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

GB/T 15902-2026

Replacing GB/T 15902-2017

**Conveyor belts - Determination of elastic and permanent
elongation and calculation of elastic modulus**

输送带 弹性伸长和永久伸长的测定及弹性模量的计算

(English Translation)

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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 replaces GB/T 15902-2017 "Determination of Elastic Elongation and Permanent Elongation and Calculation of Elastic Modulus of Conveyor Belts".

Compared with GB/T 15902-2017, the main technical changes in the "Calculation" standard, apart from structural adjustments and editorial modifications, are as follows.

a) The scope has been expanded to include applicable content (see Chapter 1, Chapter 1 of the 2017 edition);

b) The terms and definitions for tensile strength and nominal tensile strength have been removed (see 3.1-3.2 in the 2017 edition), and the terms for high reference force and low tensile strength have been changed.

Definitions of reference force, specific force range parameters, and elastic modulus (see 3.1~3.3, 3.9; 3.3~3.5, 3.11 in the 2017 edition);

c) The range coverage requirements for the dynamic tensile testing machine have been changed (see 5.1, 2017 version 5.1);

- d) The sample size was changed, and the sample size and preparation method for steel wire rope core conveyor belts were added (see 7.1, 2017 version 7.1);
- e) The unit of force applied under cyclic tensile stress has been changed (see Figure 1, Figure 1 in the 2017 edition);
- f) The formula for calculating the modulus of elasticity has been changed (see 10.3, 2017 edition of 10.3).

This document is modified to adopt ISO 9856:2016 "Determination of elastic elongation and permanent elongation and calculation of elastic modulus of conveyor belts".

---Chapter 3 corresponds to Chapter 3 of ISO 9856:2016, where 3.1 to 3.9 correspond to 3.3 to 3.11 of ISO 9856:2016.

The technical differences between this document and ISO 9856:2016, and the reasons therefor, are as follows.

---The scope of application has been expanded (see Chapter 1) to increase operability and facilitate the application of this document;

---The terminology and definitions section has added the normative reference GB/T 5756, and removed the terms tensile strength and nominal tensile strength.

The definitions of high reference force, low reference force, specific force range parameters, and elastic modulus have been revised (see Chapter 3) to adapt to my country's national standards.

The technical requirements are consistent with Chinese standards, increasing operability;

---The range coverage requirements for the dynamic tensile testing machine have been changed (see section 5.1) to increase the accuracy of data measurements;

---ISO 7500-1 (see 5.1) has been replaced with the normatively referenced GB/T 16825.1 to adapt to my country's technical conditions and add [further details needed].

Operability;

---ISO 282 (see Chapter 6) has been replaced with the normatively referenced HG/T 2410 to adapt to my country's technical conditions and increase operability.

Actual nature;

---The sample dimensions and preparation method for steel wire rope core conveyor belts have been added (see 7.1) to increase operability and facilitate the application of this document;

---ISO 18573 (see Chapter 8) has been replaced with the normatively referenced GB/T 30691 to adapt to my country's technical conditions and add [further details needed].

Operability;

---The units of the applied force under cyclic tensile stress have been changed (see Figure 1) to improve the accuracy of calculations;

---The formula for calculating the modulus of elasticity has been modified (see Chapter 10) to improve the accuracy of the calculation.

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).

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Introduction

This document aims to determine the scenario where a conveyor belt undergoes permanent elongation after cyclic stretching under mechanical action, especially in the practical application of HG/T 4604.

This has practical significance in the application of GB/T 39819.

Determination of elastic elongation and permanent elongation of conveyor belts Calculation of elastic modulus

1 Scope

This document describes the methods for determining the elastic elongation and permanent elongation of conveyor belts, and provides a method for calculating the elastic modulus.

This document applies to the determination of elastic elongation and permanent elongation, and the calculation of elastic modulus, for fabric-core conveyor belts and wire rope-core conveyor belts.

This document does not apply to the determination of elastic elongation and permanent elongation and the calculation of elastic modulus of light conveyor belts as specified in GB/T 39825.

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.

This document.

GB/T 5756 Conveyor Belt Terminology and Definitions GB/T 16825.1 Inspection and calibration of static uniaxial testing machines for metallic materials - Part 1: Tensile and/or compressive testing machines Inspection and calibration of force measurement systems (GB/T 16825.1-2022, ISO 7500-1:2018, IDT) GB/T 30691 Test environment and conditioning time for conveyor belts (GB/T 30691-2014, ISO 18573:2012, IDT) HG/T 2410 Sampling of Conveyor Belts (HG/T 2410-2006, ISO 282:1992, IDT)

3 Terms and Definitions

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

high reference force F_U Multiply the nominal tensile strength (T) of the conveyor belt by the width of the sample.

Note: The unit is Newton (N).

lower reference force F_L 2% of the nominal tensile strength (T) of the conveyor belt multiplied by the width of the specimen.

Note: The unit is Newton (N).

The difference between high reference strength (3.1) and low reference strength (3.2).

Note: The unit is Newton (N).