

Natural stone test methods - Determination of compressive strength

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compressive strength

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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| Käesolev Eesti standard EVS-EN 1926:2001 sisaldab Euroopa standardi EN 1926:1999 ingliskeelset teksti. | This Estonian standard EVS-EN 1926:2001 consists of the English text of the European standard EN 1926:1999. |
| Käesolev dokument on jõustatud 18.06.2001 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. | This document is endorsed on 18.06.2001 with the notification being published in the official publication of the Estonian national standardisation organisation. |
| Standard on kättesaadav Eesti standardiorganisatsioonist. | The standard is available from Estonian standardisation organisation. |

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| Käsitlusala: This draft European standard specifies a method for determining the compressive strength of natural stones. | Scope: This draft European standard specifies a method for determining the compressive strength of natural stones. |
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ICS 73.020, 91.100.15

Võtmesõnad: compressive strength, determination, natural stone, procedures, specimen preparation, tests

ICS 73.020; 91.100.15

English version

**Natural stone test methods
Determination of compressive strength**

Méthodes d'essai pour pierres
naturelles – Détermination de la
résistance en compression

Prüfverfahren für Naturstein –
Bestimmung der Druckfestigkeit

This European Standard was approved by CEN on 1999-02-12.

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 Central Secretariat or to any CEN member.

The European Standards exist 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 Central Secretariat has the same status as the official versions.

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

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

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Foreword

This European Standard 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 September 1999, and conflicting national standards shall be withdrawn at the latest by September 1999.

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:

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| EN 1925 | Natural stone test methods - Determination of water absorption coefficient by capillarity |
| EN 1936 | Natural stone test methods - Determination of real density and apparent density and of total and open porosity |
| EN 12370 | Natural stone test methods - Determination of resistance to salt crystallisation |
| prEN 12371 | Natural stone test methods - Determination of frost resistance |
| EN 12372 | Natural stone test methods - Determination of flexural strength under concentrated load |
| prEN 12407 | Natural stone test methods - Petrographic description |
| prEN 13161 | Natural stone test methods - Determination of flexural strength under constant moment |
| prEN 13364 | Natural stone test methods - Determination of the breaking load at a dowel hole |
| 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 00246014) | Natural stone test methods - Determination of abrasion resistance |
| prEN(WI 00246015) | Natural stone test methods - Determination of Knoop hardness |
| prEN(WI 00246016) | Natural stone test methods - Determination of thermal shock resistance |
| 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 00246019) | Natural stone test methods - Determination of rupture energy |
| prEN(WI 00246030) | Natural stone test methods - Determination of surface finishes (rugosity) |
| prEN 13373 | Natural stone test methods - Determination of geometric characteristics on units |
| prEN(WI 00246032) | Natural stone test methods - Determination of resistance to ageing by salt mist |
| prEN(WI 00246033) | Natural stone test methods - Determination of resistance to ageing by humidity, temperature, SO ₂ action |
| prEN(WI 00246035) | Natural stone test methods - Determination of dynamic elastic modulus (by fundamental resonance frequency) |
| prEN(WI 00246036) | Natural stone test methods - Determination of water absorption at atmospheric pressure |

It is intended that other ENs should call up this EN 1926 as the basis of evaluation of conformity. (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).

This European standard has an annex A (normative), an annex B (informative), an annex C (normative) and an annex D (informative).

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 for determining the compressive strength of natural stones.

2 Normative references

This European standard incorporates by dated or undated references, 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.

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|-------------------|---|
| ENV 197-1 | Cement - Composition, specifications and conformity criteria - Part 1: Common cements |
| prEN 12390 | Testing concrete - Determination of compressive strength - Specification for compression testing machines |
| prEN 12670 | Natural stones - Terminology |
| prEN 13383-1:1998 | Armourstone - Part 1: Specification |
| prEN 12440 | Denomination of natural stone |

3 Principle

The specimens, after mechanical preparation of the surfaces or, if needed, after capping, are laid and centred on the plate of a testing machine. A uniformly distributed load is applied and increased continuously until failure occurs.

4 Definitions

For the purposes of this standard, the definitions in accordance with prEN 12670 apply.

5 Symbols

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| h | height of the specimen, in millimetres; |
| \bar{l} | mean value of the lateral dimension, i.e. the distance between opposite vertical faces of the specimen (if cubic), in millimetres; |
| \bar{d} | mean value of the diameter of the specimen (if cylindrical), in millimetres; |
| A | cross-sectional area of the specimen before testing, in square millimetres; |
| F | failure load, in newtons; |
| R | uniaxial compressive strength of the specimen, in Megapascals; |
| \bar{R} | mean value of the uniaxial compressive strength, in Megapascals; |
| s | standard deviation; |
| v | coefficient of variation. |