

# MALAYSIAN STANDARD

MS EN 206:2016

Concrete - Specification, performance, production and conformity (Third revision)

ICS: 91.100.30

Descriptors: concrete, specification, delivery, production, conformity

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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 Dewan Bandaraya Kuala Lumpur Federation of Malaysian Manufacturers Jabatan Bomba dan Penyelamat Malaysia Jabatan Kerajaan Tempatan Jabatan Kerja Raya Malaysia Malaysian Plastics Manufacturers Association Malaysian Timber Council Malaysian Timber Industry Board Master Builders Association Malaysia Pertubuhan Akitek Malaysia Pertubuhan Perancang Malaysia Projek Lebuhraya Utara-Selatan Berhad Real Estate and Housing Developers' Association 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 Jabatan Kerja Raya Malaysia (Cawangan Pangkalan Udara dan Maritim) Master Builders Association Malaysia National Ready Mixed Concrete Association Pertubuhan Akitek Malaysia SIRIM Berhad (Secretariat) SIRIM QAS International Sdn Bhd (Product Certification and Inspection Department) SIRIM QAS International Sdn Bhd (Testing Services Department) The Cement and Concrete Association of Malaysia The Institution of Engineers, Malaysia Universiti Teknologi Malaysia Universiti Teknologi MARA

#### Co-opted member:

**IQRAMXPERT Sdn Bhd** 

#### MS EN 206:2016

#### **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 identical with EN 206:2013, Concrete - Specification, performance, production and conformity, published by the European Committee for Standardization (CEN). However, for the purposes of this Malaysian Standard, the following apply:

- 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.
- reference to European/International Standards should be replaced by equivalent c) Malaysian Standards as follows:

#### Referenced European/International Standards Corresponding Malaysian Standards

### ISO 2859-1, Sampling procedures for inspection by attributes - Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection

- ISO 3951-1, Sampling procedures for inspection by variables - Part 1: Specification for single sampling plans indexed by acceptance quality limit (AQL) for lot-by-lot inspection for a single quality characteristic and a single AQL
- ISO 9001, Quality management systems -Requirements
- Chemical analysis of cement
- EN 197-1, Cement Part 1- Compositions, specifications and conformity criteria for common cement
- EN 450-1, Fly ash for concrete Part 1: MS EN 450-1:2014, Fly ash for concrete -Definition, specifications and conformity criteria

- MS ISO 2859-1:2001, Sampling procedures for inspection by attributes - Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection (ISO 2859-1: 1999, IDT)
- MS ISO 3951-1:2007, Sampling procedures for inspection by variables - Part 1: Specification for single sampling plans indexed by acceptance quality limit (AQL) for lot-by-lot inspection for a single quality characteristic and a single AQL (First revision) (ISO 3951-1:2005, IDT)
- MS ISO 9001:2015, Quality management systems - Requirements (Second revision) (ISO 9001:2015, IDT)
- EN 196-2, Methods of testing cement Part 2: MS EN 196-2: 2007, Methods of testing cement - Part 2: Chemical analysis of cement
  - MS EN 197-1:2014, Cement Part 1-Compositions, specifications and conformity criteria for common cement (First revision)
  - specifications and Part 1: Definition, conformity criteria (First revision)

### **National foreword** (continued)

#### Referenced European/International Standards Corresponding Malaysian Standards EN 934-1, Admixtures for concrete, mortar and MS EN 934-1:2012, Admixtures for concrete, mortar and grout - Part 1: Common grout - Part 1: Common requirements requirements (First revision) EN 934-2, Admixtures for concrete, mortar and MS EN 934-2:2012, Admixtures for concrete, grout - Part 2: Concrete admixtures mortar and grout - Part 2: Concrete Definitions, requirements, conformity, marking admixtures - Definitions, requirements, and labelling conformity, marking and labelling (First revision) EN 1008, Mixing water for concrete -MS EN 1008:2010, Mixing water for concrete - Specification for sampling, testing and Specification for sampling, testing and assessing the suitability of water, including assessing the suitability of water, including water recovered from processes in the water recovered from processes in the concrete industry, as mixing water for concrete industry, as mixing water for concrete concrete (Second revision) EN 1097-3, Tests for mechanical and physical MS EN 1097-3:2011, Tests for mechanical - Part 3: and physical properties of aggregates - Part of aggregates Determination of loose bulk density and voids 3: Determination of loose bulk density and voids EN 1097-6, Tests for mechanical and physical MS EN 1097-6:2011, Tests for mechanical properties of aggregates - Part 6: and physical properties of aggregates - Part Determination of particle density and water 6: Determination of particle density and water absorption absorption EN 12350-1, Testing fresh concrete - Part 1: MS 26-1-1:2009, Testing of concrete - Part 1: Sampling Fresh concrete - Section 1: Sampling (Second revision) EN 12350-2, Testing fresh concrete - Part 2: MS 26-1-2:2009, Testing of concrete - Part 1: Fresh concrete - Section 2: Slump test Slump-test (Second revision) EN 12350-4, Testing fresh concrete - Part 4: MS 26-1-4:2009, Testing of concrete - Part 1: Fresh concrete - Section 4: Degree of Degree of compatability compactability (Second revision) EN 12350-5, Testing fresh concrete - Part 5: MS 26-1-5:2009, Testing of concrete - Part 1: Flow table test Fresh concrete - Section 5: Flow table test (Second revision) EN 12350-6, Testing fresh concrete - Part 6: MS 26-1-6:2009, Testing of concrete - Part 1:

revision)

Fresh concrete - Section 6: Density (Second

Density

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# National foreword (continued)

Referenced European/International Standards	Corresponding Malaysian Standards
EN 12350-7, Testing fresh concrete - Part 7: Air content - Pressure methods	MS 26-1-7:2009, Testing of concrete - Part 1: Fresh concrete - Section 7: Air-content - Pressure methods (Second revision)
EN 12350-8, Testing fresh concrete - Part 8: Air content - Self-compacting concrete - Slump-flow test	MS 26-1-8:2010, Testing of concrete - Part 1: Fresh concrete - Section 8: Compacting factor test (Second revision)
EN 12390-1, Testing hardened concrete - Part 1: Shape, dimensions and other requirements for specimens and moulds	MS EN 12390-1:2012, Testing hardened concrete - Part 1: Shape, dimensions and other requirements for specimens and moulds (Second Revision)
EN 12390-2, Testing hardened concrete - Part 2: Making and curing specimens for strength tests	MS EN 12390-2:2012, Testing hardened concrete - Part 2: Making and curing specimens for strength tests
EN 12390-3, Testing hardened concrete - Part 3: Compressive strength of test specimens	MS EN 12390-3:2012, Testing hardened concrete - Part 3: Compressive strength of test specimens
EN 12390-5, Testing hardened concrete - Part 5: Flexural strength of test specimens	MS EN 12390-5:2012, Testing hardened concrete - Part 5: Flexural strength of test specimens (Second revision)
EN 12390-6, Testing hardened concrete - Part 6: Tensile splitting strength of test specimens	MS EN 12390-6:2012, Testing hardened concrete - Part 6: Tensile splitting strength of test specimens
EN 12390-7, Testing hardened concrete - Part 7: Density of hardened concrete	MS EN 12390-7:2012, Testing hardened concrete - Part 7: Density of hardened concrete
EN 12390-8, Testing hardened concrete - Part 8: Depth of penetration of water under pressure	MS EN 12390-8:2012, Testing hardened concrete - Part 8: Depth of penetration of water under pressure (Second revision)
EN 12504-1, Testing concrete in structures - Part 1: Cored specimens - Taking, examining and testing in compression	MS EN 12504-1:2013, Testing concrete in structures - Part 1: Cored specimens - Taking, examining and testing in compression (Second revision)
EN 12504-2, Testing concrete in structures - Part 2: Non-destructive testing Determination of rebound number	MS EN 12504-2:2013, Testing concrete in structures - Part 2: Non-destructive testing - Determination of rebound number (Second revision)

### National foreword (concluded)

#### Referenced European/International Standards Corresponding Malaysian Standards

EN 12504-4, Testing concrete in structures -Part 4: Determination of ultrasonic pulse velocity

MS EN 12504-4:2013, Testing concrete in structures - Part 4: Determination of ultrasonic pulse velocity (Second revision)

EN 12620, Aggregates for concrete

MS EN 12620:2010, Aggregates for concrete (Second revision)

EN 13791, Assessment of in-situ compressive strength in structures and precast concrete components

MS EN 13791:2014, Assessment of in-situ compressive strength in structures and precast concrete components

EN 15167-1, Ground granulated blast furnace slag for use in concrete, mortar and grout -Part 1: Definitions, specifications and conformity criteria

MS EN 15167-1:2010, Ground granulated blast furnace slag for use in concrete, mortar and grout - Part 1: Definitions, specifications and conformity criteria

EN 1992-1-1, Eurocode 2: Design of concrete MS EN 1992-1-1:2010, Eurocode 2: Design structures - Part 1-1: General rules and rules of concrete structures - Part 1-1: General for buildings

rules and rules for buildings

This Malaysian Standard cancels and replaces MS 523-1:2005, Concrete - Part 1: Specification, performance, production and conformity (Second revision).

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