



**SLOVENSKI STANDARD**  
**oSIST prEN 13245-1:2024**  
**01-september-2024**

---

**Polimerni materiali - Profili iz trdega polivinilklorida (PVC-U) za uporabo v gradbeništvu - 1. del: Označevanje profilov PVC-U**

Plastics - Unplasticized poly(vinyl chloride) (PVC-U) profiles for building applications - Part 1: Designation of PVC-U profiles

Kunststoffe - Profile aus weichmacherfreiem Polyvinylchlorid (PVC-U) für die Anwendung im Bauwesen - Teil 1: Bezeichnung von Profilen aus PVC-U

Plastiques - Profilés en poly(chlorure de vinyle) non plastifié (PVC-U) pour applications dans le bâtiment - Partie 1: Désignation des profilés en PVC-U

**Ta slovenski standard je istoveten z: prEN 13245-1**

[oSIST prEN 13245-1:2024](https://standards.sist.net/catalog/standards/sist/36798cd-1202-437c-9adb-6061332d4c36/osist-pr-en-13245-1-2024)

<https://standards.sist.net/catalog/standards/sist/36798cd-1202-437c-9adb-6061332d4c36/osist-pr-en-13245-1-2024>

**ICS:**

|           |  |                                    |
|-----------|--|------------------------------------|
| 83.140.99 | Drugi izdelki iz gume in polimernih materialov | Other rubber and plastics products |
|-----------|--|------------------------------------|

**oSIST prEN 13245-1:2024**

**en,fr,de**



EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**DRAFT**  
**prEN 13245-1**

June 2024

ICS 83.140.99

Will supersede EN 13245-1:2010

English Version

## Plastics - Unplasticized poly(vinyl chloride) (PVC-U) profiles for building applications - Part 1: Designation of PVC-U profiles

Plastiques - Profilés en poly(chlorure de vinyle) non  
plastifié (PVC-U) pour applications dans le bâtiment -  
Partie 1: Désignation des profilés en PVC-U

Kunststoffe - Profile aus weichmacherfreiem  
Polyvinylchlorid (PVC-U) für die Anwendung im  
Bauwesen - Teil 1: Bezeichnung von Profilen aus PVC-U

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 249.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

**Warning** : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

## Contents

Page

|  |           |
|--|-----------|
| European foreword.....   | 4         |
| <b>1</b> <b>Scope</b> .....  | <b>5</b>  |
| <b>2</b> <b>Normative references</b> .....   | <b>5</b>  |
| <b>3</b> <b>Terms and definitions</b> .....  | <b>6</b>  |
| <b>4</b> <b>Designation of PVC-U profiles</b> .....  | <b>8</b>  |
| <b>5</b> <b>Codification system for Data block 3 to Data block 5</b> .....   | <b>8</b>  |
| 5.1 <b>Vicat softening temperature (Data block 3)</b> .....  | <b>8</b>  |
| 5.2 <b>Modulus of elasticity in flexure (Data block 3)</b> .....   | <b>9</b>  |
| 5.3 <b>Nominal linear mass (Data block 4)</b> .....  | <b>9</b>  |
| 5.4 <b>Heat reversion at 100 °C (Data block 4)</b> .....   | <b>9</b>  |
| 5.5 <b>Impact resistance (Data block 4)</b> .....  | <b>9</b>  |
| 5.6 <b>Durability (Data block 5)</b> .....   | <b>10</b> |
| 5.6.1 <b>General</b> .....   | <b>10</b> |
| 5.6.2 <b>Test methods for ageing</b> .....   | <b>10</b> |
| 5.6.3 <b>Methods for assessing of ageing</b> .....   | <b>12</b> |
| 5.6.4 <b>Codification for properties after ageing</b> .....  | <b>12</b> |
| <b>6</b> <b>Required characteristics for Type 3, Type 4 and Type 5 profiles</b> .....                              | <b>14</b> |
| <b>7</b> <b>Optional characteristics</b> .....   | <b>15</b> |
| 7.1 <b>Resistance to staining</b> .....  | <b>15</b> |
| 7.2 <b>Application and appearance of the surface finishing (only for Type 3, Type 4 and Type 5 profiles)</b> ..... | <b>15</b> |
| 7.2.1 <b>General</b> .....   | <b>15</b> |
| 7.2.2 <b>Single colour profiles</b> .....  | <b>15</b> |
| 7.2.3 <b>Non-uniform colour and texture profiles</b> .....   | <b>15</b> |
| 7.2.4 <b>Gloss</b> .....   | <b>15</b> |
| <b>8</b> <b>Example of the designation of a PVC-U profile</b> .....  | <b>15</b> |
| <b>9</b> <b>Use of rPVC-U or IRM</b> .....   | <b>16</b> |
| <b>10</b> <b>Design for recycling</b> .....  | <b>16</b> |
| <b>Annex A (normative) Determination of the linear mass</b> .....  | <b>17</b> |
| A.1 <b>Apparatus</b> .....   | <b>17</b> |
| A.2 <b>Test specimens</b> .....  | <b>17</b> |
| A.3 <b>Procedure</b> .....   | <b>17</b> |
| A.4 <b>Calculation and expression of results</b> .....   | <b>17</b> |
| <b>Annex B (normative) Determination of the impact resistance</b> .....  | <b>18</b> |
| B.1 <b>Principle</b> .....   | <b>18</b> |
| B.2 <b>Apparatus</b> .....   | <b>18</b> |
| B.3 <b>Test specimens</b> .....  | <b>18</b> |
| B.4 <b>Conditioning</b> .....  | <b>19</b> |

|  |  |           |
|--|--|-----------|
| <b>B.4.1</b>   | <b>Impact resistance at 23 °C .....</b>              | <b>19</b> |
| <b>B.4.2</b>   | <b>Impact resistance at low temperature .....</b>    | <b>19</b> |
| <b>B.5</b>   | <b>Procedure .....</b>                               | <b>19</b> |
| <b>B.6</b>   | <b>Expression of results .....</b>                   | <b>19</b> |
| <b>Annex C (normative) Determination of peel strength using a constant-load tensile test .....</b> |  | <b>21</b> |
| <b>C.1</b>   | <b>Principle.....</b>                                | <b>21</b> |
| <b>C.2</b>   | <b>Apparatus .....</b>                               | <b>21</b> |
| <b>C.3</b>   | <b>Preparation of test pieces.....</b>               | <b>21</b> |
| <b>C.4</b>   | <b>Conditioning .....</b>                            | <b>22</b> |
| <b>C.5</b>   | <b>Procedure for constant-load tensile test.....</b> | <b>22</b> |
| <b>C.6</b>   | <b>Test report .....</b>                             | <b>22</b> |
| <b>Bibliography .....</b>  |  | <b>24</b> |

**iTeh Standards**  
**(<https://standards.iteh.ai>)**  
**Document Preview**

[oSIST prEN 13245-1:2024](https://standards.iteh.ai/catalog/standards/sist/5cd79bed-f202-434c-9adb-d804532dac30/osist-pren-13245-1-2024)

<https://standards.iteh.ai/catalog/standards/sist/5cd79bed-f202-434c-9adb-d804532dac30/osist-pren-13245-1-2024>

## prEN 13245-1:2024 (E)

### European foreword

This document (prEN 13245-1:2024) has been prepared by Technical Committee CEN/TC 249 “Plastics”, the secretariat of which is held by SIS.

This document is currently submitted to CEN Enquiry.

This document will supersede EN 13245-1:2010.

EN 13245, Plastics – Unplasticized poly(vinyl chloride) (PVC-U) profiles for building applications, consists of the following parts:

- *Part 1: Designation of PVC-U profiles*
- *Part 2: PVC-U profiles and PVC-UE profiles for internal and external wall and ceiling finishes*
- *Part 3: Designation of PVC-UE profiles*

**iTeh Standards**  
**(<https://standards.iteh.ai>)**  
**Document Preview**

[oSIST prEN 13245-1:2024](https://standards.iteh.ai/catalog/standards/sist/5cd79bed-f202-434c-9adb-d804532dac30/osist-pren-13245-1-2024)

<https://standards.iteh.ai/catalog/standards/sist/5cd79bed-f202-434c-9adb-d804532dac30/osist-pren-13245-1-2024>

## 1 Scope

This document establishes a system of designation for profiles made of unplasticized poly (vinyl chloride) (PVC-U) intended to be used for building applications.

This part is applicable to light coloured and coloured PVC-U profiles, obtained by a mono-extrusion or a co-extrusion process, with or without surface finishing (e.g. laminated foil, paint, printing process).

It specifies test methods and test parameters.

This method of designation is intended to be used in product specification when the application is specified.

Profiles for the management of electrical power cables, communication cables and power track systems used for the distribution of electrical power, profiles for windows or doors and profiles for guttering are not covered by this document<sup>1</sup>.

NOTE It is intended to use this method for the designation of PVC-U profiles for information related to technical literature of the manufacturer, not for the marking of the products.

## 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.

EN 438-2:2016+A1:2018, *High-pressure decorative laminates (HPL) — Sheets based on thermosetting resins (usually called Laminates) — Part 2: Determination of properties*

EN 477, *Plastics — Poly(vinyl chloride) (PVC) based profiles — Determination of the resistance to impact of profiles by falling mass*

EN 478, *Plastics — Poly(vinyl chloride) (PVC) based profiles — Determination of the appearance after exposure at 150 °C*

EN 479, *Plastics — Poly(vinyl chloride) (PVC) based profiles — Determination of heat reversion*

EN 513, *Plastics — Poly(vinyl chloride) (PVC) based profiles — Determination of the resistance to artificial weathering*

EN 17271, *Plastics — Poly(vinyl chloride) (PVC) based profiles — Determination of the peel strength of profiles laminated with foils*

EN 17410, *Plastics — Controlled loop recycling of PVC-U profiles from windows and doors*

EN 17508, *Plastics — Unplasticized poly(vinyl chloride) (PVC-U) profiles for the fabrication of windows and doors — Terminology of PVC based materials*

EN 17615, *Plastics — Environmental Aspects — Vocabulary*

EN 20105-A02, *Textiles — Tests for colour fastness — Part A02: Grey scale for assessing change in colour (ISO 105-A02)*

---

<sup>1</sup> Profiles that are excluded are in the scopes of standards prepared by CEN/TC 249/WG 21, CENELEC/TC 213 or CEN/TC 128.

**prEN 13245-1:2024 (E)**

EN ISO 105-A01:2010, *Textiles — Tests for colour fastness — Part A01: General principles of testing (ISO 105-A01:2010)*

EN ISO 178, *Plastics — Determination of flexural properties (ISO 178)*

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

EN ISO 472, *Plastics — Vocabulary (ISO 472)*

EN ISO 877-2, *Plastics - Methods of exposure to solar radiation — Part 2: Direct weathering and exposure behind window glass (ISO 877-2)*

EN ISO 1043-1, *Plastics — Symbols and abbreviated terms — Part 1: Basic polymers and their special characteristics (ISO 1043-1)*

EN ISO 2409, *Paints and varnishes — Cross-cut test (ISO 2409)*

EN ISO 2813, *Paints and varnishes — Determination of gloss value at 20°, 60° and 85° (ISO 2813)*

EN ISO 4624, *Paints and varnishes — Pull-off test for adhesion (ISO 4624)*

EN ISO 4892-2:2013, *Plastics — Methods of exposure to laboratory light sources — Part 2: Xenon-arc lamps (ISO 4892-2:2013)*

EN ISO 8256, *Plastics — Determination of tensile-impact strength (ISO 8256)*

EN ISO 18314-1, *Analytical colorimetry — Part 1: Practical colour measurement (ISO 18314-1)*

EN ISO/CIE 11664-1, *Colorimetry — Part 1: CIE standard colorimetric observers (ISO/CIE 11664-1)*

EN ISO/CIE 11664-2, *Colorimetry — Part 2: CIE standard illuminants (ISO/CIE 11664-2)*

EN ISO/CIE 11664-4, *Colorimetry — Part 4: CIE 1976 L\*a\*b\* Colour space (ISO/CIE 11664-4)*

### **3 Terms and definitions**

For the purposes of this document, the terms and definitions given in EN 17410, EN 17508, EN 17615, EN ISO 472, EN ISO 1043-1 and the following apply.

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 <https://www.electropedia.org/>

#### **3.1**

##### **PVC-U profile**

profile made of unplasticized poly(vinyl chloride) (PVC-U) material

Note 1 to entry: It applies to profiles made of non-cellular material as opposed to cellular material.

#### **3.2**

##### **Type of profile**



**3.2.1****Type 1 profile**

PVC-U profile obtained by a mono-extrusion process (coloured in the mass)

**3.2.2****Type 2 profile**

PVC-U profile obtained by a co-extrusion process

**3.2.3****Type 3 profile**

PVC-U profile as Type 1 or Type 2 covered by a laminated foil

**3.2.4****Type 4 profile**

PVC-U profile as Type 1 or Type 2 with paint

**3.2.5****Type 5 profile**

PVC-U profile as Type 1 or Type 2 covered by a printing process

**3.3****sight surface**

surface of a profile that is exposed to view, when the PVC-U profile is installed

**3.4****surface finishing**

covering layer on the sight surface of a PVC-U profile, e.g. a co-extruded layer, a laminated foil, a paint, a printing process

**3.5****laminated foil**

plastic layer for external use intended to cover surface of a base profile

Note 1 to entry: Foil can be painted or not.

**3.6****printing process**

operation or system wherein printing ink or a combination of printing ink and surface coating or varnish is applied

**3.7****paint**

one or several layer(s) of lacquer (e.g. acrylic or polyurethane resin) or varnish (clear coating material) that cover(s) a PVC-U profile

**3.8****co-extrusion**

durable bonding of two thermoplastics [e.g. unplasticized polyvinylchloride (PVC-U) and poly(methyl methacrylate) (PMMA)] that are melted in separated extruders and fused together in the profile tool

**3.9****radiant exposure*****H***

time integral of irradiance

**prEN 13245-1:2024 (E)**

Note 1 to entry: It is measured in joules per square metre (J·m<sup>-2</sup>).

[SOURCE: ISO 9370:2017[1], 3.27]

**4 Designation of PVC-U profiles**

The PVC-U profiles are designated in accordance with a classification system of their characteristics.

The designation consists of a description block and five data blocks as given in Table 1.

**Table 1 — Designation of PVC-U profiles**

| Data block  | Description                              | Profile EN 13245-1  | Additional information        |
|---|--|---|-------------------------------|
| <b>Data block 1</b>   | Material and profile type identification | PVC-U – Type 1, Type 2, Type 3 <sup>a</sup> , Type 4 <sup>b</sup> or Type 5 <sup>b</sup><br>For types of profiles   | See 3.2                       |
| <b>Data block 2</b>   | Intended application                     | One or more following codes depending on the intended application:<br>For outside building applications: <i>E</i><br>For inside building applications: <i>I</i> |                               |
| <b>Data block 3</b>   | Material properties                      | Vicat softening temperature (VST)<br>Modulus of elasticity in flexure   | See 5.1<br>See 5.2            |
| <b>Data block 4</b>   | Profile properties                       | Nominal linear mass<br>Heat reversion at 100 °C<br>Impact resistance  | See 5.3<br>See 5.4<br>See 5.5 |
| <b>Data block 5</b>   | Durability                               |   | See 5.6                       |
| <sup>a</sup> For Type 3 profiles, the requirements given in 6.1 to 6.4 shall be fulfilled, as applicable.<br><sup>b</sup> For Type 4 or 5 profiles, the requirements given in 6.1 to 6.3 shall be fulfilled, as applicable. |  |   |                               |

**5 Codification system for Data block 3 to Data block 5****5.1 Vicat softening temperature (Data block 3)**

The Vicat softening temperature (VST) shall be measured in accordance with EN ISO 306, Method B50, as indicated in Table 2.

Testing shall be carried out on profiles, however where geometry or thickness is prohibitive samples can be made of pressed plates prepared according to EN ISO 21306-2. Where these are used, the test result shall be designated with the letter “Q” after the value.

**Table 2 — Preparation of test specimens**

| Type of profile                   | Compound to be tested                         |
|-----------------------------------|---|
| Type 1                            | PVC-U compound                                |
| Type 2, Type 3, Type 4 and Type 5 | Each of the extruded compounds, as applicable |

The value of VST shall be coded according to Table 3 and record the type of sample tested.