

ICS 53.040.20
CCS G 42



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

GB/T 33204-2025

Replacing GB/T 33204-2016

Light conveyor belts - Determination of electrical resistances

轻型输送带 电阻测定

(English Translation)

Issued on: October 31, 2025

Implemented on: May 1, 2026

Issued by: State Administration for Market Regulation

Table of Contents

- Foreword
- 1 Scope
- 2 Normative references
- 3 Terms and Definitions
- 4 Symbols

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 33204-2016 "Determination of Resistance of Light Conveyor Belts". Compared with GB/T 33204-2016, the only differences are in the structural design.

Aside from integration and editorial changes, the main technical changes are as follows.

- a) Added terms and definitions (see Chapter 3);
- b) The schematic diagram of the surface resistance ROA measurement device, the test setup diagram for measuring surface resistance ROB, and the diagram for measuring surface resistance ROG have been modified.

Schematic diagram of the test setup, example diagram of a disk electrode used to measure the volume resistivity RD of the tape, and measurement of the volume resistivity parallel to the tape surface.

Schematic diagram of the RDi test setup (see Figures 1, 4, 6, 8, and 9; Figures 2, 3, 4, 6, and 9 from the 2016 edition);
- c) Electrode dimensions have been increased (see 5.1.3.2, 4.1.3.2 in the 2016 version);
- d) A schematic diagram of the sample cutting location distribution and a schematic diagram of the sample shape and size have been added (see Figures 2, 5, 7, and 10);
- e) The formulas have been changed (see Chapters 6 and 8, and Chapters 5 and 7 in the 2016 edition);
- f) The layout diagram for measuring the volume resistivity RD of light conveyor belts using the current-voltage method and the diagram for measuring the volume resistivity RD of light conveyor belts using the read-only instrument method have been deleted.

The arrangement diagram of the volume resistivity RD of the strip (see Figures 7 and 8 in the 2016 edition).

This document is modified to adopt ISO 21178:2020 "Determination of resistance of light conveyor belts".

The technical differences between this document and ISO 21178:2020, and the reasons therefor, are as follows.

---The size of the measuring electrodes has been increased (see Chapter 5) to reduce measurement variability, adapt to my country's technical conditions, and increase operability;

---The normative reference GB/T 5756 (see Chapter 3) has been added to adapt to my country's technical conditions;

---ISO 18573 (see 5.1.4.5, 5.1.5, 5.2.5, 7.1.4, 7.2.4) has been replaced with the normatively referenced GB/T 30691 to accommodate [the standard/standard].

my country's technological conditions.

The following editorial changes have been made to this document.

---ISO 21183-1 has been replaced by GB/T 39825 (see Chapter 1) as an informative reference;

---Added an introductory text to Chapter 4.

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).

1 Scope

This document describes the test method for determining the resistance of lightweight conveyor belts (hereinafter referred to as "belts"), including surface resistance and volume resistance perpendicular to the belt plane.

This document describes the experimental results for surface resistivity and volume resistivity, as well as the transverse and longitudinal volume resistivity parallel to the plane of the band.

method.

This document applies to the light conveyor belts described in GB/T 39825[2].

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) GB/T 30691 Test environment and conditioning time for conveyor belts (GB/T 30691-2014, ISO 18573:2012, IDT)

3 Terms and Definitions

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

The ratio of DC voltage to current applied between two electrodes on the same surface of the sample.

Note: The unit is ohms (ohm).

Surface resistance per unit area.

Note: The unit is ohms (ohm), which is independent of the area.

The ratio of DC voltage to current applied between the two electrodes in contact with the opposite surface of the sample, excluding the current along the surface.

Note: The unit is ohms (ohm).

Volume resistivity per unit volume.

Note: The unit is ohmmeter (ohmm).

4 Symbols

The symbols listed in Table 1 are applicable to this document.