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

GB 14784-2013

Replacing GB 14784-1993

Safety regulations of belt conveyor

带式输送机 安全规范

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Foreword

Articles 4.1.1, 4.1.2, 4.1.3, 4.1.4, 4.1.5,

4.1.11 of this Standard [except Items d), e),

f) and h)] are compulsory; the rest are recommended. This Standard was drafted according to the rules given in GB/T 1.1-2009. This Standard replaces GB 14784-1993 "Safety Regulations of Belt Conveyor". Compared with GB/T 14784-1993, main differences in this Standard are as follows: - Application scope in the former standard was modified; - Sections 3.1, 3.5, 3.10, 4.1, 5.1, 5.2,

5.3 and 5.8; Items a, b, c, d, e and g in Article 3.2.3.4; Articles

4.3.3 and 5.4.5.6; and Chapter 7 in the former standard were deleted; - Basic requirements were added (see Chapter 3); - This Safety Regulations was prepared into three parts - "design and manufacture stage", "installation stage", and "operation and maintenance stage". - Article

3.11.2 and Table 1 in the former standard were revised (see Article

4.1.1.3 and Table 1); - Article

3.11.3 was deleted; and its contents were respectively written in the drum protection, idler protection, tension device protection, driving device protection, belt device protection, unloading vehicle protection and metal structural member protection; - "The idler in the transition section of the bearing branch conveyor belt, the idler in the lower part of the guide chute, the idler in the lower part of the pinch roller, and the part between the pinch roller

and the conveyor belt are also easily-pinched parts" (see Article 4.1.1.2) was added; - Anti-clamping wedge protection was added (see Article 4.1.2); - Transition idler protection, protection for the idler in the lower part of the guide chute, and protection for the idler in the lower part of the pinch roller were added (see Articles 4.1.3.4,

4.1.3.5 and 4.1.3.6); - Vehicle-type tension device protection was added (see Article 4.1.4.2); - Belt device protection was added (see Article 4.1.6); - Requirements for the protective plate were added (see Article 4.1.10); - Requirements for the emergency stop switch were added [see Item

i) in Article 4.1.11]; - Requirements for the preparation of "product operation and maintenance instructions" were added (see Article

4.1.12 and Appendix A); - The requirements that the test run shall not be carried out before completion of installation of the passageway etc. were added (see Article 4.2.4); - Items e), i), j), m), n), o), and

4.3 were added. This Standard was proposed by China Machinery Industry Federation. This Standard shall be under the jurisdiction of National Technical Committee on Continuous Handling Machinery of Standardization Administration of China (SAC/TC 331). Drafting organizations of this Standard. Beijing Yueji Industry Co., Ltd., and Beijing Materials Handling Research Institute (BMHRI). Participating drafting organizations of this Standard. Northeren Heavy Industries Group Co., Ltd., Huadian Heavy Industries Co., Ltd., Shanghai Keda Heavy Industry Group Co., Ltd., Hengyang Conveying Machinery Co., Ltd., Shanxi Oriental Material Handling Co., Ltd., Tongling Miracle Mechanical Equipment Co., Ltd., Transportation Machinery Equipment Manufacturing Co., Ltd. of Maanshan Iron & Steel Co., Ltd., and Jiangsu Huanyu Crane Transporter Co., Ltd. Chief drafting staffs of this Standard. Huang Wenlin, Wang Shunting, Ma Limin, Zhang Jigong, Liu Wenjun, Wang Yu, Liu Pokuan, Wang Fenglei, Zhang Xiaohua, Wang Yonghong, Yu Hongquan, Zhang Yongfeng, and Zhang Liming. The previous edition replaced by this Standard is as follows: - GB/T 14784-1993. Safety Regulations of Belt Conveyor

1 Scope

GB 14784 is the safety standard for belt conveyors, the machine responsible for a large share of entanglement and crushing injuries in mines, ports and bulk plants. It sets the basic requirements and the safety rules covering the guarding of nip points at drums, idlers and the take-up, the pull-cord and emergency stop devices along the run, the start-up warning, the walkways and crossings, the protection against belt slip and misalignment, and the requirements for maintenance access, with a normative annex on the operation and maintenance instructions the manufacturer must supply. It replaces both GB 14784-1993 and GB/T 14784-1993. Issued on 31 December 2013, in force since 1 July 2014. 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 Standard specifies the safety requirements of the belt conveyor (hereinafter referred to as "conveyor") in aspects of design and manufacture, installation, operation, and maintenance etc. This Standard is applicable to the fixed belt conveyor for conveying all kinds of blocky and granular bulk materials etc. as well as packed articles. This Standard is not applicable to the belt conveyors that are used for the underground coal mine, that in direct contact with foods or drugs, and manned belt conveyor. The conveyor for conveying flammable, explosive, toxic, corrosive and radioactive materials etc. shall comply with both this Standard and corresponding standards.

2 Normative References

The following referenced documents are indispensable for the application of this document. For dated reference, only the edition cited applies. For undated references, the latest edition of the normative document (including any amendments) applies.

GB/T 10595 Belt Conveyors

GB/T 17119 Continuous Mechanical Handling Equipment - Belt Conveyors with Carrying Idlers - Calculation of Operating Power and Tensile Forces

GB 23821-2009 Safety of Machinery - Safety Distances to Prevent Danger Zones Being Reached by the Upper and Lower Limbs

GB/T 25295 Guidelines on Safety Designs for Electric Equipment

GB 50168 Code for Construction and Acceptance of Cable System Electric Equipment Installation Engineering

GB 50169 Code for Construction and Acceptance of Grounding Connection Electric Equipment Installation Engineering

3 Basic Requirements

3.1 Design of the conveyor shall meet the requirements of GB 50431 and GB/T 17119.

3.2 Manufacture of the conveyor shall meet the requirements of GB/T 10595.

3.3 Operation conditions of the conveyor shall meet its normal operating conditions. The conveyor with special requirements shall also meet corresponding conditions.

4.1.1 Scope of easily-pinched parts

4.1.1.1 Head, tail and tension parts of the conveyor where people are often accessible as well as turn-about part of the conveyor belt are easily-pinched parts (see Figures 1 and 2).

4.1.1.3 If the above parts are arranged with guardrails, and the easily-pinched parts are within the positions shown in Figure 4 and dimensions specified in Table 1, then they will still belong to the easily-pinched parts, and shall be arranged with protective devices.

4.1.2 Drum protection Protective cover (plate) (See Figure 5) or anti-clamping wedge (see Figure 6) shall be adopted for the drum protection.

4.1.4 Tension device protection

4.1.4.1 Protective nets shall be arranged on both sides of (or around) the two turnabout drums in the upper part of the vertical heavy hammer tension device.

4.1.4.2 The drum at the tension trolley of the vehicle-type heavy hammer tension device shall be protected according to the requirements of Article 4.1.2.

4.1.5 Driving device protection High-speed shaft coupling, low-speed shaft coupling, brake wheel, brake disc and fluid coupling shall be installed with protective covers. When the driving device is arranged on the ground or at the platform where personnel can be accessible to and the belt speed is greater than 3.15m/s, the whole driving device scope shall be protected with a guardrail whose height is not less than 1500mm.

4.1.9 Receiving plate

4.1.9.1 When the driving drum is located at over 2m of the conveyor belts of the return branch and bearing branch from the top of the driving drum, a receiving plate shall be installed between the conveyor belt bearing branch and the driving drum (see Figure 14).

4.1.11 The conveyor (or conveying line) shall (should) be installed with a safety protection device The above safety protection device is as follows:

4.1.12 Product operation and maintenance instructions The belt conveyor manufacturer shall provide users with product operation and maintenance instructions, which shall also include the safety requirements and relevant precautions in the operation and maintenance suggested in Appendix A, in addition to product description, product parameter, operation instructions, maintenance period and overhaul items, lubrication instruction, catalogue of vulnerable parts, catalogue of spare parts and catalogue of accompanied documents etc.

4.2 Installation Stage

4.2.1 The installation organization shall comply with the requirements of GB 50270, GB 50168, GB 50169, GB 50170, GB 50254 and GB 50255, and develop and implement the installation plan by reference to the "Product Operation and Maintenance Instructions".

Appendix A

Note 1. 2. **Search (Optional).** Enter the keyword '**GB 14784-2013**' in the search bar, if