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

GB/T 29762-2013

**Carbon fibre -- Determination of filament diameter and
cross-section area**

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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 11567.1995 "carbon fiber filament diameter and cross-sectional area of measurement."

This standard and ISO 11567.1995 as compared to the structural adjustment have more details reg number control situation see Appendix A.

This standard and ISO 11567.1995 as compared, differences in technology and for the following reasons.

--- Remove the ISO 11567.1995 Chapter 2, "Normative references" in ISO 11566, with GB/T 7690.1 substitute

ISO 10120.1991, in accordance with this convenient domestic standards for testing inspection;

Added --- Option B optical microscopy 6.1.4.2 "do not use the sample box" approach, easy to operate;

--- Method B adds 6.2 "scanning electron microscopy";

--- A method in C "Capture Method" to "image analysis" test more simple;

--- Increased Procedure A, Method B and Method C precision, and improve standards.

The standard proposed by China Building Materials Federation.

This standard by the National Standardization Technical Committee fiberglass (SAC/TC245) centralized.

This standard is drafted by. Nanjing Fiberglass Research and Design Institute Limited, Jane

and Technology Development Co., Ltd., Anhui Jia Li Qi Hang

Days Carbon Fiber Co., Ltd., the national glass fiber product quality supervision and inspection center, expanding Fiber Co., Ltd. Weihai.

Participated in the drafting of this standard. High-tech Co., Ltd. Jiangsu-day birds, Changzhou Hongfa CKC New Material Technology Co. Shares the company.

1 Scope

This standard specifies four methods for the determination of the carbon fiber diameter and fiber cross-sectional area. This standard "diameter" This term applies

In all cross-sectional shape, including a circular cross section "true" and the non-circular diameter "apparent" in diameter.

Note. The cross-sectional shape of different suppliers of carbon fiber filaments may vary widely.

This standard applies to carbon fiber tows, carbon fiber yarn, carbon fiber fabrics. One of the methods given in this standard may not be directly applicable

For all types of fibers, with reference to product specifications select the appropriate method. If there is no product specification, details refer to this standard as given in

The right choice.

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.

Determination of linear density. GB/T 7690.1 Test method for yarns Part 1

ISO 10119 Carbon fiber density measurement (Carbonfibre-Determinationofdensity)

Principle 3

This standard gives four methods of measuring the carbon fiber diameter and fiber cross-sectional area.

--- Method A. Determination of fiber diameter by calculation.

--- Method B. with an optical microscope or a scanning electron microscope, the fiber diameter was measured.

--- Method C. Determination of transverse cut fiber diameter and cross-sectional area with a microscope.

--- Method D. fiber diameter measured by laser diffraction.

Note. Method A can give the average diameter, may be sufficient in some cases. The Method B, Method C and Method D is the experimental method is given real Measured value.

4.1 General

For Method B, Method C and Method D, due to different positions between the same or different monofilament monofilament will differ, each yarn

Line sample should be measured 20 filaments, and gives statistical analysis of test data.

Yarn samples shall be taken from the same sample.

4.2 Method A

Take full yarn bundles for the test sample, a predetermined length of the yarn bundle by GB/T 7690.1 and the ISO 10119.

4.3 Method B

Taken from the yarn length of about 50mm monofilament (using sample box) or 25mm tow (do not use a sample box) as a sample.