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

GB/T 25758.2-2010

**Non-destructive testing -- Characteristics of focal spots in
industrial X-ray systems for use in non-destructive testing --
Part 2: Pinhole camera radiographic method**

无损检测 工业X射线系统焦点特性 第2部分：针孔照相机射线照相方法
(English Translation)

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Table of Contents

- Foreword
- Introduction
- 1 Scope
- 2 Normative references
- 3 Terms and Definitions
- 4 Test Equipment
- 4.2 Alignment and location of the pinhole camera

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 2.

This section identical with EN12543-2:1999 "Non-destructive testing of industrial X-ray system focus characteristics - Part 2. Pinhole camera Radiographic method "(in English).

This section is equivalent translation EN12543-2:1999.

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.

Appendix A of this section is an informative annex.

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 2. Pinhole camera radiographic method

1 Scope

This section GB/T 25758 specifies the use of a pinhole camera radiographic method to measure the tube voltage up to 500kV Industrial Greater than 0.2mm focal spot size method of X-ray system. This section measuring voltage used is limited to 200kV.

X-ray image of the image quality and resolution depends largely on the characteristics of focus, in particular, the size and two-dimensional intensity distribution.

Commercial X-ray tube type (for example, in advertising or trade) characteristics, should first consider the maximum value given in Appendix A.

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) 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)

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).

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]

4 Test Equipment

4.1

the basic characteristics of a pinhole camera Pinhole camera by a pinhole aperture composed of pinhole size and the actual focal spot size related to the relationship shown in Table 1.

Table 1 pinhole size

Focal spot size/mm diameter P/ μm height H/ μm 0.2 ~ 1.0 30 ± 5 75 ± 10 > 1.0 100 ± 5 500 ± 10

Figure 1 shows the diameter and height of H. P

Tungsten pinhole aperture or a similar material having absorption properties should be produced.

4.2 Alignment and location of the pinhole camera

The angle between the beam and the direction of the axis of the pinhole (see FIG. 2) should be less than 3° . When there are deviations in Figure 2, should indicate the direction of the main radiation beam.