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

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**Non-destructive testing - Terminology - Part 13: Ultrasonic
testing with arrays**

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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 for Standardization Documents"

drafting:

This document is part 13 of GB/T 12604 "Terms for Nondestructive Testing": GB/T 12604 has issued the following parts:

- 12604:1 Non-destructive testing term ultrasonic testing;
- 12604:2 Non-destructive testing term radiographic testing;
- 12604:3 non-destructive testing term penetration testing;
- 12604:4 Non-destructive testing term acoustic emission testing;
- 12604:5 Non-destructive testing terminology Magnetic particle testing;
- 12604:6 Non-destructive testing term eddy current testing;
- 12604:7 non-destructive testing term leak detection;
- 12604:8 Non-destructive testing term neutron testing;
- 12604:9 Non-destructive testing term infrared thermal imaging;
- 12604:10 Non-destructive testing terminology Part 10: Magnetic memory testing;
- 12604:11 Non-destructive testing term X-ray digital imaging test;
- 12604:12 Non-destructive testing terminology Part 12: industrial ray computer tomography testing;
- 12604:13 Nondestructive Testing Terminology Part 13: Array Ultrasonic Testing;

This document is equivalent to ISO 23243:2020 "Non-destructive testing array ultrasonic testing terminology":

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

--- Changed the name of the standard to be consistent with the existing series of standards;

---Increase the index for ease of use:

Please note that some contents of this document may refer to patents: The issuing agency of this document assumes no responsibility for identifying patents:

Introduction

Non-destructive testing technology is an indispensable and important tool for human industrialization and social development:

It is the main means of full operation, and it also provides feedback to the production process: Non-destructive testing utilizes the properties of heat, force, sound, light, electricity and magnetism of materials

Detect, locate and measure defects or anomalies in materials and components in a manner that does not impair intended performance and reliability, and evaluate their performance

capacity, organization and integrity: The application of non-destructive testing covers machinery manufacturing, chemical industry, medicine and medical treatment, energy, transportation, metallurgy, construction, water conservancy, ocean

Engineering, weapons, aviation, aerospace, nuclear industry, health food, anti-smuggling and anti-terrorism, and public security:

There are many methods and techniques of non-destructive testing, and they are widely used: The general term that establishes the basis for the 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 universal 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 applicable to non-destructive testing standardization documents, consisting of thirteen parts:

---12604:1 Non-destructive testing term ultrasonic testing: The purpose is to define the terminology of ultrasonic testing:

---12604:2 Non-destructive testing term radiographic testing: The purpose is to define the terminology of radiographic examination:

---12604:3 Non-destructive testing term penetration testing: The purpose is to define the terminology of penetration testing:

---12604:4 Non-destructive testing term acoustic emission testing: The purpose is to define the terminology of acoustic emission detection:

---12604:5 Non-destructive testing terminology Magnetic particle testing: The purpose is to define the terminology of magnetic particle inspection:

---12604:6 Non-destructive testing term eddy current testing: The purpose is to define the terminology of eddy current testing:

---12604:7 Non-destructive testing term leak detection: The purpose is to define the terminology of leak detection:

---12604:8 Non-destructive testing term neutron testing: The purpose is to define the terminology of neutron detection:

---12604:9 Non-destructive testing term infrared thermal imaging: The purpose is to define the terminology of infrared thermography:

--- 12604:10 Non-destructive testing terminology Part 10: Magnetic memory testing: The purpose is to define the terminology of magnetic memory detection:

---12604:11 Non-destructive testing term X-ray digital imaging test: The purpose is to define the X-ray digital imaging detection

the term:

--- 12604:12 Non-destructive testing terminology Part 12: Industrial ray computer tomography testing: The purpose is to define the industry

A term for ray computed tomography detection:

--- 12604:13 Nondestructive Testing Terminology Part 13: Array Ultrasonic Testing: The purpose is to define the

the term:

This document is the 13th part of GB/T 12604, which discusses phased array technology and

Defined using the terminology of the signal processing technique of the array: This formulation of GB/T 12604:13 focuses on

In order to connect the international standards of testing terminology, clarify the commonly used terms and definitions of array ultrasonic testing, when formulating array ultrasonic

testing methods and product documents

There is evidence to rely on, so as to play the basic and general supporting function of the terminology file, and better promote the trade, communication and technical cooperation of non-destructive testing:

Nondestructive Testing Terminology

Part 13: Ultrasonic testing of arrays

1 Scope

This document defines the terminology for array ultrasound testing: The terminology provided in this document applies to phased array technology and signal processing using arrays

Techniques such as full matrix acquisition (FMC) (3:3:1:28) and total focusing technique (TFM) (3:3:1:35):

2 Normative references

This document has no normative references:

3 Terms and Definitions

The terminology databases used in the standardization work maintained by ISO and IEC can be found at the following URLs:

---ISO online browsing platform: <http://www.iso.org/obp>;

3:1 Terms related to "sound"

3:1:1

main lobe mainlobe

main sound beam mainbeam

A beam of sound in the expected direction in which the sound pressure is usually highest in the sound field:

NOTE: Applicable to conventional probes and array probes (3:2:1:3):

3:1:2

sidelobe sidelobe

part of the sound field in the direction away from the main lobe (3:1:1) corresponding to a local maximum of the sound pressure in the far field, usually of lower amplitude:

NOTE: Applicable to conventional probes and array probes (3:2:1:3):