

**Plastics - Unplasticized compounds of  
homopolymers and copolymers of vinyl  
chloride - Part 2: Determination of  
properties**

Plastics - Unplasticized compounds of  
homopolymers and copolymers of vinyl chloride -  
Part 2: Determination of properties

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 1163-2:2000 sisaldab Euroopa standardi EN ISO 1163-2:1999 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 11.01.2000 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 1163-2:2000 consists of the English text of the European standard EN ISO 1163-2:1999.</p> <p>This document is endorsed on 11.01.2000 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p><b>Käsitlusala:</b></p> <p>This part of ISO 1163 specifies procedures and conditions for the preparations of test specimens of PVC-U materials in a specified state, and methods for measuring their properties. Any property listed in this part and referred to in combinatin with part 1 shall be determined by the method referred to in this part</p>	<p><b>Scope:</b></p> <p>This part of ISO 1163 specifies procedures and conditions for the preparations of test specimens of PVC-U materials in a specified state, and methods for measuring their properties. Any property listed in this part and referred to in combinatin with part 1 shall be determined by the method referred to in this part</p>
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**ICS** 83.080.20

**Võtmesõnad:** copolymers, determination, homopolymers, plastics, polyvinyl chloride, properties, tests, unplasticized polyvinyl chloride

**English version**

Plastics

**Unplasticized poly(vinyl chloride) (PVC-U) moulding  
and extrusion materials**

**Part 2: Preparation of test specimens and determination of properties  
(ISO 1163-2 : 1995)**

Plastiques – Poly(chlorure de vinyle)  
non plastifié (PVC-U) pour moulage  
et extrusion – Partie 2: Préparation  
des éprouvettes et détermination des  
propriétés (ISO 1163-2 : 1995)

Kunststoffe – Weichmacherfreie  
Polyvinylchlorid (PVC-U)-Form-  
massen – Teil 2: Herstellung von  
Probekörpern und Bestimmung von  
Eigenschaften (ISO 1163-2 : 1995)

This European Standard was approved by CEN on 1999-06-07.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

The European Standards exist in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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**CEN**

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

**Central Secretariat: rue de Stassart 36, B-1050 Brussels**

## Foreword

International Standard

ISO 1163-2 : 1995 Plastics – Unplasticized poly(vinyl chloride) (PVC-U) moulding and extrusion materials – Part 2: Preparation of test specimens and determination of properties,

which was prepared by ISO/TC 61 'Plastics' of the International Organization for Standardization, has been adopted by Technical Committee CEN/TC 249 'Plastics', the Secretariat of which is held by IBN, as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by January 2000 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard:

Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

## Endorsement notice

The text of the International Standard ISO 1163-2 : 1995 was approved by CEN as a European Standard without any modification.

NOTE: Normative references to international publications are listed in Annex ZA (normative).

## 1 Scope

This part of ISO 1163 specifies procedures and conditions for the preparation of test specimens of PVC-U materials in a specified state, and methods for measuring their properties. Any property listed in this part and referred to in combination with part 1 shall be determined by the method referred to in this part.

No figures are quoted for these properties. Those required for the designation of PVC-U thermoplastics are given in part 1 of this International Standard. All properties shall be determined by the appropriate methods referred to in this part of ISO 1163 and values obtained shall be presented as laid down in ISO 10350.

The values determined in accordance with this part of ISO 1163 will not necessarily be identical to those obtained using specimens of different dimensions and/or prepared by different procedures. The values obtained for the properties of a moulding depend on the moulding compound, the shape, the test method and the state of anisotropy. The last-mentioned depends on the gating of the mould and the moulding conditions, for example temperature, pressure and injection rate. Any subsequent treatment must also be considered, for example conditioning or annealing.

The thermal history and the internal stresses of the specimens may strongly influence the thermal and mechanical properties and the resistance to environmental stress cracking, but exert less effect on the

electrical properties, which depend mainly on the chemical composition of the moulding compound.

In order to obtain reproducible test results, the following two conditions shall be met:

- use test specimens with the specified dimensions and conditioning;
- use test procedures as specified in this part of ISO 1163.

## 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 1163. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 1163 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 62:1980, *Plastics — Determination of water absorption*.

ISO 75-1:1993, *Plastics — Determination of temperature of deflection under load — Part 1: General test method*.

ISO 75-2:1993, *Plastics — Determination of temperature of deflection under load — Part 2: Plastics and ebonite*.

ISO 178:1993, *Plastics — Determination of flexural properties.*

ISO 179:1993, *Plastics — Determination of Charpy impact strength.*

ISO 291:1977, *Plastics — Standard atmospheres for conditioning and testing.*

ISO 293:1986, *Plastics — Compression moulding test specimens of thermoplastic materials.*

ISO 306:1994, *Plastics — Thermoplastic materials — Determination of Vicat softening temperature (VST).*

ISO 527-1:1993, *Plastics — Determination of tensile properties — Part 1: General principles.*

ISO 527-2:1993, *Plastics — Determination of tensile properties — Part 2: Test conditions for moulding and extrusion plastics.*

ISO 527-4:—<sup>1)</sup>, *Plastics — Determination of tensile properties — Part 4: Test conditions for isotropic and orthotropic fibre-reinforced plastic composites.*

ISO 899-1:1993, *Plastics — Determination of creep behaviour — Part 1: Tensile creep.*

ISO 1163-1:—<sup>2)</sup>, *Plastics — Unplasticized poly(vinyl chloride) (PVC-U) moulding and extrusion materials — Part 1: Designation system and basis for specifications.*

ISO 1183:1987, *Plastics — Methods for determining the density and relative density of non-cellular plastics.*

ISO 1210:1992, *Plastics — Determination of the burning behaviour of horizontal and vertical specimens in contact with a small-flame ignition source.*

ISO 2818:1994, *Plastics — Preparation of test specimens by machining.*

ISO 3167:1993, *Plastics — Multipurpose test specimens.*

ISO 4589-2:—<sup>1)</sup>, *Plastics — Determination of burning behaviour by oxygen index — Part 2: Ambient-temperature test.*

ISO 4589-3:—<sup>1)</sup>, *Plastics — Determination of burning behaviour by oxygen index — Part 3: Elevated-temperature test.*

ISO 8256:1990, *Plastics — Determination of tensile-impact strength.*

ISO 10350:1993, *Plastics — Acquisition and presentation of comparable single-point data.*

IEC 93:1980, *Methods of test for volume resistivity and surface resistivity of solid electrical insulating materials.*

IEC 112:1979, *Method for determining the comparative and the proof tracking indices of solid insulating materials under moist conditions.*

IEC 243-1:1988, *Methods of test for electric strength of solid insulating materials — Part 1: Tests at power frequencies.*

IEC 250:1969, *Recommended methods for the determination of the permittivity and dielectric dissipation factor of electrical insulating materials at power, audio and radio frequencies including metre wavelengths.*

IEC 296:1982, *Specification for unused mineral insulating oils for transformers and switchgear.*

### 3 Preparation of test specimens

Test specimens shall be prepared by compression moulding.

The method applied shall be indicated in the list of properties for every test specimen, using "Q" as the code-letter for compression moulding.

It is essential that all specimens prepared by a particular method are prepared using the same processing conditions given in tables 1 and 2.

#### 3.1 Treatment of the material before moulding

Before compression moulding, the material shall be preplasticized in a two-roll mill, using the conditions specified in table 1.

#### 3.2 Compression moulding

Place the required number of milled sheets, preferably crosslayered, in the preheated mould and prepare compression-moulded sheets in accordance with ISO 293, using the conditions specified in table 2.

1) To be published.

2) To be published. (Revision of ISO 1163-1:1985)