INTERNATIONAL STANDARD

ISO 24023-2

First edition
2020-05

Plastics — Plasticized poly(vinyl chloride) (PVC-P) moulding and extrusion materials —

Part 2: Preparation of test specimens and determination of properties

Plastiques — Matériaux à base de poly(chlorure de vinyle) plastifié (PVC-P) pour moulage et extrusion —

Partie 2: Préparation des éprouvettes et détermination des propriétés

Reference number
ISO 24023-2:2020(E)

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Published in Switzerland

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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).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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 9, *Thermoplastic materials*, 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 first edition of ISO 24023-2 cancels and replaces ISO 2898-2:2008, which has been technically revised.

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

— ISO 3167 has been replaced by ISO 20753;

— IEC 60093 has been replaced by the new editions of IEC 62631-3-1and IEC 62631-3-2.

A list of all parts in the ISO 24023 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.

Plastics — Plasticized poly(vinyl chloride) (PVC-P) moulding and extrusion materials —

Part 2: Preparation of test specimens and determination of properties

1 Scope

This document specifies the methods of preparation of test specimens and the test methods to be used in determining the properties of PVC-P moulding and extrusion materials. It gives the requirements for handling test materials and for conditioning both the test material before moulding and the specimens before testing.

This document gives procedures and conditions for the preparation of test specimens and procedures for measuring properties of the materials from which these specimens are made. It lists properties and test methods which are suitable and necessary to characterize PVC-P moulding and extrusion materials.

The properties have been selected from the general test methods in ISO 10350-1. Other test methods in wide use for, or of particular significance to, these moulding and extrusion materials are also included in this document, as are the designatory properties specified in ISO 24023 (all parts).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 176, *Plastics — Determination of loss of plasticizers — Activated carbon method*

ISO 291, *Plastics — Standard atmospheres for conditioning and testing*

ISO 293, *Plastics — Compression moulding of test specimens of thermoplastic materials*

ISO 458-2, *Plastics — Determination of stiffness in torsion of flexible materials — Part 2: Application to plasticized compounds of homopolymers and copolymers of vinyl chloride*

ISO 527-1, *Plastics — Determination of tensile properties — Part 1: General principles*

ISO 527-2, *Plastics — Determination of tensile properties — Part 2: Test conditions for moulding and extrusion plastics*

ISO 868, *Plastics and ebonite — Determination of indentation hardness by means of a durometer (Shore hardness)*

ISO 1183-1, *Plastics — Methods for determining the density of non-cellular plastics — Part 1: Immersion method, liquid pycnometer method and titration method*

ISO 2818, *Plastics — Preparation of test specimens by machining*

ISO 3451-5, *Plastics — Determination of ash — Part 5: Poly(vinyl chloride)*

ISO 10350-1, *Plastics — Acquisition and presentation of comparable single-point data — Part 1: Moulding materials*

ISO 24023-1, *Plastics — Plasticized polyvinyl chloride) (PVC-P) moulding and extrusion materials — Part 1: Designation system and basis for specifications*

ISO 20753, *Plastics — Test specimens*

IEC 62631-3-1, *Dielectric and resistive properties of solid insulating materials — Part 3-1: Determination of resistive properties (DC methods) — Volume resistance and volume resistivity — General method*

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

4 Preparation of test specimens

4.1 General

In order to obtain reproducible and comparable test results, it is necessary to use the methods of preparation and conditioning, the specimen dimensions and the test procedures specified herein. Values determined are not necessarily identical to those obtained using specimens of different dimensions or prepared using different procedures.

It is essential that specimens are always prepared by the same procedure (compression moulding), using the same processing conditions.

The material shall be kept in moisture-proof containers until it is required for use.

4.2 Treatment of the material before moulding

Before processing, no pretreatment of the material sample is normally necessary.

4.3 Compression moulding

Before compression moulding, the material shall be plasticized using a two-roll mill under the conditions specified in Table 1.

Unless it constitutes a variable under study, the required number of milled sheets shall be placed cross layered in the preheated mould and prepare compression-moulded sheets in accordance with ISO 293, using the conditions specified in Table 2.

Table 1 — Conditions for milling of material before compression moulding

Shore hardness of material	Roll surface temperature °C	Milling time[a] min	Roll surface speed m/min	Speed ratio	Roll nip width mm	Roll diameter mm	Roll length mm
Up to A 80	130 to 160	Approximately 5	Approximately 10	1:1,2	Approximately 1	e.g. 150	e.g. 300
D 35 to D 50	145 to 170	Approximately 5	Approximately 10	1:1,2	Approximately 1	e.g. 150	e.g. 300

[a] Measured from the moment when a sheet is formed.