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Plastics — Acquisition and presentation of comparable single-point data —

Part 2: Long-fibre-reinforced plastics

Plastiques — Acquisition et présentation de caractéristiques intrinsèques comparables —

Partie 2: Plastiques renforcés par de longues fibres



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 2, *Mechanical behaviour*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 249, *Plastics*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 10350-2:2011), which has been technically revised. The main change compared to the previous edition are as follows:

- normative reference IEC 60250 has been cancelled and replaced by IEC 62631-2-1;
- normative reference IEC 60093 has been cancelled and replaced by either IEC 62631-3-1 or ISO 3915.

These changes were made previously for plastics in ISO 10350-1.

A list of all parts in the ISO 10350 series can be found on the ISO website.

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.

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Introduction

This document has been prepared because users of long-fibre-reinforced plastics find that available data cannot always be readily used to compare the properties of similar materials, especially when the data have been supplied by different sources. Even when the same standard tests have been used, they can allow the adoption of a wide range of alternative test conditions, and the data obtained are not necessarily comparable. The purpose of this document is to identify specific methods and conditions of test to be used for the acquisition and presentation of data in order that valid comparisons between materials can be made.

This document is concerned with tests employed to present “single-point” data on the limited range of properties commonly included in data sheets and used for the preliminary selection of materials. Such data represent the most basic approach to the specification of properties of materials and this document thus facilitates the first steps towards more efficient selection and use of plastics in the many applications to which they are suited.

Many properties of long-fibre-reinforced plastics are anisotropic. The test method standards for these properties have been produced with different procedures for specific types of reinforcement. In this document, use of the appropriate procedure is specified rather than the use of a specific specimen geometry as adopted in ISO 10350-1^[1] for moulding materials. This is necessary for the recording of meaningful material property values.

Complementary International Standards (such as ISO 11403-1^[2], ISO 11403-2^[3] and ISO 11403-3^[4]) are concerned with the standardized acquisition and presentation of multipoint data, to demonstrate how properties vary with important factors such as time, temperature and the presence of particular natural and chemical environments. In these International Standards, some additional properties are included. Their use provides a more substantial database than one containing only single-point data, and so enables improved assessment of the fitness of a material for any particular application. In addition, ISO 11403-1, which deals with mechanical properties, assists predictions of the performance of components and ISO 11403-2, covering thermal and processing properties, aids predictions of melt-flow behaviour during manufacturing. ISO 11403-3 is concerned with environmental influences on properties, and other parts may be prepared to cover additional properties. The various parts of ISO 11403 were written primarily for moulding materials. The test methods and test conditions referred to might not therefore be ideally suited to the acquisition of data for all long-fibre-reinforced plastics.