

Plastics - Decorative solid surfacing materials - Part 3:
Determination of properties - Solid surface shapes (ISO
19712-3:2022)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 19712-3:2022 sisaldab Euroopa standardi EN ISO 19712-3:2022 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 19712-3:2022 consists of the English text of the European standard EN ISO 19712-3:2022.
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 13.04.2022.	Date of Availability of the European standard is 13.04.2022.
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 83.140.20

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 autorikaitse 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 copyright, please contact Estonian Centre for Standardisation and Accreditation:

Homepage www.evs.ee; phone +372 605 5050; e-mail info@evs.ee

English Version

**Plastics - Decorative solid surfacing materials - Part 3:
Determination of properties - Solid surface shapes (ISO
19712-3:2022)**

Plastiques - Matériaux décoratifs massifs de
revêtement de surface - Partie 3: Détermination des
propriétés - Produits mis en forme (ISO 19712-3:2022)

Kunststoffe - Dekorative Mineralwerkstoffe - Teil 3:
Prüfverfahren - Formteile (ISO 19712-3:2022)

This European Standard was approved by CEN on 18 March 2022.

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

European foreword

This document (EN ISO 19712-3:2022) has been prepared by Technical Committee ISO/TC 61 "Plastics" in collaboration with 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 October 2022, and conflicting national standards shall be withdrawn at the latest by October 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 supersedes EN ISO 19712-3:2013.

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

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, 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.

Endorsement notice

The text of ISO 19712-3:2022 has been approved by CEN as EN ISO 19712-3:2022 without any modification.

Contents

Page

Foreword	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Cleaning the test specimen surface	2
4.1 General	2
4.2 Materials	2
4.3 Procedure	2
5 Surface defects	2
5.1 Procedure	2
5.2 Method of inspection of surface	3
5.3 Performance requirements	3
5.4 Test report	3
6 Resistance to impact by large-diameter ball	3
6.1 Principle	3
6.2 Test specimen	3
6.3 Procedure	3
6.4 Performance requirement	4
6.5 Test report	4
7 Lightfastness	5
7.1 Method A	5
7.1.1 Principle	5
7.1.2 Apparatus	5
7.1.3 Test specimen	5
7.1.4 Procedure	5
7.1.5 Assessment of specimen and expression of results	6
7.1.6 Test report	6
7.2 Method B	6
7.2.1 Principle	6
7.2.2 Materials	7
7.2.3 Apparatus	7
7.2.4 Standardization of apparatus	7
7.2.5 Test specimens	7
7.2.6 Procedure	7
7.2.7 Expression of results	8
7.2.8 Test report	8
7.3 Method C (resistance to colour change in light from an enclosed carbon-arc lamp)	9
7.3.1 Principle	9
7.3.2 Apparatus	9
7.3.3 Test specimen	9
7.3.4 Procedure	9
7.3.5 Evaluation and expression of results	9
7.3.6 Test report	9
8 Stain/chemical-resistance test	10
8.1 Method A	10
8.1.1 Principle	10
8.1.2 Staining agents	10
8.1.3 Apparatus and materials	10
8.1.4 Test specimens	10
8.1.5 Procedures	14
8.1.6 Expression of results	14
8.1.7 Test report	14

8.2	Method B	15
8.2.1	Principle	15
8.2.2	Materials	15
8.2.3	Apparatus	16
8.2.4	Test specimen	16
8.2.5	Procedure	17
8.2.6	Expression of results	18
8.2.7	Test report	19
9	Resistance to cigarette burns	19
9.1	Method A	19
9.1.1	Principle	19
9.1.2	Materials	19
9.1.3	Test specimen	19
9.1.4	Procedure	19
9.1.5	Expression of results	20
9.1.6	Test report	20
9.2	Method B (simulated test using electric heater)	20
9.2.1	Principle	20
9.2.2	Apparatus	20
9.2.3	Test specimens	25
9.2.4	Procedure	25
9.2.5	Expression of results	27
9.2.6	Test report	27
10	Resistance to dry heat	27
10.1	Method A	27
10.1.1	Principle	27
10.1.2	Materials	27
10.1.3	Apparatus	28
10.1.4	Test specimen	28
10.1.5	Procedure	28
10.1.6	Expression of results	28
10.1.7	Test report	28
10.2	Method B	29
10.2.1	Principle	29
10.2.2	Materials	29
10.2.3	Apparatus	29
10.2.4	Test specimen	29
10.2.5	Procedure	30
10.2.6	Expression of results	31
10.2.7	Test report	32
10.3	Method C	32
10.3.1	Test specimen	32
10.3.2	Procedure	32
10.3.3	Performance requirements	32
10.3.4	Test report	32
11	Resistance to wet heat	33
11.1	Method A	33
11.1.1	Principle	33
11.1.2	Materials	33
11.1.3	Apparatus	33
11.1.4	Test specimen	33
11.1.5	Procedure	33
11.1.6	Expression of results	33
11.1.7	Test report	34
11.2	Method B	34
11.2.1	Principle	34
11.2.2	Materials	34

11.2.3	Apparatus.....	34
11.2.4	Test specimen.....	35
11.2.5	Procedure.....	35
11.2.6	Expression of results.....	35
11.2.7	Test report.....	36
12	Hot/cold-cycle water-resistance test.....	36
12.1	Method A — Kitchen sinks.....	36
12.1.1	Principle.....	36
12.1.2	Apparatus and materials.....	36
12.1.3	Test specimen.....	37
12.1.4	Procedure.....	37
12.1.5	Performance requirement.....	38
12.1.6	Test report.....	38
12.2	Method B — Other shaped products.....	39
12.2.1	Principle.....	39
12.2.2	Apparatus and materials.....	39
12.2.3	Test specimen.....	39
12.2.4	Procedure.....	39
12.2.5	Performance requirement.....	39
12.2.6	Test report.....	39
13	Hardness.....	40
14	Ability to be renewed.....	40
	Bibliography.....	41

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 11 *Products*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 249, *Plastics*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 19712-3:2007), of which it constitutes a minor revision.

The changes compared to the previous edition are as follows:

- the normative references clause has been updated;
- the rate of flow of water has been updated in [Table 6](#) and subclause [12.2.4](#).

A list of all parts in the ISO 19712 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Plastics — Decorative solid surfacing materials —

Part 3:

Determination of properties — Solid surface shapes

SAFETY STATEMENT — Persons using this document should be familiar with normal laboratory practice, if applicable. This document does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and to determine the applicability of regulatory limitations prior to use.

1 Scope

This document specifies the methods of test for determination of the properties of solid surfacing materials, as defined in [Clause 3](#), in the form of shaped products. These methods are primarily intended for testing the materials specified in ISO 19712-1.

The tests can be carried out on finished products, but are generally carried out on test panels of a size sufficient to meet the requirements of the test, and of the same material and finish as the finished product.

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.

ISO 105-A02, *Textiles — Tests for colour fastness — Part A02: Grey scale for assessing change in colour*

ISO 105-B02, *Textiles — Tests for colour fastness — Part B02: Colour fastness to artificial light: Xenon arc fading lamp test*

ISO 209, *Aluminium and aluminium alloys — Chemical composition*

ISO 1770, *Solid-stem general purpose thermometers*

ISO 2039-1, *Plastics — Determination of hardness — Part 1: Ball indentation method*

ISO 2039-2, *Plastics — Determination of hardness — Part 2: Rockwell hardness*

ISO 3668, *Paints and varnishes — Visual comparison of colour of paints*

ISO 4211:1979, *Furniture — Assessment of surface resistance to cold liquids*

ISO 4892 (all parts), *Plastics — Methods of exposure to laboratory light sources*

ISO 4892-1, *Plastics — Methods of exposure to laboratory light sources — Part 1: General guidance*

ISO 4892-2:2013, *Plastics — Methods of exposure to laboratory light sources — Part 2: Xenon-arc sources*

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

ASTM D 2244, *Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates*

ASTM D 2583, *Standard Test Method for Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor*

CIE PUBLICATION No 85:1989, *Solar spectral irradiance*

3 Terms and definitions

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

ISO and IEC maintain terminology 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
solid surfacing material
SSM
material, composed of polymeric materials together with pigments and fillers, intended to be cast into sheets or shaped products

Note 1 to entry: The material is of the same composition throughout the whole thickness of the sheet or product.

Note 2 to entry: Sheets and products made from SSMs are repairable and renewable to the original finish.

Note 3 to entry: SSMs can also be fabricated into continuous sheets with inconspicuous seams.

4 Cleaning the test specimen surface

4.1 General

The surface to be tested shall be prepared prior to testing using the procedure specified in [4.3](#).

4.2 Materials

4.2.1 Cellulose sponge.

4.2.2 Non-abrasive cleanser, containing a bleaching agent.

4.2.3 Water.

4.2.4 Clean, absorbent, lint-free material.

4.3 Procedure

Clean the surface using a damp sponge and non-abrasive cleanser containing a bleaching agent, scrubbing the surface with light hand pressure for up to 1,0 min/m². Rinse the prepared surface with water and dry with clean, absorbent, lint-free material.

5 Surface defects

5.1 Procedure

The entire finished surface of the shaped product under test shall be rubbed with a sponge and a 50 % solution of tap water and water-soluble black or blue-black ink after the surface has been washed and