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

GB/T 25433-2024

Safety requirements for rubber & plastics internal mixers

密闭式炼胶机炼塑机安全要求

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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. This document replaces GB 25433-2010 "Safety requirements for closed rubber mixing mills and plastic mixing mills". Compared with GB 25433-2010, except for the structural adjustment In addition to the integration and editorial changes, the main technical changes are as follows:

a) The scope of application of this document has been changed to include tandem internal

mixers and laboratory internal mixers (see Chapter 1, 2010 Chapter 1 of the 2011 edition);

b) Added relevant safety requirements for "General Principles", "Start, Stop and Restart Functions" and "Control System Safety Related Components" (see

c) Added major hazards of laboratory internal mixers and related safety requirements (see 4.4, 4.5.4.13, 4.5.4.14, 4.5.7.2.2, 4.7.1, 4.7.2, 6.2.5, 6.4, A.3.7);

d) Changed the following sections. "Emergency stop", "Mechanical hazards", "Hazards of hose assemblies for hydraulic, pneumatic and heating and cooling systems", "Large-scale cleaning operations". Safety requirements for "additional hazards during operation, maintenance and repair" (see

4.4 to 4.7, 5.1, 5.8,

5.9 of the 2010 edition);

e) The safety requirements and protection measures for "electrical hazards" have been changed (see

5.2 of the 2010 edition);

f) Changed the following categories. "Heat hazard", "Noise hazard", "Hazards caused by substances hazardous to health", "Fire hazard", "Hazards of slips, trips and falls". Safety requirements and protective measures for "risk" (see 4.9~4.13, 5.3~

5.7 of the 2010 edition);

g) Added "ergonomics" safety requirements and protective measures (see 4.14);

h) Changed the "Verification methods for safety requirements and/or risk protection/reduction measures" (see Chapter 5, Chapter 6 of the 2010 edition);

1 Scope

GB/T 25433-2024 sets the safety requirements for internal mixers used in the rubber and plastics industries, the Banbury-type machines in which compound is masticated under pressure by counter-rotating rotors inside a closed chamber. They are among the most dangerous machines in the industry: the feed hopper and the ram present a trap into which an operator can be drawn, the chamber runs hot enough to burn on contact, the discharge door releases a mass of hot compound, and the drive train stores enough energy that a hazardous movement continues long after the stop button. The standard addresses each of those directly. It sets the general requirements, the start, stop and restart functions, the safety-related parts of the control system, the emergency stop, the mechanical hazards and the guarding that answers them, the hazards of hydraulic, pneumatic, heating and cooling hose assemblies, the additional risks arising during large-scale cleaning, maintenance and repair, and the electrical, thermal, noise and other hazards. For a machine builder or a

compounding plant operating in China, this is the safety standard the machine is judged against.

This document specifies the safety requirements for the design and manufacture of closed rubber and plastic mixing mills (hereinafter referred to as "internal mixers") and gives the machine safety Instructions for use. This document is applicable to the treatment of the internal mixer during its life cycle (

5.4 in GB/T 15706-2012). All significant hazards, hazardous conditions and hazardous events associated with the internal mixer that could result from misuse that could be reasonably foreseeable by the manufacturer (see Appendix Record A). This document specifies the requirements for the measurement and declaration of noise emissions from internal mixers for laboratory use only. This document applies to the following internal mixers.

- Production internal mixers and tandem internal mixers with manual feeding starting from the charging door and ending at the lower edge of the material discharge port;
- Automatic feeding of production internal mixers and tandem internal mixers starting from the conveyor integrated in the equipment and ending at the lower edge of the material discharge port Refining machine;
- Laboratory internal mixer starting from the charging door and ending at the material container integrated in the internal mixer. This document does not include.
- Risk of explosion during material processing;
- Requirements for equipment and protection systems used in potentially explosive atmospheres;
- Design requirements for exhaust ventilation systems.

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 to This document.

GB/T 3766 General rules and safety requirements for hydraulic transmission systems and their components

GB/T 3767 Acoustics - Determination of sound power level and sound energy level of noise source by sound pressure method - Engineering method for approximate free field above reflecting surface

GB/T 3768 Acoustics Sound Pressure Method for Determination of Sound Power Level and Sound Energy Level of Noise Source Using a Simple Measurement of the Envelope Measurement Surface Above the Reflecting Surface Easy Method

GB/T 4208-2017 Enclosure protection degree (IP code)

GB/T 5226.1-2019 Electrical safety of machinery Electrical equipment of machinery Part

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