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

GB/T 4852-2002

**Test method for tack of pressure sensitive adhesive tapes by
rolling ball**

(English Translation)

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Foreword

This standard equivalently uses the part 12 "Test for tack by inclined rolling ball" in JIS Z 0237.1991 "Test method for pressure-sensitive adhesive tapes and adhesive sheets" as well as the part 4 of the reference part "Test method of tack by rolling ball".

The main technical differences between this standard and part 12 of JIS Z

0237.1991 are as follows.

There are only 29 kinds of steel balls for testing in this standard, which is lack of two steel balls which have nominal diameters of 21.431 mm and 24.606 mm as compared with the steel balls as specified in the part 12 of JIS Z 0237.1991. This is because there are no such two sizes of steel balls in the steel ball series for rolling bearings in China.

The main technical differences between this standard and the pre-revised standards are.

(1) ADD the method B. Chute rolling ball method. Therefore, the name of this standard is changed from the "Test method for tack of pressure sensitive

adhesive tapes by bevel rolling ball" to the "Test method for tack of pressure sensitive adhesive tapes by rolling ball".

(2) The angle of the inclined plate in the method A is generally specified as 30°, and in special cases, 20° or 40°. However, the standard before revision does not clearly specify the angle of inclination plate in special cases.

(3) The number of rolling balls in the method A is 33 before the revision and

29 after the revision.

This standard shall, from the date of implementation, replace GB/T 4852-1984.

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

This standard shall be under the jurisdiction of the National Adhesive Standardization Technical Committee.

The responsible drafting organization of this standard. Shanghai Rubber Products Research Institute.

The main drafter of this standard. Zhang Wengang.

This standard was first published in 1984.

For this standard, the National Adhesive Standardization Technical Committee is responsible for its interpretation.

Test method for tack of pressure sensitive adhesive tapes by rolling ball

1 Scope

The standard of this method applies to the test of the tack of pressure sensitive adhesive tapes and those products similar to pressure sensitive adhesive tapes.

2 Normative references

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable

to this document; for the undated documents, only the latest version (including all the amendments) are applicable to this standard.

GB/T 308-1989 Rolling bearing - Steel ball

3 Definition

This standard uses the following definition.

4 Principles

Roll a steel ball over the adhesive surface of the adhesive tape that is placed flat on the inclined surface.

5.1 Unless otherwise specified, the laboratory temperature is $23\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ and the relative temperature is $50\% \pm 10\%$.

6 Test piece

For the adhesive tape which has greater elongation, after sampling, it shall be placed until the elongation is basically restored before testing.

6.1 Test piece for method A

The size of test piece. Width (10 ~ 80) mm, length more than 250 mm.

6.2 Test piece for method B

The size of test piece. Width 25 mm, length more than 100 mm.

7.1.1 The bevel ball rolling device consists of inclined plates that can be inclined at 20° , 30° , 40° and their coupling structures, as shown in Figure 1. The parts are as follows.

7.1.1.1 Inclined plate

The inclined plate is made of a smooth hard flat plate (glass plate, metal plate, wood board, plastic plate, etc.).

7.1.1.2 Rolling-aid section

The rolling-aid section is made of a transparent polyester film which has a length of more than 100 mm a thickness of about 25 μm , which is attached to the test piece at a predetermined position. The length of rolling-aid section is

7.1.2.1 Material. It is made of GCr15 bearing steel. The accuracy of the steel

ball's shape tolerance and surface roughness shall be above the grade-40 as specified in GB/T 308.

7.2.1 Use a level to fix the rolling ball device horizontally on the test bench. The

inclined surface is taken at a standard angle of 30° , or otherwise 20° or 40° if necessary.

7.2.3 In order to keep the length of the rolling-aid section constant at 100 mm,

according to the size of the ball, as shown in Figure 1, adjust the center of the ball to the starting position of the ball.

7.2.4 Use tweezers to remove the ball which is stored in the rust inhibitor. Use

the cleaning method of test rolling ball as described in 7.2.5 to clean it. After washing it clean, place it at the starting position. Allow the ball to roll down the rolling-aid section.

7.2.5 Cleaning of test rolling ball. Use absorbent gauze 1) to dip solvent 2) to

wipe it. After the surface is dry, use a new cleaning gauze to dip solvent to scrub it repeatedly for more than 3 times, until it is considered clean in visual inspection.

7.2.7 Formal test

Take 3 specimens. Use the steel ball of the largest number to carry out one rolling ball test, respectively. If a specimen cannot adhere to the steel ball, it may be replaced with a ball which has the number smaller than it to carry out one test.