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

GB/T 13477.17-2017

**Test method for building sealants -- Part 17: Determination of
elastic recovery
(English Translation)**

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Foreword

GB/T 13477 Test method for building sealants is divided into 20 parts:

- Part 1: Specifications for test substrates;
- Part 2: Determination of density;
- Part 3: Determination of extrudability of sealants using standardized apparatus;
- Part 4: Determination of extrudability of one-component sealants;
- Part 5: Determination for tack-free time;
- Part 6: Determination of flow;
- Part 7: Determination of low-temperature flexibility;
- Part 8: Determination of tensile properties;
- Part 9: Determination of adhesion/cohesion properties after immersion in water;
- Part 10: Determination of tensile properties at maintained extension;
- Part 11: Determination of tensile properties at maintained extension after immersion in water;
- Part 12: Determination of adhesion/cohesion properties at constant temperature;

- Part 13: Determination of adhesion/cohesion properties at variable temperatures;
- Part 14: Determination of resistance to prolonged exposure to water;
- Part 15: Determination of adhesion/cohesion properties after exposure to heat and artificial light through glass and to water;
- Part 16: Determination of resistance to compression;
- Part 17: Determination of elastic recovery;
- Part 18: Determination of adhesion-in-peel;
- Part 19: Determination of change in mass and volume;
- Part 20: Determination of staining.

This part is Part 17 of GB/T 13477.

Test method for building sealants - Part 17: Determination
of elastic recovery

1 Scope

This part of GB/T 13477 specifies the method for determining the elastic recovery of building sealing materials after maintaining a tensile state.

This part is suitable for determining the elastic recovery of building sealing materials.

2 Normative references

The following documents are essential to the application of this document. For the dated referenced documents, only the versions with the indicated dates are applicable to this document; for the undated referenced documents, only the latest version (including all the amendments) is applicable to this document.

GB/T 13477.1 Test method for building sealants - Part 1: Specifications for test substrates (GB/T 13477.1-2002, ISO 13640:1999, MOD)

GB/T 14682 Building sealing material vocabulary (GB/T 14682-2006, ISO 6927:1981, NEQ)

GB/T 22083-2008 Classification and requirements for building sealants (ISO 11600:2002, MOD)

3 Terms and definitions

The terms and definitions defined in GB/T 14682 apply to this document.

4 Principle

The specimen is stretched to the specified width, maintained in the tensile state for the specified time, and then released. The elastic recovery (expressed as a percentage of elongation) is calculated based on the change in width of the specimen before and after stretching.

5 Standard test conditions

The standard test conditions of the laboratory are as follows: a temperature of $(23\pm 2)^\circ\text{C}$, and the relative humidity of $(50\pm 5)\%$.

6.1 Adhesive substrate: Cement mortar boards, glass plates, or aluminum plates that

meet the requirements of GB/T 13477.1 and are used to prepare test specimens. The shape and sizes of the substrate are shown in Figures 1 and 2. For each specimen, two substrates of the same material shall be used. Substrates of other materials and sizes can also be selected as agreed upon by all parties, but the bonding size and area of the embedded sealing material sample shall be the same as shown in Figures 1 and 2.

6.2 Spacer block: The surface shall be anti-adhesive and used to prepare a sealing

material specimen with a cross-section of 12 mmx12 mm (as shown in Figures 1 and 2).

6.3 Positioning block: It is used to control the width of the stretched specimen, allowing

the specimen to maintain an elongation rate of 25%, 60%, 100% of the initial width, or the width agreed upon by all parties.

6.4 Bond breaker: Anti-adhesive film or anti-adhesive paper, such as polyethylene (PE)

film, should be selected according to the recommendations of the sealing material manufacturer. It is used to prepare specimens.

6.5 Blast drying oven: The temperature can be adjusted to (70 ± 2) °C; it is used to process the specimen according to method B (see 8.3).

6.6 Tensile testing machine: It is capable of stretching the specimen at a speed of (5.5 ± 0.7) mm/min.

6.7 Container: It is used to hold distilled water and soak the specimen according to method B (see 8.3).

7 Specimen preparation

Use degreasing gauze to remove floating dust from the surface of the cement mortar board. Use acetone and other solvents to clean the aluminum plate and glass plate and dry them.

8.2 Method A

The prepared specimens are stored under standard test conditions for 28 days.

8.3 Method B

First process the specimen according to method A, and then process the specimen according to the following procedure for 3 cycles:

- a) Store in a drying oven at (70 ± 2) °C for 3 days;
- b) Store in distilled water at (23 ± 2) °C for 1 day;
- c) Store in a drying oven at (70 ± 2) °C for 2 days;
- d) Store in distilled water at (23 ± 2) °C for 1 day.

The above procedure can also be changed to c)-d)-a)-b).

The specimens processed by Method B shall be stored under standard test conditions