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

GB/T 5755-2021

**Steel cord conveyor belts - Cord-to-coating bond test - Initial
test and after thermal treatment**

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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 5755-2013 "Wire rope core conveyor belt rope and coating glue adhesion test under the original state and after heat aging

Tests, compared with GB/T 5755-2013, the main technical changes are as follows.

---Modified the normative reference documents (see Chapter 2, Chapter 2 of the.2013 edition);

---Modified the description of the tensile testing machine (see 4.1, 4.1 in the.2013 edition);

---Modified the description of test conditions (see Chapter 5, Chapter 5 of the.2013 edition);

--- Modify the content of Note 2 of the.2013 edition of 5.2 into paragraphs (see 5.2, Note 2 of the.2013 edition of 5.2);

--- Modify the icon in Figure 1 and add the description in the figure (see Figure 1, Figure 1 of the.2013 edition);

---Added Figure 2 (see Figure 2).

This standard uses the translation method equivalent to ISO 7623.2015 "The original state

of the adhesion test of steel wire rope core conveyor belt rope and covering rubber

Test after down and heat aging."

The Chinese documents that have a consistent correspondence relationship with the normatively cited international documents in this standard are as follows.

---GB/T 5754.2-2017 Steel cord conveyor belt longitudinal tensile test Part 2.Determination of tensile strength (ISO 7622-

2.2015, IDT);

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

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. Wuxi Baotong Technology Co., Ltd., Sino-German (Yangzhou) Transportation Engineering Technology Co., Ltd., Anhui Zhongyi Adhesive Tape Co., Ltd., Zhongnan Rubber Group Co., Ltd., Shandong Weipusi Rubber Co., Ltd., Qingdao University of Science and Technology.

1 Scope

This standard specifies the test method for the bond strength (including the original state and after heat aging) between the steel wire rope and the coated rubber.

This standard applies to conveyor belts with metal skeletons.

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.

ISO 7622-2 Steel cord conveyor belt longitudinal tensile test Part 2.Determination of tensile strength (Steelcordconveyor

belts-Longitudinaltractiontest-Part 2.Measurementoftensilestrength)

ISO 18573 Conveyor Belt Test Environment and Condition Adjustment Time (Conveyorbelts-Testatmospheresandcondi-

tioningperiods)

3 Principle

A longitudinal tensile force is applied to the sample at a constant speed, and the force required to pull a steel wire rope out of the sample is measured.

4.1 Tensile testing machine with gripper. meet the requirements of ISO 7622-2.

4.2 Flat vulcanizing machine. with two hot plates whose temperature can be adjusted to (145 ± 5) degrees C, which can apply 1MPa~5MPa to the sample (see Chapter 6) pressure.

5 Test conditions

The test is carried out under the conditions specified in the environment B in ISO 18573. If otherwise specified, it shall be stated in the test report.

5.1 Test in original state

The belt is made to be parked for at least 5d, and the test is carried out in accordance with the content described in Chapter 8.

5.2 Test after heat aging

Before the test, the sample strip is heated on the flat vulcanizing machine, the heating time is (150 ± 1) min, the heating temperature is (145 ± 5) degrees C, and the sample table

The surface pressure is about 1MPa, and should not exceed 5MPa.

If a different temperature, pressure or time is used, the details should be pointed out in the test report.

Note. A gasket with a thickness equal to the thickness of the sample strip minus (1 ± 0.5) mm can be placed between the two hot plates to obtain the surface pressure of the sample strip that meets the requirements.

6 Sample

Three samples with the following dimensions are cut from the samples of the conveyor belt before and after aging.

a) Along the longitudinal length of the belt (SLmin). when the diameter of the wire rope is less than or equal to 5mm, the minimum is 350mm; the diameter of the wire rope is greater than

At 5mm, the minimum is 450mm;

b) Width. make the sample contain five longitudinal steel wire ropes;

c) Thickness. the thickness of the belt (including the upper and lower cover rubber).

In the middle of the sample, mark the length of the test section L, L is determined according to Table 1.

Use a knife to remove at least 10mm long cover rubber and transverse reinforcement layer (if any) on both sides of the test section, so that five longitudinal steel wire ropes on both sides are exposed.

On one side of the test section, close the end line of the section to cut the middle wire rope (see Figure 1 or Figure 2).

On the other side of the test section, close to the end line of the section and cut the other four wire ropes on both sides of the middle wire rope (see Figure 1 or Figure 2).

Use a knife to remove the covering glue from the end of the cut wire rope. Do not damage the wire rope to be tested for bonding strength.

7 Status adjustment

The sample should be adjusted for at least 3h under the condition of temperature (23 ± 2) degrees C and relative humidity $(50\pm 5)\%$. After the state is adjusted, press the first

The contents described in Chapter 8 are tested.

8 Test procedure

Adjust the distance between the two grippers on the tensile testing machine (see 4.1) to (250 ± 10) mm.

Clamp both ends of the sample with holders. For self-tightening holders, check whether the parts of the holder can move freely.

Apply continuous (non-stop) tensile force to the sample, and the tensile speed is (100 ± 10) mm/min.

Continue to stretch until the wire rope is completely drawn out.

Note. The maximum pulling force is defined as the withdrawal force.

Repeat the above test for the other two samples.

10 Test report

The test report should include at least the following content.

a) The name and number of this standard;