



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

GB/T 3323.2-2019

**Non-destructive testing of welds -- Radiographic testing -- Part
2: X-and gamma-ray techniques with digital detectors**

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Table of Contents

Foreword...	3
1 Scope...	5
2 Normative references...	5
3 Terms and definitions...	6
4 Symbols and abbreviations...	12
5 Classification and compensation rules of radiographic testing technology.	13
6 General...	15
7 Recommended digital radiography technology...	19
8 Testing report...	43
Appendix A (Normative) Minimum image quality value...	45
Appendix B (Normative) Determination of basic spatial resolution...	50

Foreword

GB/T 3323 "Non-destructive testing of welds - Radiographic testing" is divided into the following two parts.

- Part 1.X-and gamma-ray techniques with film;
- Part 2.X-and gamma-ray techniques with digital detectors.

This part is Part 2 of GB/T 3323.

This part was drafted in accordance with the rules given in GB/T 1.1-2009.

This part uses the redrafting method to modify and adopt ISO 17636-2:2013

"Non-destructive testing of welds - Radiographic testing - Part 2.X-and gamma-ray techniques with digital detectors".

Compared with ISO 17636-2:2013, the structure of this part is slightly adjusted, that is, the order of Appendix A, Appendix B, Appendix C has been adjusted; clause 6.9 is moved to 6.7; the rest is postponed accordingly.

Compared with ISO 17636-2:2013, the main technical differences and reasons for this part are as follows.

- Regarding normative references, this part has made adjustments with

technical differences, to adapt to China's technical conditions. The adjustments are reflected in Chapter 2 "Normative references". The specific adjustments are as follows.

- * USE GB/T 12604.2, which identically adopts the international standard, to replace ISO 5576 (see Chapter 3);
- * USE GB/T 9445, which identically adopts the international standard, to replace ISO 9712 (see 6.9);
- * USE GB/T 23901.1, which identically adopts the international standard, to replace ISO 19232-1 (see 5.1, 6.8.1, 6.8.3);
- * USE GB/T 23901.2, which identically adopts the international standard, to replace ISO 19232-2 (see 5.1, 6.8.1, 6.8.3);
- * USE GB/T 23901.4, which identically adopts the international standard, to replace ISO 19232-4 (see 6.7);
- * USE GB/T 23901.5, which identically adopts the international standard, to replace ISO 19232-5 (see 3.8, 3.9, 5.1, 6.8.1, Table A.13, Table A.14, Appendix B);
- * USE GB/T 25758 (all parts), which identically adopts the international standard, to replace EN 12543.1 ~ 12543.5 (see 7.6);
- * ADD reference to GB/T 12604.11, to facilitate understanding, communication, use.

This part also made the following editorial changes.

- MODIFY and ADJUST the order of references.

This part was proposed by AND shall be under the jurisdiction of the National Welding Standardization Technical Committee (SAC/TC 55).

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1 Scope

This part of GB/T 3323 is based on the basic theory and practical experience of digital radiography; specifies the general technology and requirements using computer radiography (CR) technology and digital imaging (DR) technology, which use the digital detector array (DDA), to perform X-and gamma-ray digital detection, for the welded joints of metal materials, including the technical level, general requirements, recommended technologies of X-and gamma-ray digital detection technology (detector system's selection, penetration technology control, image acquisition and display requirements), etc.;

2 Normative references

The following documents are essential to the application of 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 standard.

3 Terms and definitions

The terms and definitions as defined in GB/T 12604.2 and GB/T 12604.11, as well as the following terms and definitions, apply to this document.

4 Symbols and abbreviations

The symbols and abbreviations, which are given in Table 1, apply to this document.

5 Classification and compensation rules of radiographic testing technology

For insufficient contrast (such as caused by increased tube voltage), compensate by increasing SNR (such as by increasing tube current or exposure time).

6 General

The surface of the object should be permanently marked, to ensure the accurate positioning of each digital image (for example. zero point, direction, marking, size, etc.).

7 Recommended digital radiography technology

The ray source is located on one side of the tested object, whilst the digital detector is located on the other side, as shown in Figure 1.

8 Testing report

After the digital radiographic testing, it shall record the testing results and relevant testing parameters in detail; fill the testing report, so that the testing results can be inquired under any circumstances.

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