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

GB/T 39240-2020

Non-destructive testing. Ultrasonic testing. General principles

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Table of Contents

1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Personnel qualification and certification	1
5 Information needed before testing	2
6 Principles of Ultrasonic Testing	2
7 Device	3
8 Setting	4
9 Test preparation	5
10 Detection	6
11 Lack of features	6
12 Process regulations	7
13 Test report	7

Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard uses the redrafting method to amend and adopt ISO 16810.2012 "General Principles of Nondestructive Testing Ultrasonic Testing."

The technical differences between this standard and ISO 16810.2012 and the reasons are as follows.

--- Regarding normative reference documents, this standard has made adjustments with technical differences to adapt to my country's technical conditions and adjustments.

The situation is collectively reflected in Chapter 2 "Normative Reference Documents", and the specific adjustments are as follows.

* Replace ISO 9712 with GB/T 9445 which is equivalent to the international standard (see Chapter 4);

* Replace ISO 2400 (see 7.4) with GB/T 19799.1 which is equivalent to the international standard;

* Replace ISO 7963 (see 7.4) with GB/T 19799.2 which is equivalent to the international standard;

- * Replace ISO 16811 (see 6.4, 7.3, 7.5, 8.3, 9.1, 9.3, 11.1) with GB/T 39242 modified to adopt international standards;
 - * Replace ISO 16823 (see 6.3) with GB/T 39241 modified to adopt international standards;
 - * Added GB/T 12604.1 and GB/T 20737 (see Chapter 3).
- Added terms and definitions (see Chapter 3).

This standard was proposed and managed by the National Standardization Technical Committee for Nondestructive Testing (SAC/TC56).

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1 Scope

This standard specifies the general requirements for ultrasonic testing of industrial products capable of transmitting ultrasound.

This standard applies to ultrasonic testing under the minimum requirements. The application of ultrasonic testing is related to the type of the inspected part. For specific requirements, see the corresponding

Product standards, specifications, contract documents and inspection process regulations.

This standard does not apply to the determination of detection areas, scanning methods and acceptance criteria.

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this document.

For undated references, the latest version (including all amendments) applies to this document.

GB/T 9445 Non-destructive testing personnel qualification and certification (GB/T 9445-2015, ISO 9712:2012, IDT)

GB/T 12604.1 Non-destructive testing term Ultrasonic testing (GB/T 12604.1-2005, ISO 5577:2000, IDT)

GB/T 19799.1 Non-destructive testing Ultrasonic testing No. 1 calibration test block (GB/T 19799.1-2015, ISO 2400.2012, IDT)

GB/T 19799.2 Non-destructive testing Ultrasonic testing No. 2 calibration test block (GB/T 19799.2-2012, ISO 7963..2006, IDT)

GB/T 20737 Non-destructive testing general terms and definitions (GB/T 20737-2006, ISO /T S18173.2005, IDT)

GB/T 39241 Non-destructive testing Ultrasonic testing penetration technology (GB/T 39241-2020, ISO 16823.2012, MOD)

GB/T 39242 Non-destructive testing ultrasonic testing sensitivity and range setting (GB/T 39242-2020, ISO 16811.2012, MOD)

EN12668-1 Non-destructive testing. Performance and inspection of ultrasonic testing equipment. Part 1.Instruments

EN12668-2 Non-destructive testing. Performance and inspection of ultrasonic testing equipment. Part 2.Probes

EN12668-3 Non-destructive testing. Performance and inspection of ultrasonic testing equipment. Part 3.Combined equipment

3 Terms and definitions

The terms and definitions defined in GB/T 12604.1 and GB/T 20737 apply to this document.

4 Personnel qualification and certification

Personnel who perform ultrasonic testing according to this standard shall be qualified and certified according to GB/T 9445 or after the consent of all parties, and obtain ultrasonic testing

Test the qualification certificates of relevant industrial categories, and conduct job training and authorization by the employer or its agent.