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

GB/T 30019-2013

Carbon fiber -- Determination of density

碳纤维 密度的测定

(English Translation)

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Foreword

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

This standard uses redrafted Law Amendment uses ISO 10119:2002 "Carbon fiber density determination." this standard and ISO 10119:2002 technical differences and their reasons are as follows.

--- On normative references, this standard has been adjusted technical differences, in order to adapt our technical conditions, the adjusted situation Focus is reflected in the status of Chapter 2, "Normative references", the specific adjustments are as follows.

- equivalents adoption of international standards GB/T 2918 instead of ISO 291 (see Chapter 5);

- equivalents adoption of international standards GB/T 15223 replaces ISO 1675 (see 6.1.4.2);

- Modify with international standards of GB/T 29761 replaces ISO 10548 (see Chapter 4);

--- Increasing the quality of sampling and sampling length 6.1.3 in the sample, the sample size in order to clearly improve operability standards;

--- Increasing the sampling length 6.2.3 in the sample, is given in addition to another method of sampling quality, more operational;

--- Increasing the sampling length 6.3.3 in the sample, it is given in addition to another method of sampling quality, more operational.

This standard made the following editorial changes.

--- Added Appendix B (informative) "precision", a method B and method C precision.

The standard proposed by China Building Materials Federation.

The standard fiber-reinforced plastic by the National Standardization Technical Committee (SAC/TC39) centralized.

This standard was drafted. Nanjing Fiberglass Research and Design Institute Co., Ltd., Harbin FRP Institute, Anhui good Nilfisk aerospace carbon fiber Victoria Limited, the national glass fiber product quality supervision and inspection center, expanding Fiber Co., Ltd. Weihai.

1 Scope

This standard specifies the test three methods for the determination of carbon fiber yarn density, namely.

- Method A. liquid displacement method;
- Method B. drifting law;
- Method C. Density gradient column method.

Method C is a method of arbitration.

This standard applies to continuous carbon fiber and yarn length carbon fiber yarn.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 2918 standard plastic sample conditioning and environmental tests (GB/T 2918-1998, idt ISO 291:1997) GB/T 15223 liquid plastic resin density using a pycnometer method (GB/T 15223-2008, ISO 1675. 1985, IDT) GB/T 29761 Determination of carbon fiber sizing content (GB/T 29761-2013, ISO 10548:2002, MOD)

3 Terms and Definitions

The following terms and definitions apply to this document.

Density

At a predetermined temperature mass per unit volume of material, in units of g/cm³ or kg/m³. Recommended temperature was 23 °C.

4 Sample

Unless otherwise agreed, the sample should be removed sizing. Soxhlet extraction method to remove the sizing can be GB/T 29761 stipulated, and sulfuric acid A mixed solution of hydrogen peroxide digestion method, pyrolysis method. If both parties agree, it may also be used to test samples containing wetting agents. When sizing content when low density containing wetting agent and removal of the sample density of the sample can be regarded

as sizing it is consistent.

Conditioning 5

Before the test, the sample shall be adjusted in the state under the temperature and humidity conditions GB/T 2918 regulations, and at the same temperature and humidity conditions test. Preferred conditions are a temperature of $23\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$, relative humidity of $50\% \pm 10\%$.