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Plastics - Unplasticized poly(vinyl chloride) (PVC-U) profiles for building applications - Part 2: PVC-U profiles and PVC-UE profiles for internal and external wall and ceiling finishes

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Kunststoffe - Profile aus weichmacherfreiem Polyvinylchlorid (PVC-U) für die Anwendung im Bauwesen - Teil 2: Profile aus PVC-U und Profile aus PVC-UE für Wand- und Deckenbekleidungen für Innen- und Außenanwendungen

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Plastiques - Profilés en poly(chlorure de vinyle) non plastifié (PVC-U) pour applications dans le bâtiment - Partie 2: Profilés en PVC-U et profilés en PVC-UE pour finitions des murs et plafonds intérieurs et extérieurs

Ta slovenski standard je istoveten z: EN 13245-2:2008

ICS:

83.140.99	Drugi izdelki iz gume in polimernih materialov	Other rubber and plastics products
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EUROPEAN STANDARD
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EN 13245-2

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Plastics - Unplasticized poly(vinyl chloride) (PVC-U) profiles for building applications - Part 2: PVC-U profiles and PVC-UE profiles for internal and external wall and ceiling finishes

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This European Standard was approved by CEN on 25 July 2008.

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EN 13245-2:2008 (E)**Foreword**

This document (EN 13245-2:2008) has been prepared by Technical Committee CEN/TC 249 "Plastics", the secretariat of which is held by NEN.

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of an identical text or by endorsement, at the latest by March 2009, and conflicting national standards shall be withdrawn at the latest by June 2010.

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.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EC Directive(s).

For relationship with EC Directive(s), see informative Annex ZA, which is an integral part of this document.

EN 13245 consists of the following parts, under the general title *Plastics — Unplasticized poly(vinyl chloride) (PVC-U) profiles for building applications*:

- Part 1: Designation of light coloured profiles
- Part 2: PVC-U profiles and PVC-UE profiles for internal and external wall and ceiling finishes
- Part 3: Designation of coated/coloured PVC-U profiles
- Part 4: Designation of light coloured PVC-UE profiles
- Part 5: Designation of coated/coloured PVC-UE profiles

This European Standard is one of standards addressing PVC-U profiles and PVC-UE profiles for building applications (see Table 1).

Table 1 — Relationship between various standards

Designation standards for PVC-U profiles	EN 13245-1, Designation of PVC-U profiles (<i>in revision</i>)
	prEN 13245-3, Designation of coated/coloured PVC-UE profiles (<i>in preparation</i>)
Product standards ^a	EN 13245-2, Plastics — Unplasticized poly(vinyl chloride) (PVC-U) profiles for building applications — Part 2: PVC-U profiles and PVC-UE profiles for internal and external wall and ceiling finishes (<i>standard prepared by CEN/TC 249</i>)
	EN 13659, Shutters — Performance requirements including safety (<i>standard prepared by CEN/TC 33</i>)
	EN 14351-1, Windows and doors — Product standard, performance characteristics - Part 1: Windows and external pedestrian doorsets without resistance to fire and/or smoke leakage characteristics (<i>standard prepared by CEN/TC 33</i>)
Semi-products standard	EN 12608, Unplasticized polyvinylchloride (PVC-U) profiles for the fabrication of windows and doors — Classification, requirements and test methods (<i>standard prepared by CEN/TC 33</i>)
^a Standards to provide possibility for the CE marking.	

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

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EN 13245-2:2008 (E)**1 Scope**

This European Standard specifies the health and safety requirements for unplasticized poly(vinyl chloride) (PVC-U) profiles and cellular unplasticized poly(vinyl chloride) (PVC-UE) profiles for interior and exterior wall and ceiling finishes. It also specifies methods for the evaluation of conformity of the products to the requirements, and includes requirements for their marking.

The products are intended for use as wall and ceiling finishes for internal and external applications according to the manufacturer's specifications, which may include specifications for the fixings.

Profiles for the management of electrical power cables, communication cables and power track systems used for the distribution of electrical power, roofline products (fascia and soffit) including guttering, internal trim profiles including window boards and profiles for windows or doors are not covered by this European Standard.¹⁾

2 Normative references

The following referenced documents are indispensable for the application 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 477:1995, *Unplasticized polyvinylchloride (PVC-U) profiles for the fabrication of windows and doors — Determination of the resistance to impact of main profiles by falling mass*

EN 13245-1:2004, *Plastics — Unplasticized poly(vinyl chloride) (PVC-U) profiles for building applications — Part 1: Designation of light coloured profiles*

EN 13501-1, *Fire classification of construction products and building elements — Part 1: Classification using data from reaction to fire tests*

EN 13823, *Reaction to fire tests for building products — Building products excluding floorings exposed to the thermal attack by a single burning item*

EN ISO 179-1, *Plastics — Determination of Charpy impact properties — Part 1: Non-instrumented impact test (ISO 179-1:2000)*

EN ISO 4892-3, *Plastics — Methods of exposure to laboratory light sources — Part 3: Fluorescent UV lamps (ISO 4892-3:2006)*

EN ISO 8256, *Plastics — Determination of tensile-impact strength (ISO 8256:2004)*

EN ISO 9001:2000, *Quality management systems — Requirements (ISO 9001:2000)*

EN ISO 11925-2, *Reaction to fire tests — Ignitability of building products subjected to direct impingement of flame — Part 2: Single-flame source test (ISO 11925-2:2002)*

1) Products that are excluded are in the scopes of standards prepared by CEN/TC 33 or CENELEC/TC 213. Further works in CEN/TC 249 will develop specifications for internal trim profiles including window boards and roofline products.

3 Terms and definitions

For the purposes of this document the following terms and definitions apply.

3.1

profile

product assigned to be joined side by side to form a continuous plane panel used as internal or external wall or ceiling finish for protection and/or decoration

3.2

coating

coloured or clear covering layer on the sight surface of a profile with a good bonding strength to the profile, e.g. a co-extruded layer, a lacquer-coating or a laminated foil

3.3

non-cellular unplasticized poly(vinyl chloride)

PVC-U

unplasticized poly(vinyl chloride) the density of which is not reduced by the presence of numerous small cavities (cells), interconnecting or not, dispersed throughout the mass

3.4

cellular unplasticized poly(vinyl chloride)

PVC-UE

unplasticized poly(vinyl chloride) the density of which is reduced by the presence of numerous small cavities (cells), interconnecting or not, dispersed throughout the mass

[EN ISO 472:2001]

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3.5

PVC-U profile

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

NOTE It applies to profiles made of non-cellular material rather than cellular material.

3.6

PVC-UE profile

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

4 Performance requirements

4.1 Reaction to fire

Reaction to fire performance applies only for PVC-U profiles and PVC-UE profiles intended for end uses on interior/exterior wall/ceiling finishes subject to reaction to fire regulations. Nevertheless, even when this use is not subject to such regulations, the reaction to fire performance of these profiles may be declared.

The PVC-U profile or PVC-UE profile shall be tested and classified according to EN 13501-1 and the resulting class and sub-class shall be declared.

When tested in accordance with EN 13823, the mounting and fixing of the PVC-U profile or PVC-UE profile shall conform to Annex A and the indication on this method, as given therein, shall also be declared.

NOTE For exterior wall finishes (claddings, sidings) a façade fire scenario may be developed. This new scenario may in the future replace the scenario according to EN 13501-1. Classification of the product can still be based on the current Euroclass system (EN 13501-1) unless and until regulatory requirements provisions demand otherwise.

EN 13245-2:2008 (E)**4.2 Resistance to fixings**

The method(s) of fixing of the PVC-U profiles and PVC-UE profiles shall be declared.

4.3 Mechanical resistance**4.3.1 General**

Mechanical resistance applies only for profiles intended for end uses on external wall/ceiling finishes.

4.3.2 PVC-U profiles

The mechanical resistance of PVC-U profiles shall be demonstrated by testing the impact resistance at 23 °C according to Annex A of EN 13245-1:2004 with the extrusion direction of the test specimen perpendicular to the two rounded steel supports and declaring the result according to Table 2 of EN 13245-1:2004.

4.3.3 PVC-UE profiles

The mechanical resistance of PVC-UE profiles shall be demonstrated by testing the impact resistance at 23 °C according to Annex B and declaring the result according to Table B.1.

4.4 Durability**4.4.1 Profiles for internal use****4.4.1.1 PVC-U profiles**

The durability of non-cellular PVC-U profiles for internal use shall be demonstrated by testing the impact resistance at 23 °C according to Annex A of EN 13245-1:2004 and declaring the result according to Table 2 of EN 13245-1:2004.

4.4.1.2 PVC-UE profiles

The durability of PVC-UE profiles for internal use shall be demonstrated by testing the impact resistance at 23 °C according to Annex B and declaring the result according to Table B.1.

4.4.2 Profiles for external use**4.4.2.1 PVC-U profiles**

The durability of PVC-U profiles for external use shall be demonstrated by testing the tensile impact-strength according to EN ISO 8256, Method A, using a test specimen of type 5 cut in the extrusion direction, after either an artificial ageing or a natural ageing according to 5.6.2 of EN 13245-1:2004 and declaring the result according to 5.6.4 of EN 13245-1:2004.

4.4.2.2 PVC-UE profiles

The durability of PVC-UE profiles for external use shall be demonstrated by testing:

- a) impact resistance according to Annex B after an artificial ageing (exposure to fluorescent UV lamps) or a natural ageing according to Annex C and declaring the method of assessment and the result according to Table C.1;

or

- b) Charpy impact strength according to Annex D after an artificial ageing (exposure to xenon-arc lamps) or a natural ageing according to 5.6.2 of EN 13245-1:2004 and declaring the method of assessment and the result according to Table D.1.

5 Evaluation of conformity

5.1 General

The conformity of PVC-U profiles and PVC-UE profiles with the requirements of this standard and with the declared values (including classes) shall be demonstrated by:

- initial type testing;
- factory production control by the manufacturer, including product assessment.

For the purposes of initial type testing, PVC-U profiles and PVC-UE profiles may be grouped into families, where it is considered that the result, for the selected characteristic(s), from testing any one product within the family is representative for all other products within that family.

Products produced as one-offs, prototypes and products produced in very low quantities shall be covered by 5.4.

5.2 Initial type testing

5.2.1 General

The initial type testing of PVC-U profiles and PVC-UE profiles shall be performed to show conformity with this standard. Tests previously performed in accordance with the provisions of this standard (same product, characteristic(s), test method, sampling procedure, system of attestation of conformity, etc.) may be taken into account. In addition, initial type testing shall be performed at the beginning of the production of a new type of PVC-U profiles and PVC-UE profiles (unless a member of the same family) or at the beginning of a new method of production (where this may affect the stated characteristics).

All characteristics of PVC-U profiles and PVC-UE profiles in Clause 4 for which declared values are given shall be subject to initial type testing.

Whenever a change occurs in the PVC-U profiles and PVC-UE profiles, the compound or supplier of the components, or the production process (subject to the definition of a family), which would change significantly one or more of the characteristics, the initial type testing shall be repeated for the appropriate characteristic(s).

5.2.2 Sampling, testing and conformity criteria

PVC-U profiles and PVC-UE profiles shall be selected at random from normal production in such a manner that they are representative of normal production. For a new PVC-U profile or PVC-UE profile or a new method of their production it shall be as in 5.4.

The number of specimens to be tested (or assessed) shall be in accordance with Table 2 or Table 3, as applicable.

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Table 2 — Number of specimens and conformity criteria for ITT applicable to PVC-U profiles

Characteristic	Intended use ^a	Requirement clause	Assessment method	Number of tests	Number of specimens/ test	Conformity criteria
Reaction to fire	i + e	4.1	Tests referred to from EN 13501-1	1	See EN 13501-1	See classification in EN 13501-1 + indication on mounting/ fixing method
Mechanical resistance	e	4.3.2	EN 13245-1:2004, Annex A	1	10	EN 13245-1:2004, Table 2
Durability	i	4.4.1.1	EN 13245-1:2004, Annex A	1	10	EN 13245-1:2004, Table 2
Durability	e	4.4.2.1	EN ISO 8256, Method A - type 5 and EN 13245-1:2004, 5.6.2 (ageing)	1	10	EN 13245-1:2004, 5.6.4

^a PVC-U profiles for internal (i) and/or external (e) use.

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Table 3 — Number of specimens and conformity criteria for ITT applicable to PVC-UE profiles

Characteristic	Intended use ^a	Requirement clause	Assessment method	Number of tests	Number of specimens/ test	Conformity criteria
Reaction to fire	i + e	4.1	Tests referred to from EN 13501-1	1	See EN 13501-1	See classification in EN 13501-1 + indication on mounting/ fixing method
Mechanical resistance	e	4.3.3	Annex B	1	10	Table B.1
Durability	i	4.4.1.2	Annex B	1	10	Table B.1
Durability	e	4.4.2.2 a) or 4.4.2.2 b)	Annex B and Annex C (ageing) Annex D and EN 13245-1:2004 - 5.6.2 (ageing)	1	10	Table C.1 Table D.1

^a PVC-UE profiles for internal (i) and/or external (e) use.

The results of all initial type testing shall be recorded and held by the manufacturer for at least 10 years after the date of last production of the profiles to which they relate.

5.3 Factory production control (FPC)

5.3.1 General

The manufacturer shall establish, document and maintain an FPC system to ensure that the products placed on the market conform to the stated performance characteristics. The FPC system shall consist of procedures, regular inspections and tests and/or assessments and the use of the results to control raw and other incoming materials or products, equipment, the production process and the product.

If the manufacturer has the product designed, manufactured, packed, processed and labelled by subcontracting, FPC of the original manufacturer may be taken into account. However, where subcontracting takes place, the manufacturer shall retain the overall control of the product and ensure that he receives all the information that is necessary to fulfil his responsibilities according to this European Standard. The manufacturer who subcontracts all of his activities may in no circumstances discharge himself of his responsibilities to a subcontractor.

All the elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic manner in the form of written policies and procedures. This production control system documentation shall ensure a common understanding of conformity evaluation and enable the achievement of the required product characteristics and the effective operation of the production control system to be checked.

Factory production control therefore brings together operational techniques and all measures allowing maintenance and control of the conformity of the product with this European Standard. Its implementation may be achieved by controls and tests on measuring equipment, raw materials and constituents, processes, machines and manufacturing equipment and finished products, including material properties in products, and by making use of the results thus obtained.

The FPC system shall fulfil the requirements as described in the following clauses of EN ISO 9001:2000, where applicable:

- 4.2 except 4.2.1 a),
- 5.1 e), 5.5.1, 5.5.2,
- Clause 6,
- 7.1 except 7.1 a), 7.2.3 c), 7.4, 7.5, 7.6,
- 8.2.3, 8.2.4, 8.3, 8.5.2.

The FPC system may be part of a Quality Management system, e.g. in accordance with EN ISO 9001:2000.

5.3.2 FPC requirements for all manufacturers

5.3.2.1 Product specific requirements

The FPC system shall:

- address this European Standard; and
- ensure that the products placed on the market conform with the stated performance characteristics.

The results of inspections, tests or assessments requiring action shall be recorded, as shall any action taken. The action to be taken when control values or criteria are not met shall be recorded and retained for the period specified in the manufacturer's FPC procedures.