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

GB/T 26838-2024

**Non-destructive testing instruments - Portable industrial X-ray
radiographic equipment**

无损检测仪器 便携式工业X射线探伤机

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part

1. Structure and drafting rules for standardization documents" Drafting is required. This document replaces GB/T 26838-2011 "Non-destructive testing instruments Portable industrial X-ray flaw detectors" and Compared with GB/T 26838-2011, in addition to structural adjustments and editorial changes, the main technical changes are as follows: Added "Terms and Definitions" (see Chapter 3);

- a) Changed "Product Model" (see 4.1, 3.1 of the 2011 edition);
- b) Changed "ambient temperature" [see

1 Scope

GB/T 26838-2024 specifies portable industrial X-ray flaw detectors, the sets carried to a pipeline, a pressure vessel or a structural weld to make a radiograph in the field. They are

unlike laboratory X-ray equipment in every respect that matters: they are operated outdoors by a two-person crew, often at night, they run from a generator, and they emit at energies that make the exclusion zone tens of metres across, so radiation protection is a design requirement rather than an installation one. The standard sets the product models and the main technical parameters, then the technical requirements - conditions of use, performance, stability, radiation protection and safety, and appearance - and the test methods, covering the test conditions, the instruments and apparatus required, the penetration test and the tests for each other requirement, followed by the inspection rules and the marking, packaging, transport and storage provisions. It replaces GB/T 26838-2011 and took effect on 23 August 2024.

This document provides the product classification of portable industrial X-ray flaw detectors and specifies the technical requirements, Inspection rules, marking, packaging, transportation and storage, and descriptions of the corresponding test methods. This document applies to the design, manufacture and maintenance of portable industrial X-ray flaw detectors (hereinafter referred to as X-ray machines) with a tube voltage not exceeding 500 kV. Manufacturing and testing.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document. For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies. in this document.

GB/T 191 Pictorial markings for packaging, storage and transportation

GB/T 9582-2008 Determination of ISO sensitivity, ISO average slope and ISO slope G2 and G4 of photographic industrial radiographic films (Exposure with X-rays and gamma rays)

GB/T 12604.2 Nondestructive testing terminology Radiographic testing

GB/T 13384 General technical requirements for packaging of electromechanical products

GB 18871-2002 Basic standard for protection against ionizing radiation and safety of radiation sources

GB/T 25480 Basic environmental conditions and test methods for transportation and storage of instruments GBZ 117 Industrial Flaw Detection Radiation Protection Standard

JB/T 6220-2011 Density meter for non-destructive testing instruments - Radiographic flaw detection

JB/T 7808 Nondestructive Testing Instruments Industrial X-ray Flaw Detector Main Parameters Series

3 Terms and definitions

The terms and definitions defined in GB/T 12604.2 apply to this document.

4 Product Categories

4.1 Product Model The model of the X-ray machine should be compiled in the form shown in Figure 1 (the model is determined based on the series, with voltage and current as parameters).

4.1

b) of the.2011 edition];

c) Added "frequency" requirement [see

d) Changed "Exposure" (see Table 1, Table 2, Table 3, Table 1, Table 2, Table 3, Table 4 of the.2011 edition);

e) Deleted the description of "directional, power frequency, oil-insulated X-ray machine penetration and main model" (see Table 2 of the.2011 edition);

f) Changed "temperature protection device" (see 5.2.9, 4.2.9 of the.2011 edition);

g) Changed the description of "Radio-leakage air kerma rate" (see 5.4.1, 4.4.1 of the.2011 edition);

h) The test procedure of "Penetration Determination" has been changed (see 6.3.2, 5.3.2 of the.2011 edition);

i) Changed the "Schematic diagram of the penetration test of directional X-ray machine" (see Figure 2, Figure 2 of the.2011 edition)

j) Added "Schematic diagram of circumferential X-ray machine penetration test" (see Figure 3 of 6.3.3.1);

k) Changed the "IQI Placement Diagram" (see Figure 4, Figure 3 of the.2011 edition);

l) Deleted some descriptions on the measurement of radiation angle of directional X-ray machine (see

5.28

a) of the.2011 edition].

q) Please note that some of the contents of this document may involve patents. The issuing