

ICS 65.040.20

CCS B20



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

GB/T 25229-2024

**Grain and oils storage - Requirement of airtightness of
warehouse**

粮油储藏 粮仓气密性要求

Issued on: October 26, 2024

Implemented on: May 1, 2025

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

Table of Contents

- 1 Scope
- 2 Normative references
- 3 Test conditions for films and sheets

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/T 25229-2010 "Requirements for airtightness of flat warehouses for grain and oil storage". Compared with GB/T 25229-2010, In addition to structural adjustments and editorial changes, the main technical changes are as follows:

- Added airtightness requirements for silos and warehouse accessories (see 4.1, 4.2);
- Changed the requirements for warehouse air tightness level and adjusted the pressure half-life value of the level indicator (see Table 1 and Table 2, 2010 Edition Table 1, Table 2);
- Changed the content of sealant, and proposed performance requirements according to non-structural sealing materials and structural sealing materials (see 4.3.1, 4.3.2, 5.3.3 of the 2010 edition);
- Deleted the content of polyamide epoxy resin, polyurethane foam and non-woven fabrics (see 5.3.6 of the 2010 edition);
- Changed the warehouse air tightness pressure half-life test method (see 5.1, Chapter 6 of the 2010 edition);
- Increased the airtightness pressure half-life of warehouse supporting components, sealing materials, sealing films, sealing coatings and airtight insulation boards Test methods for energy consumption (see
- Deleted the air tightness test of flat warehouses (see Appendix C of the 2010 edition). Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents. This document was submitted by the State Administration of Grain and Material Reserves. This document is under the jurisdiction of the National Technical Committee on Standardization of Cereals and Oils (SAC/TC270). This document was drafted by: Henan

University of Technology, Zhengzhou COFCO Research and Design Institute Co., Ltd., COFCO Chengdu Storage Research Institute Co., Ltd., Henan Gongda Design and Research Institute Co., Ltd., Guangdong Grain Reserve Management Group Co., Ltd., COFCO Engineering Testing and Certification Co., Ltd., Zhejiang Jin Jiang Construction and Decoration Engineering Co., Ltd., Henan Juyan Materials Technology Co., Ltd., and Henan Bulk Grain Silo Engineering Testing Co., Ltd. The main drafters of this document are: Ding Yonggang, Zhang Lailin, Wang Rong, Fu Pengcheng, Fu Huitan, Sun Huinan, Ye Zhenhong, Chen Yan, Sui Sai, Li Haojie, Hu Yamin, Yu Wenjiang, Xu Qikeng, Liu Shuaihua, Chen Junqi, Guo Chengzhou, Liang Caihong, Li Xuesen, Xu Qingyu, Wang Yue, Wang Jianlong, Li Songwei, Chen Bingshen, Huang Zhengqiang, and Li Yongjie. The previous versions of this document and the documents it replaces are as follows:

---First published in 2010 as GB/T 25229-2010;

---This is the first revision. Airtightness requirements for grain and oil storage silos

1 Scope

GB/T 25229-2024 sets the airtightness requirements for grain storage warehouses. Airtightness is the enabling property of modern Chinese grain storage: controlled atmosphere storage with nitrogen or carbon dioxide, and phosphine fumigation, both depend on holding a gas concentration in the store for days, and a silo or shed that leaks cannot do either, so insects survive and the reserve deteriorates. The standard sets the airtightness classes and the requirements for each, expressed as the pressure decay time from a stated initial pressure, together with the corresponding requirements for different store types, the flat warehouse, the squat silo and the vertical silo. It then sets the test method, the pressurisation of the store, the measurement of the decay and the correction for temperature and barometric change during the test, the conditions under which the test is valid, the acceptance of a new or repaired store, and the periodic retesting and the sealing maintenance that keeps a store in class. It takes effect on 1 May 2025.

This document specifies the technical requirements for granary air tightness and describes the test methods for granary air tightness. This document applies to warehouses that store grain and oil using controlled atmosphere, fumigation and temperature control technologies.

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 1037 Plastic film and sheeting - Determination of water vapor transmission properties

- Cup weight gain and loss method

GB/T 1040.3 Plastics - Determination of tensile properties - Part

3 Test conditions for films and sheets

GB/T 6343 Determination of apparent density of cellular plastics and rubber

GB 8624 Classification of combustion performance of building materials and products

GB/T 8810 Determination of water absorption of rigid cellular plastics

GB/T 8814 Unplasticized polyvinyl chloride (PVC-U) profiles for doors and windows

GB/T 9756 Synthetic resin emulsion interior wall paint

GB/T 10295 Insulation materials - Determination of steady-state thermal resistance and related properties - Heat flow meter method

GB 18582 Limits of Hazardous Substances in Architectural Wall Coatings

GB/T 19789 Plastic film and sheeting for packaging materials - Oxygen permeability test - Coulometric method

GB/T 22083 Classification and requirements of building sealants

GB/T 29890 Technical Specification for Grain and Oil Storage

GB 30982 Limits of Hazardous Substances in Building Adhesives

GB/T 31729 Test method for mass per unit area of plastic film

GB/T 37866 Green Product Evaluation for Plastic Products

GB 50077 Design Standard for Reinforced Concrete Silos