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PEOPLE'S REPUBLIC OF CHINA

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Replacing GB/T 532-1997

Rubber, Vulcanized or Thermoplastic
– Determination of Adhesion to Textile Fabric

硫化橡胶或热塑性橡胶与织物粘合强度的测定

(ISO 36:2005, IDT)

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Rubber, Vulcanized or Thermoplastic

– Determination of Adhesion to Textile Fabric

WARNING - Persons using this Standard shall have practical experience working in formal laboratory. This Standard does not point out all possible safety issues, the user is responsible for taking appropriate safety and health measures and ensuring compliance with the conditions stipulated by relevant national regulations.

1 Scope

This Standard specifies a test method for the determination of the force required to separate the adhesive interface BETWEEN rubber or thermoplastic rubber AND fabric layers or between fabric and fabric layers by peeling method.

This Standard applies to samples with an approximately flat adhesive layer or cylindrical samples with an inner diameter of more than 50mm.

This Standard does not apply to specimens whose interlaminar surfaces contain sharp bend angles or other severe irregularities when the specimen is cut.

This Standard does not apply to coated fabrics, which can be tested in accordance with the provisions of HG/T 3052. It also does not apply to fabric conveyor belts, which can be tested in accordance with the provisions of GB/T 6759.

2 Normative References

The provisions in following documents become the provisions of this Standard through reference in this Standard. For dated references, the subsequent amendments (excluding corrigendum) or revisions do not apply to this Standard, however, parties who reach an agreement based on this Standard are encouraged to study if the latest versions of these documents are applicable. For undated references, the latest edition of the referenced document applies.

GB/T 2941 Rubber - General Procedures for Preparing and Conditioning Test Pieces for Physical Test Methods (GB/T 2941-2006, ISO 23529:2004, IDT)

GB/T 12833 Rubber and Plastics - Analysis of Multipeak Traces Obtained in Determinations of Tear Strength and Adhesion Strength (GB/T 12833-2006, ISO 6133:1998, IDT)

ISO 5893:2002 Rubber and Plastics Test Equipment – Tensile, Flexural and Compression Types (Constant Rate of Traverse) – Specification

3 Terms and Definitions

For the purposes of this Standard, the following terms and definitions apply.

3.1 Adhesion strength

The force required to separate a specimen of unit width to separate two adhesion interfaces.

NOTE: Separation may occur at non-adhesion interfaces. If it occurs inside a material to be adhered, it belongs to the destruction of the material to be adhered and cannot indicate its adhesion strength. In this case, the adhesion strength is greater than the strength of the weakest material.

4 Principle

Under specified conditions, determine the force required to separate the adhesion interface between vulcanized rubber or thermoplastic rubber and fabric layers, or between fabrics adhered with rubber and fabric layers. The shape of the specimen is a standard flat strip one.

5 Instrument

5.1 Testing machine

The testing machine shall be electric and fitted with a suitable dynamometer, preferably a non-inertial dynamometer (e.g., electronic or optical). During the test, the mobile gripper shall keep moving at a substantially constant speed and be equipped with an automatic recorder or a computer with graphing software available for data acquisition and processing.

The testing machine shall comply with the provisions of ISO 5893; and the accuracy of the elongation dynamometer shall meet the requirements of Class-2 in ISO 5893:2002. And the moving speed of the gripper is 50mm/min $\pm$ 5mm/min.

The testing machine shall be equipped with grippers to hold the specimen and shall not slip during the test.

5.2 Automatic chart recorder

The recorder has enough range for easy analysis of peeling curve graphs. Or a computer with graphics software, the computer's automatic recording graphics software shall comply with the provisions of data processing procedures in GB/T 12833.

weeks. In order to make the test results comparable, the comparative test shall be carried out within the same time interval as possible.

- c) For product tests, where possible, the time interval between test and vulcanization shall not exceed 3 months. In other cases, the test shall be carried out within two months from the date of receipt by the purchaser.

9 Environmental Conditioning and Test Temperature of the Specimen

The environmental conditioning of all samples shall comply with the provisions of GB/T 2941. If the sample preparation includes grinding, the time interval between grinding and test shall be a minimum of 16h and a maximum of 72h.

For the test at the standard laboratory temperature (see GB/T 2941), the test piece cut from the environmental conditioning specimen can be tested immediately at the standard temperature if no further preparation is required. For further preparation, it shall be adjusted at standard temperature for a minimum of 3h.

For the test at non-standard temperature, according to the provisions of GB/T 2941, adjust enough time at the specified temperature to ensure that the specimen reaches the equilibrium state.

10 Test Procedures

Take the specimen specified in 6.1; peel off a layer of fabric or a layer of glue with a length of about 50mm by hand. For initial separation, a scalpel or similar tool can be used, and fix both ends of the peeled specimen on the gripper of the testing machine (5.1); and adjust the specimen so that the tensile force is evenly distributed and the specimen is not twisted during the test. The main body of the specimen is clamped on the fixed gripper, and the peeled layer is placed in the moving gripper, so that the peeling angle is about 180°. What is important here is to ensure that the axes of the flat-strip specimen in the gripper are in the same plane.

Start the testing machine and carry out continuous peeling; while recording with a chart recorder or computer (see 5.2) the force required to peel at least a length of 100 mm. The moving speed of the gripper shall be 50mm/min±5mm/min.

Check the specimen for peeling or damage.

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