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

GB/T 29890-2026

Replacing GB/T 29890-2013

Technical specification for the storage of grains and oilseeds

粮油储藏技术规范

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Foreword

GB/T 29890-2026 | Technical specifications for the storage of grains and oilseeds

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State Administration for Standardization issued a statement.

1.Scope This document defines the relevant terms and definitions for grain and oil storage, and stipulates the general requirements for grain and oil storage, as well as the basic requirements for warehouse facilities and equipment. Requirements for grain and oil entering and leaving warehouses, grain condition and quality safety testing, storage technology, pest control and record keeping. This document applies to the storage of raw grains such as wheat, rice, corn, soybeans, and miscellaneous grains, as well as their finished products and oilseeds. This document does not apply to the storage of potatoes.

4 General Requirements for Grain and Oil Storage

4.1 General Requirements Necessary grain storage facilities and equipment should be available, the quality of grains and oilseeds entering the warehouse should be strictly controlled, and appropriate and reasonable technical measures should be adopted to reduce losses. To prevent loss and slow down quality decline, prevent contamination, and ensure the safety of stored grain.

4.2 Factors to consider when selecting storage technology

4.2.1 Based on climatic and environmental conditions, the country is divided into 7 grain storage ecological zones.

1.High-altitude, arid grain storage area;

---Second Zone. Low-Temperature Dry Grain Storage Area;

3.Low-temperature, high-humidity grain storage area;

4.Medium-temperature dry grain storage area;

5.Medium-temperature and high-humidity grain storage area;

---Section Six. Medium-Temperature, Low-Humidity Grain Storage Area;

7.High-temperature and high-humidity grain storage area. The characteristics of each grain storage ecological region and the main grain storage measures are shown in Appendix A. When selecting the main grain storage measures, the specific regional climate environment should also be considered. The impact of the environment.

4.2.2 Appropriate storage techniques should be adopted based on the following main factors.

- Ecological characteristics of the grain storage ecological zone where it is located;
- Warehouse type and performance of warehousing facilities and equipment;
- Types of grains and oilseeds and their storage characteristics;
- The season in which grains and oilseeds are stored, the quality of the stored grains, the temperature of the grain pile, and the status of pest infestation;
- Expected storage time and intended use.

5.1 Basic Requirements for Warehouses

5.1.1 Appropriate storage processes and facilities and equipment should be set up according to the needs of grain and oilseed storage, transshipment and collection functions.

5.1.2 It shall meet the dynamic and static load requirements for load-bearing grain piles in Building Standard 172-2016, and be able to meet the requirements for moisture-proofing, waterproofing, airtightness, heat insulation, and ventilation of grain storage. Requirements such as wind speed should be taken to reduce the impact of adverse environmental conditions, especially high temperature and high humidity, on grain storage.

5.1.3 Each independent grain and oil storage area should reserve appropriate storage capacity as backup storage capacity.

5.1.4 The floor inside the warehouse should be intact, flat, firm, and equipped with a moisture-proof layer.

5.1.5 The walls of warehouses storing bulk grain and oil should be load-bearing walls.

5.1.6 The interior walls of the warehouse should be intact and smooth with moisture-proof measures, free of cracks, and the joints between the walls and the warehouse roof, adjacent walls, and floor should be tightly sealed. The walls of bulk grain storage silos should be marked with loading lines and height gauges, and sealing grooves should be installed near the loading lines.

5.1.7 The walls of grain silos used for low-temperature or near-low-temperature storage should have good thermal insulation properties, and their heat transfer coefficients should preferably be as follows:

--- Fifth and seventh zones. not greater than

0.52 W/(m²·K);

---Zones 4 and 6. not greater than

0.58 W/(m²·K);

---Zones 1, 2 and 3. not greater than

0.70 W/(m²·K).

5.1.8 The roof of the storage area should be intact, with insulation and waterproofing layers, and meet the requirements of relevant design specifications. Roofs with organized drainage should use external gutters. drain. The heat transfer coefficient of the silo roof should preferably not exceed

5.2 Basic Requirements for Facilities and Equipment

5.2.1 The equipment for drying, cleaning, conveying, metering, and grain condition monitoring should be selected and equipped according to the ecological area of the grain storage, the type of storage facility, and the required storage technology. Equipment and facilities for ventilation, refrigeration, controlled atmosphere, fumigation, sampling, and quality inspection. Grain warehouse electromechanical equipment, grain condition monitoring systems, and mechanical ventilation systems. It should comply with relevant regulations.

5.2.2 Dust removal and explosion-proof equipment that conforms to GB 17440 shall be provided.

5.2.3 Lightning protection devices shall be installed in accordance with the provisions of GB 50057.

5.2.4 Large grain warehouses such as tall, flat warehouses and cylindrical warehouses should be equipped with deep sampling equipment.

5.2.5 For zones four through seven, bulk grain storage facilities shall be equipped with recirculation systems that comply with the specifications of GB/T 17913, LS/T 1213, or LS/T 1225. Fumigation or controlled atmosphere storage equipment, such as fumigation and controlled atmosphere storage equipment, should preferably be used in combination with multiple units. Zones 1 to 3 should be equipped with equipment conforming to GB/T 17913. The prescribed circulating fumigation equipment.

5.2.6 Safe, energy-saving, environmentally friendly and automated equipment should be used.

5.2.7 The facilities and equipment of simple warehouses shall comply with the provisions of LS/T 1217.

6.1 Preparations before warehousing

6.1.1 An inspection should be conducted on empty warehouses, equipment, materials, and tools to confirm that there is no damage, leakage, dampness, etc., and that doors, windows, and lighting fixtures are in good condition. It is in good working order and all equipment is functioning properly.

6.1.2 Empty warehouses, storage yards, and work areas should be cleaned thoroughly to