



MALAYSIAN STANDARD

MS 26-1-6:2009

TESTING OF CONCRETE - PART 1: FRESH CONCRETE - SECTION 6: DENSITY (SECOND REVISION)

ICS: 91.100.30

Descriptors: testing, fresh concrete, density, apparatus, procedure, slump test, test result and report,
precision

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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
Department of Standards Malaysia
Federation of Malaysian Manufacturers
Jabatan Bomba dan Penyelamat Malaysia
Jabatan Kerajaan Tempatan
Jabatan Kerja Raya Malaysia
Malaysian Timber Industry Board
Master Builders Association Malaysia
Ministry of Energy, Water and Communications
Ministry of International Trade and Industry
National Housing Department
Pertubuhan Akitek Malaysia
SIRIM Berhad (Secretariat)
The Chartered Institute of Building Malaysia
The Institution of Engineers, Malaysia
Universiti Sains Malaysia
Universiti Teknologi Malaysia

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

Association of Consulting Engineers Malaysia
Construction Industry Development Board Malaysia
Department of Irrigation and Drainage
IKRAM QA Services Sdn Bhd
Jabatan Kerja Raya Malaysia
Jabatan Kerja Raya Malaysia (Cawangan Kejuruteraan Awam, Struktur dan Jambatan)
Jabatan Kerja Raya Malaysia (Cawangan Pangkalan Udara dan Maritim)
Master Builders Association Malaysia
National Ready Mixed Concrete Association of Malaysia
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

The Working Group on Revision of MS 26: Part 1 which recommended the adoption of the EN Standard consists of representatives from the following organisations:

Association of Consulting Engineers Malaysia
National Ready Mixed Concrete Association of Malaysia
SIRIM Berhad (Secretariat)
SIRIM QAS International Sdn Bhd
The Cement and Concrete Association of Malaysia
Universiti Teknologi MARA

FOREWORD

The adoption of the EN Standard as a Malaysian Standard was recommended by the Working Group on Revision of MS 26: Part 1 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 1, *Methods of testing concrete - Part 1: Methods of sampling fresh concrete (First revision)*.

This Malaysian Standard is identical with EN 12350-6:1999, *Testing fresh concrete - Part 6: Density*, published by the European Committee for Standardization (CEN) with the exceptions as listed below.

MALAYSIAN STANDARD EXCEPTIONS

- a) in the source text, "this European Standard" should read "this Malaysian Standard";
- b) the comma which is used as a decimal sign (if any), to read as a point; and
- c) reference to EN Standards should be replaced by equivalent Malaysian Standards as follows:

Referenced EN Standards

EN 12350-1:1999, *Testing fresh concrete - Part 1: Sampling*

Corresponding Malaysian Standards

MS 26-1-1, *Testing fresh concrete - Part 1: Fresh concrete - Section 1: Sampling*

This MS 26-1 consists of the following sections, under the general title, *Testing of concrete - Part 1: Fresh concrete*:

Section 1: Sampling

Section 2: Slump test

Section 3: Vebe test

Section 4: Degree of compactability

Section 5: Flow table test

Section 6: Density

Section 7: Air content - Pressure methods

Section 8: Compacting factor test

Section 1 specifies the methods to be used on site for obtaining representative samples from a batch of fresh concrete, which would then be used for various tests. Besides establishing important definitions, this part also includes guidance of temperature measurement, transport and handling and report of sampling.

FOREWORD *(continued)*

Section 2 specifies the methods to determine the slump test. The procedure is detailed including measurements and the types of slump.

Section 3 describes the method for determination of vebe test of fresh concrete for which applies to fresh concrete having between 5 s and 30 s vebe time. The procedures are well detailed. Special attention is paid to procedures for remoulding depending on different types of slump.

Section 4 gives guidance on the method for determination of degree of compactibility which applies to fresh concrete having degree of compactibility from 1.04 and not more than 1.46. Besides figures on the apparatus, photographs of examples of flows are included.

Section 5 gives guidance on the method for determination of flow table test which only correspond to flow values of fresh concrete between 340 mm and 600 mm. Figures on the apparatus, photographs of examples of flows are included.

Section 6 describes the method for determination of density of fresh concrete. Guidance on the apparatus, procedures and calculation are included.

Section 7 gives guidance on the method for determination air content of fresh concrete by pressure methods, which applies to compacted fresh concrete, made with normal weight or relatively dense aggregate of maximum 63 mm. It does not apply to concretes made with lightweight aggregates, air cooled blast-furnace slag, or aggregates with high porosity, because of the magnitude of the aggregate correction factor, compared with the entrained air content of the concrete.

Section 8 describes the method for determination of compacting factor of fresh concrete. It specifies the apparatus required and the procedure including final compaction.

CAUTION: When cement is mixed with water, alkali is released. Take precautions to avoid dry cement entering eyes, mouth and nose whilst mixing concrete. Prevent skin contact with wet cement or concrete by wearing suitable protective clothing. If cement or concrete enters the eye, immediately wash it out thoroughly with clean water and seek medical treatment without delay. Wash wet concrete off the skin immediately.

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This Malaysian Standard cancels and replaces MS 26: Part 1:1991.

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