Third edition
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Carbon fibre — Determination of density

Fibre de carbone — Détermination de la masse volumique

Reference number
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Foreword

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This document was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 13, *Composites and reinforcement fibres*.

This third edition cancels and replaces the second edition (ISO 10119:2002), which has been technically revised.

The main changes compared to the previous edition are as follows:

— gas pycnometer method (method D) has been added;

— the calibration of the measurement cell and expansion cell have been added.

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Density is a parameter that characterizes the basic physical properties of carbon fibre, and is also an important parameter for calculating the tensile strength and tensile modulus of carbon fibre.

ISO 10119:2002 describes three methods (A, B and C) of using liquid to determine the density of carbon fibre. In this edition, the gas pycnometer method is added as method D.

Gas pycnometer method uses inert gas instead of liquids to measure the volume of fibres, powders and cellular materials so as to obtain the density. The method give a much higher resolution (i.e. a factor of 100 times better).

With the development of electronic technology, fully automatic instruments are commercially available, which allow faster throughput testing which are suitable for large scale testing. In addition, there is no environmental pollution because no organic solvent is used.