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

GB 14443-2025

Replacing GB 14443-2007

Safety technical requirements for paint oven

涂层烘干室安全技术要求

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1. Structure and Drafting Rules of Standardization Documents". Drafting. This document supersedes GB 14443-2007 "Safety Regulations for Coating Operations - Technical Specifications for Safety of Coating Drying Rooms", and is consistent with GB 14443-2007, aside from structural adjustments and editorial changes, the main technical changes are as follows:

- a) Definitions for the terms "coating drying chamber" and "ultraviolet drying chamber" have been added (see
- b) The classification of drying rooms has been expanded (see 3.1);
- c) The type of fire protection system installed on the exhaust duct of the drying chamber has been changed (see 4.2, 5.1.2 of the 2006 edition);
- d) Requirements for preventing expansion and deformation of the chamber have been added (see 5.1.5);
- e) Added requirements for corrosion protection of water-based coating drying chambers (see 5.1.6);
- f) Added requirements for preventing radiation leakage from the ultraviolet drying chamber (see 5.1.8);
- g) Requirements for emergency shut-off valves, fuel leak detection devices, and locking devices in fuel oil and gas heating systems have been added (see 5.3.3.3). 5.3.3.5,

5.3.3.6);

h) The requirements for the pressure relief facilities in the drying chamber have been changed (see 5.6.1, 5.6.2, 5.6.3; 5.3.1, 5.3.2,

5.3.3 in the 2006 edition);

i) Requirements for the installation of pressure relief ports in the pressure relief facility section have been added (see

5.6.4 and 5.6.5);

1 Scope

GB 14443 governs the safety of paint drying ovens, where a coated part is heated in an enclosure filled with the solvent vapour it gives off - a combination that is explosive unless the ventilation keeps the concentration far below the lower limit. The standard sets the general requirements, the requirements on the equipment and the facilities including the ventilation, the interlocks, the heating source and the explosion relief, the rules for operation and maintenance, and the verification methods, with a normative annex giving the calculation of the fresh air volume for solvent-based ovens. Issued on 31 October 2025, in force since 1 August 2026, replacing GB 14443-2007. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the edition it replaces are taken from there. The clause text, the tables and the numeric limits are not reproduced on this page - they are in the document itself, which is delivered in full in English translation.

This document specifies the coating drying chamber structure, electrical equipment, heating system, ventilation system, control facilities, pressure relief facilities, operation and maintenance, etc. The safety technical requirements are described, along with the verification methods. This document applies to drying chambers using flammable liquid coatings and powder coatings.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB 2894 Safety Colors and Safety Signs

GB/T 3836.1 Explosive Atmospheres - Part

3 Terms and Definitions

The terms and definitions defined in GB/T 14441 and the following terms and definitions apply to this document.

3.1 Coating drying chamber paintoven A chamber that uses heating to dry and cure the coating.

Note. Based on the heating method, coating drying chambers are divided into radiant drying chambers and convection coating drying chambers; based on the operation method, they are divided into intermittent coating drying chambers and continuous coating drying chambers. Drying rooms; based on the coating composition, they are divided into solvent-based coating drying rooms, water-based coating drying rooms, and powder coating drying rooms, etc.

15 Design, Selection and Installation of Electrical Installations

GB 4053 (all parts) Safety requirements for fixed steel ladders and platforms

GB/T 4272 General Technical Specifications for Thermal Insulation of Equipment and Piping

GB/T 4942 Protection rating (IP code) for integral structures of rotating electrical machines

GB 5959.13 Safety of electric heating apparatus - Part

13.Particular requirements for electric heating apparatus with explosive atmospheres

GB 6514 Safety Regulations for Painting Operations. Safety of Painting Processes and Ventilation

GB/T 8175 Guidelines for Insulation Design of Equipment and Piping

GB/T 14441 Safety Terminology for Painting Operations

GB 15930 Fire-resistant valves for building ventilation and smoke exhaust systems

GB 16297 Integrated Emission Standard for Air Pollutants

GB/T 19839 General Technical Requirements for Industrial Oil and Gas Burners GB.20101 Safety Technical Requirements for Organic Waste Gas Purification Devices in Coating Industry

GB 50058 Design Code for Electrical Installations in Explosive Atmospheres

GB/T 50087 Design Code for Noise Control in Industrial Enterprises

GB 50140 Code for Design of Fire Extinguisher Configuration in Buildings