

Influence of materials on water intended for human consumption - Influence due to migration - Part 2: Test method for non-metallic and noncementitious site-applied materials

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

| | |
|---|--|
| See Eesti standard EVS-EN 12873-2:2021 sisaldab Euroopa standardi EN 12873-2:2021 ingliskeelset teksti. | This Estonian standard EVS-EN 12873-2:2021 consists of the English text of the European standard EN 12873-2:2021. |
| 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 and Accreditation. |
| Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 15.12.2021. | Date of Availability of the European standard is 15.12.2021. |
| Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest. | The standard is available from the Estonian Centre for Standardisation and Accreditation. |

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

ICS 13.060.20, 67.250

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardimis- ja Akrediteerimiskeskusele

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

Kui Teil on küsimusi standardite autoriõiguse kaitse kohta, võtke palun ühendust Eesti Standardimis- ja Akrediteerimiskeskusega: Koduleht www.evs.ee; telefon 605 5050; e-post info@evs.ee

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

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 and Accreditation.

If you have any questions about standards copyright protection, please contact the Estonian Centre for Standardisation and Accreditation: Homepage www.evs.ee; phone +372 605 5050; e-mail info@evs.ee

English Version

**Influence of materials on water intended for human
consumption - Influence due to migration - Part 2: Test
method for non-metallic and noncementitious site-applied
materials**

Influence des matériaux en contact sur l'eau destinée à
la consommation humaine - Influence due à la
migration - Partie 2 : Méthode d'essai des matériaux
appliqués sur site, excepté les matériaux métalliques et
ceux à base de ciment

Einfluss von Materialien auf Trinkwasser - Einfluss
infolge der Migration - Teil 2: Prüfverfahren für vor Ort
aufgebrachte nicht metallische und nicht
zementgebundene Materialien

This European Standard was approved by CEN on 15 November 2021.

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, 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, 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

| Contents | Page |
|--|-------------|
| European foreword..... | 3 |
| Introduction | 4 |
| 1 Scope..... | 5 |
| 2 Normative references..... | 5 |
| 3 Terms and definitions | 5 |
| 4 Principle | 7 |
| 5 Reagents | 7 |
| 6 Apparatus..... | 8 |
| 7 Test pieces | 9 |
| 8 Pre-treatment of test pieces..... | 10 |
| 9 Test procedure | 11 |
| 10 Calculation of test results..... | 13 |
| 11 Test report..... | 14 |
| Annex A (normative) Arrangement for flushing pipes with nominal size greater than DN 80..... | 18 |
| Annex B (normative) Additional procedure for testing non-homogeneous products and pipes with nominal size greater than DN 80 | 21 |
| Annex C (informative) Examples of extended collection and analysis of migration waters..... | 26 |
| Annex D (informative) Procedural tests using standard additions (positive controls)..... | 28 |
| Annex E (informative) Flow diagrams (Figures E.1 and E.2) for migration test procedure for cold water temperature and elevated temperature..... | 29 |
| Bibliography..... | 31 |

European foreword

This document (EN 12873-2:2021) has been prepared by Technical Committee CEN/TC 164 “Water Supply”, the secretariat of which is held by AFNOR.

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 2022, and conflicting national standards shall be withdrawn at the latest by June 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.

This document will supersede EN 12873-2:2005.

Significant technical difference between this edition and EN 12873-2:2005 is as follows:

- the test temperatures, outlined in Clause 4 ‘Principle’, are more specific;
- the use of chromic acid is removed because of safety concerns;
- the use of sulphuric acid has been removed;
- the examples of extended collection and analysis of migration waters (Annex C) are more systematic.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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, 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, Turkey and the United Kingdom.

Introduction

In respect of potential adverse effects on the quality of water intended for human consumption caused by the materials, it is called to mind that, while awaiting the adoption of verifiable European acceptance criteria, the relevant national regulations remain in force.

This document has been drawn up with the objective to describe a test method to determine the migration of substances from products made from, or incorporating, organic and glassy (porcelain/vitreous enamel) material for use in contact with water intended for human consumption.

Annex A, which is normative, describes an alternative arrangement for flushing pipes having a nominal size greater than DN 80.

Annex B, which is informative, describes additional procedures for testing non-homogeneous products and pipes having a nominal size greater than DN 80.

Annex C, which is informative, describes a schedule for the preparation of migration waters.

Annex D, which is informative, describes procedural tests using standard additions (positive controls).

Annex E, which is informative, describes the migration test procedure in a schematic manner.

This document will result in one of a series of standards on test methods which support the appropriate standards.

With regards to potential adverse effect on the quality of water intended for human consumption, caused by the material testing covered by this document:

- 1) This document provides no information as to whether the final product tested using this methodology may be used without restriction in any of the Member States of the EU or EFTA.
- 2) It should be noted that, whilst awaiting the adoption of verifiable European criteria, existing national regulations concerning the use of this material test method remain in force.

NOTE Conformity with this document does not confer or imply acceptance or approval of the material in any of the Member States of the EU or EFTA. The use of the methodology covered by this document is subject to regulation or control by National Authorities.

This document, Part 2, is the second in a series of standards for dealing with the influence of migration from materials on water intended for human consumption, including:

- Part 1: Test method for factory-made products made from or incorporating organic and glassy (porcelain/vitreous enamel) materials;
- Part 2: Test method for non-metallic and non-cementitious site-applied products;
- Part 3: Test method for ion exchange and absorbent resins;
- Part 4: Test method for water treatment membranes.

1 Scope

This document specifies a procedure to determine the migration of substances from non-metallic and non-cementitious site-applied materials for use in contact with water intended for human consumption.

It is applicable to site-applied materials intended to be used under various conditions for the transport and storage of water intended for human consumption, including raw water used for the production of water intended for human consumption. It covers the extraction by water of substances from these materials after their application on site.

The document is applicable to materials whose physical or chemical properties alter during or after on-site application, such as coatings, paints, and adhesives. In addition, some site-applied materials that do not change in such a manner, e.g. greases or lubricants, are also included.

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 ISO 7393-2, *Water quality - Determination of free chlorine and total chlorine - Part 2: Colorimetric method using N,N-dialkyl-1,4-phenylenediamine, for routine control purposes (ISO 7393-2)*

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:

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

3.1

test

technical operation that consists of the determination of one or more characteristics of a given product

3.2

test procedure

specified technical method for performing a test

3.3

test report

document that presents test results and other information relevant to a test

3.4

testing laboratory

laboratory that performs tests

3.5

material

manufactured items(s) for application on site and subsequent contact with water intended for human consumption