



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

GB/T 23901.1-2019

**Non-destructive testing -- Image quality of radiographs -- Part
1: Determination of the image quality value using wire-type
image quality indicators**

Issued on: May 10, 2019

Implemented on: December 1, 2019

Issued by: SAMR; SAC

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Foreword

GB/T 23901 "Non-destructive testing radiographic inspection image quality" is divided into five parts.

---Part 1. Determination of the image quality of the silk-type image quality meter;

--- Part 2. Determination of image quality values of stepped hole image quality meters;

--- Part 3. Image quality classification;

--- Part 4. Experimental evaluation of image quality and image quality table;

--- Part 5. Determination of image clarity of double-filament image quality.

This part is the first part of GB/T 23901.

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

This part replaces GB/T 23901.1-2009 "Non-destructive testing of radiographic film quality - Part 1. Linear image quality

The determination of the index, compared with GB/T 23901.1-2009, the main changes are as follows.

---Modified normative references;

---Modified terms and definitions;

---" Radiographic film quality" was changed to "radiography to detect image quality";

--- "Image quality index" was changed to "image quality value";

--- "film" changed to "detector";

--- "Linear image quality meter", changed to "silk-type image quality meter";

--- Added Appendix A for the conversion between the ASTM wire type image quality mark and the GB image quality wire number.

This section uses the translation method equivalent to ISO 19232-1.2013 "Non-destructive testing radiographic inspection image quality Part 1. Silk

Determination of the image quality value of the image quality meter.

The documents of our country that have a consistent correspondence with the international documents referenced in this part are as follows.

---GB/T 19802-2005 Minimum requirements for non-destructive testing of industrial radiographic viewing lamps (ISO 5580.1985, IDT)

--- GB/T 23901.4-2019 Non-destructive testing - Radiographic image quality - Part 4. Image quality and image quality

Evaluation (ISO 19232-4.2013, IDT)

--- GB/T 27050.1-2006 Conformity assessment supplier's declaration of conformance Part 1. General requirements (ISO /IEC 17050-1.

2004, IDT)

This part is proposed and managed by the National Non-Destructive Testing Standardization Technical Committee (SAC/TC56).

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1 Scope

This part of GB/T 23901 specifies equipment and methods for determining the quality of radiographic images using a silk-type image quality meter.

This section applies to the determination of image quality by radiographic determination using a silk-type image quality meter.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article.

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

ISO 5580 Non-destructive testing industrial radiography viewing lamp minimum requirements (Non-destructive testing-Industrialradiographicillumination-Minimumrequirements)

ISO /IEC 17050-1 Conformity Assessment Suppliers - Conformity Assessment Part 1. General (Conformityassessment-

Supplier'sdeclarationofconformity-Part 1.Generalrequirements)

ISO 19232-4 - Non-destructive testing - Radiographic image quality - Part 4. Evaluation of image quality and image quality (Non-destructivetesting-Imagequalityofradiographs-Part 4.Experimental evaluation of image quality Values and image quality tables)

3 Terms and definitions

The following terms and definitions apply to this document.

3.1

Image quality

Image quality

Radiographic detection image features reflecting the extent of the displayed details.

3.2

Image quality image quality indicator; IQI

The ability to measure the quality of the image, consisting of a series of different grades of wire or a stepped hole.

Note. The image quality indicator can also be expressed by image quality indicator and IQI. The image quality type is usually a wire type or a stepped hole type.

3.3

Image quality value

Expressed as a requirement to determine or achieve the most fine or smallest pore identifiable on the radiographic image of the image quality.

Note. Image quality values can also be expressed in terms of image quality values and IQI sensitivity (IQI sensitivity). The number of the wire type image meter is shown in Table 1.

4.1 Image size and name

The wire type image quality meter is shown in Figure 1.

The unit is mm

Description.

I --- the length of the wire;

S---wire center spacing.

a Image quality marker area.

Figure 1 silk type image quality meter

The image quality series consists of 19 wires of different diameters with corresponding tolerances and corresponding wire numbers, see Table 1. These gold

The filaments are divided into four groups with overlapping ranges, each consisting of 7 consecutively numbered wires, namely W1~W7, W6~W12, W10~

W16 and W13~W19. The seven wires in the image quality meter are arranged in parallel with each other, and the length I of the wires is 10 mm, 25 mm or 50 mm, respectively.

The name of the image should include the image number, standard number, and the number of the thickest wire specified by the standard (for example. W10, see Table 1), silk material.