

ICS 19.100
CCS J 04



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

GB/T 23908-2009

**Non-destructive testing -- Practice for ultrasonic pulse-echo
straight-beam testing by the contact method**

无损检测 接触式超声脉冲回波直射检测方法

(English Translation)

Issued on: May 26, 2009

Implemented on: December 1, 2009

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China**

Table of Contents

- Foreword
- 1 Scope
- 2 Normative reference documents
- 3 Terms and definitions
- 4 Overview
 - 4.1 Institutional requirements
 - 4.2 Personnel Qualification
 - 4.3 Detection content
 - 4.4 Detection timing
 - 4.5 Assessment criteria
- 5 Meaning and use

Foreword

This standard is modified using ASTM E114-95 (2001) "Contact ultrasonic pulse echo direct detection method" (English version).

This standard is redrafted according to ASTM E114-95.

Taking into account our national conditions, in the use of ASTM E114-95, the standard made some changes. The technical differences are as follows.

- the normative reference document ASTM E543 to our standard GB/T 5616;
- Standardized reference documents SNT-TC-1A, ANSI/ASNTCP-189, NAS-410 to China's standard GB/T 9445;
- the normative reference document ASTM E1316 to our standard GB/T 12604.1 and GB/T 20737;
- the normative reference document ASTM E317 to our standard JB/T 9214;
- Remove ASTM E114-95 of 1.3, 1.4, Table 1 and Chapter 12.

For ease of use, this standard has also made the following editorial changes.

The word "this method" is changed to "this standard";

- replace the value of the imperial unit with the value of the international unit system;
- insert the lead in GB/T 1.1-2000 in Chapter 2;

--- According to the format requirements specified in GB/T 1.1-2000, refer to Chapter 1, Chapter 2, Chapter 4, Chapter 6, Chapter 9, Chapter 10 and Some of the bars in Chapter 11 are modified.

This standard is proposed by the National Committee for the Standardization of Non-destructive Testing (SAC/TC56).

The drafting of this standard. Shanghai Suzhou US Kodak Detection Equipment Co., Ltd., Shanghai Materials Research Institute, Shanghai Engineering Materials Application Evaluation Key Laboratory, Changzhou Ultrasonic Electronics Co., Ltd., Shandong Jining Mold Factory, Shanghai Shangmu Electromagnetic Equipment Co., Ltd., Shanghai Pan Asia Nondestructive Testing Technology Co., Ltd., Shanghai Shangmu Engineering Materials Testing Co., Ltd., VESTAS Wind Technology (China) Co., Ltd. Shanghai Branch.

1 Scope

This standard specifies the probe and the test material in direct contact with the direct probe longitudinal wave pulse reflection ultrasonic detection method.

This standard applies to the development of testing procedures.

2 Normative reference documents

The terms of the following documents are hereby incorporated by reference into this standard. Whichever is the date of the reference file, which is followed by all (Excluding corrigenda) or revisions do not apply to this standard, however, encourage the parties to reach an agreement under this standard Whether you can use the latest version of these files. For undated references, the latest edition applies to this standard.

GB/T 5616 Guidelines for non - destructive testing GB/T 9445 non-destructive testing personnel qualification and certification (GB/T 9445-2008, ISO 9712.:2005, IDT) GB/T 12604.1 Non-destructive testing Terminology Ultrasonic testing (GB/T 12604.1-2005, ISO 5577.:2000, Non-destructivetesting-Ultrasonicsinspection-Vocabulary, IDT) GB/T 20737 Non-destructive testing - General terms and definitions (GB/T 20737-2006, ISO/T S18173..2005, IDT) Test Method for Performance Test of JB/T 9214 Type A Pulse Reflective Ultrasonic Flaw Detection System

3 Terms and definitions

The terms and definitions established in GB/T 12604.1 and GB/T 20737 apply to this standard.

4.1 Institutional requirements

The institutions or units that carry out the inspection according to this standard shall comply with the relevant requirements of GB/T 5616 or equivalent standards and regulations.

4.2 Personnel Qualification

The personnel who carry out the inspection according to this standard shall be qualified and certified according to the system agreed by GB/T 9445 or the parties to the contract, the principal or his agent conducts professional training and operational authorization.

4.3 Detection content

The contents of the test should be clearly defined in the parties' agreement.

4.4 Detection timing

The timing of the inspection should be clearly defined in the agreement between the parties.

4.5 Assessment criteria

The criteria for assessing the acceptance of ultrasonic signals and workpieces should be clearly defined in the parties' agreements.

5 Meaning and use

5.1

A series of electrical pulses are applied to the piezoelectric wafer (transducer) to convert the mechanical energy in the form of a nominal frequency pulse wave. Transducer is fixed in a housing so that the wave can enter the material through a suitable wear-resistant protective film and coupling agent. Transducers, housings, wear films and electricity Gas connector, etc. to form a probe.