MALAYSIAN STANDARD

MS EN 12390-1:2012

Testing hardened concrete - Part 1: Shape, dimensions and other requirements for specimens and moulds (Second revision)

ICS: 91.100.30

Descriptors: hardened concrete, compressive strength, specimen

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Committee representation

The Industry Standards Committee on Building, Construction and Civil Engineering (ISC D) under whose authority this Malaysian Standard was adopted, comprises representatives from the following organisations:

Association of Consulting Engineers Malaysia
Construction Industry Development Board Malaysia
Department of Irrigation and Drainage Malaysia
Department of Standards Malaysia
Federation of Malaysian Manufacturers
Jabatan Bomba dan Penyelamat Malaysia
Jabatan Kerajaan Tempatan
Jabatan Kerja Raya Malaysia
Malaysian Timber Council
Malaysian Timber Industry Board
Master Builders Association Malaysia
Pertubuhan Akitek Malaysia
SIRIM Berhad (Secretariat)
Suruhanjaya Perkhidmatan Air Negara
The Cement and Concrete Association of Malaysia
The Institution of Engineers, Malaysia
Universiti Sains Malaysia
Universiti Teknologi Malaysia

The Technical Committee on Concrete and Concrete Products which recommended the adoption of the EN Standard as Malaysian Standard consists of representatives from the following organisations:

Association of Consulting Engineers Malaysia

Construction Industry Development Board Malaysia

Department of Irrigation and Drainage Malaysia

IKRAM QA Services Sdn Bhd

Jabatan Kerja Raya Malaysia (Cawangan Kejuruteraan Awam, Struktur dan Jambatan)

Jabatan Kerja Raya Malaysia (Cawangan Pengkalan Udara dan Maritim)

Master Builders Association Malaysia

National Ready Mixed Concrete Association

Pertubuhan Akitek Malaysia

SIRIM Berhad (Secretariat)

SIRIM QAS International Sdn Bhd

The Cement and Concrete Association of Malaysia

The Institution of Engineers, Malaysia

Universiti Teknologi Malaysia

Universiti Teknologi MARA

NATIONAL FOREWORD

The adoption of the EN Standard as a Malaysian Standard was recommended by the Technical Committee on Concrete and Concrete Products under the authority of the Industry Standards Committee on Building, Construction and Civil Engineering.

This Malaysian Standard is the second revision of MS 26: Part 2, *Methods of testing hardened concrete (First revision).*

This Malaysian Standard is identical with EN 12390-1:2000, *Testing hardened concrete - Part 1: Shape, dimensions and other requirements for specimens and moulds*, published by the European Committee for Standardization (CEN). However, for the purposes of this Malaysian Standard, the following apply:

a) in the source text, " this European Standard" should read "this Malaysian Standard"; and

b) the comma which is used as a decimal sign (if any), to read as a point.

MS EN 12390 consists of the following parts, under the general title *Testing hardened concrete:*

Part 1: Shape, dimensions and other requirements for specimens and moulds

Part 2: Making and curing specimens for strength tests

Part 3: Compressive strength of test specimens

Part 4: Compressive strength - Specification for testing machines

Part 5: Flexural strength of test specimens

Part 6: Tensile splitting strength of test specimens

Part 7: Density of hardened concrete

Part 8: Depth of penetration of water under pressure

This Malaysian Standard cancels and replaces MS 26: Part 2:1991.

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Compliance with a Malaysian Standard does not of itself confer immunity from legal obligations.

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 12390-1

October 2000

ICS 91.100.30

Incorporating corrigendum September 2004

English version

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

Essai pour béton durci - Partie 1: Forme, dimensions et autres exigences aux éprouvettes et aux moules

Prüfung von Festbeton - Teil 1: Form, Maße und andere Anforderungen für Probekörper und Formen

This European Standard was approved by CEN on 3 February 2000.

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.

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Ref. No. EN 12390-1:2000 E

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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 104, Concrete (performance, production, placing and compliance criteria), 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 April 2001, and conflicting national standards shall be withdrawn at the latest by December 2003.

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.

This standard is one of a series for test methods for testing hardened concrete.

It is based on the draft International Standard ISO 1920 - Concrete tests - Dimensions, tolerances and applicability of test specimens. However "applicability" has been omitted as not being appropriate and the special rules for calculating test results have also been omitted, both these items being covered in the relevant standards.

This standard recognises alternative approaches towards obtaining test specimens of the correct sizes and shapes. The first is to use moulds whose life is limited and to measure the specimens to ensure conformity. The second is to cast specimens in calibrated metal moulds which meet tighter tolerances than for specimens. The use of calibrated moulds allows relaxation on the requirement for measuring the specimens.

Informative Annex A gives the application of ISO 1101 to measuring the shapes of concrete test specimens and moulds.

Informative Annex B gives guidance on the measurement of flatness of specimens and moulds.

A draft for this standard was published in 1996 for CEN enquiry as prEN 12356. It was one of a series of individually numbered test methods for fresh or hardened concrete. For convenience it has now been decided to combine these separate draft standards into three new standards with separate parts for each method, as follows:

- Testing fresh concrete (EN 12350)
- Testing hardened concrete (EN 12390)
- Testing concrete in structures (EN 12504)

The series EN 12390 includes the following parts where the brackets give the numbers under which particular test methods were published for CEN enquiry:

EN 12390 Testing hardened concrete -

Part 1: Shape, dimensions and other requirements of specimens and moulds (former prEN 12356:1996)
Part 2: Making and curing specimens for strength tests (former prEN 12379:1996)
Part 3: Compressive strength of test specimens (former prEN 12394:1996)
Part 4: Compressive strength - Specification for testing machines (former prEN 12390:1996)
Part 5: Flexural strength of test specimens (former prEN 12359:1996)
Part 6: Tensile splitting strength of test specimens (former prEN 12362:1996)
Part 7: Density of hardened concrete (former prEN 12363:1996)
Part 8: Depth of penetration of water under pressure (former prEN 12364:1996)

1 Scope

This standard specifies the shape, dimensions and tolerances of cast concrete test specimens in the form of cubes, cylinders and prisms, and of the moulds required to produce them.

NOTE The tolerances specified in this standard are based on the needs of strength testing, but they can be applicable to tests for other properties.