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

GB/T 23912-2009

**Non-destructive testing -- Practice for immersed ultrasonic
testing by the reflection method using pulsed longitudinal
waves**

无损检测 液浸式超声纵波脉冲反射检测方法
(English Translation)

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Foreword

This revised standard adopts ASTM E214-01 "immersed ultrasonic pulse longitudinal wave reflection detection method" (in English).

This standard redrafted according to ASTM E214-01.

Taking into account China's national conditions, when using ASTM E214-01, we made some changes in this standard. About the technical differences are as follows.

- Increase Normative references GB/T 5616;
 - The Normative references ANST SNT-TC-1A, ASNT CP-189, NAS-410, MIL-STD-410 to our standard Quasi GB/T 9445;
 - The Normative references ASTM E1316 to our standard GB/T 12604.1 and GB/T 20737;
 - The Normative references ASTM E127 and ASTM E428 instead of the standard GB/T 23905;
 - Delete references to normative documents ASTM E1001;
 - Increased institutional requirements (see 4.3);
 - Remove ASTM E214-01 of 1.2, 10.2, 10.3 and Chapter 11.
- For ease of use, this standard also made the following editorial changes.
- "The method" be replaced by "this standard";
 - Insert GB/T 1.1-2000 specified key words in Chapter 2;

--- According to GB/T 1.1-2000 format specified requirements of Chapter 1, Chapter 2, Section 5, Chapter 7, Chapter 8, and Chapter 9 Article 10 in Chapter part number has been modified.

The standard non-destructive testing by the National Standardization Technical Committee (SAC/TC56) and focal points.

This standard was drafted. Shanghai Suzhou US detection equipment Kodak Co., Shanghai Research Institute of Materials, Shanghai Engineering Materials Evaluation Laboratory, Changzhou ultrasound Electronics Co., Ltd., Shandong Jining Mould Factory, Shanghai on wood electromagnetic Equipment Co., Ltd., Shanghai Pan Asia NDT Technology Co., Ltd., Shanghai on material Engineering Materials Testing Limited, VESTAS Wind Technology (China) Co., Ltd. Shanghai Branch.

1 Scope

This standard specifies the use of transmitting and receiving ultrasonic pulse longitudinal wave instrument, and using liquid as a coupling agent, and immersion or by spraying liquid Technology to detect material discontinuities ultrasonic testing method.

This standard applies to the conduction in an appropriate frequency sound waves, but also immersed in the liquid coupling agent is detected in the material, or can probe and the subject by controlling the coupling between the material to detect the liquid column or liquid materials.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 5616 NDT Applications Guide GB/T 9445 NDT personnel qualification and certification (GB/T 9445-2008, ISO 9712:2005, IDT) GB/T 12604.1 Terminology for nondestructive testing 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) GB/T 23905 NDT ultrasonic testing with test block

3 Terms and Definitions

Terms and definitions GB/T 12604.1 and GB/T 20737 apply to this standard established.

4.1 Qualification

Staff by implementation of this standard test, should be GB/T 9445 or contractual parties agreed system for Qualification and certification by the employer Master or agent job professional training and authorization to operate.

4.2 Written procedures testing process

Ultrasonic testing according to the standard implementation, should prepare detailed written testing process procedure (see GB/T 5616). Written procedures should be testing process this standard contains various elements, in order to ensure consistency and the detection result of the implementation of repeatability. For written testing process procedure Code Special requests written and approved by the parties to the contract should be clear in the agreement in.

4.3 Body requested

According to the present embodiment standard testing agency or unit should be consistent with GB/T 5616 requirements or equivalent standards and regulations.

5.1 Electronic Equipment

Electronic equipment should be able to generate, receive and display the desired electrical pulse frequency and energy, and A-scan display.

Note: Other display mode, such as B-scan and C-scan, it can be used, but not covered by this standard.

In the detection site, you should use the appropriate appliance regulator, thermometer and hygrometer, to ensure stable operation of the electronic device.