

MALAYSIAN STANDARD

MS EN 12620:2010

AGGREGATES FOR CONCRETE (SECOND REVISION)

ICS: 91.100.30

Descriptors: requirement, aggregates, concrete

FOR SALE WITHIN MALAYSIA ONLY

© Copyright 2010

DEPARTMENT OF STANDARDS MALAYSIA

DEVELOPMENT OF MALAYSIAN STANDARDS

The Department of Standards Malaysia (STANDARDS MALAYSIA) is the national

standards and accreditation body of Malaysia.

The main function of STANDARDS MALAYSIA is to foster and promote standards,

standardisation and accreditation as a means of advancing the national economy,

promoting industrial efficiency and development, benefiting the health and safety of

the public, protecting the consumers, facilitating domestic and international trade and

furthering international cooperation in relation to standards and standardisation.

Malaysian Standards (MS) are developed through consensus by committees which

comprise balanced representation of producers, users, consumers and others with

relevant interests, as may be appropriate to the subject at hand. To the greatest

extent possible, Malaysian Standards are aligned to or are adoption of international

standards. Approval of a standard as a Malaysian Standard is governed by the

Standards of Malaysia Act 1996 [Act 549]. Malaysian Standards are reviewed

periodically. The use of Malaysian Standards is voluntary except in so far as they are

made mandatory by regulatory authorities by means of regulations, local by-laws or

any other similar ways.

STANDARDS MALAYSIA has appointed SIRIM Berhad as the agent to develop,

OR

distribute and sell the Malaysian Standards.

For further information on Malaysian Standards, please contact:

Department of Standards Malaysia

Ministry of Science, Technology and Innovation

Level 1 & 2, Block 2300, Century Square

Jalan Usahawan 63000 Cyberjaya

Selangor Darul Ehsan

MALAYSIA

Tel: 60 3 8318 0002 Fax: 60 3 8319 3131

http://www.standardsmalaysia.gov.my

E-mail: central@standardsmalaysia.gov.my

SIRIM Berhad

(Company No. 367474 - V) 1, Persiaran Dato' Menteri

Section 2

40000 Shah Alam

Selangor Darul Ehsan

MALAYSIA

Tel: 60 3 5544 6000 Fax: 60 3 5510 8095

http://www.sirim.my

E-mail: msonline@sirim.my

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 Malaysian Timber Industry Board Master Builders Association Malaysia Ministry of Energy, Green Technology and Water 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 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
IKRAM QA Services Sdn Bhd
Jabatan Kerja Raya Malaysia
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 (Civil and Construction Testing Section)
SIRIM QAS International Sdn Bhd (Product Certification Section - Civil and Construction)
The Cement and Concrete Association of Malaysia
Universiti Teknologi Malaysia
Universiti Teknologi MARA

The Working Group on Revision of MS 29 which recommended the adoption of the EN Standard as Malaysian Standard consists of representatives from the following organisations:

Concrete Society of Malaysia
IKRAM QA Services Sdn Bhd
Jabatan Kerja Raya Malaysia
Malaysia Quarries Association
Minerals and Geoscience Department Malaysia
National Ready Mixed Concrete Association
SIRIM Berhad (Secretariat)
SIRIM QAS International Sdn Bhd (Civil and Construction Testing Section)
The Institution of Engineers, Malaysia
Universiti Teknologi MARA

NATIONAL FOREWORD

The adoption of the EN Standard as a Malaysian Standard was recommended by the Working Group on Revision of MS 29 under the authority of the Industry Standards Committee on Building, Construction and Civil Engineering.

This Malaysian Standard is the second revision of MS 29, *Specification for aggregates from natural sources for concrete*.

This Malaysian Standard is identical with EN 12620:2002+A1:2008, *Aggregates for concrete*, published by the European Committee for Standardisation (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;
- c) clause 5.4.2 Resistance to abrasion from studded tyres should be read as clause 5.4.3 Resistance to abrasion from studded tyres; and
- d) reference to EN Standards should be replaced by corresponding Malaysian Standards as follows:

Referenced EN Standards	Corresponding Malaysian Standards
EN 206-1, Concrete - Part 1: Specification, performance, production and conformity	MS 523: Part 1, Concrete - Part 1: Specification, performance, production and conformity
EN 196-2, Methods of testing cement - Part 2: Chemical analysis of cement	MS 522: Part 4, Cement - Part 4: Chemical analysis of cement
EN 933-1, Test for geometrical properties of aggregates - Part 1: Determination of particles size distribution - Sieving method	MS 30: Part 4, Methods of testing aggregates - Part 4: Methods for determination of particle size distribution

This Malaysian Standard cancels and replaces MS 29:1995.

This standard is published with the permission of the European Committee for Standardization. Such permission is hereby acknowledged.

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

EUROPEAN STANDARD NORME EUROPÉENNE EUROPÄISCHE NORM

EN 12620:2002+A1

April 2008

ICS 91.100.15; 91.100.30

Supersedes EN 12620:2002

English Version

Aggregates for concrete

Granulats pour béton

Gesteinskörnungen für Beton

This European Standard was approved by CEN on 1 August 2002 and includes Corrigendum 1 issued by CEN on 26 May 2004 and Amendment 1 approved by CEN on 16 February 2008.

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 CEN 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 CEN Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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 United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION COMITÉ EUROPÉEN DE NORMALISATION EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

BS EN 12620:2002+A1:2008

Contents

	•	oage
Forewo	ord	
1	Scope	
2	Normative references	5
3	Terms and definitions	6
4	Geometrical requirements	8
4.1	General	
4.2 4.3	Aggregate sizesGrading	
4.4	Shape of coarse aggregate	13
4.5	Shell content of coarse aggregate	
4.6 4.7	Fines contentFines quality	
	Physical requirements	
5 5.1	General	
5.2	Resistance to fragmentation of coarse aggregate	15
5.3	Resistance to wear of coarse aggregate	
5.4 5.5	Resistance to polishing and abrasion of coarse aggregate to be used for surface courses Particle density and water absorption	
5.6	Bulk density	
5.7	Durability	
5.8	Classification of the constituents of coarse recycled aggregates	
6	Chemical requirements	
6.1 6.2	General Chlorides	
6.3	Sulfur containing compounds	
6.4	Other constituents	
3.5	Carbonate content of fine aggregates for concrete pavement surface courses	
7 7.1	Evaluation of conformity	
7.1 7.2	General Initial type tests	
7.3	Factory production control	
В	Designation	23
B.1	Designation and description	
3.2	Additional information for the description of an aggregate	
9	Marking and labelling	24
Annex	A (informative) Illustration of grading requirements for most commonly used sizes for graded coarse aggregates	25
Annex	B (informative) Guidance on the description of coarseness/fineness of fine aggregates	27
Annex	C (normative) Reduced grading tolerances on producer's declared typical grading for fine aggregate	28
Annex	D (normative) Assessment of fines	
	E (informative) Guidance on the use of aggregates in concrete	
	F (informative) Notes for guidance on the freezing and thawing resistance of aggregates	

Annex G (informative) Guidance on the effects of some chemical constituents of aggregates on the durability of concrete in which they are incorporated	33
Annex H (normative) Factory production control	
Annex ZA (informative) Clauses of this European Standard addressing essential requirements or other provisions of EU Directives	44
Bibliography	56

Foreword

This document (EN 12620:2002+A1:2008) has been prepared by Technical Committee CEN/TC 154 "Aggregates", the secretariat of which is held by BSI.

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 October 2008 and conflicting national standards shall be withdrawn at the latest by October 2008.

This document includes Amendment 1, approved by CEN on 2008-02-16.

This document supersedes EN 12620:2002.

The start and finish of text introduced or altered by amendment is indicated in the text by tags $|A\rangle$ $\langle A\rangle$.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

This amendment introduces clauses for recycled aggregates. The clauses call up new test methods, prEN 933-11, EN 1744-5, EN 1744-6 and EN 1367-4. These standards are at an advanced stage of preparation.

Annexes A, B, E, F and G are informative. Annexes C, D and H are normative.

This standard includes a Bibliography.

Requirements for other end uses of aggregates will be specified in the following European Standards:

EN 13043	Aggregates for bituminous mixtures and surface treatments for roads, airfields and other trafficked areas
EN 13055-1	Lightweight aggregates - Part 1 : Lightweight aggregates for concrete, mortar and grout
prEN 13055-2	Lightweight aggregates - Part 2 : Lightweight aggregates for unbound and bound applications
EN 13139	Aggregates for mortar
prEN 13242	Aggregates for unbound and hydraulically bound materials for use in civil engineering work and road construction
EN 13383-1	Armourstone - Part 1: Specification
prEN 13450	Aggregates for railway ballast

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 United Kingdom.