



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

GB/T 29712-2023

**Non-destructive testing of welds - Ultrasonic testing -
Acceptance levels**

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Foreword

This Document was drafted as per the rules specified in GB/T 1.1-2020 Directives for Standardization - Part 1. Rules for the Structure and Drafting of Standardizing Documents.

This Document replaced GB/T 29712-2013 Non-Destructive Testing of Welds - Ultrasonic Testing - Acceptance Levels. Compared with GB/T 29712-2013, the major technical changes of

this Documents are as follows besides the structural adjustments and editorial modifications.

- a) Change the scope (see Clause 1 of this Edition; Clause 1 of the 2013 Edition);
- b) Add terms and definitions (see Clause 3 of this Editon; Clause 3 of the 2013 Edition);
- c) Delete the provision "If otherwise specified, alternative techniques may be used to measure the display length" (see Clause 3 of the 2013 Edition);
- d) Change the expression of the adoption method of horizontal hole technology, the flat bottom hole technology, the rectangular slot technology, and the serial technology of the sensitivity setting and level (see Clause 5 of this Edition; Clause 4 of the 2013 Edition);
- e) Change the expression of the detection technology and level according to ISO 17640 in Table 1 (see 6.1 of this Edition; 5.1 of the 2013 Edition);
- f) Change the description of the provisions of Tables A.2 and A.3 (see 6.2 of this Edition;

5.2 of the 2013 Edition);

- g) Change "group display" to "discontinuous group"; and change the definition of discontinuous group (see 6.4 of this Edition; 5.4 of the 2013 Edition);
- h) Add the assessment requirements for single acceptable discontinuities exceeding the record level; change the definition of "cumulative length of single acceptable discontinuities exceeding the record level"; and change the acceptance criteria for the cumulative length of weld discontinuities (see 6.5 of this Edition; 5.5 of the 2013 Edition).

This Document equivalently adopts ISO 11666.2018 Non-Destructive Testing of Welds - Ultrasonic Testing - Acceptance Levels.

This Document made the following minimum editorial modifications.

--- Add NOTE to Clause 5.

Please note some contents of this Document may involve patents. The issuing agency of this

Document shall not assume the responsibility to identify these patents.

This Document was proposed by China Machinery Industry Federation.

This Document shall be under the jurisdiction of National Technical Committee on Welding of

Standardization Administration of China (SAC/TC 55).

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This Document was first-time published in 2013; and it was first-time revised hereby.

Non-Destructive Testing of Welds - Ultrasonic Testing -

Acceptance Levels

1 Scope

This Document specifies two ultrasonic acceptance levels known as acceptance level 2 (AL 2)

and acceptance level 3 (AL 3) for full penetration welded joints in ferritic steels, which correspond to ISO 5817:2014, quality levels B and C. An acceptance level corresponding to ISO 5817:2014, quality level D is not included in this document, as ultrasonic testing is generally not requested for this weld quality.

2 Normative References

The provisions in following documents become the essential provisions of this Document through reference in this Document. For the dated documents, only the versions with the dates

indicated are applicable to this Document; for the undated documents, only the latest version

(including all the amendments) is applicable to this Document.

ISO 5577 Non-destructive testing - Ultrasonic testing - Vocabulary

3 Terms and Definitions

For the purposes of this Document, the terms and definitions given in ISO 5577 apply.

4 Determination of Discontinuity Length

The length of a discontinuity shall be determined by measuring the distance along the length

over which the echo amplitude is above the evaluation level, using the fixed-amplitude level technique specified in Annex B.

5 Sensitivity Setting and Levels

The sensitivity setting shall be performed by one of the following techniques. For sensitivity setting and the subsequent testing, the same technique shall be used.

6 Acceptance Levels

When detection of transverse discontinuities is specified, the acceptance levels stated in 6.2

apply.

The length of a single acceptable discontinuity above recording level shall be evaluated according to the criteria in this subclause.

The cumulative length of all individually acceptable discontinuities above recording level is given as the sum of lengths of both single discontinuities and linearly aligned discontinuities of

combined length within a given section of weld length (see Figure 3).

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