

ICS 91.100.50



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

GB/T 13477.4-2017

Replacing GB/T 13477.4-2002

**Test method for building sealants -- Part 4: Determination of
extrudability of one-component sealants**

建筑密封材料试验方法 第4部分：原包装单组分密封材料挤出性的测定

(English Translation)

Issued on: May 31, 2017

Implemented on: April 1, 2018

Issued by: SAMR; SAC

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Foreword

GB/T 13477 Test method for building sealants consists of 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 adhesion/cohesion 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.
 - deleted "not applicable to the classification of sealants" because the existing building sealant grading standards do not take extrusion as a grading index;
 - for normative references, this Part made modifications with technical differences; the modifications are reflected in Clause 2 "Normative references"; the modifications are as follows. used GB/T 14682 that in-equivalently used the International Standard to replace ISO 6927 (see Clause 3). GB/T 14682-2006 contains all terms of ISO 6927-1981 (exactly the same) and added some terms; referred to GB/T 14682 so as to let standard user use Chinese terms;
 - used GB/T 14682 that in-equivalently used the International Standard to replace ISO 6927 in Clause 3, so as to let standard user to use Chinese terms;
 - added "the extrudability is reported at the mass extrusion rate or volume extrusion rate of the sealants per unit time" so as to be consistent with GB/T 13477.3;
 - added "packaging type" in c) of Clause 10 so as to understand the test report.
- Compared with ISO 8394-1:2010, this Part also made the following editorial modifications.
- modified the standard's name from "Determination of extrudability of sealants" to "Determination of extrudability of one-component sealants";
 - modified a) and c) of Clause 10 of ISO 8394-2:2010 to b) and a) of Clause 10 of this Part; merged c) and d) of Clause 10 of ISO 8394-2:2010 as c) of Clause 10 of this Part;
 - added the unit for density in equation (2) in 9.2.

In addition to editorial modifications, the clause numbers of this Part are the same with the ones of ISO 8394-1:2010 and the contents are corresponding.

1 Scope

This Part of GB/T 13477 specifies the determination method for extrudability of original-packaging one-component sealant.

This Part is applicable to testing the extrudability of one-component sealant of barrel or film packaging.

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 14682, Building sealing material vocabulary (GB/T 14682-2006, ISO 6972:1981, NEQ)

3 Terms and definitions

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

4 Principle

Under the specified conditions, use compressed air to extrude the sealant from original packaging. Weigh the mass of extruded sealant. Report the extrudability at the mass of sealant per unit time (mass extrusion rate) or extrusion volume (volume extrusion rate).

This Part provides basic test conditions, such as temperature, pressure, extrusion time and nozzle dimensions. The test may deviate from these test conditions and change the final test results. Therefore, any deviation shall be described in the test report. The results shall be comparable only when all

9 Results representation

E_m - mass extrusion rate of sealant, in grams per minute (g/min);

m - extruded sample mass, in grams (g);

t - extrusion time, in seconds (s).

Calculate the arithmetic mean of the three test results, rounded off to integer.

9.2 Volume extrusion rate

If necessary, calculate the volume extrusion rate of each test results according to equation (2). The test results shall be represented by sealant volume (in mL) extruded per minute. The volume shall be rounded off to integer. where, E_v - volume extrusion rate of sealant, in milliliters per minute (mL/min);

E_m - mass extrusion rate of sealant, in grams per minute (g/min);

D - density of sealant at test temperature, in grams per cubic centimeter (g/cm³).

Calculate the arithmetic mean of 3 EV values, rounded off to integer.

10 Test report

The test report shall indicate the followings.

- a) laboratory name and test date;
- b) reference to this Part;
- c) the name, type (chemical type), color, lot number and type of packaging of sealant;
- d) test processing temperature;
- e) extrusion pressure;
- f) extrusion time;
- g) nozzle type; if other type of nozzle is used, it shall specify the type of