## 1 Scope

This document defines the terminology used in industrial radiographic computed tomography (CT) inspection: The terminology provided in this document applies to CT examinations:

and other radiation imaging related fields:

## 2 Normative references

There are no normative references in this document:

## 3 Terms and Definitions

3:1

absorption

photoelectric absorption

The interaction between photons and matter, incident photons are absorbed by atoms of matter, and electrons are emitted:

NOTE: See Compton Scattering (3:6):

3:2

angular increment

Angular separation between adjacent CT projections (3:15):

3:3

artefact; artifact

The image information that appears on the CT image (3:13) does not match the physical characteristics of the measured object:

3:4

beam hardening