

Looduskivist sillutusplaadid välissillutiseks. Nõuded ja katsemeetodid

**Slabs of natural stone for external paving -
Requirements and test methods**

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 1341:2012 sisaldab Euroopa standardi EN 1341:2012 ingliskeelset teksti.	This Estonian standard EVS-EN 1341:2012 consists of the English text of the European standard EN 1341:2012.
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 28.11.2012.	Date of Availability of the European standard is 28.11.2012.
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 93.080.20

Võtmesõnad: area, conformity tests, grades, packages, packing, paving flag, paving slabs, plates, quality, rocks, size, specification (approval), specifications, strength of materials, surfaces, terminology, testing, thickness,

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:
Aru 10, 10317 Tallinn, Eesti; 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:
Aru 10, 10317 Tallinn, Estonia; www.evs.ee; phone 605 5050; e-mail info@evs.ee

English Version

Slabs of natural stone for external paving - Requirements and test methods

Dalles de pierre naturelle pour le pavage extérieur -
Exigences et méthodes d'essai

Platten aus Naturstein für Außenbereiche - Anforderungen
und Prüfverfahren

This European Standard was approved by CEN on 6 October 2012.

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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

Foreword.....	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	5
4 Requirements and test methods for slabs of natural stone.....	7
4.1 General.....	7
4.1.1 Denomination	7
4.1.2 Alteration of physical properties of the natural stone	8
4.2 Dimensions.....	8
4.2.1 General.....	8
4.2.2 Permissible tolerances.....	8
4.3 Freeze/thaw resistance	10
4.3.1 Freeze- thaw under normal conditions.....	10
4.3.2 Freeze-thaw in the presence of de-icing salts	11
4.4 Breaking strength — Flexural strength	11
4.5 Abrasion resistance	11
4.6 Slip and skid resistance.....	11
4.6.1 Slip resistance.....	11
4.6.2 Skid resistance.....	12
4.6.3 Durability of slip and skid resistance	12
4.7 Appearance	12
4.7.1 General.....	12
4.7.2 Reference sample, visual inspection and acceptance criteria	12
4.8 Water absorption	12
4.9 Apparent density and open porosity	13
4.10 Petrographic description	13
4.11 Dangerous substances	13
5 Evaluation of conformity.....	13
5.1 General.....	13
5.2 Initial type testing (ITT) - Type Testing (TT)	13
5.3 Factory production control.....	15
6 Marking, labelling and packaging	17
Annex A (informative) Guidance on the appropriate thickness for different classes of use	19
A.1 Introduction	19
A.2 Simplified method for the calculation of slab thickness	19
A.3 Guidance on expected breaking loads	20
Annex B (informative) Guidance on sampling	21
B.1 General.....	21
B.2 Principles of sampling	21
B.3 Taking bulk samples	21
B.4 Preparing a sampling plan	21
B.5 Sampling apparatus	22
B.6 Sampling methods.....	22
B.6.1 General.....	22
B.6.2 Sampling from quarries	22
B.6.3 Sampling from production units and consignments	23
B.6.4 Sampling from construction works	23
B.7 Marking, packaging and dispatch of the samples.....	23

B.8	Sampling report	23
Annex C	(informative) Example of calculation of Lower Expected Value	25
C.1	Scope	25
C.2	Symbols and definitions	25
C.3	Calculation of Lower Expected Value	25
Annex ZA	(informative) Clauses of this European Standard addressing the provisions of the EU	
	Construction Products Directive	28
ZA.1	Scope and relevant characteristics	28
ZA.2	Procedure for the attestation of conformity of slabs of natural stone	29
ZA.2.1	System of attestation of conformity	29
ZA.2.2	EC declaration of conformity	30
ZA.3	CE marking and labelling	31
Bibliography	34

Foreword

This document (EN 1341:2012) has been prepared by Technical Committee CEN/TC 178 "Paving units and kerbs", the secretariat of which is held by BSI.

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 May 2013, and conflicting national standards shall be withdrawn at the latest by August 2014.

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

This document supersedes EN 1341:2001.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

The following changes have been made in this new edition:

- a) Where possible the requirements refer to separate test methods prepared by CEN/TC 246, "Natural stones". The change was made to allow those placing the products on the market to use the same test results for a number of products.
- b) The values to be declared have been clarified and where applicable the declared values are now 'lower expected values'.
- c) Annex A (Annex B in the 2001 version) has been extended to include safety factors specific to different uses.

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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard specifies the performance requirements and the corresponding test methods for all natural stone slabs used for external paving and road finishes.

External paving use includes all pavements typical of road works, such as pedestrian and trafficked areas, outdoor squares and similar to be used in an outdoor condition that are subject to the weathering agents, such as temperature changes, rain, ice, wind, etc.

This European Standard provides also for the evaluation of conformity and for marking of the natural stone slabs.

This European Standard covers also characteristics that are of importance to the trade.

This European standard does not cover natural stone slabs for floors and stairs in buildings. In these cases EN 12058 [1] applies.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 1936, *Natural stone test methods — Determination of real density and apparent density, and of total and open porosity*

EN 12371, *Natural stone test methods — Determination of frost resistance*

EN 12372, *Natural stone test methods — Determination of flexural strength under concentrated load*

EN 12407, *Natural stone test methods — Petrographic examination*

EN 12440, *Natural stone — Denomination criteria*

EN 13373:2003, *Natural stone test methods — Determination of geometric characteristics on units*

EN 13755, *Natural stone test methods — Determination of water absorption at atmospheric pressure*

EN 14157, *Natural stone test methods — Determination of the abrasion resistance*

EN 14231, *Natural stone test methods — Determination of the slip resistance by means of the pendulum tester*

3 Terms and definitions

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

3.1

external paving slab

unit of natural stone obtained by cutting or splitting used as a paving material, used for external paving and road finishes in which the working width exceeds two times the thickness