



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

GB/T 13477.12-2018

**Test method for building sealants -- Part 12: Determination of
adhesion/cohesion properties at constant temperature**

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Foreword

GB/T 13477 "Test method for building sealants" consists of the following 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 12 of GB/T 13477.

This Part was drafted in accordance with the rules given in GB/T 1.1-2009.

Test method for building sealants - Part 12: Determination
of adhesion/cohesion properties at constant temperature

1 Scope

This Part of GB/T 13477 specifies the terms and definitions, principle, standard test conditions, test instruments and materials, preparation of specimens, treatment of specimens, test procedure, and test report for the determination of adhesion/cohesion properties after tension-compression cycles at constant temperature of sealants used in construction and civil engineering.

This Part applies to the determination of adhesion/cohesion properties after repeated tension-compression of plastic sealants used in construction and civil engineering.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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)

3 Terms and definitions

For the purpose of this document, the terms and definitions defined in GB/T 14682 apply.

4 Principle

Bond the sealant sample between the surfaces of two parallel substrates to make a specimen. After subjecting the specimen to tension-compression cycles, inspect the sealant specimen for adhesion or cohesion damage.

5 Standard test conditions

The standard test conditions are: temperature of (23 ± 2) degrees C, relative humidity of $(50 \pm 5)\%$.

6.1.2 Testing machine: capable of performing a tension-compression cycle at a speed

of (1 ± 0.2) mm/min.

6.2.1 Bonding substrate: The cement mortar board, aluminum plate or glass plate used

to prepare the specimen shall comply with the provisions of GB/T 13477.1. The shape and dimension of the substrate are shown in Figures 1 and 2. Substrates of other materials and dimensions can also be selected as agreed upon by all parties, but the bonding dimension and area of the embedded sealant sample shall be the same with those shown in Figures 1 and 2. For each specimen, two substrates of the same material shall be used.

6.2.2 Isolation pad: The surface shall be anti-adhesive. It is used to prepare sealant

specimens with a cross-section of 12 mm x 12 mm (as shown in Figures 1 and 2).

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

should be selected according to the recommendations of the sealant manufacturer. It is used to prepare specimens.

7 Preparation of specimens

Before the test, the sealant sample to be tested and the test substrate shall be placed under standard test conditions for at least 24 h.

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

Prepare specimens according to the instructions (e.g., whether to use primer and the mixing procedure of multi-component sealant) of the sealant manufacturer, and prepare

3 specimens of the same category of substrate.

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