

*Indian Standard*

GLOSSARY OF TERMS RELATING TO  
CEMENT CONCRETE

PART II MATERIALS (OTHER THAN CEMENT AND  
AGGREGATE)

(First Reprint JULY 1988)

UDC 001.4:666.972

© *Copyright* 1972

BUREAU OF INDIAN STANDARDS  
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG  
NEW DELHI 110002

*Indian Standard*GLOSSARY OF TERMS RELATING TO  
CEMENT CONCRETEPART II MATERIALS ( OTHER THAN CEMENT AND  
AGGREGATE )

Cement and Concrete Sectional Committee, BDC 2

*Chairman*

DR H. C. VISVESVARAYA

*Representing*

Cement Research Institute of India, New Delhi

*Members*

DR A. S. BHADURI

National Test House, Calcutta

SHRI E. K. RAMACHANDRAN ( *Alternate* )Central Building Research Institute ( CSIR ),  
Roorkee

SHRI A. K. CHATTERJI

DR S. S. REHSI ( *Alternate* )

DIRECTOR

Central Road Research Institute ( CSIR ), New  
DelhiDR R. K. GHOSH ( *Alternate* )  
DIRECTOR ( CSMRS )

Central Water &amp; Power Commission, New Delhi

DEPUTY DIRECTOR ( CSMRS )  
( *Alternate* )

SHRI K. C. GHOSAL

Alokudyog Services Ltd, New Delhi

SHRI A. K. BISWAS ( *Alternate* )

DR R. K. GHOSH

Indian Roads Congress, New Delhi

DR R. R. HATTIANGADI

The Associated Cement Companies Ltd, Bombay

SHRI P. J. JAGUS ( *Alternate* )JOINT DIRECTOR, STANDARDS  
( B & S )Research, Designs & Standards Organization,  
LucknowDEPUTY DIRECTOR, STANDARDS  
( B & S ) ( *Alternate* )

SHRI S. B. JOSHI

S. B. Joshi &amp; Co Ltd, Bombay

SHRI M. T. KANSE

Directorate General of Supplies &amp; Disposals

SHRI KARTIK PRASAD

Roads Wing, Ministry of Transport &amp; Shipping

SHRI S. L. KATHURIA ( *Alternate* )

SHRI S. R. KULKARNI

M. N. Dastur &amp; Co ( Private ) Ltd, Calcutta

SHRI M. A. MEHTA

The Concrete Association of India, Bombay

SHRI O. MUTHACHEN

Central Public Works Department

SUPERINTENDING ENGINEER,  
2ND CIRCLE ( *Alternate* )

SHRI ERACH A. NADIRSHAH

The Institution of Engineers ( India ), Calcutta

SHRI K. K. NAMBIAR

In personal capacity ( ' Ramanalaya ' 11, First  
Crescent Park Road, Gandhinagar, Adyar,  
Madras 20 )

BRIG NARESH PRASAD

Engineer-in-Chief's Branch, Army Headquarters

COL J. M. TOLANI ( *Alternate* )( *Continued on page 2* )BUREAU OF INDIAN STANDARDS  
MANAK BHAVAN, 9 BHADUR SHAH ZAFAR MARG  
NEW DELHI 110002

(Continued from page 1)

<i>Members</i>	<i>Representing</i>
<b>PROF G. S. RAMASWAMY</b>	Structural Engineering Research Centre (CSIR), Roorkee
<b>DR N. S. BHAL (Alternate)</b>	
<b>DR A. V. R. RAO</b>	National Buildings Organization, New Delhi
<b>SHRI RAVINDER LAL (Alternate)</b>	
<b>SHRI G. S. M. RAO</b>	Geological Survey of India, Nagpur
<b>SHRI T. N. S. RAO</b>	Gammon India Ltd, Bombay
<b>SHRI S. R. PINHEIRO (Alternate)</b>	
<b>SECRETARY</b>	Central Board of Irrigation & Power, New Delhi
<b>SHRI R. P. SHARMA</b>	Irrigation & Power Research Institute, Amritsar
<b>SHRI MOHINDER SINGH (Alternate)</b>	
<b>SHRI G. B. SINGH</b>	Hindustan Housing Factory Ltd, New Delhi
<b>SHRI C. L. KASLIWAL (Alternate)</b>	
<b>SHRI J. S. SINGHOTA</b>	Beas Designs Organization, Nangal Township
<b>SHRI A. M. SINGAL (Alternate)</b>	
<b>SHRI K. A. SUBRAMANIAM</b>	The India Cements Ltd, Madras
<b>SHRI T. S. RAMACHANDRAN (Alternate)</b>	
<b>SHRI L. SWAROOP</b>	Dalmia Cement (Bharat) Ltd, New Delhi
<b>SHRI A. V. RAMANA (Alternate)</b>	
<b>SHRI D. AJITHA SIMHA, Director (Civ Engg)</b>	Director General, BIS ( <i>Ex-officio Member</i> )

*Secretary*

**SHRI Y. R. TANEJA**

Deputy Director (Civ Engg), BIS

Concrete Subcommittee, BDC 2 : 2

*Convener*

**SHRI S. B. JOSHI** S. B. Joshi & Co Ltd, Bombay

*Members*

<b>DR S. M. K. CHETTY</b>	Central Building Research Institute (CSIR) Roorkee
<b>SHRI C. A. TANEJA (Alternate)</b>	
<b>SHRI B. K. CHOKSI</b>	In personal capacity ('Shrikunj' Near Parkash Housing Society, Athwa Lines, Surat I)
<b>DEPUTY DIRECTOR, STANDARDS (B &amp; S)</b>	Research, Designs & Standards Organization, Lucknow
<b>ASSISTANT DIRECTOR, STANDARDS (M/C) (Alternate)</b>	
<b>DIRECTOR</b>	Engineering Research Laboratories, Hyderabad
<b>DIRECTOR (C &amp; MDD)</b>	Central Water & Power Commission, New Delhi
<b>DEPUTY DIRECTOR (C &amp; MDD) (Alternate)</b>	
<b>SHRI V. K. GHANEKAR</b>	Structural Engineering Research Centre (CSIR), Roorkee
<b>SHRI A. S. PRASADA RAO (Alternate)</b>	
<b>SHRI K. C. GHOSAL</b>	Alokudyog Services Ltd, New Delhi
<b>SHRI A. K. BISWAS (Alternate)</b>	
<b>SHRI V. N. GUNAJI</b>	Buildings & Communications Department, Bombay
<b>SHRI P. J. JAGUS</b>	The Associated Cement Companies Ltd, Bombay

(Continued on page 8)

*Indian Standard*GLOSSARY OF TERMS RELATING TO  
CEMENT CONCRETEPART II MATERIALS (OTHER THAN CEMENT AND  
AGGREGATE)

## 0. FOREWORD

**0.1** This Indian Standard (Part II) was adopted by the Indian Standards Institution on 25 February 1972, after the draft finalized by the Cement and Concrete Sectional Committee had been approved by the Civil Engineering Division Council.

**0.2** 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. It has, therefore, become necessary to standardize the various terms and definitions used in cement and concrete technology and thus avoid ambiguity in their interpretations. The Sectional Committee has, therefore decided to bring out a series of glossaries of terms relating to concrete and concrete materials.

**0.3** For convenience of reference, the Indian Standard Glossary of terms relating to cement concrete has been grouped into the following twelve parts:

Part I	Concrete aggregates
Part II	Materials ( other than cement and aggregate )
Part III	Concrete reinforcement
Part IV	Types of concrete
Part V	Formwork for concrete
Part VI	Equipment, tools and plant
Part VII	Mixing, laying, compacting, curing and other construction aspects
Part VIII	Properties of concrete
Part IX	Structural aspects

## IS : 6461 ( Part II ) - 1972

Part X	Tests and testing apparatus
Part XI	Prestressed concrete
Part XII	Miscellaneous

**0.3.1** In addition to the above, two separate standards have been brought out concerning terminology relating to hydraulic cement and pozzolanic materials. These standards are IS : 4845-1968\* and IS : 4305-1967†.

**0.4** 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:

BS : 2787-1956 Glossary of terms for concrete and reinforced concrete. British Standards Institution.

BS : 4340-1968 Glossary of formwork of terms. British Standards Institution.

ASTM Designation : C 125 Definitions of terms relating to concrete aggregate. American Society for Testing and Materials.

ACI No SP-19 ( 1967 ) Cement and concrete terminology. American Concrete Institute.

ACI 617-1968 Recommended practice for concrete formwork. American Concrete Institute.

---

## 1. SCOPE

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

## 2. DEFINITIONS

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

**2.1 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.

**2.2 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.

---

\*Definitions and terminology relating to hydraulic cement.

†Glossary of terms relating to pozzolana.

**2.3 Additive** — See 2.2.

**2.4 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.

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

**2.6 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.

**2.7 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.

**2.8 Alabaster** — A massive densely crystalline, softly textured form of practically pure gypsum.

**2.9 Alkyl Aryl Sulfonate** — Synthetic detergent from petroleum fractions.

**2.10 Barite** — A mineral, barium sulphate ( $\text{BaSO}_4$ ), used in pure or impure form as concrete aggregate primarily for the construction of high-density radiation shielding concrete.

**2.11 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.

**2.12 Breeze** — Usually cinder; also fine divided material from coke production.

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

**2.14 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.

**2.15 Catalyst ( or Promoter )** — A substance that accelerates or causes a chemical reaction without itself being transformed by the reaction ( see also 2.1 ).

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

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

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

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

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

**2.21 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.

**2.22 Flow Promoter** — Substance added to coating to enhance brushability, flow and levelling.

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

**2.24 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.

**2.25 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.

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

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

**2.28 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.

**2.29 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.

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

**2.31 Waterproofed Cement** — Cement interground with a water repellent material such as calcium stearate.

**2.32 Waterproofing Compound** — Material used to impart water repellency to a structure or a construction unit.

**2.33 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.

**2.34 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 the concrete or mortar.



*( Continued from page 2 )*

<i>Members</i>	<i>Representing</i>
SHRI S. R. KULKARNI	M. N. Dastur & Co ( Private ) Ltd, Calcutta
SHRI B. C. PATEL ( <i>Alternate</i> )	National Buildings Organization, New Delhi
SHRI G. C. MATHUR	
SHRI RAVINDER LAL ( <i>Alternate</i> )	The Concrete Association of India, Bombay
SHRI M. A. MEHTA	
SHRI C. L. N. IYENGAR ( <i>Alternate</i> )	Tor-Isteg Steel Corporation Ltd, Calcutta
DR P. K. MOHANTY	
DR R. S. PRASAD ( <i>Alternate</i> )	In personal capacity ( ' <i>Ramanalaya</i> ' 11, <i>First Crescent Park Road, Gandhinagar, Adyar, Madras 20</i> )
SHRI K. K. NAMBIAR	Central Road Research Institute ( CSIR ), New Delhi
DR M. L. PURI	Roads Wing, Ministry of Transport & Shipping
SHRI N. S. RAMASWAMY	
SHRI R. P. SIKKA ( <i>Alternate</i> )	Geological Survey of India, Nagpur
SHRI G. S. M. RAO	Gammon India Ltd, Bombay
SHRI T. N. S. RAO	
SHRI S. R. PINHEIRO ( <i>Alternate</i> )	Central Public Works Department
SUPERINTENDING ENGINEER, 2ND CIRCLE	
SHRI S. G. VAIDYA ( <i>Alternate</i> )	In personal capacity ( <i>82, Marine Drive, Bombay 2</i> )
SHRI N. M. THADANI	Engineer-in-Chief's Branch, Army Headquarters
COL J. M. TOLANI	
MAJ D. D. SHARMA ( <i>Alternate</i> )	Cement Research Institute of India, New Delhi
DR H. C. VIVESVARAYA	

# BUREAU OF INDIAN STANDARDS

## Headquarters :

Manak Bhavan, 9 Bahadur Shah Zafar Marg, NEW DELHI 110002

Telephones : 3 31 01 31, 3 31 13 75

Telegrams : Manaksanstha

( Common to all Offices )

## Regional Offices :

Telephone

\*Western ; Manakalaya, E9 MIDC, Marol, Andheri ( East ), 6 32 92 95  
BOMBAY 400093

†Eastern : 1/14 C. I. T. Scheme VII M, V. I. P. Road, 36 24 99  
Maniktola, CALCUTTA 700054

Northern : SCO 445-446, Sector 35-C { 2 18 43  
CHANDIGARH 160036 { 3 16 41

Southern : C. I. T. Campus, MADRAS 600113 { 41 24 42  
{ 41 25 19  
{ 41 29 16

## Branch Offices :

Pushpak, Nurmohamed Shaikh Marg, Khanpur, { 2 63 48  
AHMADABAD 380001 { 2 63 49

'F' Block, Unity Bldg, Narasimharaja Square, 22 48 05  
BANGALORE 560002

Gangotri Complex, 5th Floor, Bhadbhada Road, T. T. Nagar, 6 27 16  
BHOPAL 462003

Plot No. 82/83, Lewis Road, BHUBANESHWAR 751002 5 36 27

53/5 Ward No. 29, R. G. Barua Road,  
5th Byelane, GUWAHATI 781003 —

5-8-56C L. N. Gupta Marg, (Nampally Station Road), 22 10 83  
HYDERABAD 500001

R14 Yudhister Marg, C Scheme, JAIPUR 302005 { 6 34 71  
{ 6 98 32

117/418B Sarvodaya Nagar, KANPUR 208005 { 21 68 76  
{ 21 82 92

Patliputra Industrial Estate, PATNA 800013 6 23 05

Hantex Bldg ( 2nd Floor ), Rly Station Road, 52 27  
TRIVANDRUM 695001

## Inspection Office ( With Sale Point ):

Institution of Engineers ( India ) Building, 1332 Shivaji Nagar, 5 24 35  
PUNE 410005

\*Sales Office in Bombay is at Novelty Chambers, Grant Road, 89 65 28  
Bombay 400007

†Sales Office in Calcutta is at 5 Chowringhee Approsch. P. O. Princep 27 68 00  
Street, Calcutta 700072

Reprography Unit, BIS, New Delhi, India