BS EN ISO 11403-1:2014

Incorporating corrigendum August 2014

BSI Standards Publication

Plastics — Acquisition and presentation of comparable multipoint data

Part 1: Mechanical properties

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National foreword

This British Standard is the UK implementation of EN ISO 11403-1:2014. It supersedes BS EN ISO 11403-1:2003 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PRI/21, Testing of plastics.

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

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Plastiques - Acquisition et présentation de données multiples comparables - Partie 1: Propriétés mécaniques (ISO 11403-1:2014)

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This European Standard was approved by CEN on 7 June 2014.

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Foreword

This document (EN ISO 11403-1:2014) has been prepared by Technical Committee ISO/TC 61 “Plastics” in collaboration with Technical Committee CEN/TC 249 “Plastics” the secretariat of which is held by NBN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by December 2014, and conflicting national standards shall be withdrawn at the latest by December 2014.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

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Full document details: BS EN ISO 11403-1:2014

Contents

Page

Foreword ... **iv**
Introduction ... **v**
1 Scope ... **1**
2 Normative references ... **1**
3 Terms and definitions ... **2**
4 Specimen preparation ... **2**
5 Conditioning ... **3**
6 Test requirements ... **4**
6.1 General ... 4
6.2 Dynamic modulus: ISO 6721-2 or ISO 6721-4 ... 4
6.3 Tensile properties at constant test speed: ISO 527-1 and ISO 527-2 ... 4
6.4 Tensile creep: ISO 899-1 ... 5
6.5 Charpy impact strength: ISO 179-1 or ISO 179-2 ... 5
6.6 Puncture impact behaviour: ISO 6603-2 ... 6
7 Presentation of data ... **6**
8 Precision ... **8**
Bibliography ... **12**

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Document Sharing Hub
Full document details: BS EN ISO 11403-1:2014

Foreword

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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. www.iso.org/directives

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The committee responsible for this document is ISO/TC 61, *Plastics*, Subcommittee SC 2, *mechanical properties*.

This third edition cancels and replaces the second edition (ISO 11403-1:2001), which has been technically revised. The main changes are as follows:

— Annex A was deleted;

— ISO 3167 was deleted and ISO 20753 was added in the Clause 2, Normative references.

ISO 11403 consists of the following parts, under the general title *Plastics — Acquisition and presentation of comparable multipoint data*:

— *Part 1: Mechanical properties*

— *Part 2: Thermal and processing properties*

— *Part 3: Environmental influences on properties*

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Introduction

This International Standard has been prepared because users of plastics find sometimes that available data cannot be used readily 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 often allow the adoption of a wide range of alternative test conditions, and the data obtained are not necessarily comparable. The purpose of this International Standard 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.

ISO 10350 is concerned with single-point data. Such data represent the most basic method for characterizing materials and are useful for the initial stages of material selection. The present International Standard identifies test conditions and procedures for the measurement and presentation of a more substantial quantity of data. Each property here is characterized by multipoint data which demonstrate how that property depends upon important variables such as time, temperature and environmental effects. Additional properties are also considered in this standard. These data therefore enable more discriminating decisions to be made regarding a material's suitability for a particular application. Some data are also considered adequate for undertaking predictions of performance in service and of optimum processing conditions for moulding a component, although it should be recognized that, for purposes of design, additional data will often be needed. One reason for this is that some properties are strongly dependent upon the physical structure of the material. The test procedures referred to in this standard employ, where possible, the multipurpose tensile bar, and the polymer structure in this test specimen may be significantly different from that in specific regions of a moulded component. Under these circumstances, therefore, the data will not be suitable for accurate design calculations for product performance. The material supplier should be consulted for specific information on the applicability of data.

ISO 10350 and the various parts of this International Standard together define the means for acquiring and presenting a core set of comparable data for use in material selection. Use of these standards should result in a rationalization of effort and a reduction of cost associated with provision of these data. Furthermore, reference to these standards will simplify the development of data models for the computerized storage and exchange of data concerning material properties.

Where appropriate, values for test variables have been specified by this standard. For some tests however, owing to the wide range of conditions over which different plastics perform, the standard gives guidance in the selection of certain test conditions so that they cover the operating range for that polymer. Because, in general, the properties and performance specifications for different polymers differ widely, there is no obligation to generate data under all the test conditions specified in this standard.

Data on a wide range of properties are needed to enable plastics to be selected and used in the large variety of applications to which they are suited. ISO standards describe experimental procedures which are suitable for the acquisition of relevant information on many of these properties. The standard has therefore been divided into parts so that each part can be developed independently. In this way, additional properties can be included as new or revised standards become available.

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