

<b>STN</b>	<b>Plasty</b> <b>Recyklácia PVC-U profilov okien a dverí v</b> <b>kontrolovanom cykle</b>	<b>STN</b> <b>EN 17410</b>  64 3219
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Plastics - Controlled loop recycling of PVC-U profiles from windows and doors

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

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EUROPEAN STANDARD  
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**EN 17410**

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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 - Geregelter Recyclingkreislauf von  
Fenster- und Türprofilen aus PVC-U

This European Standard was approved by CEN on 9 August 2021.

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## **European foreword**

This document (EN 17410:2021) has been prepared by Technical Committee CEN/TC 249 “Plastics”, the secretariat of which is held by NBN.

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of an identical text or by endorsement, at the latest by March 2022, and conflicting national standards shall be withdrawn at the latest by March 2022.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

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**EN 17410:2021 (E)****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 recyclate 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.

## 1 Scope

This document specifies the controlled loop and 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.

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

This document establishes the controlled loop treatment of PVC profiles in line with the general understanding of life cycles as outlined in EN 15804.

NOTE 1 With regard to PVC waste treatment, the present document relates to existing standards EN 15343, EN 15346 and EN 15347.

NOTE 2 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).

## 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*

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

EN 15346, *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*

EN 514, *Plastics — Poly(vinyl chloride) (PVC) based profiles — Determination of the strength of welded corners and T-joints*

EN ISO 60, *Plastics — Determination of apparent density of material that can be poured from a specified funnel (ISO 60)*

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

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

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

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