



SLOVENSKI STANDARD
oSIST prEN 17410:2020
01-julij-2020

Polimerni materiali - Nadzorovano krožno recikliranje oken in vrat iz profilov PVC-U

Plastics - Controlled loop recycling of PVC-U profiles from windows and doors

Kunststoffe - Geregelttes Verfahren für das Recycling von gebrauchten PVC-U-Fenstern und Türen

iTeh STANDARD PREVIEW

Plastiques - Recyclage en boucle contrôlée de profilés de fenêtres et portes en PVC-U

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Ta slovenski standard je istoveten z: prEN 17410

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ICS:

13.030.50	Recikliranje	Recycling
83.140.01	Izdelki iz gume in polimernih materialov na splošno	Rubber and plastics products in general
91.060.50	Vrata in okna	Doors and windows

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EUROPEAN STANDARD
NORME EUROPÉENNE
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English Version

Plastics - Controlled loop recycling of PVC-U profiles from windows and doors

Plastiques - Recyclage en boucle contrôlée de profilés de fenêtres et portes en PVC-U

Kunststoffe - Geregeltes Verfahren für das Recycling von gebrauchten PVC-U-Fenstern und Türen

This draft European Standard is submitted to CEN members for second 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.

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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

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European foreword

This document (prEN 17410:2020) has been prepared by Technical Committee CEN/TC 249 “Plastics”, the secretariat of which is held by NBN.

This document is currently submitted to the CEN Enquiry.

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Introduction

Recycling of plastics pre and post consumer waste is a material recovery process aiming to save resources such as raw materials, water and energy, thus minimizing emissions into air, water and soil and hence contributing to human health and environmental protection.

For a huge number of plastic products, individual recycling schemes have been established. Regarding PVC windows and doors made of un-plasticized PVC, they are subject to an advanced recycling scheme, i.e. a so-called controlled loop. In this particular case, the used windows and doors are collected, the PVC frame separated, shredded and treated. The recyclete obtained therefrom then goes back to the manufacturing of new window and door profiles. To ensure a high quality level of both plastic recycling and finished products in a single market, the control of the recycling process is recommended to be standardized, with regard to (i) process steps such as collection, identification, sorting, cleaning and (ii) sub-process steps such as testing, quality assurance, and traceability.

In that respect, this document forms, together with EN 12608-1, and EN 14351-1, EN 14351-2 and EN 16034 a unique and consistent standardization framework enabling the value chain to act in a circular manner.

NOTE In this document, only EN 12608-1 will be mentioned. However, whenever this is the case reference is made to all subsequent parts of EN 12608, once published as well.

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1 Scope

This document references existing quality and test methodologies for recycled PVC to be used in PVC-U profiles for windows and doors.

It contains a description of the controlled loop as such, the definition of those material transformation steps which are relevant for product quality, in particular recycling input and output and profile manufacturing input and output.

Traceability tools are specified to characterize this loop as a controlled loop.

With regard to PVC waste treatment, the present document relates to existing standards such as EN 15343, EN 15346 and EN 15347.

With regard to semifinished and/or finished products, it refers to the European Standard PVC-U window profiles (see EN 12608-1) and to the European Standards for windows and doors (see EN 14351-1, EN 14351-2 and EN 16034).

The controlled loop treatment of PVC profiles will be aligned to the general understanding of life cycles as outlined in EN 15804.

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 12608-1, *Unplasticized poly(vinyl chloride) (PVC-U) profiles for the fabrication of windows and doors - Classification, requirements and test methods - Part 1: Non-coated PVC-U profiles with light coloured surfaces*

[oSIST prEN 17410:2020](https://standards.iteh.ai/catalog/standards/sist/c583c07d-007a-4443-b4f6-)

<https://standards.iteh.ai/catalog/standards/sist/c583c07d-007a-4443-b4f6->

EN 15343, *Plastics - Recycled Plastics - Plastics recycling traceability and assessment of conformity and recycled content*

EN 15346:2014, *Plastics - Recycled plastics - Characterization of poly(vinyl chloride) (PVC) recyclates*

EN 15347, *Plastics - Recycled Plastics - Characterisation of plastics wastes*

EN 17213, *Windows and doors - Environmental Product Declarations - Product category rules for windows and pedestrian doorsets*

3 Terms and definitions

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

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

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

prEN 17410:2020 (E)

3.1 material
PVC-U compound in a form of granules or powder for the production of PVC-U profiles intended to be used for the fabrication of a window or door

[SOURCE: EN 17508:—¹]

3.2 defined formulation
formulation which is a specified composition of polymer, additives and pigments

[SOURCE: EN 17508:—¹]

3.3 virgin unplasticized polyvinylchloride PVC-U
material of a defined formulation, which has not been used or processed other than required for its manufacture and to which no rPVC-U (3.6) has been added.

Note 1 to entry: Material can be UV, non-UV or reduced UV-resistant.

[SOURCE: EN 17508:—¹]

3.3.1 UV resistant material UVM

material which fulfills weathering resistance

Note 1 to entry: Weathering resistance shall be defined in the referring standard.

[SOURCE: EN 17508:—¹]

3.3.2 reduced UV resistant material RUVM

material which fulfills reduced weathering resistance

Note 1 to entry: Weathering resistance shall be defined in the referring standard.

[SOURCE: EN 17508:—¹]

3.3.3 non-UV resistant material NUVM

material which does not necessarily satisfy the requirements of the resistance to weathering

Note 1 to entry: Weathering resistance shall be defined in the referring standard.

[SOURCE: EN 17508:—¹]

1) Under preparation. Stage at the time of publication: prEN 17508:2020.

3.4**internally reused material
IRM**

internal material to be reused which includes mismeasured, unused products and offcuts from internally extruded, virgin material

Note 1 to entry: Different defined formulations cannot be mixed.

Note 2 to entry: Material can be UV, non-UV or reduced UV-resistant.

Note 3 to entry: "Internally" refers to the same profile manufacturing company group even if located at different sites.

[SOURCE: EN 17508:—¹]

3.5**PVC-U Waste**

any PVC-U profile which the holder discards or intends or is required to discard

3.5.1**PVC-U pre-consumer waste**

descriptive term covering material diverted during a manufacturing process of profiles and/or windows

Note 1 to entry: The term post-industrial material is sometimes used synonymously.

[SOURCE: EN ISO 472:2013, 2.1701 - modified]

3.5.2**PVC-U post-consumer waste**

descriptive term covering material, generated by the end-users of products, that has fulfilled its intended purpose or can no longer be used (including material returned from within the distribution chain)

[SOURCE: EN ISO 472:2013, 2.1700 - modified]

3.6**recycled unplasticized polyvinylchloride****PVC-U Recyclate****rPVC-U**

recycled, unplasticized polyvinylchloride

Note 1 to entry: Table 2 lists products commonly recycled into rPVC-U of a quality for use in the end applications as outlined.

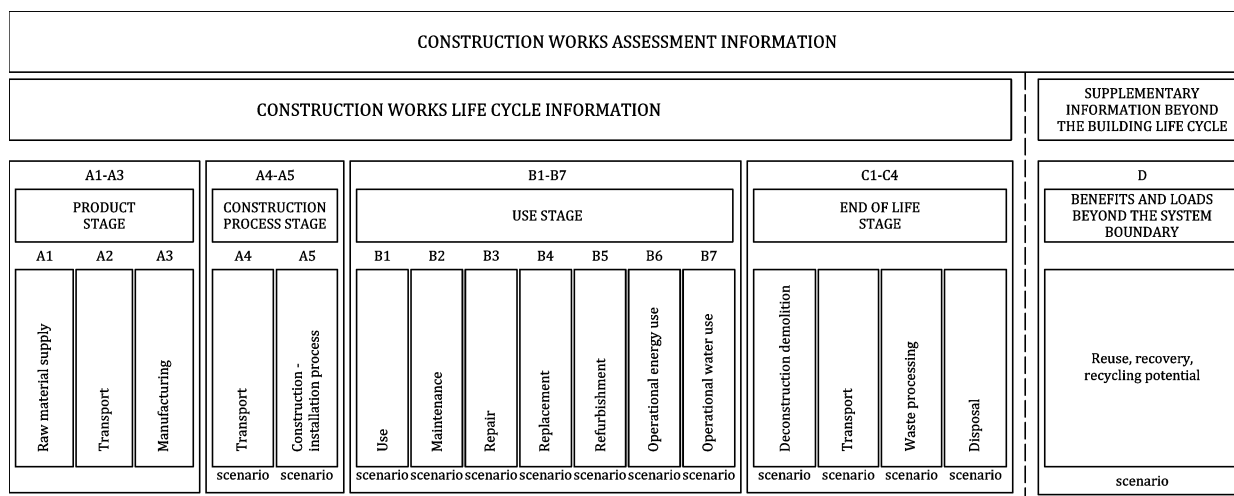
Note 2 to entry: Material can be UV, non-UV or reduced UV-resistant.

[SOURCE: EN 17508:—¹]

3.7**components**

material from window parts such as hardware, glass and gaskets, including profiles.

3.8 Life cycle stages of PVC windows and doors



[SOURCE: EN 15804:2012+A2:2019, 7 and Figure 1]

Figure 1 — Life cycle stages and modules for the building assessment

3.8.1

product stage

<PVC windows and doors> stage including:

- A1, the forming of raw material, virgin and recycled material into PVC window profiles;
- A2, raw material, profiles and components are transported in the course of the production process
- A3, the assembling of components such as profiles, panes and hardware to windows and doors

Note 1 to entry: Included is the provision of all materials, products and energy, as well as the waste processing up to the end-of waste state, or disposal of final residues during the product stage as well as the re-use, recovery and/or recycling potentials.

3.8.2

construction stage

stage including:

- A4, the transport of windows and doors to the building site;
- A5, the installation of windows and doors into the building

Note 1 to entry: Included is the provision of all materials, products and energy, as well as waste processing up to the end-of-waste state or disposal of final residues during the construction stage. These modules also include all impacts and aspects related to any losses during this construction stage (i.e. production, transport, waste processing and disposal of the lost products and materials).

3.8.3**use stage <related to the building fabric>**

stage including:

- B1, the use of windows and doors;
- B2, their maintenance;
- B3, repair;
- B4, replacement; or
- B5, refurbishment

Note 1 to entry: Included is the provision and transport of all materials, products and related energy and water use, as well as waste processing up to the end-of-waste state or disposal of final residues during this part of the use stage. These modules also include all impacts and aspects related to the losses during this part of the use stage (i.e. production, transport and waste processing and disposal of the lost products and materials).

3.8.4**use stage <related to the operation of the building>**

stage including:

- B6, the operational energy use (e.g. operation of heating system and other building related installed services);
- B7, the operational water use

Note 1 to entry: These modules include provision and transport of all materials, products, as well as energy and water provisions, waste processing up to the end-of-waste state or disposal of final residues during this part of the use stage.

3.8.5**end of life stage**

stage including:

- C1, de-construction, demolition;
- C2, transport to waste processing;
- C3, waste processing for reuse, recovery and/or recycling;
- C4, disposal

Note 1 to entry: Transportation, provision of materials, products, related energy and water use are also included.

3.8.6**benefits and loads beyond the system boundary**

module D includes reuse, recovery and/or recycling potentials, expressed as net impacts and benefits