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

GB/T 33100-2025

Replacing GB/T 33100-2016

Test methods of belt flexing fatigue for dipped cords

浸胶帘线带式曲挠疲劳试验方法

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document replaces GB/T 33100-2016 "Dipped Cord Belt Flexural Fatigue Test Method" and is consistent with GB/T 33100-2016.

In addition to structural adjustments and editorial changes, the main technical changes are as follows.

- Changed the scope of the standard (see Chapter 1, Chapter 1 of the 2016 edition);
- Added terms and definitions (see Chapter 3);
- Added the requirements for the test temperature selection range of the belt flexure fatigue machine (see 5.1);
- Added release paper preparation (see 6.2.3);
- Changed the specimen mold preparation, vulcanization and specimen cutting (see 6.2.4, 5.2.3 of the 2016 edition);
- Added a schematic diagram of the placement of the vulcanized mold sample (see 6.2.4);
- Changed the preparation method and number of specimens for the breaking strength test (see 7.3.1, 6.3.1 of the 2016 edition).

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the 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 Rubber and Rubber Products of Standardization (SAC/TC35).

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The previous versions of this document and the documents it replaces are as follows.

- First published in 2016 as GB/T 33100-2016;
- This is the first revision.

1 Scope

This document describes the determination of the breaking strength retention of dipped cords after flexural fatigue tests on strip specimens made of dipped cords and rubber vulcanization.

Test methods for fatigue resistance properties such as adhesion rate, adhesive peel force, and rubber coverage.

This document is applicable to the determination of the belt-type flexural fatigue resistance of the dipped rubber cord made of fiber, and is also applicable to the dipped rubber yarn, dipped Determination of fatigue resistance of rubber-impregnated skeleton materials such as rubber cords.

2 Normative citations

GB/T 2941
GB/T 8170
GB/T 16491
GB/T 32108
GB/T 32109
GB/T 32110

3 Terms and Definitions

The terms and definitions defined in GB/T 32110 apply to this document.

4 Test Principle

The strip rubber specimens made by vulcanizing the dipped cord and rubber were tested using a belt flexure tester according to the set test conditions.

Repeated bending is performed to simulate the repeated fatigue of the rubber cord itself and the relationship between the rubber and the cord when the rubber cord is used in tires and other rubber products.

The tensile testing machine is used to test the adhesive peeling force between the rubber and the cord in the fatigue area of the sample after flexural fatigue and the peeling surface of the fatigue area.

Rubber coverage, the ratio of the adhesive peeling strength of the fatigue specimen to the adhesive peeling strength of the unflexed fatigue specimen is the flexing strength of the dipped cord. The tensile testing machine was used to test the breaking strength of the rubber-impregnated cord after fatigue peeling. The breaking strength was the same as that of the unimpregnated cord.

The ratio of the breaking strength values of the dipped cord peeled off from the flexural fatigue comparison specimen is the breaking strength retention rate of the dipped cord before and after flexing.

5.1 Belt flexure testing machine

The belt flexure tester used in this document should be able to make the belt rubber specimen contact the pulley at a certain angle, with the two ends of the specimen respectively. The connecting rod is connected to the drive shaft through the rocker arm, and the load can be applied to the sample through the pulley.

The counter can set and record the number of times the specimen is bent at a certain tensile tension, as shown in Figure 1, and must meet the following requirements.