

**Konstruksiooni betooni katsetamine. Osa 2:
Mittepurustav katsetamine. Põrkearvu määramine**

**Testing concrete in structures - Part 2: Non-destructive
testing - Determination of rebound number**

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 12504-2:2012 sisaldab Euroopa standardi EN 12504-2:2012 ingliskeelset teksti.	This Estonian standard EVS-EN 12504-2:2012 consists of the English text of the European standard EN 12504-2:2012.
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.
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English Version

Testing concrete in structures - Part 2: Non-destructive testing - Determination of rebound number

Essais pour béton dans les structures - Partie 2: Essais
non destructifs - Détermination de l'indice de
rebondissement

Prüfung von Beton in Bauwerken - Teil 2: Zerstörungsfreie
Prüfung - Bestimmung der Rückprallzahl

This European Standard was approved by CEN on 13 July 2012.

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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.

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Foreword

This document (EN 12504-2:2012) has been prepared by Technical Committee CEN/TC 104 "Concrete and related products", the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by March 2013, and conflicting national standards shall be withdrawn at the latest by March 2013.

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 12504-2:2001.

This document is based on the International Standard ISO 1920-7, *Testing of concrete – Part 7: Non-destructive tests on hardened concrete*, and reference has been made to ASTM C805, *Standard Test Method for Rebound number of hardened concrete*.

This document has been framed around the use of a Type N, spring driven steel hammer, originally designed by Schmidt.

This European Standard is one of a series of test methods for concrete.

The series EN 12504 "Testing concrete in structures" consists of the following parts:

- *Part 1: Cored specimens — Taking, examining and testing in compression;*
- *Part 2: Non-destructive testing — Determination of rebound number;*
- *Part 3: Determination of pull-out force;*
- *Part 4: Determination of ultrasonic pulse velocity.*

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

- a) editorial revision;
- b) clarification to the procedure for carrying out the test and indicates the required specification of the equipment to be used;
- c) the option of using an electronic measuring device as well as the mechanical version.

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 a method for determining the rebound number of an area of hardened concrete using a spring-driven hammer.

NOTE 1 The rebound number determined by this method can be used to assess the uniformity of concrete in situ, to delineate zones or areas of poor quality or deteriorated concrete in structures.

NOTE 2 The test method is not intended as an alternative for the compressive strength determination of concrete (EN 12390-3), but with suitable correlation, it can provide an estimate of in situ compressive strength. For the assessment of in-situ compressive strength see EN 13791.

NOTE 3 The hammer may be used for comparative testing, referenced against a concrete with known strength or against a concrete which has been shown that it has come from a defined volume of concrete with a population verified as conforming to a particular strength class.

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 ISO 6508-1, *Metallic materials – Rockwell hardness test – Part 1: Test method (scales A, B, C, D, E, F, G, H, K, N, T) (ISO 6508-1)*

3 Principle

A mass propelled by a spring strikes a plunger in contact with the surface of the structure or specimen to be tested. The test result is expressed as a number in terms of the rebound distance of the mass. A number may also be obtained in terms of the energy or velocity differential before and after impact of the mass.

4 Apparatus

4.1 Rebound hammer

Consisting of a spring-loaded hammer mass which, when released, strikes a plunger in contact with the surface to be tested. The rebound distance of the hammer mass from the plunger or other rebound values shall be measured.

NOTE Several types and sizes of rebound hammers are commercially available for testing various strength classes and types of concrete. Each type and size of hammer should be used only with the strength class and type of concrete for which it is intended.

4.2 Reference anvil

Steel reference anvil for verification of the hammer, with an impact area having a hardness of minimum 52 HRC when tested in accordance with EN ISO 6508-1 and a mass of (16 ± 1) kg and a diameter of approximately 150 mm.

Other anvils may be used if it can be demonstrated the accuracy of the readings are not significantly affected.

The manufacturer's instructions and any other equipment shall be used to ensure the longitudinal axis of the plunger is perpendicular to the surface of the anvil at impact.

NOTE Verification on an anvil will not guarantee that different hammers will yield the same results at other points on the rebound scale.