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

GB/T 13477.2-2018

Replacing GB/T 13477.2-2002

**Test method for building sealants Part 2: Determination of
density**

建筑密封材料试验方法 第2部分：密度的测定

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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 2 of GB/T 13477. This Part was drafted in accordance with the rules given in GB/T 1.1-2009. This Part replaces GB/T 13477.2-2002 "Test method for building sealants - Part 2: Determination of density". Compared with GB/T 13477.2-2002, the main technical changes except for editorial modifications are as follows: - MODIFY the scope, adding the provision that "the metal ring method applies to non-sag sealants, and the metal mold frame method applies to non-sag and self-leveling sealants" (see Clause 1 of this Part,

Clause 1 of the 2002 edition); - MODIFY the principle (see Clause 4 of this Part, Clause 4 of the 2002 edition); - MODIFY the general provisions (see Clause 5 of this Part, Clause 5 of the 2002 edition); - In the test instruments and materials, DELETE the test instruments in the 2002 edition, and ADD the test instruments and materials used in the metal ring method and the metal mold frame method (see Clause 6 of this Part, Clause 6 of the 2002 edition); - In the test procedure, DELETE the test procedure in the 2002 edition, and ADD the test procedure of the metal ring method and the metal mold frame method (see Clause 7 of this Part, Clause 7 of the 2002 edition); - MODIFY the calculation of test results (see Clause 8 of this Part, Clause 8 of the 2002 edition); - MODIFY the requirements for the test report (see Clause 9 of this Part, Clause 9 of the 2002 edition). This Part was proposed by China Building Materials Federation. This Part shall be under the jurisdiction of National Technical Committee on Lightweight and Decorative Building Materials of Standardization Administration of China (SAC/TC 195). Drafting organizations of this Part: Henan Building Materials Research and Design Institute Co., Ltd., Guangzhou Baiyun Chemical Industry Co., Ltd., Chengdu Guibao Science and Technology Co., Ltd., Zhengzhou Zhongyuan Silande High Technology Co., Ltd., Guangzhou Glorystar Chemicals Co., Ltd., Guangdong Pustar Adhesives & Sealants Co., Ltd., Shandong Yulong Polymer Technology Co., Ltd., Jiangmen Daguangming Adhesive Co., Ltd., Hubei Huitian New Materials Co., Ltd. Main drafters of this Part: Deng Chao, Duan Linli, Duan Aiping, Li Buchun, Hu Huiying, Cheng Peng, Deng Lihua, Li Guifei, You Shuming, Feng Xiangjia, Wang Cuihua. The previous released versions replaced by this Part are as follows: - GB/T 13477-1992; Test method for building sealants - Part 2: Determination of density

1 Scope

GB/T 13477.2-2018 is the Chinese national standard on test method for building sealants part 2: determination of density, in the field of construction materials and building. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 28 December 2018 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 November 2019. Classification: ICS 91.100.50, CCS Q24. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This Part of GB/T 13477 specifies the terms and definitions, principle, standard test conditions, test instruments and materials, test procedure, calculation of test results, and test report for the determination of density of sealants used in construction and civil engineering. This Part applies to the determination of density of sealants used in construction and civil engineering. The metal ring method applies to non-sag sealants, and

the metal mold frame method applies to non-sag and self-leveling sealants.

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

3 Terms and definitions

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

4 Principle

Fill the metal ring or metal mold frame with sealant to make a specimen. Weigh the mass of the metal ring or metal mold frame and the specimen in the air and in the test liquid before and after filling, and calculate the density of the sealant.

5 Standard test conditions

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

7 Test procedure

7.1 General Before the test, the sample to be tested and the test instruments and materials used shall be placed under standard test conditions for at least 24 h. As agreed upon by all parties, the metal ring method (see 7.2) or the metal mold frame method (see 7.3) can be used for test. 3 specimens shall be prepared for each method.

7.2 Metal ring method

7.2.1 Use a density balance (6.1.3) to weigh the mass (m_1) in the air and the mass (m_2) in the test liquid (6.2.2) of each metal ring (6.1.1).

7.2.2 Wipe the test liquid adhering to the surface of the metal ring and place it on the bond breaker (6.2.1), and then fill the metal ring with the sealant sample that has been treated according to 7.1. The following matters shall be noted when embedding the sample:

- a) avoid the formation of bubbles;
- b) press the sealant onto the inner surface of the metal ring to ensure full contact;
- c) trim the sealant surface so that it is flush with the upper edge of the metal ring;
- d) immediately remove the metal ring specimen from the bond breaker so that the back

side of the sealant is flush.

7.2.3 Immediately weigh the mass (m_3) in the air and the mass (m_4) in the test liquid (6.2.2) of the metal ring specimen filled with sample, and this shall be completed within 30 s. For water-sensitive sealants, weighing in isooctane shall be performed immediately after surface drying.

7.3 Metal mold frame method

7.3.1 Use a density balance (6.1.3) to weigh the mass (m_1) in the air and the mass (m_2) in the test liquid (6.2.2) of each metal mold frame (6.1.2).

7.3.2 Wipe the test liquid adhering to the surface of the metal mold frame, and then fill the metal mold frame with the sealant sample that has been treated according to 7.1. The following matters shall be noted when embedding the sample:

a) avoid the formation of bubbles;