



भारतीय मानक ब्यूरो  
BUREAU OF INDIAN STANDARDS

MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG, NEW DELHI 110002

व्यापक परिचालन मसौदा

हमारा संदर्भ : सीईडी 02:2/टी-30

11 जनवरी 2024

तकनीकी समिति : सीमेंट और कंक्रीट विषय समिति, सीईडी 02

प्राप्तकर्ता :

- 1 सिविल इंजीनियरिंग विभाग परिषद, सीईडीसी के सभी सदस्य
- 2 सीमेंट और कंक्रीट विषय समिति, सीईडी 02 के सभी सदस्य
- 3 सीईडी 02 उपसमिति एंव इसकी पैनल और कार्यदल के सभी सदस्य
- 4 रूचि रखने वाले अन्य निकाय।

महोदया/महोदय,

निम्नलिखित मसौदा संलग्न है:

प्रलेख संख्या	शीर्षक
सीईडी 02 (xxxxxx)WC	सीमेंट कंक्रीट से संबंधित शब्दों की शब्दावली: भाग 2 सामग्री (सीमेंट और एग्रीगेट के अलावा) (पहला पुनरीक्षण) का भारतीय मानक मसौदा (ICS: 01.040.91)

कृपया इस मसौदे का अवलोकन करें और अपनी सम्मतियाँ यह बताते हुए भेजे कि यह मसौदा प्रकाशित हो तो इस पर अमल करने में, आपको व्यवसाय अथवा कारोबार में क्या कठिनाइयाँ आ सकती हैं।

सम्मतियाँ भेजने की अंतिम तिथि: **12 फरवरी 2024**

सम्मति यदि कोई हो तो कृपया अधोहस्ताक्षरी को उपरिलिखित पते पर संलग्न फॉर्मेट में भेजें या [ced2@bis.gov.in](mailto:ced2@bis.gov.in) पर ईमेल कर दें या सम्मतियाँ बीआईएस ई-गवर्नेंसस पोर्टल, [www.manakonline.in](http://www.manakonline.in) के माध्यम से ऑनलाइन भी भेजी जा सकती हैं।

यदि कोई सम्मति प्राप्त नहीं होती है अथवा सम्मति में केवल भाषा संबंधी त्रुटि हुई तो उपरोक्त प्रलेख को यथावत अंतिम रूप दे दिया जाएगा। यदि सम्मति तकनीकी प्रकृति की हुई तो विषय समिति के अध्यक्ष के परामर्श से अथवा उनकी इच्छा पर आगे की कार्यवाही के लिए विषय समिति को भेजे जाने के बाद प्रलेख को अंतिम रूप दे दिया जाएगा।

यह प्रलेख भारतीय मानक ब्यूरो की वेबसाइट [www.bis.gov.in](http://www.bis.gov.in) पर भी उपलब्ध हैं।

धन्यवाद।

भवदीय

ह/-

(अरुण कुमार एस.)

वै. 'ई' / निर्देशक और प्रमुख (सिविल इंजीनियरिंग)

संलग्न: उपरिलिखित



भारतीय मानक ब्यूरो  
BUREAU OF INDIAN STANDARDS

MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG, NEW DELHI 110002

DRAFT IN  
WIDE CIRCULATION

DOCUMENT DESPATCH ADVICE

TECHNICAL COMMITTEE:

Reference	Date
CED 02:2/T-30	11 January 2024

CEMENT AND CONCRETE SECTIONAL COMMITTEE, CED 02

**ADDRESSED TO:**

1. All Members of Civil Engineering Division Council, CEDC
2. All Members of Cement and Concrete Sectional Committee, CED 02
3. All Members of Subcommittees, Panels and Working Groups under CED 02
4. All other interested

Dear Madam/Sir,

Please find enclosed the following draft:

Doc. No.	Title
CED 02 (xxxxx)WC	Draft Indian Standard Glossary of terms relating to Cement Concrete : Part 2 Materials (Other than Cement and Aggregate) ( <i>First Revision</i> ) (ICS 01.040.91)

Kindly examine the draft and forward your views stating any difficulties which you are likely to experience in your business or profession, if this is finally adopted as National Standard.

**Last Date for comments: 12 February 2024**

Comments if any, may please be made in the attached format and mailed to the undersigned at the above address or preferably through e-mail to [ced2@bis.gov.in](mailto:ced2@bis.gov.in). The comments may preferably be shared in the prescribed template through the Manak Online portal at [www.manakonline.in](http://www.manakonline.in). Alternatively, the comments may be sent through the attached format for consideration by the BIS' Sectional Committee for necessary action.

In case no comments are received or comments received are of editorial nature, you will kindly permit us to presume your approval for the above document as finalized. However, in case comments, technical in nature are received, then it may be finalized either in consultation with the Chairman, Sectional Committee or referred to the Sectional Committee for further necessary action if so desired by the Chairman, Sectional Committee.

The document is also hosted on BIS website [www.bis.gov.in](http://www.bis.gov.in) .

Thanking you,

Yours faithfully,  
Sd/-

(Arun Kumar S.)

Sc. 'E'/Director and Head (Civil Engg.)

Encl: As above



**BUREAU OF INDIAN STANDARDS****DRAFT FOR COMMENTS ONLY**

*(Not to be reproduced without the permission of BIS or used as a Standard)*

***Draft Indian Standard*****GLOSSARY OF TERMS RELATING TO CEMENT CONCRETE  
PART 2 MATERIALS (OTHER THAN CEMENT AND AGGREGATE)**

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Cement and Concrete  
Sectional Committee, CED 02

Last date of Comments:  
**12 February 2024**

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**FOREWORD**

*(Formal Clauses to be added later)*

Cement concrete is one of the most versatile and extensively used building materials in all civil engineering constructions. There are a number of technical terms connected with the basic materials for concrete as well as the production and use of concrete which quite often require clarification to give precise meaning to the stipulations in the standard specifications, codes of practices and other technical documents. Based on this necessity and to standardize the various terms and definitions used in cement and concrete technology, this standard was published in 12 parts.

The other parts in the series are:

Part 1	Concrete aggregates
Part 3	Concrete reinforcement
Part 4	Types of concrete
Part 5	Formwork for concrete
Part 6	Equipment, tools and plant
Part 7	Mixing, laying, compaction, curing and other construction aspects
Part 8	Properties of concrete
Part 9	Structural aspects
Part 10	Tests and testing apparatus
Part 11	Prestressed concrete
Part 12	Miscellaneous

In addition to the above, two separate standards were brought out concerning terminology relating to hydraulic cement and pozzolanic materials. These standards are IS 4845: 1968 'Definitions and terminology relating to hydraulic cement' and IS 4305: 1967 'Glossary of terms relating to pozzolana'.

This standard (Part 2) was first published in 1972. This revision was taken up to incorporate the modifications found necessary in the light of experience gained in its use and also to bring it in line with the latest development on the subject.

In the formulation of this standard due weightage has been given to international co-ordination among the standards and practices prevailing in different countries in addition to relating it to the practices in the field in this country. This has been met by deriving assistance from the following publications:

- a) BS 6100-9 (2007) Building and civil engineering – Vocabulary – Part 9 – Work with concrete and plaster, British Standards Institution
- b) ASTM C125 (2021) Standard terminology relating to concrete and concrete aggregates, American Society for Testing and Materials (revision 21A)
- c) ACI No. SP-19 (1967) Cement and concrete terminology, American Concrete Institute.
- d) ACI 617 (1968) Recommended practice for concrete formwork, American Concrete Institute.

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2: 2022 'Rules for rounding off numerical values (second revision)'. The number of significant places retained in the rounded off value should be periodically removed to create more space for the future falling blocks.

**BUREAU OF INDIAN STANDARDS****DRAFT FOR COMMENTS ONLY**

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***Draft Indian Standard*****GLOSSARY OF TERMS RELATING TO CEMENT CONCRETE  
PART 2 MATERIALS (OTHER THAN CEMENT AND AGGREGATE)**

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Cement and Concrete  
Sectional Committee, CED 02

Last date of Comments:  
**12 February 2024**

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**1 SCOPE**

This standard (Part 2) covers definitions of terms relating to materials (other than cement and aggregates).

**2 REFERENCES**

The Indian Standards listed below contain provisions which through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

<i>IS No.</i>	<i>Title</i>
IS 456: 2000	Plain and reinforced concrete – Code of practice ( <i>fourth revision</i> )
IS 16714: 2018	Ground granulated blast furnace slag for use in cement, mortar and concrete — Specification
IS 16715: 2018	Ultrafine ground granulated blast furnace slag — Specification
IS 15388: 2003	Silica fume — Specification
IS 9103: 1999	Specification for concrete admixtures

**3 TERMINOLOGY**

For the purpose of this standard, the following definitions shall apply.

**3.1 Accelerator** – A substance which, when added to concrete, mortar, or grout, increases the rate of hydration of a hydraulic cement, shortens the time of set, or increases the rate of hardening or strength development.

**3.2 Addition** – A material that is interground or blended in limited amounts into a hydraulic cement during manufacture either as a 'processing addition' to aid in manufacturing and handling the cement or as a functional addition' to modify the use properties of the finished product.

**3.3 Additive** – See 3.3.

**3.4 Admixture** – A material other than water, aggregates, and hydraulic cement, used as an ingredient of concrete or mortar, and added to the batch immediately before or during its mixing to modify one or more of the properties of concrete. Also refer IS 9103.

**3.5 Air-Entraining** – The capability of a material or process to develop a system of minute bubbles of air in cement paste, mortar, or concrete.

**3.6 Air-Entraining Agent** – An addition for hydraulic cement or an admixture for concrete or mortar which causes air to be incorporated in the form of minute bubbles in the concrete or mortar during mixing, usually to increase its workability and frost resistance.

**3.7 Air-Entraining Hydraulic Cement** – Hydraulic cement containing an air-entraining addition in such amount as to cause the product to entrain air in mortar within specified limits.

**3.8 Alabaster** – A massive densely crystalline, softly textured form of practically pure gypsum.

**3.9 Alkyl Aryl Sulfonate** – Synthetic detergent from petroleum fractions.

**3.10 Barite** – A mineral, barium sulphate ( $BaSO_4$ ), used in pure or impure form as concrete aggregate primarily for the construction of high density radiation shielding concrete.

**3.11 Bonding Agent** – A substance applied to a suitable substrate to create a bond between it and a succeeding layer as between a subsurface and a terrazzo topping or a succeeding plaster application.

**3.12 Breeze** – Usually cinder; also fine divided material from coke production.

**3.13 Brown Oxide** – A brown mineral pigment having an iron oxide content between 28 and 95 percent.

**3.14 Carbon Black** – A finely divided amorphous carbon used to colour concrete; produced by burning natural gas in supply of air insufficient for combustion; characterized by a high oil absorption and a low specific gravity.

**3.15 Catalyst (or Promoter)** – A substance that accelerates or causes a chemical reaction without itself being transformed by the reaction (see also **3.1**).

**3.16 Cement Paste** – A mixture of cement and water; may be either hardened or unhardened.

**3.17 Compound, Joint Sealing** – An impervious material used to fill joints in pavements or structures.

**3.18 Compound, Sealing** – An impervious material applied as a coating or to fill joints or cracks in concrete or mortar.

**3.19 Compound, Waterproofing** – Material used to impart water repellency to a structure or a construction unit.

**3.20 Dispersing Agent** – An addition or admixture capable of increasing the fluidity of pastes, mortars, or concrete by reduction of interparticle attraction.

### **3.21 Filler**

- a) Finely divided inert material, such as pulverized limestone, silica, or colloidal substances sometimes added to Portland cement paint or other materials to reduce shrinkage, improve workability, or act as an extender.
- b) Material used to fill an opening in a form.

**3.22 Flay Promoter** – Substance added to coating to enhance brushability, flow and levelling.

**3.23 Fluosilicate** – A salt, usually of magnesium or zinc, used on concrete as a surface-hardening agent.

**3.24 Fly Ash** – A finely divided residue that results from the combustion of ground or pulverized coal and is transported from boilers by flue gases and collected by cyclone separation or electrostatic precipitation.

### **3.25 Hardener**

- a) A chemical (including certain fluosilicates or sodium silicate) applied to concrete floors to reduce wear and dusting.
- b) In a two-component adhesive or coating, the chemical component which causes the resin component to cure.

**3.26 Plasticizer** – A material that increases plasticity of a cement paste, mortar, or concrete mixture.



**3.27 Preformed Foam** – Foam produced in a foam generator prior to introduction of the foam into a mixer with other ingredients to produce cellular concrete.

**3.28 Pumice** – A highly porous and vesicular lava usually of relatively high silica content composed largely of glass drawn into approximately parallel or loosely entwined fibres, which themselves contain sealed vehicles.

**3.29 Resin** – A natural or synthetic, solid or semisolid organic material of indefinite and often high molecular weight having a tendency to flow under stress, usually has a softening or melting range and usually fractures conchoidally.

**3.30 Retarder** – An admixture which delays the setting of cement paste, and hence of mixtures, such as mortar or concrete containing cement.

**3.31 Waterproofed Cement** – Cement interground with a water repellent material such as calcium stearate.

**3.32 Waterproofing Compound** – Material used to impart water repellency to a structure or a construction unit.

**3.33 Water-Reducing Agent** – A material which either increases workability of freshly mixed mortar or concrete without increasing water content or maintains workability with a reduced amount of water.

**3.34 Water-Repellent Cement** – A hydraulic cement having a water repellent agent added during the process of manufacture, with the intention of resisting the absorption of water by then concrete or mortar.

**3.35 Granulated Blast Furnace Slag** – A non-metallic product consisting essentially of glass containing silicates and alumino-silicates of lime and other bases, which is developed simultaneously with iron in blast furnace. Granulated blast furnace slag is obtained by further processing the molten slag by rapidly chilling or quenching with water or steam.

**3.36 Ground Granulated Blast Furnace Slag** – Granulated blast furnace slag duly ground so as to meet the requirements of IS 16714.

**3.37 Ultrafine Ground Granulated Blast Furnace Slag** – Granulated blast furnace slag duly ground and classified to specified particle size distribution so as to meet the requirements of IS 16715.

**3.38 Grout** – A cementitious mixture with or without aggregate or admixtures that is used primarily to fill voids.

**3.39 Metakaoline** – Metakaoline having fineness between 700 to 900 m<sup>2</sup>/kg may be used as pozzolanic material in concrete.

NOTE - Metakaoline is obtained by calcination of pure or refined kaolintic clay at a temperature between 650°C and 850°C, followed by grinding to achieve a fineness of 700 to 900 m<sup>2</sup>/kg. The resulting material has high pozzolanicity.

**3.40 Rotary screen** – Revolving cylinder of perforated metal, that has its axis inclined at a slight angle to the horizontal used for screening aggregates.

**3.41 Superplasticizers** – An admixture for mortar or concrete which imparts very high workability or allows a large decrease in water content for a given workability.

**3.42 Silica Fumes** – Very fine pozzolanic material, composed mostly of amorphous silica produced by electric arc furnaces as a byproduct of the production of elemental silicon or ferro-silicon alloys as per IS 15388.

**3.43 Silica Fume In Natural State** – Silica fume taken directly from the collection filter. The bulk density typically being in the range of 150-350 kg/m<sup>3</sup>.

**3.44 Densified Silica Fume** – Silica fume that has been treated to increase the bulk density by particle agglomeration. The bulk density typically being above 500 kg/m<sup>3</sup>.

**3.45 Silica Fume Slurry** – A homogenous, liquid suspension of silica fume particles in water, typically with a dry content of 50 percent by mass, corresponding to about 700 kg/m<sup>3</sup> of silica fume.

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