Incorporating corrigendum May 2014

BSI Standards Publication

Concrete — Specification, performance, production and conformity

bsi.

This British Standard is the UK implementation of EN 206:2013+A1:2016. It supersedes BS EN 206:2013, which is withdrawn.

The CEN Correction Notice 12 March 2014 provided a revised English language text, incorporating the following editorial corrections:

– In the Foreword, add after the 3rd paragraph, "Based on a CEN/BT Decision (DECISION BT 42/2013) EN 12620:2013 was withdrawn. Therefore, this document has been aligned with the specifications given in EN 12620:2002+A1:2008. As soon as CEN/TC 154 publishes a new version of EN 12620, CEN/TC 104 intends to amend EN 206."
– In Clause 2, replace "EN 12620:2013" with "EN 12620:2002+A1:2008".
– In 3.1, Terms and definitions, delete in 3.1.2.5, 3.1.2.6, 3.1.2.7, "[SOURCE: EN 12620:2013, 3.x]".
– In 5.1.3, (2), delete "listed in EN 12620 with identified history of use,".
– In 5.1.3, delete the last paragraph (3).
– In Table E.1, 2nd column, replace "EN 12620:2013" with "EN 12620:2002+A1:2008" and update all cross references.
– In Table E.1, 3rd column, 4th row, delete "≤".
– In Table E.1, 3rd column, 5th row, replace "SZ_{38}" with "SZ_{32}".
– In Table E.1, 3rd column, 9th row, replace "S_1" with "1 % by mass" and "S_2" with "2 % by mass".
– In E.3, note after Table E.2, replace "EN 12620:2013", C.3" with "EN 12620:2002+A1:2008, G.3.2".
– In Table E.3, 2nd column, replace "EN 12620:2013" with "EN 12620:2002+A1:2008" and update all cross references.
– In Table E.3, 4th column, 4th row, replace "SZ_{38}" with "SZ_{32}".
– In Table E.3, 4th column, 10th row, replace "≤ $SS_{0,7}$" with "$SS_{0,2}$".
– In Annex M, row 5.1.3, last column, replace "(1), (2) and (3)" with "(1) and (2).

It is intended that this British Standard be used in conjunction with the complementary standards BS 8500-1 and BS 8500-2, which give national provisions where they are permitted in EN 206:2013. Additionally, the UK committee draws particular attention to subclause 10.1, which recommends "the inspection and certification of the production control by accredited inspection and certification bodies".

The start and finish of text introduced or altered by amendment is indicated in the text by tags. Tags indicating changes to CEN text carry the number of the CEN amendment. For example, text altered by CEN amendment A1 is indicated by A1 A1.

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

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

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

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

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 December 2013.

Date	Text affected
31 May 2014	Implementation of CEN correction notice 12 March 2014. National foreword updated.
30 November 2016	Implementation of CEN amendment A1:2016

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EUROPEAN STANDARD **EN 206:2013+A1**

NORME EUROPÉENNE

EUROPÄISCHE NORM November 2016

ICS 91.100.30 Supersedes EN 206:2013

English Version

Concrete - Specification, performance, production and conformity

Béton - Spécification, performances, production et conformité

Beton - Festlegung, Eigenschaften, Herstellung und Konformität

This European Standard was approved by CEN on 28 September 2013 and includes Amendment 1 approved by CEN on 27 July 2016.

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-CENELEC 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-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

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

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Ref. No. EN 206:2013+A1:2016 E

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European foreword

This document (EN 206:2013+A1:2016) 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 May 2017 and conflicting national standards shall be withdrawn at the latest by May 2017.

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.

Based on a CEN/BT Decision (T 42/2013) EN 12620:2013 was withdrawn. Therefore, this document has been aligned with the specifications given in EN 12620:2002+A1:2008. As soon as CEN/TC 154 publishes a new version of EN 12620, CEN/TC 104 intends to amend EN 206.

This document includes Amendment 1 approved by CEN on 27 July 2016.

This document supersedes ▌A1⟩ EN 206:2013 ⟨A1▌.

The start and finish of text introduced or altered by amendment is indicated in the text by tags ▌A1⟩ ⟨A1▌.

▌A1⟩ In particular, the following main items had been subject to revision when preparing EN 206:2013: ⟨A1▌

a) adding application rules for fibre concrete and concrete with recycled aggregates;

b) revising *k*-value concept for fly ash and silica fume and adding new rules for ground granulated blast furnace slag;

c) introduction of principles for the performance concepts for the use of additions, e.g. equivalent concrete performance concept and equivalent performance of combinations concept;

d) revising and adding new concepts for the conformity assessment;

e) including EN 206-9 "Additional rules for self-compacting concrete (SCC)";

f) including additional requirements for concrete for special geotechnical works (Annex D).

NOTE Annex D was jointly prepared by CEN/TC 104 and CEN/TC 288.

Figure 1 illustrates the relationships between EN 206 and standards for design and execution, standards for constituents and test standards.

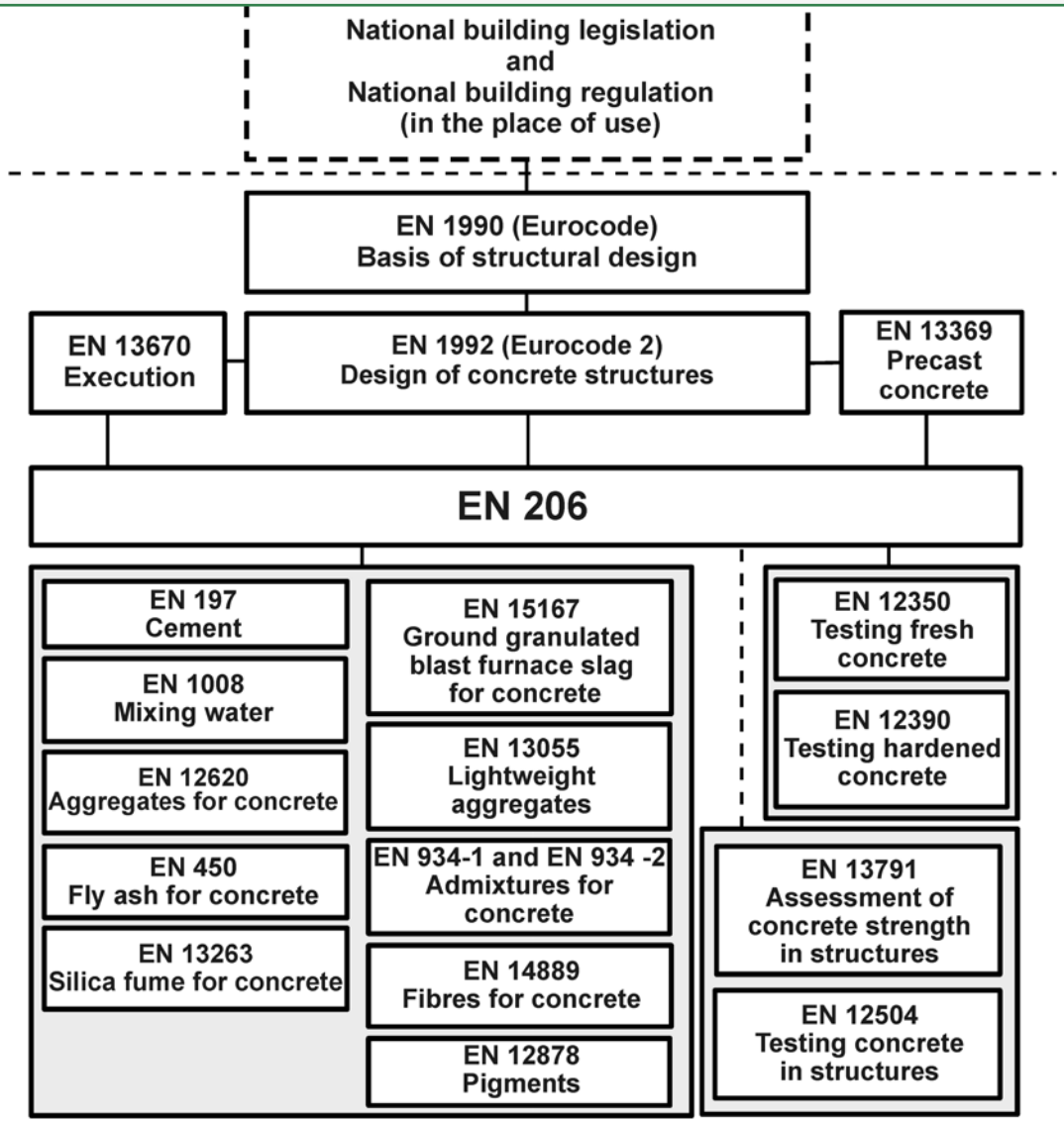

Figure 1 — Relationships between EN 206 and standards for design and execution, standards for constituents and test standards

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, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

This European Standard will be applied under different climatic and geographical conditions, different levels of protection and under different, well established, regional traditions and experience. Classes for concrete properties have been introduced to cover these situations. Where such general solutions were not possible, the relevant clauses contain permission for the application of provisions valid in the place of use of the concrete.

This European Standard incorporates rules for the use of constituents that are covered by European Standards. Constituents not covered by European Standards may be used in accordance with provisions valid in the place of use of the concrete.

If the concrete is in conformity with the limiting values, the concrete in the structure is deemed to satisfy the durability requirements for the intended use in the specific environmental condition, provided:

— the appropriate exposure classes were selected;

— the concrete has the minimum cover to reinforcement in accordance with the relevant design standard required for the specific environmental condition, e.g. EN 1992-1-1;

— the concrete is properly placed, compacted and cured, e.g. in accordance with EN 13670 or other relevant standards;

— the appropriate maintenance is applied during the working life.

Performance based concepts as alternatives to the concept of limiting values are under development.

Concrete conforming to this European Standard may be assumed to satisfy the basic requirements for materials to be used in all three Execution Classes as defined in EN 13670.

This European Standard defines tasks for the specifier, producer and user. For example, the specifier is responsible for the specification of concrete, Clause 6, and the producer is responsible for conformity and production control, Clauses 8 and 9. The user is responsible for placing the concrete in the structure. In practice there may be several different parties specifying requirements at various stages of the design and construction process, e.g. the client, the designer, the contractor, the concreting sub-contractor. Each is responsible for passing the specified requirements, together with any additional requirements, to the next party in the chain until they reach the producer. In the terms of this European Standard, this final compilation is known as the “specification of concrete”. Conversely, the specifier, producer and user may be the same party (e.g. a precast concrete manufacturer or a contractor doing design and build). In the case of ready- mixed concrete, the purchaser of the fresh concrete is the specifier who gives the specification of concrete to the producer.

This European Standard also covers the necessary exchange of information between the different parties. Contractual matters are not addressed. Where responsibilities are given for parties involved, these are technical responsibilities.

Notes and footnotes in tables of this standard are normative unless stated otherwise; other notes and footnotes are informative.

Further explanations and guidance on the application of this standard are given in other documents, such as CEN Technical Reports.

1 Scope

(1) This European Standard applies to concrete for structures cast in situ, precast structures, and structural precast products for buildings and civil engineering structures.

(2) The concrete under this European Standard can be:

— normal-weight, heavy-weight and light-weight;

— mixed on site, ready-mixed or produced in a plant for precast concrete products;

— compacted or self-compacting to retain no appreciable amount of entrapped air other than entrained air.

(3) This standard specifies requirements for:

— the constituents of concrete;

— the properties of fresh and hardened concrete and their verification;

— the limitations for concrete composition;

— the specification of concrete;

— the delivery of fresh concrete;

— the production control procedures;

— the conformity criteria and evaluation of conformity.

(4) Other European Standards for specific products e.g. precast products or for processes within the field of the scope of this standard may require or permit deviations.

(5) Additional or different requirements may be given for specific applications in other European Standards, for example:

— concrete to be used in roads and other trafficked areas (e.g. concrete pavements according to EN 13877–1);

— special technologies (e.g. sprayed concrete according to EN 14487).

(6) Supplementing requirements or different testing procedures may be specified for specific types of concrete and applications, for example:

— concrete for massive structures (e.g. dams);

— dry mixed concrete;

— concrete with a D_{max} of 4 mm or less (mortar);

— self-compacting concretes (SCC) containing lightweight or heavy-weight aggregates or fibres;

— concrete with open structure (e. g. pervious concrete for drainage).

(7) This standard does not apply to:

— aerated concrete;