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GLOSSARY OF TERMS RELATING TO CEMENT CONCRETE

PART II MATERIALS (OTHER THAN CEMENT AND AGGREGATE)

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

Indian Standard

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(*Continued on page* 8)

Indian Standard

GLOSSARY OF TERMS RELATING TO CEMENT CONCRETE

PART 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

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 ($BaSO_4$), 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.

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BUREAU OF INDIAN STANDARDS

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Telephones : 3 31 01 31, 3 31 13 75 Telegrams : Manaksanstha
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