

ICS 19.100

CCS J 04



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

GB/T 23909.3-2009

**Non-destructive testing -- Radioscopic testing -- Part 3: General
principles of radioscopic testing of metallic materials by X-rays
and gamma rays**

无损检测 射线透视检测 第3部分：金属材料X和伽玛射线透视检测总则
(English Translation)

Issued on: May 26, 2009

Implemented on: December 1, 2009

Issued by: Standardization Administration of China

Table of Contents

- Foreword
- Introduction
- 1 Scope
- 2 Normative references
- 3 Terms and Definitions

Foreword

GB/T 23909 "NDT-ray transmission detector" is divided into three parts.

- Part 1. Quantitative measurement of imaging performance;
- Part 2. Long-term stability of the imaging device calibration;
- Part 3. metallic materials by X - and gamma rays detected General.

This is Part 3 GB/T 23909 of.

The partial modification using EN13068-3:2001 "NDT-ray fluoroscopy testing - Part 3. metallic materials by X and gamma rays General Detection perspective "(in English).

This section according to EN13068-3:2001 redrafted.

Taking into account China's national conditions, in the use of EN13068-3:2001 when this part has made several modifications. About the technical differences are as follows.

- Delete references to normative documents EN12544-1, EN12544-2 and EN12544-3;
- The rest of normative references to our standards.

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

This section drafted by. Austrian Alexander too Shandong Electric Co., Ltd., Shanghai IAC Inspection Technologies Ltd., Guangdong Steel Products Co. earnings-chuen the company, Shanghai Research Institute of Materials, GE Inspection Technologies Co., Ltd., ????? Industries Limited.

Introduction

This section GB/T 23909 specifies the workpiece-ray fluoroscopy to detect the basic techniques, and repeat the workpiece economy Testing. These techniques are based on the detection of the workpiece accepted norms and basic theory.

The objective of this section is to define a standard as close as possible radiography ray fluoroscopy. Because of the special differences, there are some groups this deviation.

1) In the image intensifier systems and film technology limited inherent unsharpness comparison, it requires careful handling IQI. therefore, each time requiring additional wire type IQI presentation of measurement. The maximum allowed by the thickness of the workpiece to be no resolution to set Meaning, but also allow the calculation of geometric clarity. Due to technical and economic reasons, Tables 4 and 5 allows a smaller thickness, etc.

In standard double is not clarity. A lower maximum tube voltage to enhance the contrast, to meet the minimum linear IQI Value, and it will limit the spatial resolution to produce a compensation. Because linear IQI detection of small details are more traditional, the to not define any stepped hole IQI values.

2) By contrast enhancement to compensate for the limited spatial resolution, which calls for the use of image points in the application. Thus, the metal timber Material, as defined in Table 5 is based on the image quality has been integral perspective ray detection image. Based on real-time detection will be beneficial to move State detection principle OSB identification, and it should be the first step is often applied as a system optimization and location. Ray fluoroscopy Light alloy widely used for detection, demonstrated in Table 4 in the field of special restrictions on the application is correct. Table SA level detection Through real-time ray fluoroscopy is completed, SB-grade test requires only an additional image points. Users can rely on to determine the detection problem are applications Table 4 or 5.

NDT-ray fluoroscopy detected Part 3. Metal and Materials X Gamma rays detected General

1 Scope

This section GB/T 23909 specifies the use of ray fluoroscopy, metal materials and products for the purpose of implementation of industrial flaw detection X and general rules of gamma rays.

This section does not involve discontinuous acceptance criteria.

2 Normative references

The following documents contain provisions which, through reference GB/T 23909 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 3323 metal fusion welded joints radiography (GB/T 3323-2005, EN1435:1997, MOD)
GB/T 5677 Steel Castings radiographic testing (GB/T 5677-2007, ISO 4993. 1987, IDT)
GB/T 9445 NDT personnel qualification and certification (GB/T 9445-2008, ISO 9712:2005, IDT) GB/T 23901.1 - Part 1 lossless detection Image quality of radiographs. Determination of linear IQI Image Quality Index (GB/T 23901.1-2009, ISO 19232-1:2004, IDT) GB/T 23901.3 NDT Image quality of radiographs - Part 3. Image quality classes for ferrous metals (GB/T 23901.3-2009, ISO 19232-3:2004, IDT) GB/T 23901.5 NDT Image quality of radiographs - Part 5. wire type IQI image unsharpness Determination (GB/T 23901.5-2009, ISO 19232-5:2004, IDT) GB/T 23909.1 NDT-ray transmission detection - Part 1. Quantitative measurement of imaging performance (GB/T 23909.1-2009, EN13068-1:1999, MOD) GB/T 23909.2 NDT-ray fluoroscopy testing - Part 2. Long-term stability of the imaging device calibration (GB/T 23909.2-2009, EN13068-2:1999, MOD)

3 Terms and Definitions

The following terms and definitions apply to this part of the GB/T 23909 of.

The nominal thickness is within the scope of the subject material.

Regardless of manufacturing tolerances.

Thickness nominal thickness calculated based on the beam direction of the material.