

ICS 53.040.20
CCS G 42



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

GB/T 46612-2025

**Conveyor belts - Indentation rolling resistance related to belt
width - Requirements and testing**

输送带 基于带宽的压陷滚动阻力 技术条件和试验方法

(English Translation)

Issued on: October 31, 2025

Implemented on: May 1, 2026

Issued by: State Administration for Market Regulation

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is modified to adopt ISO 23586:2022 "Technical conditions and test methods for indentation rolling resistance of conveyor belts based on bandwidth".

This document has undergone the following structural adjustments compared to ISO 23586:2022.

---Added headings A.1 and A.2 to Appendix A.

The technical differences between this document and ISO 23586:2022, and the reasons therefor, are as follows.

---The terms and definitions have been updated to include normative references to GB/T 5756 to adapt to my country's technical conditions and increase operability (see Chapter 3);

---The relevant content regarding the calculation of indentation rolling resistance has been revised to clarify operational requirements and eliminate ambiguity (see Chapter 6);

---The test report has been amended (see Chapter 9).

The following editorial changes have been made to this document.

---ISO 21183-1 has been replaced with GB/T 39825 (reference standard) to improve operability (see Chapter 1);

---ISO 15236-3 has been replaced with GB/T 28267.3, which is used for informational purposes, to improve operability (see Chapter 9).

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the China Petroleum and Chemical Industry Federation.

This document is under the jurisdiction of the National Technical Committee on Standardization of Pulleys and Belts (SAC/TC428).

Introduction

Rolling resistance caused by indentation is due to energy loss resulting from deformation of the conveyor belt when it contacts the idler rollers. Besides the technical characteristics of the conveyor belt, rolling resistance also contributes to this energy loss.

The magnitude of rolling resistance also depends on the following factors.

---Conveyor belt design, especially the thickness of the cover layer on the roller contact surface;

---Vertical load;

---Idler roller diameter;

---Ambient temperature;

---Belt speed.

Bandwidth-based indentation rolling resistance is measured on a test apparatus with idlers. During testing, the idlers apply a uniform pressure to the conveyor belt.

Vertical load on the fabric. In the design of belt conveyors with multiple idlers, the indentation rolling resistance is achieved through the conveyor belt and...

The vertical force between the idlers and its distribution were calculated (see Appendix A).

Conveyor belt indentation rolling resistance based on bandwidth Technical conditions and test methods

1 Scope

This document describes a test method for indentation rolling resistance related to conveyor belt width. The purpose of the test is to assess the structure of the finished conveyor belt.

Comprehensive testing and simulations were conducted to ensure that the results were repeatable and relevant to practical applications. The test results can be used for communication between conveyor belts.

Comparison, and for designing belt conveyors using steel cord conveyor belts and fabric cord conveyor belts.

This document applies to steel cord conveyor belts and fabric cord conveyor belts, but not to the light-duty conveyor belts described in GB/T 39825[1].

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

This document.

GB/T 5756 Conveyor Belt Terminology and Definitions (GB/T 5756-2009, ISO 5284:1986, NEQ)

3 Terms and Definitions

The terms and definitions defined in GB/T 5756 apply to this document.

4 Symbols and Units

The symbols and units listed in Table 1 apply to this document.

Table 1 Symbols and Units

Symbolic units

B Conveyor belt width (mm) bK Conveyor belt edge rubber width (mm) bR Contact ratio between conveyor belt and idler roller (mm) the coefficient in the approximate equation for width-related indentation rolling resistance -the exponent in the approximate equation for cb width-related indentation rolling resistance -DR,M measures the diameter of the idler roller (mm).

DR,G support roller diameter (mm) DS wire rope diameter (mm) DTr roller diameter (mm)

FE is the indentation rolling resistance N acting on a roller.