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

**GB/T 3685-2017**

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**Conveyor belts -- Laboratory scale flammability characteristics  
-- Test method  
(English Translation)**

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### Foreword

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

This Standard replaces GB/T 3685-2009, Conveyor belts - Laboratory scale flammability characteristics - Requirements and test method; compared with GB/T 3685-2009, the main technical changes are as follow:

- Modify the standard name (see cover);
- Modify the introductory words of the normative references (see Chapter 2; Chapter 2 of the 2009 edition);
- Remove the year number of the normative reference ISO 9162, and replace ISO

### **18573 with GB/T 30691 (see Chapter 2; Chapter 2 of the 2009 edition);**

- Correct the term and definition "afterflame" (see 3.1; 3.1 of the 2009 edition);
- Delete the term "flame" (3.4 of the 2009 edition);
- Delete the terms and definitions of burning duration and burning (see 3.2 and 3.5 of the 2009 edition);
- Correct the name of burner (see 4.4.1; 5.4.1 of 2009 edition);
- Correct the name of gas fuel (see 4.4.2; 5.4.2 of the 2009 edition);
- Delete the requirements (see Chapter 4 of the 2009 edition).

This Standard uses the redrafting method to modify and adopt ISO 340:2013 Conveyor

belts - Laboratory scale flammability characteristics - Requirements and test method  
(English version).

There are technical differences between this Standard and ISO 340:2013. The technical differences and their reasons are as follows:

-- Regarding the normative references, this Standard makes technical adjustments to adapt to the technical conditions of China. The adjustments are concentrated in Chapter 2 "Normative references". The specific adjustments are as follows:

- Use GB/T 30691, which is equivalent to the international standard, to replace ISO 18573;

-- Since the technical requirements have been stipulated in the relevant product standards in China, in order to facilitate the use and prevent confusion caused during the implementation of the standards, in this Standard Chapter 4 Requirements in ISO 340:2013 is removed, thus making the difference in Conveyor belts - Laboratory scale flammability

characteristics - Test method

CAUTION - This test method is not intended to evaluate the fire hazard of any product. The test results help to evaluate the flammability of products or materials, but cannot be used as a basis for evaluating the safety of products or materials.

## 1 Scope

This Standard specifies a small-scale test method for evaluating the reaction of conveyor belts to fire. This Standard applies to fabric core conveyor belts and steel cord conveyor belts.

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies to this document. For undated references, the latest edition (including any amendment) applies to this document.

GB/T 30691, Conveyor belts - Test atmospheres and conditioning periods (GB/T

30691-2014, ISO 18573:2012, IDT)

ISO 8056-1, Aircraft - Nickel-chromium and nickel-aluminium thermocouple

extension cables - Part 1: Conductors - General requirements and tests

ISO 9162, Petroleum products - Fuels (class F) - Liquefied petroleum gases -  
Specifications

### **3 Terms and definitions**

The following terms and definitions are applicable to this document.

#### **3.1 Afterflame**

Flame which persists after the ignition source has been removed.

[ISO 13943:2008, definition 4.6].

#### **3.2 Flame, noun**

Zone of combustion in the gaseous phase, usually with emission of light.

[ISO 13943:2008, definition 4.133].

#### **4.1.1 Smoke and flame**

The combustion of polymeric materials may produce smoke and toxic gas, which can affect the health of the operators. Therefore, the smoke in the test area shall be removed in time.

#### **4.1.2 Handling, storage and disposal of liquefied petroleum gas containers**

All safety regulations for the handling and storage of liquefied petroleum gas (LPG) shall be followed; regulations for the disposal of LPG containers shall also be followed.

If the relevant safety regulations require that the storage temperature of LPG is lower than the test environment temperature, or if there is a certain distance from the test platform, a sufficiently long piping system is required to ensure the temperature required for gas balance in the combustion test. A convenient method is to pass the gas (before the combustion test) through a metal pipe placed in water at 25 °C.

## **4.2 Principle**

Place the test piece cut from the conveyor belt vertically in the flame for a certain period of time, and record the afterflame time of the test piece after removal from the burner. Then, apply a current of air to the test piece, and record the re-flame.

### **4.3.1 General**

The test pieces described in 4.3.2 and 4.3.3 shall be cut at least 50 mm from the edge of the belt.

#### **4.3.2.1.1 Prepare 12 test pieces, each (200 mm $\pm$ 5 mm) x (25 mm $\pm$ 1 mm) as follows:**

- a) Cut 3 test pieces with coating along the longitudinal direction of the conveyor belt.
- b) Cut 3 test pieces with coating along the transverse direction of the conveyor belt.
- c) Cut 3 test pieces with coating removed (see 4.3.2.1.2) along the longitudinal direction of the conveyor belt.
- d) Cut 3 test pieces with coating removed (see 4.3.2.1.2) along the transverse direction of the conveyor belt.

#### **4.3.2.1.2 Coating can be removed [see c) and d) in 4.3.2.1.1] by stripping, scraping and**

grinding. If the coating is removed by grinding, special care shall be taken, to ensure that the test piece is not overheated and the fabric core is not damaged.

#### **4.3.2.2 Tests on conveyor belts with intact coating**

If the product specification requires the test to be carried out on a conveyor belt with an intact coating, the test requires only 6 test pieces as described in a) and b) of 4.3.2.1.1.

#### **4.3.2.3 Tests on conveyor belts designed without coating**

If the product specification requires the conveyor belt to be designed for testing without covering, the test requires only 6 test pieces as described in c) and d) in 4.3.2.1.1.