Natural stone test methods - Determination of flexural strength under constant moment

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 13161:2002 sisaldab Euroopa standardi EN 13161:2001 + AC:2002 ingliskeelset teksti. Käesolev dokument on jõustatud 19.04.2002 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 13161:2002 consists of the English text of the European standard EN 13161:2001 + AC:2002. This document is endorsed on 19.04.2002 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

Käsitlusala: This European Standard specifies the method to determine the flexural strength of natural stones under constant moment. The standard contains provision for both an identification test and for a technological test.	**Scope:** This European Standard specifies the method to determine the flexural strength of natural stones under constant moment. The standard contains provision for both an identification test and for a technological test.

ICS 73.020, 91.100.15

Võtmesõnad: bending st, building stones, construction, construction materials, determination, evaluations, frost resistance, lumped load test, materials, materials testing, mechanical testing, natural stones, rocks, stone, strength of materials, strength tests, symbols, testing

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 13161

October 2001

ICS 73.020; 91.100.15

English version

Natural stone test methods - Determination of flexural strength under constant moment

Méthodes d'essai pour pierres naturelles - Détermination de la résistance en flexion sous moment constant

Prüfverfahren für Naturstein - Bestimmung der Biegefestigkeit unter Drittellinienlast

This European Standard was approved by CEN on 29 September 2001.

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

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Foreword

This European Standard has been prepared by TC 246 "Natural Stone", 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 April 2002, and conflicting national standards shall be withdrawn at the latest by December 2002.

This draft standard is one of the series of draft standards for tests on natural stone.
Test methods for natural stone consist of the following parts:

EN 1925	*Natural stone test methods – Determination of water absorption coefficient by capillarity.*
EN 1926	*Natural stone test methods – Determination of compressive strength*.
EN 1936	*Natural stone test methods – Determination of real density and apparent density and of total porosity and open porosity.*
EN 12370	*Natural stone test methods – Determination of resistance to salt crystallisation*.
EN 12372	*Natural stone test methods – Determination of flexural strength under concentrated load*.
prEN 12371	*Natural stone test methods – Determination of frost resistance.*
prEN 12407	*Natural stone test methods – Petrographic description*.
prEN 13364	*Natural stone test methods – Determination of the breaking load at a dowel hole*.
prEN 13373	*Natural stone test methods – Determination of geometric characteristics.*
prEN 13755	*Natural stone test methods – Determination of water absorption at atmospheric pressure*.
prEN 13919	*Natural stone test methods – Determination of resistance to ageing by SO_2 action in the presence of humidity.*
prEN 14066	*Natural stone test methods – Determination of thermal shock resistance*.
prEN 14147	*Natural stone test methods – Determination of resistance to ageing by salt mist*.
prEN 14157	*Natural stone test methods – Determination of abrasion resistance*.
prEN 14158	*Natural stone test methods – Determination of rupture energy.*
prEN …(WI 00246011)	*Natural stone test methods – Determination of thermal dilatation coefficient*.
prEN …(WI 00246012)	*Natural stone test methods – Determination of sound – speed propagation*.
prEN …(WI 00246015)	*Natural stone test methods – Determination of Knoop hardness.*
prEN …(WI 00246017)	*Natural stone test methods – Determination of slip coefficient*.
prEN …(WI 00246018)	*Natural stone test methods – Determination of static elastic modulus*.
prEN …(WI 00246030)	*Natural stone test methods – Determination of surface finishes (rugosity).*

It is intended that other European Standards should call up this European Standard as the basis of evaluation of conformity.

NOTE Nevertheless it is not intended that all natural stones products should be subjected regularly to all the listed tests. Specifications in other standards should call up only relevant test methods.

The Annex A contained in this European Standard is normative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard specifies a method to determine the flexural strength of natural stones under constant moment. The standard contains provision for both an identification test and for a technological test.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 12390-4 *Testing hardened concrete - Part 4: Compressive strength - Specification for testing machines.*

EN 12390-5 *Testing hardened concrete - Part 5: Flexural strength of test specimens.*

3 Principle

After appropriate preparation a specimen of the rock to be tested is laid and centred between two supports. Thereafter the specimen is subjected to two line loads acting on the top of the specimen and so that each load is located at a distance of one third of the length of span. The loads are steadily increased until failure.

4 Symbols

R_{tc} flexural strength at constant moment, in Megapascal
F load at failure in newton
B specimen width in millimetres
h specimen thickness in millimetres
L specimen length in millimetres
ℓ distance between the supporting rollers, in millimetres