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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB 15607-2023

Replacing GB 15607-2008

Safety code of practice for coating - Safety of the electrostatic powder coating process

涂装作业安全规程 粉末静电喷涂工艺安全

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Table of Contents

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 replaces GB 15607-2008 "Safety Regulations for Painting Operations - Safety of Powder Electrostatic Spraying Processes" and is consistent with GB 15607-2008 In comparison, in addition to structural adjustments and editorial changes, the main technical changes are as follows:

a) Changed the scope of the powder spraying area (see 4:1,:2008 version of 4:1);

b) The fire hazard area was deleted and changed to the explosion hazard area (see 4:2, 4:2 in the:2008 edition);

c) The regulations on safety indicators of powder spraying rooms have been changed [see 4:3:2, 4:3:2a) of the:2008 edition];

d) Added regulations for maintenance and cleaning operation ports (see 4:3:5);

e) Delete the factory building requirements for powder spraying operations (see 4:4:2 of the:2008 edition);

f) Interlock control regulations have been changed (see 4:5:3, 4:5:3, 5:1:5, 5:1:6, 5:1:7 of the:2008 edition);

g) Electrical regulations such as explosion protection and grounding have been changed (see 4:7:2, 4:8:1, 4:8:2, 4:8:1, 4:9, and 4:10 of the:2008 edition);

h) The regulations on explosion control have been changed (see 5:1:3, 5:1:3 and 6:4:4 of the:2008 edition);

i) The regulations on spark prevention have been changed (see 5:1:4, 6:4:7 of the:2008

edition);

j) The regulations on recovery devices and purification devices have been changed (see 6:4,:2008 version of 6:4);

k) Changed the name of the "silo" container to powder supply barrel (see 7:2,:2008 version of 7:2);

l) Added relevant requirements for production safety management and emergency plans (see 8:1);

m) Added the classification of hazardous areas for explosive dust environments in various types of powder spraying rooms (see Appendix A);

1 Scope

GB 15607 covers electrostatic powder coating, which trades the solvent hazard of wet painting for a different one: a cloud of combustible powder charged to tens of kilovolts, in a booth, next to a recovery system full of the same powder. The standard sets the basic requirements, the requirements for the coating equipment and its auxiliaries, the ventilation and purification, the storage and transport of the powder, and the operation and maintenance management, with normative annexes on the hazardous area classification inside the booth, the calculation of the extract volume and the inspection and cleaning intervals. Issued on 28 December 2023, in force since 1 October 2024, replacing GB 15607-2008. 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 basic requirements for the powder electrostatic spraying process, powder spraying equipment and its auxiliary devices, ventilation and purification, and storage of powder coatings: Basic safety requirements such as storage and transportation, operation and maintenance safety management: This document applies to powder electrostatic spraying process design and the design, installation, operation, maintenance and management of its equipment: It also applies to powder electrostatic spraying technology: Acceptance of spraying projects: The electrostatic fluidized bed method, fluidized bed method and other fluidized coating methods shall be implemented with reference:

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text: Among them, the dated quotations For undated referenced documents, only the version corresponding to that date applies to this

document; for undated referenced documents, the latest version (including all amendments) applies to this document:

GB 5083 General Principles for Safety and Hygiene Design of Production Equipment

GB 6514 Safety regulations for painting operations: Painting process safety and ventilation

GB 12158 General Guidelines for Preventing Static Electricity Accidents

GB 12367 Safety Regulations for Painting Operations Safety of Electrostatic Spray Painting Process

GB/T 14441 Terminology of safety regulations for painting operations

GB 14443 Safety Regulations for Painting Operations Safety Technical Regulations for Coating Drying Rooms

GB 14444 Safety Regulations for Painting Operations Safety Technical Regulations for Spray Rooms

GB 14773 Safety regulations for painting operations Safety technical conditions for electrostatic spray guns and their auxiliary devices

GB 15577 Dust explosion protection safety regulations

GB 50016 Fire Protection Code for Building Design

GB 50058 Design Code for Electrical Equipment in Explosive Hazardous Environments

GB 50140 Design specifications for configuration of building fire extinguishers

GB 55037 General specifications for building fire protection

3 Terms and definitions

The terms and definitions defined in GB/T 14441 and the following apply to this document: 3:

1 Powder feeder A device that can continuously and evenly supply powder coating for spraying: 3:2 powder recovery unit powderrecoveryunit It is specially designed to collect uncoated powder, has powder-gas separation function, and can control the concentration of powder-containing air at its entrance to be less than its lower explosion limit: