BS ISO 14127:2024

BSI Standards Publication

Carbon-fibre-reinforced composites — Determination of the resin, fibre and void contents

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National foreword

This British Standard is the UK implementation of ISO 14127:2024. It supersedes BS ISO 14127:2008, which is withdrawn.

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A list of organizations represented on this committee can be obtained on request to its committee manager.

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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 second edition cancels and replaces the first edition (ISO 14127:2008), which has been technically revised.

The main changes are as follows:

— the new method: Method C (microscopic method) as means to determinate fibre content by volume and areal void content has been added;

— technical details related to the new method have been edited;

— procedure A3 has been modified by replacing the heating plate, beaker and watch glass with a heating mantle and round bottom flask;

— in subclauses 4.3,6.3 and 7.3, where provisions for the number of test samples per assessment have been newly added;

— "m_r" has been corrected to "φ_r" in Formula (4).

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Introduction

The constituent contents such as fibre content, resin content as well as void content are parameters characterize physical/structural properties of carbon-fibre-reinforced composites. Such properties are proven to have influence on mechanical performances of carbon-fibre-reinforced composites; thus, the constituent contents are always required as important index for processing quality control.

Microscopic method calculates the fibre volume content/areal void content from measured fibre area/void area and the area of cross-section of a specimen. The principle of this method differs from method A or B, so that method C might be available when some of the types of resin were so hard to remove or in the case of lacking information of the prepregs. Meanwhile, thanks to the development of electronic and information technology, equipment integrated with image analysis functions is commercially available. The microscopic method has multiple advantages of being efficient, safe, commercial and environment friendly.

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