# GB

ICS 83.180
G 38

## NATIONAL STANDARD

## OF THE PEOPLE'S REPUBLIC OF CHINA

## GB/T 2791-1995

**Replacing GB 2791-81**

# Adhesives, T Peel Strength Test Method for a Flexible-to-flexible Test Specimen Assembly



**Issued on: December 20, 1995** **Implemented on: August 1, 1996**

**Issued by: State Bureau of Technical Supervision**

# Table of Contents

# Adhesives, T Peel Strength Test Method for a Flexible-to-flexible Test Specimen Assembly

## 1 Subject Content and Application Scope

This standard specifies the device, specimen preparation, procedures and results treatment for T peel test on bonding specimens of flexible-to-flexible materials.

This standard is applicable to the determination of the anti-T peeling performance of adhesives for bonding specimens that are composed of 2 kinds of same or different flexible materials, under specified conditions.

## 2 Normative References

GB 2918 Plastics - Standard Atmospheres for Conditioning and Testing

## 3 Principle

For T peeling test on bonding of flexible-to-flexible materials, apply the peeling force at the non-bonding ends of the specimens, so as to peel them along the bonding line. The angle between the applied force and the bonding line is not required to be under controlled.

## 4 Device

### **4.1** Device for tensile test

The device has appropriate loading range. Its chuck is able to separate and apply tensile force, at a constant rate. This device shall be equipped with force measuring system and indication recording system. The indication error of force does not exceed 2%. The response time of the whole device shall be short enough, so that it has no impact on the accuracy of measurement. That is, when the bonding specimen is damaged, the applied force may be measured. The failure load of the specimen shall be within the range of 10%~80% of the full-scale load.

### **4.2** Chuck

The chuck is able to firmly clamp the specimen (see Figure 1b).

When preparing specimens, if compression is needed, apply a uniform pressure on the whole bonding surface. It is recommended that the applied force may be up to 1 MPa. It is better to equip a timing depressurizing device. In order to obtain a uniform pressure distribution throughout the bonding surface, the flat plate of pressing machine shall be in parallel. If it is not achievable, cover a piece of stretchy gasket on the flat plate. The thickness of gasket is 10mm. The hardness (Shore A) is about 45 degree. At this time, it is suggested to apply the pressure up to 0.7 MPa.

Another method to prepare the specimen is to bond 2 pieces of appropriate-size's plates into an enlarged test specimen. Then cut down the specimen from the enlarged test specimen. When cutting, reduce the impact of cutting heat and mechanical force TO the bonded joint as much as possible. It must remove the outmost 12mm-width's strip-portion, that is in parallel to the long-side of the specimen, from the enlarged test specimen.

Determine the average thickness of adhesive layer of the specimen.

**5.3** Quantity of specimen

The specimen quantity of each batch number shall not be less than five.

## 6 State Adjustment and Test Environment

Specimens shall be performed for state adjustment and test in standard environment, according to the provisions specified in GB 2918. The duration of state adjustment for specimens shall not be less than 2h.

## 7 Test Procedures

Separate the non-bonded end of the flexible test block. Symmetrically clamp them into the high and low holders according to Figure 1(b). The position being clamped is unable to slip, so as to guarantee that the tension being applied can be uniformly distributed on the specimen in width. Start the testing machine to separate high and low holders with a speed of 100 ± 10 mm/min.

The peeling length of specimen shall be at least 125mm. The recording device shall draw out the peeling load curve simultaneously. Pay attention to the failure mode, that is - the adhesive failure, cohesive failure or being-adhered failure.

## 8 Treatment of Test Results

For each specimen, determine the average peeling force from the relation curve of peeling force AND peeling length, in unit of N. The peeling length used to calculate the peeling force shall be at least 100 mm, but excluding the initial 25mm. It may draw an estimated contour

c. Complete instructions for bonded materials, especially the thickness, dimension, material type and surface treatment methods;

d. Instructions for bonding process, including the adhesive application methods, drying or curing conditions, and temperature and pressure for bonding;

e. The average thickness of adhesive layer after bonding;

f. Complete instructions of specimen, including the dimension, structure and amount;

g. State the adjustment conditions and test environment before the test;

h. Chuck's separation rate;

i. Methods to determine the mean peeling force;

j. The maximum value, minimum value, average value, and their arithmetic mean of peeling strength of each specimen, in kN/m;

k. Failure type of each specimen, namely the adhesive failure, cohesive failure or being-adhered failure;

l. Any condition that may possibly impact to test results and not comply with the specified procedures.

**_____ END _____**

## Additional Information:

This standard was proposed by the Ministry of Chemical Industry of the People's Republic of China.

This standard shall be under the jurisdiction of Shanghai Institute of Rubber Products.

Shanghai Institute of Rubber Products is responsible for drafting this standard.

Chief drafting staff of this standard: Liu Qianling.

This standard was issued in 1981 for the first time and was revised in 1994.

**_____ END of this document _____**

**This is an excerpt of the PDF (Some pages are marked off intentionally)**



**------ The End ------**