

ICS 03.220.40

CCS R 46



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

GB 13561.1-2009

Replacing GB 13561.1-1992

**Safety rules on ports continuous handling facilities - Part 1:
Grain silos system**

港口连续装卸设备安全规程 第1部分：散粮筒仓系统

Issued on: June 4, 2009

Implemented on: January 1, 2010

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine**

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Foreword

All technical content in this section is mandatory. GB 13561 "port 's continuous handling facilities safety rules" consists of four parts.

--- Part 1. Grain silos system;

--- Part 2. Pneumatic unloader;

--- Part 3. belt conveyor, buried scraper conveyor and bucket elevator;

--- Part 6. continuous handling machinery. This is Part 1 GB 13561's. This Part replaces GB 13561.1-1992 "port 's continuous handling equipment safety procedures Grain silos system." This part of the main technical differences compared with GB 13561.1-1992 as follows:

--- Increased grain dust, dust explosion hazard, secondary explosions, grain dust explosion, explosion relief, explosion and seven fumigation technique Terms and definitions (see

3.3,3.4,3.5,3.6,3.7,

- Improve the layout and structure of security requirements (see 4.2,4.3.3,4.3.4,4.4.6);
- Improve the venting of security requirements (see 4.4.1,4.4.3);
- Reducing the explosion safety requirements (see 4.4.5);
- Canceled 4.5, and the content incorporated 5.1,7.10 11.13;
- Improve the process design and safety requirements for handling equipment (see 5.1.1,5.1.2,5.2.1,5.2.3, etc.);
- Improving the security requirements monitoring system (see 6.1.2,6.1.3,6.2.1,6.2.2,6.2.3, etc.);
- Improving the electrostatic protection of safety requirements (see 7.1,7.2,7.3, etc.);
- Improved ventilation and dust removal of security requirements (see 8.1.1,8.2.1,8.2.6,8.3.1,8.3.6, etc.);

1 Scope

Part 1 of GB 13561 is the mandatory safety code for the bulk grain silo systems installed at Chinese ports. It applies to the design, manufacture, installation, operation and maintenance of the silo and of the continuous handling plant around it - the conveyors, elevators, feeding and discharge equipment - and it is the document a port operator and its equipment supplier are held to during inspection. Grain silos combine two hazards that this code addresses together: the explosive dust atmosphere generated by handling grain, and the confined space of the silo itself. It was issued on 4 June 2009 by AQSIQ and has been in force since 1 January 2010, replacing GB 13561.1-1992. 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.

GB 13561 of the provisions of this part of the layout and structure of the port Grain silos system, process design and handling equipment, electrical and control system Systems, electrostatic protection, ventilation and dust removal, fire fighting facilities, fumigation and management of fire and explosion safety and other basic requirements. This section applies to the port of fire and explosion Grain silos system design, configuration and security management safety facilities, other Grain silos system You can also refer to use.

2 Normative references

The following documents contain provisions which, through reference in this Part of

GB 13561, constitute provisions of this part. For dated reference documents Member, all subsequent amendments (not including errata content) or revisions do not apply to this section, however, encouraged to reach under this section Parties to research agreement to use the latest versions of these documents. For undated reference documents, the latest versions apply to this section.

GB 8958 hypoxia dangerous job safety rules

GB 12158 General guidelines for preventing electrostatic accidents

GB 12476.1 combustible dust electrical equipment - Part 1. enclosures and surface temperature limitation protection of electrical equipment Section 1. Technical Requirements for Electrical Equipment (GB 12476.1-2000, idt IEC 61241-1.1999)

GB/T 13561.2 harbor continuous handling equipment safety procedures - Part 2. Pneumatic unloader

GB/T 13561.3 harbor continuous handling equipment safety procedures Part 3. belt conveyor, buried scraper conveyors and bucket lift Helicopter

GB/T 13561.6 harbor continuous handling equipment Safety specifications - Part 6. Continuous mechanical handling

GB 15577 Safety regulations for dust explosion

GB 15603 commonly used hazardous chemicals stored General

GB/T 15605 dust explosion relief guide (

GB/T 15605-1995, neqNFPA68)

GB 17440 food processing, storage and transportation system, dust explosion safety rules

GB 17918 Port bulk grain handling system dust explosion safety rules

3 Terms and Definitions

The following terms and definitions apply to this part of GB 13561.

3.1 Vertical storage container of bulk material. This section refers to the storage of bulk grain vertical container.

3.2 The silos, floor work (column), between irrigation kits, transfer towers, corridors and other buildings, loading and unloading equipment, transportation equipment, process equipment, and other auxiliary device Shi general.

3.3 In the production and storage of food in the can for a long time suspended in the air to produce solid particles, a non-conductive flammable dust.

3.4 The presence of combustible dust and gaseous oxidant (or air) in place.

3.5 Dust explosion, the initial explosion shock wave will be deposited dust raised again to form a dust cloud, and the subsequent occurrence of flame ignition Continuous explosion.

3.6 Prevention grain dust combustion, explosion, dust and combustion explosion occurred when a reduced loss technique.

3.7 A restriction explosion overpressure protection methods, by opening the vent setting means releasing unburned mixture and combustion products, avoiding stress Rises above enclosing body design strength (anti-knock intensity) to protect the enclosing body.

3.8 Extension of a limitation explosion protection methods, by blocking an explosion or combustion wave propagation, thereby limiting the expansion of the explosion.

3.9 Adopt technical measures for the fumigant to kill insects, bacteria or other harmful organisms in confined spaces.

4.1 Basic requirements

4.1.1 Fire work floor (tower) and fire hazard genus irrigation kits between B production risk, silo fire hazard was the case of a Class C storage Products fire risk, the building fire protection design shall comply with the relevant requirements of GB 50016 or regulations.

4.1.2 silos and work floor (tower) for the two types of mine construction, lightning protection measures should comply with the relevant requirements of GB 50057 and JT556 or Provisions.

4.1.3 reinforced concrete silos should be designed to meet the relevant requirements or provisions of GB 50077, steel silos should be designed in line with GB 50322 The relevant requirements or regulations.

4.1.4 Setting the substation and power distribution should be consistent with GB 50016, GB 50052, GB 50053 and GB 50058 or the relevant requirements Provisions. Grain silos system design

4.1.5 should be consistent with GB 15577, GB 17440 and GB 17918 of the relevant requirements or regulations.

4.2 Layout requirements

4.2.1 arranged silo system should comply with the relevant requirements or regulations JTJ211, handling boat operation area, loading and unloading trucks operation area, bulk grain storage Area, production area and other auxiliary press should each functional area, the relative concentration individually decorated.

4.2.2 silo management system should designate a closed area, closed management.

4.2.3 silo single warehouse capacity, number and layout should be based on technology, topography, geology, construction conditions and principles of fire and explosion, the