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

中华人民共和国国家标准

GB/T 2970-2004

Replace GB/T 2970-1991

Thicker Steel Plates - Method for Ultrasonic Inspection

厚钢板超声波检验方法

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Foreword

This standard will replace GB/T 2970-1991 “*Medium-thick Steel Plates - Method for Ultrasonic Inspection.*”

Compared with GB/T 2970-1991, major changes of this standard are as follows:

- The applicability of this standard also includes austenitic stainless steel board;
- Thickness probe region of Macle straight beam probe enlarges from 20 mm to 60 mm;
- There are some broad predigestion for the auto-verify samples;
- Macle straight beam probe performance shall be changed;
- Request for not allowing single defect exists in the steel plate has been enhanced.

Annex A of this standard is normative.

This standard was proposed by China Iron and Steel association.

This standard is under the jurisdiction of Steel Technical Committee for Standardization of China

This standard was drafted by: Iron and Steel Research Engineering Centre and China Metallurgical Information and Standardization Research Institution.

The major drafters of this standard are: Zhang Guangchun, Zhang Jianwei, Fan Hong, Jia Huiming, Huang Ying, and Dong Li.

All previous editions issued of this standard are:

GB 2970-1982

GB/T 2970-1991

Thicker Steel Plates – Method for Ultrasonic Inspection

1. Scope

This standard specifies the contents for testing thicker steel plate-ultrasonic inspection: the contrast samples, inspection instrument, equipments condition for surveys and method, defect mensuration and evaluation, steel plate quality grade as well as survey report, etc.

This standard is applicable to ultrasonic inspection for all kinds of steel plate's usage, furnace no thicker than 6 mm, pressure vessel, bridge, construction, shipbuilding, steel structure, pipeline and mould, etc.

2. Normative References

The articles contained in the following documents have become this standard when they are quoted herein. For the dated documents so quoted, all the modifications (excluding corrections) or revisions made thereafter shall not be applicable to this Standard. For the undated documents so quoted, the latest editions shall be applicable to this Standard.

GB/T 8651 Metal Plates - Ultrasonic Test Method

GB/T 12604.1 Nondestructive Testing Terms - Ultrasonic Inspection and Measurement

JB/T 10061 A-type Pulse-echo Supersonic Flaw Detector - General Specification

JB 4730-1994 Nondestructive Testing for Pressure Vessel

3. General Requirements

3.1 The surface of the plates inspected shall be with characteristics as follows: level off, lubricity and thickness uniformity. It shall not have dripping, oily soil, corrosion, and other contamination.

3.2 Metallurgical structure of the plates inspected shall not generate interference echo that influences testing.

3.3 Test fields shall avoid field influencing supersonic flaw detector stability or reliable observational factors carried by test staff, such as glare field, high intensity field, strong vibration field, field with active gases and serious ash.

3.4 Steel plate ultrasonic inspection staff shall be trained and gain professional ultrasonic inspection level approved by authoritative department and itsabove certificates of soundness. Person who sign and issue the inspection shall obtain N-level or more of professional ultrasonic inspection approved by authoritative department.

3.5 Test methods: manual contact method, immersion method (include auto verify method of part success immersion and piezoelectricity probe or electromagnetism ultrasonic probe)

3.6 Ultrasonic wave patterns can be longitudinal wave, transverse wave and plate wave.

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