



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

**GB/T 10596.1-1989**

---

**En-masse conveyor  
(English Translation)**

**Issued on: January 1, 1970**

**Implemented on: January 1, 1970**

---

**Issued by: State Administration for Market Regulation, China National  
Standardization Administration**

## Table of Contents

|                                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------|
| Preface                                                                                                                      |
| 1 Scope                                                                                                                      |
| 2 Normative references                                                                                                       |
| 3 Terms and Definitions                                                                                                      |
| 4 Types and basic parameters                                                                                                 |
| 5 Technical Requirements                                                                                                     |
| 6 Test method                                                                                                                |
| 7 Inspection rules                                                                                                           |
| 8 Marking, packaging and storage                                                                                             |
| Appendix A (normative) Types and applications of scrapers and chains                                                         |
| Appendix B (Informative) Calculation and Selection of Conveying Volume, Nominal Speed of Scraper Chain, Conveying Efficiency |

## 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 of Standardization Documents" drafted:

This document replaces GB/T 10596-2011 "Buried Scraper Conveyor": Compared with GB/T 10596-2011, except for editorial changes, the main the technical content changes are as follows:

- Added examples of materials with special physical properties (see Chapter 1);
- Modified the relevant content of normative references (see Chapter 2, Chapter 2 of the:2011 edition);
- Added terms and definitions chapter (see Chapter 3);
- The type and basic parameters are combined into Chapter 4 (see Chapter 4, Chapter 3 and Chapter 4 of the:2011 edition);
- Modify the vertical type to C type (see Table 1, etc., Table 1 of the:2011 edition);
- Modified the temperature range of the hot material type conveyor and increased the high temperature type conveyor (see Table 2, Table 2 of the:2011 edition);
- Modified the description of toxic permeable materials (see Table 2, Table 2 of the:2011 edition);

- Delete the model representation method (see 3.4 of the:2011 edition);
- Added two machine slot widths of 1400mm and 1600mm (see Table 3, Table 9 and Table 11);
- Revised the provisions for the height of the bearing machine slot, and changed it to the bearing height series of the machine slot (see Table 4, Table 4 of the:2011 edition);
- Added the content of welded structure bending plate chain for engineering (see 4.2:3:2);
- Added the nominal speed of 0:05m/s and 1:25m/s scraper chain (see Table 5, 4:3 of the:2011 edition);
- Added the relevant content of the chain pitch (see 4.2:5);
- Added the relevant content of working environment conditions (see 5.1);
- Added the content of the scraper chain nominal speed deviation and conveying capacity requirements (see 5.2:4 and 5:2:5);
- The normal working time requirement before the first overhaul is revised to the design life requirement of the conveyor scraper chain (see 5.2:11, :2011 edition) 5:1:12);
- Delete the tolerance provisions for pins, sleeves and rollers (see 5.2:1:1, 5:2:1:2, 5:2:1:3 of the:2011 edition);
- Revised the provisions on the cumulative error of the conveyor chain length (see 5.3:1:7 and 5:3:1:8, 5:2:1:7 of the:2011 edition);
- Delete the tolerance provisions of the head wheel and sprocket hole (see 5.2:2:1 and 5:2:2:2 of the:2011 edition);
- Modified the description of the symmetry of the tooth symmetry center plane (see 5.3:2:5, 5:2:2:6 of the:2011 edition);
- Modified the relevant content of the guide rail (see 5.3:3:1, 5:2:3:1 of the:2011 edition);
- Delete the material layer indication and material layer height adjustment device in the conveyor safety auxiliary device (see 5.2:5:1 and:2011 edition) 5:2:5:2);
- Added the content of the conveyor blockage alarm device (see 5.3:5:3);
- Added coating requirements for scraper chains in other fields (see 5.5:3);
- Added the method of visual inspection (see 6.1);
- Modified the air tightness test method of the conveyor (see 6.6, 6:6 of the:2011 edition);
- Modified the factory inspection items, and listed the factory inspection items and type test items in a table (see Table 13, :2011 version 7:1:4, 7:2:2);
- Deleted the material test [see 7.2:2c) of the:2011 edition];

--- Modify the relevant content of marking, packaging and storage (see Chapter 8, Chapter 8 of the:2011 edition);

---Modified the relevant content of the basic type of conveyor scraper and the width of the machine slot corresponding to the pitch of the conveyor chain in Appendix A of the:2011 edition (see Appendix A, Appendix A of the:2011 edition):

Please note that some content of this document may be patented: The issuing agency of this document assumes no responsibility for identifying patents:

## 1 Scope

This document specifies the type, basic parameters, technical requirements, test methods, inspection rules, signs, packaging and storage of buried scraper conveyors:

This document applies to buried scraper conveyors that transport bulk materials:

This document does not apply to buried scraper conveyors conveying the following bulk materials:

- a) highly corrosive materials;
- b) Materials with bulk density greater than 1.8t/m<sup>3</sup>;
- c) Materials with special physical properties such as adhesion, bonding, entanglement and agglomeration:

## 2 Normative references

The contents of the following documents constitute essential provisions of this document through normative references in the text: Among them, dated citations documents, only the version corresponding to that date applies to this document; for undated references, the latest edition (including all amendments) applies to this document:

GB/T 699-2015 High-quality carbon structural steel GB/T 985.1 Recommended grooves for gas welding, electrode arc welding, gas shielded welding and high energy beam welding  
GB/T 1184-1996 Shape and position tolerances are not marked with tolerance values GB/T 3768 Acoustic sound pressure method to determine the sound power level and sound energy level of noise sources easy law GB/T 7324-2010 General purpose lithium base grease GB/T 8923.1-2011 Visual assessment of surface cleanliness of steel surface treatment before application of paint - Part 1: Uncoated the rust grade and treatment grade of the steel surface and the steel surface after comprehensive removal of the original coating GB/T 9286-1998 Cross-cut test for paints and varnishes GB/T 11352-2009 Cast carbon steel parts for general engineering GB/T 13306 Signs GB/T 13384 General technical conditions for packaging of mechanical and electrical products GB/T 15390 Welded structural bent plate chains, accessories and sprockets for engineering GB/T 35017

Bulk material classification, symbols, performance and test methods for continuous handling equipment JB/T 9154 Chains, scrapers and sprockets for buried scraper conveyors NB/SH/T 0587-2016 Molybdenum disulfide lithium base grease

### **3 Terms and Definitions**

The terms and definitions defined in GB/T 35017 and the following apply to this document:

A conveyor that continuously transports bulk materials in a closed machine tank by the force of the scraper chain on the material and the internal friction of the material: