

CCS G 42



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

GB/T 3684-2021

**Conveyor belts - Electrical conductivity - Specification and test
method**

Issued on: March 9, 2021

Implemented on: October 1, 2021

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

Table of Contents

- Foreword
- 1 Scope
- 2 Normative references
- 3 specifications
- 4 Test method
 - 4.1 Principle
 - 4.2 Materials and devices

Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard replaces GB/T 3684-2006 "Conveyor Belt Conductivity Specifications and Test Methods", compared with GB/T 3684-2006,

The main technical changes are as follows.

---Updated normative references (see Chapter 2, Chapter 2 of the.2006 edition).

This standard uses the redrafting method to modify and adopt ISO 284.2012 "Conveyor Belt Conductivity Specifications and Test Methods".

Compared with ISO 284.2012, this standard has technical differences, and the clauses involved in these differences have been passed in the margins on the outer side.

The vertical single line (|) is marked, and the technical differences and their reasons are as follows.

--- In accordance with the requirements of GB/T 1.1-2009, in the "Scope" chapter, "This standard does not apply to the light-duty output specified in ISO 21183-1

"Send belt" is changed to "This standard applies to conveyor belts other than the light conveyor belts specified in GB/T 39825."

--- Regarding normative reference documents, this standard has made adjustments with technical differences to adapt to my country's technical conditions and adjustments.

The situation is collectively reflected in Chapter 2 "Normative Reference Documents", and the specific adjustments are as follows.

* Replace ISO 18573 with GB/T 30691, which is equivalent to the international standard (see 4.4).

This standard also made the following editorial changes.

---References are revised to Chinese documents.

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

This standard is under the jurisdiction of the National Belt Wheel and Belt Standardization Technical Committee Conveyor Belt Subcommittee (SAC/TC428/SC1).

Drafting organizations of this standard. Zhejiang Shuangjian Rubber Co., Ltd., Anhui Zhongyi Tape Co., Ltd., Zhejiang Sanwei Rubber Products Co., Ltd.

Co., Ltd., Zhongnan Rubber Group Co., Ltd., Qingdao University of Science and Technology.

1 Scope

This standard specifies the maximum surface resistance and test methods of conveyor belts.

This standard is used to ensure that the conveyor has sufficient conductivity to avoid the accumulation of static charge during use.

This standard applies to conveyor belts other than the light conveyor belts specified in GB/T 39825 [3]. For the measurement of the electrostatic performance of the light conveyor belt, see

GB/T 33204 [2].

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this article

Pieces. For undated reference documents, the latest version (including all amendments) is applicable to this document.

GB/T 30691 conveyor belt test environment and state adjustment time (GB/T 30691-2014, ISO 18573.2012, IDT)

3 specifications

When tested according to the method specified in Chapter 4, the surface resistance of the conveyor belt is not more than $3 \times 10^8 \Omega$ (300M Ω). It can be specified for special applications

Low value.

4.1 Principle

The current under the specified voltage flows through the electrode through the conveyor belt sample to test the surface resistance of the sample.

4.2.1 Insulating material board. the size is slightly larger than the sample.

4.2.2 Two cylindrical coaxial brass electrodes. one is round and the other is ring, the size and quality are shown in Figure 1. The surface of each electrode

Should be ground and polished, and each connected to insulated wires.

4.2.3 Ohmmeter (resistance tester). The maximum range is 1010ohm, and the measurement accuracy is $\pm 5\%$.

4.2.4 DC power supply. the voltage can be adjusted to 1000V, the current through the sample cannot be greater than 10mA or the power consumed in the sample is not large $\leq 1W$. The power supply can be a battery power supply or an AC power supply that can provide a stable voltage after rectification.

4.2.5 Conductive liquid. to ensure good electrical contact between the electrode and the sample, and the surface resistivity is not more than 104ohm. The components of the conductive liquid are shown in Table 1.

Table 1 Components of conductive liquid

Units are milligrams per gram

Component parts by mass

Anhydrous polyethylene glycol (relative molecular weight. 600) 800

Water.200

Potassium chloride 10

Soft soap (medical grade) 1