

Plastics - Poly(vinyl chloride) (PVC) based profiles -  
Determination of the resistance to artificial weathering

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN 513:2018 sisaldab Euroopa standardi EN 513:2018 ingliskeelset teksti.	This Estonian standard EVS-EN 513:2018 consists of the English text of the European standard EN 513:2018.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 12.12.2018.	Date of Availability of the European standard is 12.12.2018.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile [standardiosakond@evs.ee](mailto:standardiosakond@evs.ee).

ICS 83.140.99

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardikeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega:  
Koduleht [www.evs.ee](http://www.evs.ee); telefon 605 5050; e-post [info@evs.ee](mailto:info@evs.ee)

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:

Homepage [www.evs.ee](http://www.evs.ee); phone +372 605 5050; e-mail [info@evs.ee](mailto:info@evs.ee)

English Version

## Plastics - Poly(vinyl chloride) (PVC) based profiles - Determination of the resistance to artificial weathering

Plastiques - Profilés à base de poly(chlorure de vinyle)  
(PVC) - Détermination de la résistance au  
vieillessement artificiel

Kunststoffe - Profile auf Basis von Polyvinylchlorid  
(PVC) - Bestimmung der Wetterechtheit und  
Wetterbeständigkeit durch künstliche Bewitterung

This European Standard was approved by CEN on 26 October 2018.

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 CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists 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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

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

<b>Contents</b>	<b>Page</b>
European foreword.....	3
<b>1 Scope</b> .....	<b>4</b>
<b>2 Normative references</b> .....	<b>4</b>
<b>3 Terms and definitions</b> .....	<b>4</b>
<b>4 Symbols and abbreviations</b> .....	<b>5</b>
<b>5 Principle</b> .....	<b>5</b>
<b>6 Apparatus</b> .....	<b>5</b>
<b>7 Test specimens</b> .....	<b>5</b>
<b>8 Conditioning</b> .....	<b>6</b>
<b>9 Weathering test conditions</b> .....	<b>6</b>
<b>10 Procedure</b> .....	<b>7</b>
<b>11 Test report</b> .....	<b>7</b>
<b>Annex A (informative) Determination of changes in colour and variations of properties after exposure to xenon-arc radiation</b> .....	<b>9</b>
<b>A.1 General</b> .....	<b>9</b>
<b>A.2 Determination of visual change in colour</b> .....	<b>9</b>
<b>A.2.1 Test specimens</b> .....	<b>9</b>
<b>A.2.2 Grey scale</b> .....	<b>9</b>
<b>A.2.3 Determination of colorimetric coordinates</b> .....	<b>9</b>
<b>A.3 Determination of Charpy impact strength</b> .....	<b>10</b>
<b>A.3.1 PVC-U profiles</b> .....	<b>10</b>
<b>A.3.2 PVC-UE profiles</b> .....	<b>10</b>
<b>A.4 Determination of the tensile impact</b> .....	<b>11</b>
<b>A.5 Determination of flexural properties</b> .....	<b>11</b>
<b>A.6 Determination of chalking</b> .....	<b>11</b>
<b>A.7 Determination of adhesion of a coating</b> .....	<b>11</b>
<b>A.8 Determination of peel strength</b> .....	<b>11</b>
<b>A.9 Determination of falling weight impact resistance (only applicable for PVC UE profiles)</b> .....	<b>12</b>
<b>Bibliography</b> .....	<b>13</b>

## European foreword

This document (EN 513:2018) 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 June 2019, and conflicting national standards shall be withdrawn at the latest by June 2019.

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.

This document supersedes EN 513:1999.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

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

## 1 Scope

This document specifies a method for exposing specimens made from poly(vinyl chloride) (PVC) based profiles to xenon-arc radiation, in order to assess changes in characteristics.

It is applicable to PVC based profiles including those covered with foil, lacquered or coextruded.

NOTE The determination of changes in colour and variations of properties after exposure of PVC based profiles to xenon-arc radiation is described in an informative Annex A.

## 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 17271<sup>1</sup>, *Plastics — Poly(vinyl chloride) (PVC) based profiles — Determination of the peel strength of profiles laminated with foils*

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

EN ISO 4892-1:2016, *Plastics - Methods of exposure to laboratory light sources - Part 1: General guidance (ISO 4892-1:2016)*

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

ISO 9370, *Plastics — Instrumental determination of radiant exposure in weathering tests — General guidance and basic test method*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 472 and the following 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 <http://www.iso.org/obp>

### 3.1 radiant exposure

*H*  
time integral of irradiance

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

[SOURCE: ISO 9370:2017, 3.27]

---

<sup>1</sup> Under preparation. Stage at time of preparation: prEN 17271:2018.