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

GB/T 1452-2018

Replacing GB/T 1452-2005

**Test method for flatwise tension strength of sandwich
constructions**

夹层结构平拉强度试验方法

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Foreword

This Standard is drafted in accordance with the rules given in GB/T 1.1-2009. This Standard replaces GB/T 1452-2005 "Test method for flatwise tension strength of sandwich constructions". As compared with GB/T 1452-2005, the main technical changes of this Standard are as follows: - DELETE the definition of "honeycomb core" (

3.3 of 2005 edition); - MODIFY the definition of "debonding" (SEE 3.4;

3.5 of 2005 edition); - MODIFY the test principles, and ADD a description of "panel damage" (SEE Clause 4; Clause 4 of 2005 edition); - MODIFY the requirements for test tool, "A tensile clamp with a universal joint" is changed to "A tensile clamp with an automatic centering function. It is recommended to use a tensile clamp with a universal joint" (SEE Clause 4 and 5.2; Clause 4 and

5.2 of 2005 edition); - ADD the dimensional requirement for core materials such as balsa wood containing splicing (SEE Note to 6.1.2); - MODIFY the sample processing requirements, CHANGE the "midline error" to the "edge cumulative error" requirement; and MODIFY the curing and pressurization requirements (SEE 6.3.2;

7.2 of 2005 edition); - ADD failure modes of sample damage (SEE

8.4 and Figure 3); - ADD a schematic diagram of the sample of lattice type honeycomb core material (SEE Figure 4). This Standard was proposed by China Building Materials Federation. This Standard shall be under the jurisdiction of National Technical Committee

39 on Fiber Reinforced Plastic of Standardization Administration of China (SAC/TC 39).
Responsible drafting organization of this Standard. Shanghai FRP Research Institute Co., Ltd.. Participating drafting organizations of this Standard. Changzhou Tiansheng New Materials Co., Ltd., Weihai Weisai New Material Technology Co., Ltd.. Test method for flatwise tension strength of sandwich constructions

1 Scope

GB/T 1452-2018 is the Chinese national standard on test method for flatwise tension strength of sandwich constructions, in the field of rubber and plastic industries. 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 15 March 2018 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 February 2019. Classification: ICS 83.120, CCS Q23. 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 Standard specifies the terms and definitions, test principles, test equipment, sample, test conditions and condition adjustments, test procedures, test results and treatment, and test report for test method for flatwise tension strength of sandwich constructions. This Standard applies to the determination of flatwise tension strength of sandwich constructions. The flatwise tension strength of continuous core materials such as rigid foam and balsa wood can refer to it.

2 Normative references

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

GB/T 1446 Fiber-reinforced plastics composites - The generals for determination of properties

GB/T 3961 Terms for fibre reinforced plastics

3 Terms and definitions

The terms and definitions defined in GB/T 3961 and the following are applicable to this document.

3.1 Flatwise tension Stretching in a direction perpendicular to the panel of sandwich constructions with a clamp.

3.2 Flatwise tension linear strength For lattice type honeycomb sandwich constructions, the maximum tensile force undertaken on the unit bond side length in the direction perpendicular to the panel of sandwich constructions. 3 - T-shaped chuck; 4 - Loading block. Figure 1 -- Schematic diagram of tensile clamp

6.1 Dimensions of sample

6.1.1 The shape of sample shall be square or circular. The thickness is the same as the that of the sandwich construction product. When the thickness of the sandwich structure product is not determined, the thickness of core material is 15 mm; and the thickness of panel is

0.3 mm~

6.1.2 The side length or diameter of sample shall be 60 mm. For honeycomb, corrugated and other lattice type core materials, at least 4 complete lattices shall be included.

Note. If core materials such as balsa wood contain splicing, it shall avoid the splicing line locating at the edge of the sample as much as possible.

6.1.3 The parallelism tolerance of the surface of the two panels of sample shall be 0.10 mm.

6.2 Number of samples The number of samples shall be in accordance with the provisions of GB/T 1446. There shall be at least 5 effective samples.

6.3 Sample preparation

6.3.1 Sample processing shall comply with the provisions of GB/T 1446.

6.3.2 The upper and lower surfaces of sample and the adhesive surfaces of loading blocks are roughened with an abrasive cloth and are wiped clean with a solvent. Then the sample is bonded between the two loading blocks with an adhesive, centering shall be paid attention to. The edge cumulative error between the sample and the loading blocks and between the loading blocks shall be less than

0.3 mm. The type of adhesive and bonding process shall be matched with the core material, to meet the effective damage of sample.