

This document is a preview generated by EVS

Natural stone test methods - Determination of geometric characteristics on units

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

| | |
|---|--|
| See Eesti standard EVS-EN 13373:2020 sisaldab Euroopa standardi EN 13373:2020 ingliskeelset teksti. | This Estonian standard EVS-EN 13373:2020 consists of the English text of the European standard EN 13373:2020. |
| 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 08.01.2020. | Date of Availability of the European standard is 08.01.2020. |
| 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.

ICS 91.100.15

Standardite reproduutseerimise 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; telefon 605 5050; e-post 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; phone +372 605 5050; e-mail info@evs.ee

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 13373

January 2020

ICS 91.100.15

Supersedes EN 13373:2003

English Version

Natural stone test methods - Determination of geometric characteristics on units

Méthodes d'essai pour pierres naturelles -
Détermination des dimensions et autres
caractéristiques géométriques

Prüfverfahren für Naturstein - Bestimmung
geometrischer Merkmale von Gesteinen

This European Standard was approved by CEN on 15 April 2019.

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

| | Page |
|---|-----------|
| European foreword..... | 4 |
| 1 Scope..... | 5 |
| 2 Normative references..... | 5 |
| 3 Terms and definitions | 5 |
| 4 Measurement of the dimensions of squared rough blocks | 5 |
| 4.1 Measurement of the gross dimensions of squared rough blocks | 5 |
| 4.1.1 Principle | 5 |
| 4.1.2 Apparatus..... | 5 |
| 4.1.3 Measurement procedure | 5 |
| 4.1.4 Expression of the results | 6 |
| 4.2 Measurement of net dimensions of rough blocks | 6 |
| 4.2.1 Principle | 6 |
| 4.2.2 Apparatus..... | 6 |
| 4.2.3 Measurement procedure | 6 |
| 4.2.4 Expression of the results | 7 |
| 5 Measurement of the dimensions of rough slabs | 7 |
| 5.1 Measurement of the gross in-plane dimensions of rough slabs..... | 7 |
| 5.1.1 Principle | 7 |
| 5.1.2 Apparatus..... | 7 |
| 5.1.3 Measurement procedure | 8 |
| 5.1.4 Expression of the results | 8 |
| 5.2 Measurement of the net in-plane dimensions of rough slabs | 8 |
| 5.2.1 Principle | 8 |
| 5.2.2 Apparatus..... | 8 |
| 5.2.3 Measurement procedure | 9 |
| 5.2.4 Expression of the results | 9 |
| 5.3 Measurement of the thickness of a rough slab | 9 |
| 5.4 Measurement of the flatness of a rough slab..... | 9 |
| 6 Measurement of the dimensions and measurement of other geometric characteristics of finished products with sawn edges..... | 10 |
| 6.1 Principle | 10 |
| 6.2 Apparatus..... | 10 |
| 6.3 Measurement of in-plane dimensions of finished products with sawn edges | 10 |
| 6.3.1 Measurement procedure | 10 |
| 6.3.2 Expression of the results | 11 |
| 6.4 Measurement of the thickness and surface irregularities of finished products with sawn edges..... | 11 |
| 6.4.1 Measurement of the rough thickness | 11 |
| 6.4.2 Expression of the results | 12 |
| 6.4.3 Measurement of surface irregularities | 12 |
| 6.4.4 Expression of results..... | 14 |
| 6.4.5 Measurement of the nominal thickness..... | 14 |
| 6.5 Measurement of flatness | 15 |
| 6.5.1 Measurement of the flatness for a regular surface finish..... | 15 |
| 6.5.2 Measurement of the flatness for an irregular surface finish..... | 19 |

| | | |
|--------------|---|-----------|
| 6.6 | Measurement of the straightness of arrises | 19 |
| 6.6.1 | Principle..... | 19 |
| 6.6.2 | Apparatus | 20 |
| 6.6.3 | Measurement procedure | 20 |
| 6.6.4 | Expression of the results..... | 21 |
| 6.7 | Measurement of the squareness of visible faces | 21 |
| 6.7.1 | Principle..... | 21 |
| 6.7.2 | Angular measurement | 21 |
| 6.7.3 | Measurement in percentage | 23 |
| 6.8 | Measurement of the squareness of edges..... | 25 |
| 6.8.1 | Principle..... | 25 |
| 6.8.2 | Apparatus | 26 |
| 6.8.3 | Measurement procedure | 26 |
| 6.8.4 | Expression of the results..... | 28 |
| 6.9 | Measurement of the shape of non-rectangular elements | 28 |
| 6.9.1 | Principle..... | 28 |
| 6.9.2 | Apparatus | 29 |
| 6.9.3 | Measurement procedure | 29 |
| 7 | Measurement of the dimensions and other geometric characteristics of finished products with cleft / riven / hewn edges | 31 |
| 7.1 | Measurement of dimensions | 31 |
| 7.2 | Measurement of thickness and surface irregularities | 32 |
| 7.3 | Measurement of undercut and overcut | 32 |
| 7.3.1 | General | 32 |
| 7.3.2 | Apparatus | 32 |
| 7.3.3 | Measurement procedure | 32 |
| 7.3.4 | Expression of the results..... | 33 |
| 7.4 | Measurement of the flatness | 33 |
| 7.5 | Measurement of the straightness | 33 |
| 7.6 | Measurement of the squareness of seen face | 33 |
| 8 | Measurement of the shape of non-rectangular elements | 33 |
| 9 | Measurement of the geometrical characteristics of fixing holes of slabs for cladding | 34 |
| 9.1 | Principle..... | 34 |
| 9.2 | Depth of the hole | 34 |
| 9.2.1 | Apparatus | 34 |
| 9.2.2 | Measurement procedure | 34 |
| 9.2.3 | Expression of the results..... | 34 |
| 9.3 | Position of the hole | 35 |
| 9.3.1 | Apparatus | 35 |
| 9.3.2 | Measurement procedure | 35 |
| 9.3.3 | Expression of the results..... | 35 |
| 9.4 | Diameter of the hole | 35 |
| 9.4.1 | Apparatus | 35 |
| 9.4.2 | Measurement procedure | 35 |
| 9.4.3 | Expression of the results..... | 35 |
| 9.5 | Inclination of the hole | 35 |
| 9.5.1 | Apparatus | 35 |
| 9.5.2 | Measurement procedure | 35 |
| 9.5.3 | Expression of the results..... | 36 |
| 10 | Test report | 36 |
| | Bibliography | 38 |

European foreword

This document (EN 13373:2020) has been prepared by Technical Committee CEN/TC 246 "Natural stones", the secretariat of which is held by UNI.

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 July 2020, and conflicting national standards shall be withdrawn at the latest by July 2020.

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 13373:2003.

The significant changes with respect to the previous edition are listed below:

- figures have been revised;
- editorial changes have been made.

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.

1 Scope

This document describes methods for verifying the geometric characteristics of products of natural stone such as rough blocks, rough slabs, finished products for cladding, flooring, stairs and modular tiles and paving units (slabs, setts and kerbs). These methods can be applied in the case of a dispute between two parties, they are not compulsory for production control.

Other measuring equipment can be used as long as their precision can be demonstrated to be equal or better than the ones mentioned here.

It is essential that all weighing, measuring and testing equipment are calibrated or retraceable to measurement standards and regularly inspected according to documented procedures, frequencies and criteria. It is important that the expression of the dimensional characteristics is in accordance with the appropriate class of the measured product.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

No terms and definitions are listed in this document.

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>

4 Measurement of the dimensions of squared rough blocks

4.1 Measurement of the gross dimensions of squared rough blocks

4.1.1 Principle

Measurement of the dimensions of the smallest rectangular cuboid with straight edges that contains a rough block.

4.1.2 Apparatus

- A rigid ruler of appropriate length graduated in 0,01 m.

4.1.3 Measurement procedure

The gross length x_{gross} , the gross width y_{gross} and the gross height z_{gross} of the block are measured in the following manner:

- Define the smallest cuboid that can encompass the rough block.
- Estimate by projection the gross dimensions of the block x_{gross} , y_{gross} and z_{gross} (see Figure 1).
- Take measurements expressed in metres to the nearest 0,01 m at i places (minimum 3) for each direction x_i , y_i , z_i where visually the largest dimensions occur.