

Testing concrete in structures

Part 1: Cored specimens — Taking, examining and testing in compression

ICS 91.100.30

National foreword

This British Standard is the UK implementation of EN 12504-1:2009. It supersedes BS EN 12504-1:2000 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee B/517/1, Concrete production and testing.

A list of organizations represented on this committee can be obtained on request to its secretary.

Guidance on the use of BS EN 12504-1:2009 is included in National Annex NA (informative).

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

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English Version

**Testing concrete in structures - Part 1: Cored specimens -
Taking, examining and testing in compression**

Essais pour béton dans les structures - Partie 1: Carottes -
Prélèvement, examen et essais en compression

Prüfung von Beton in Bauwerken - Teil 1: Bohrkernproben -
Herstellung, Untersuchung und Prüfung der Druckfestigkeit

This European Standard was approved by CEN on 27 December 2008.

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Foreword

This document (EN 12504-1:2009) 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of an identical text or by endorsement, at the latest by August 2009, and conflicting national standards shall be withdrawn at the latest by August 2009.

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 12504-1:2000.

It is recognized good practice to include measurement of density prior to the determination of compressive strength, as a check on compaction of the concrete.

In drafting the standard consideration has been given to the results of the research programme, part funded by the EC under the Measurement and Testing Programme, contract MAT1-CT94-0043.

The standard includes simple guidance on the process of taking cores, but does not consider a sampling plan. It also provides procedures for visual examination and compressive strength testing, but not the interpretation of the results.

This standard is one of a series concerned with testing concrete.

This series EN 12504 includes the following parts:

EN 12504 Testing concrete in structures

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 following amendments have been made to the 2000-03 edition of this standard:

- editorial revision
- compressive strength to be expressed to the nearest 0,1 MPa (N/mm²) instead of 0,5 MPa (N/mm²)
- According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard specifies a method for taking cores from hardened concrete, their examination, preparation for testing and determination of compressive strength.

NOTE 1 This European Standard does not give guidance on the decision to drill cores or on the locations for drilling.

NOTE 2 This European Standard does not provide procedures for interpreting the core strength results.

NOTE 3 For the assessment of in-situ compressive strength in structures and precast concrete components EN 13791 may be used.

2 Normative references

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

EN 12390-1, *Testing hardened concrete - Part 1: Shape, dimensions and other requirements for test specimens and moulds*

EN 12390-3:2009, *Testing hardened concrete - Part 3: Compressive strength of test specimens*

EN 12390-4:2000, *Testing hardened concrete - Part 4: Compressive strength - Specification for testing machines*

EN 12390-7, *Testing hardened concrete - Part 7: Density of hardened concrete*

3 Principle

Cores extracted using a core drill are carefully examined, prepared by grinding or capping and tested in compression using standard procedures.

4 Apparatus

4.1 Core drill, equipment capable of extracting cores from the hardened concrete to the dimensions set out in 5.4 to the tolerances set out in 7.3

4.2 Compression testing machine, conforming to EN 12390-4 and related to the size of specimens and their expected failure load

NOTE Concrete compression testing machines conforming to EN 12390-4 may need to be adapted to test cores. (see the Foreword of EN 12390-4:2000).