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

GB/T 25758.5-2010

**Non-destructive testing -- Characteristics of focal spots in industrial
X-ray systems for use in non-destructive testing -- Part 5: Measurement
of the effective focal spot size of mini and micro focus X-ray tubes**

无损检测 工业X射线系统焦点特性 第5部分：小焦点和微焦点X射线管的有效焦点
尺寸的测量方法

(English Translation)

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Foreword

GB/T 25758 "non-destructive testing of industrial X-ray system focus feature" is divided into five parts.

- Part 1. Scanning method;
- Part 2. Pinhole camera radiographic method;
- Part 3. Slit camera radiographic method;
- Part 4. Edge method;
- Part 5. Measurement of the effective focal spot size smaller focus and micro focus X-ray tube.

This section GB/T 25758 Part 5.

This section identical with EN12543-5:1999 "Non-destructive testing - Industrial focus characteristics - Part 5 X-ray system. Small and Micro Focus Measurement of the effective focal spot size focus X-ray tube "(in English).

This section is equivalent translation EN12543-5:1999.

For ease of use, this section made the following editorial changes.

- "This European standard" be replaced by "this section";
- Remove the EN standard foreword;
- With a decimal point instead of a comma as the decimal point, ",";
- With GB/T 1.1-2000 predetermined key words instead of the EN standard introductory phrase.

This part of the National NDT Standardization Technical Committee (SAC/TC56) and focal points.

This section is drafted. Haitai Division Inspection Technologies Ltd., Shanghai IAC NDT Technology Co., Ltd., Shanghai Research Institute of Materials, Shanghai - Friends Industrial Co., Ltd., Shanghai Wei Cheng Banda Detection Technology Co., Ltd., GE Sensing & Inspection Technologies (Shanghai) Co., Ltd., Dan East Austrian-ray machines Limited, Shandong Institute of Light Industry.

Introduction

In order to meet the needs of different focal spot size measured in GB/T 25758.1 ~ 25758.5, the five different methods are described.

Scanning method (GB/T 25758.1) applies constant focal spot size and intensity distribution of the occasion, for example, for calibration and image processing process.

Radiographic methods (GB/T 25758.2 and GB/T 25758.3) is a conventional technique, in order to verify that the primary purpose for the highest to 200kV occasions.

When the pinhole camera can not be used and slit edge method (GB/T 25758.4) may be effective, this method is suitable for simple Occasions.

In order to take into account micro-focus system, GB/T 25758.5 proposes a special approach.

Non-destructive testing of industrial X-ray system focus feature Part 5. Focus small and micro-focus X-ray tube Measurement of the effective focal spot size

1 Scope

This section GB/T 25758 specifies the method for measuring the focal spot size of the X-ray photograph of sharp edges. This method requires focus Size between $5\mu\text{m}$ ~ $300\mu\text{m}$, the tube voltage of the X-ray tube of up to 225kV.

X-ray image quality and resolution depends largely on the characteristics of the focus. Focus image quality based on two-dimensional target plane Distribution of radiation intensity.

For purposes of identification, the use of X-ray radiography.

NOTE: If you give permission, this measurement method can be used for higher kV voltage systems, but the measurement accuracy may be reduced.

2 Normative references

The following documents contain provisions which, through reference GB/T 25758 in this section constitute provisions of this section. For dated reference documents Member, all subsequent amendments (not including errata content) or revisions do not apply to this section, however, encouraged to reach under this section Parties to research agreement to

use the latest versions of these documents. For undated reference documents, the latest versions apply to this section.

GB/T 19348.1 destructive testing - Industrial radiographic film - Part 1. Classification of film systems for industrial radiography 1) (GB/T 19348.1-2003, ISO 11699-1:1998, IDT)

1) This standard will be revised GB/T release (identical with ISO 11699-1 19348.1-2003 on the basis of 2008, and EN584-1:1994 equivalent).

GB/T 25758.1 destructive testing of industrial X-ray system focus characteristics - Part 1. Scanning method (GB/T 25758.1-2010, EN12543-1:1999, IDT)

3 Terms and Definitions

The following terms and definitions apply to this part of the GB/T 25758 of.

Focus focalspot

X-ray emission from the region to see the measuring device X-ray tube anode.

[GB/T 25758.1]

Test Method 4

4.1 Principle and equipment

This method is an indirect measurement method by measuring geometric clarity to get focus size. For this reason, the use of a relatively high discharge geometry Large magnification will clear the upper edge of the image to film or ray fluoroscopy devices.

If using film, the measurement requires the following equipment.

- Test object as described later;
- No minimum size of 10cm x 10cm intensifying screen the film;
- Low-absorption material film cartridge (e.g., polyethylene);
- Film cartridge;