



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

GB/T 40332-2021

**Non-destructive testing - Ultrasonic testing - Characterization
and verification of ultrasonic thickness measuring equipment**

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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"

Drafting.

This document uses the translation method equivalent to ISO 16831.2012 "Non-destructive testing, ultrasonic testing, ultrasonic thickness gauge performance characteristics and testing

method".

The Chinese documents that have consistent correspondence with the normatively cited international documents in this document are as follows.

---GB/T 12604.1-2020 Non-destructive testing term Ultrasonic testing (ISO 5577.2017, MOD).

1 Scope

This document specifies the test methods and acceptance criteria for the performance of pulse-echo ultrasonic thickness gauges.

This document is applicable to digital direct-reading and ultrasonic thickness gauges with A-scan waveform display, including measurement using single probes and dual crystal

probes.

This document can be used to test the performance of the instruments covered by EN12668 when used for thickness measurement.

2 Normative references

The contents of the following documents constitute the indispensable clauses of this document through normative references in the text. Among them, dated quotations

Only the version corresponding to that date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to

This document.

ISO 5577 Non-destructive testing Ultrasonic testing terms (Non-destructive testing-Ultrasonic testing-Vocabulary)

EN1330-4 Non-destructive testing terminology Part 4.Ultrasonic testing terminology (Non-destructive testing-Terminology-

Part 4.Termsusedinultrasonic testing)

EN10025-2 Hot-rolled products of structural steel Part 2.Technical delivery conditions of non-alloy structural steel (Hotrolledproducts

ofstructuralsteels-Part 2.Technicaldeliveryconditionsfor non-alloy structural steels)

EN12668-2 Non-destructive testing Ultrasonic testing equipment performance and inspection Part 2.Probe (Non-destructive testing-

Characterizationandverificationofultrasonicexaminationequipment-Part 2.Probes)

3 Terms and definitions

The terms and definitions defined by ISO 5577 and EN1330-4 apply to this document.

4 General requirements

The ultrasonic thickness gauge complies with this document when all the following conditions are met.

- a) Ultrasonic instruments and probes meet the technical requirements of this document;
- b) A declaration of conformity issued by an organization certified by ISO 9001, or by a conformity with ISO /IEC 17050-1, ISO /IEC 17050-2

A certificate issued by an institution or a test report issued by an institution with internal calibration capabilities;

- c) Clearly mark the manufacturer, type, model and serial number on the ultrasonic thickness gauge and probe;
- d) Provide user manuals for special types and series of ultrasonic thickness gauges;
- e) Special types and series of ultrasonic thickness gauges have technical parameters that meet the performance of this document.

Note. The manufacturer's technical parameters themselves cannot constitute the measured values required in b).

5.1 Overview

The technical specifications provided by the manufacturer of the ultrasonic thickness gauge shall include at least the relevant provisions of 5.2 to 5.5, and shall be in accordance with the test methods specified in Chapter 7.