HEIDELBERGCEMENT

A GLOBAL
CEMENT GIANT IS
IN INDIA FOR
A VITAL PROJECT

YOUR DREAM HOME

For nothing can be
more vital to us than
helping you build
a home that's
world apart.

PPC

mycem

About HeidelbergCement

What started off as a cement mill in 1873 in Heidelberg, Germany is today a global conglomerate in the cement industry. With sales of over 118.4 million tonnes, a presence in 40 countries and more than 52,500 employees, HeidelbergCement delivers high quality products to its discerning customers.

About "mycem" cement

"mycem" is a fly ash based cement that complies with IS 1489 (Part I). It is manufactured using high strength Portland cement clinker blended with a selection of high quality fly ash (conforming to IS 3812) and gypsum.

The "mycem" advantage

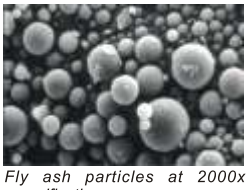
1. Improved Strength: Structures built with "mycem" display continued gain of strength even beyond 28 days. This superior characteristics is not so pronounced in OPC.

2. Improved Workability: The small size and the glassy texture of fly ash in "mycem" makes it possible to reduce the amount of water required for a given consistency. This results in improved workability, finishing and better slump retention characteristics that improves its place-ability with reduced tendency of segregation and honeycombing.

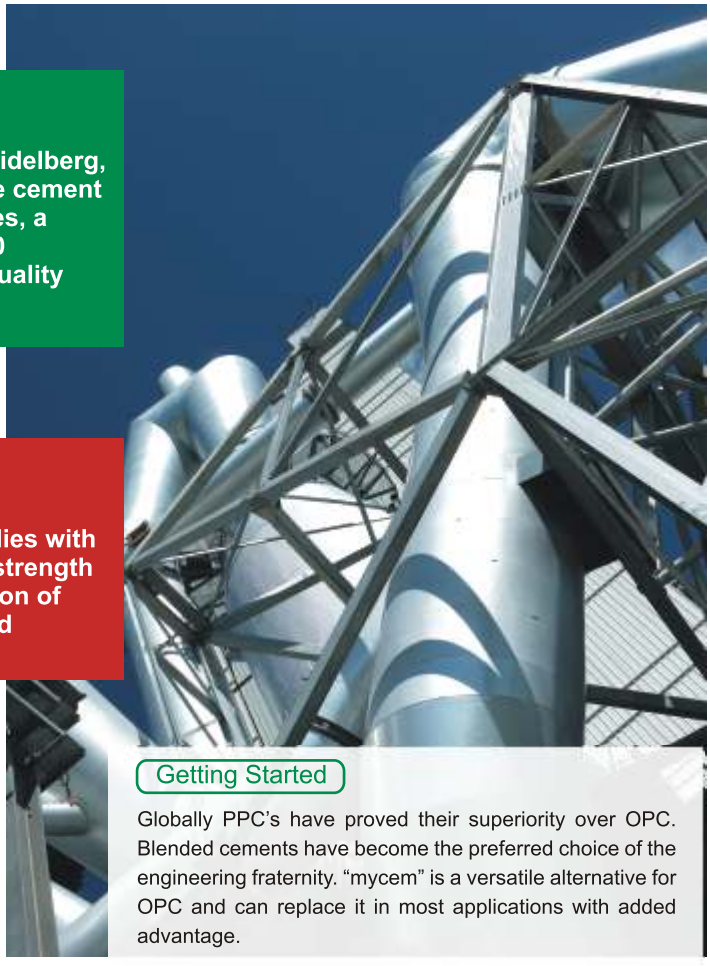
3. Reduced Permeability: The pozzolanic reaction involving fly ash and calcium hydroxide causes pore refinement which reduces the permeability of concrete. The embedded reinforcements therefore remain relatively better protected from ingress of water and salts thus making the structure more durable.

4. Improved Resistance against Chemical Attacks: Use of good quality fly ash in "mycem" improves the resistance of concrete to acidic waters, sulphate and chlorides. This happens due to reduction of calcium hydroxide in concrete and reduced permeability as a result of pozzolanic reactions.

5. Environment Friendly Alternative: Every tonne of clinker produced releases one tonne of carbon dioxide in the atmosphere. Replacing over 30% of clinker with fly ash not only reduces $C0_2$ emissions but also helps conserve energy and scarce natural resources.



Fly ash particles at 2000x magnification.



Getting Started

Globally PPC's have proved their superiority over OPC. Blended cements have become the preferred choice of the engineering fraternity. "mycem" is a versatile alternative for OPC and can replace it in most applications with added advantage.

Effect of Excess Water

One of the most critical factor in making good concrete is the water to cement ratio. It is recommended that a competent engineer's advice be sought because this factor has maximum bearing on durability. Water should be added to make the mix just workable and not into a loose paste or slurry. (Refer chart on opposite page)

Curing Time

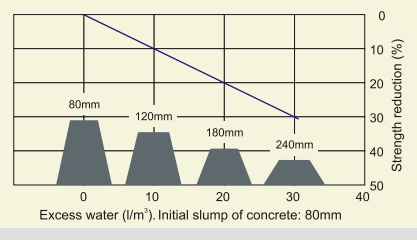
A minimum period of seven days or longer depending on the exposure at site is recommended. Curing should begin as soon as practical. Wet or moist curing is recommended. You may also consider use of curing compounds. Proper curing helps in reduction of shrinkage cracks, imparts greater abrasion resistance to surface, reduces permeability and improves carbonation resistance.

mycem for better building

Importance of Correct Design Mix

Dense, fully compacted concrete is a prime requirement for maximum strength and durability.

IS 456:2000 - Indian Standard: Plain and Reinforced Concrete - Code of Practice should be referred while deciding the minimum grade of concrete and minimum cement content appropriate for the project depending upon the prevailing exposure conditions. Careful selection of mix components is essential and reference should be made to IS 383 - Indian Standard: Specification for coarse and fine aggregates from natural sources for concrete and IS 10262:2009 - Indian Standard: Recommended guidelines for concrete mix design.



Influence of excess water on strength of concrete

Storage

"Shelf life" of any cement is dependent on its storage conditions. Contact with humid air will cause deterioration in its performance. Cement storage / godowns must be fully covered and sealed to prevent ingress of moist air.

Typical Physical Properties

Physical Characteristics	Units	Requirements of IS: 1489 (Part I)	"mycem"
Fineness of Cement			
Sp. Surface blaine	m^2/kg	300 minimum	380 ±10
Soundness			
Le-Chatelier Expansion	mm	10 maximum	<2.0
Autoclave Expansion	%	0.8 maximum	<0.1
Setting Time			
Initial setting time	Minutes	Not less than 30	180 ±20
Final setting time	Minutes	Not more than 600	250 ±20
Compressive Strength			
At 3 days	MPa	16 minimum	27 ±2
At 7 days	MPa	22 minimum	35 ±2
At 28 days	MPa	33 minimum	51 ±2

Typical Chemical Properties

Chemical Characteristics (Units % by mass)	Requirement of IS 1489 (Part I)	"mycem"
Magnesia (MgO)	6.0 maximum	<3.00
Insoluble Residue	$X + \frac{4x(100-X)}{100}$ maximum Where X is the declared % of fly ash in the PPC sample	<32.00
Sulphuric Anhydride (SO_3)	3.0 maximum	2.4 ±0.1
Loss on Ignition	5.0 maximum	<3.5
Total Chloride (Cl)	0.1 maximum	<0.006

Train station, Liège, Belgium

Arlanda airport tower, Stockholm, Sweden

HeidelbergCement AG, Germany with over 140 years of experience, manufactures over 118.4 million tonnes of cement annually and has presence in 40 countries across the globe with some 52,500 employees in more than 2,500 locations, making sure that our slogan "for better building" is brought to life day after day.

With the recent acquisition of Hanson, HeidelbergCement has become the **world's one of the largest company in the building products segment.** Deep concern for environment and emphasis on sustainability as its driving objectives, company has obligated itself to build on three pillars of ecology, economy and social responsibility. Producing reliable building materials that you can rely on, the company stands committed to building a better world for generations to come.

The group has ambitious growth plans in India through acquisitions, brown field and green field projects. Currently HeidelbergCement India (HCIL), has plants located at Ammasandra (Karnataka), Kerala, Damoh (MP), Jhansi (UP) and Raigarh (Maharashtra).

www.heidelbergcement.com
www.mycemco.com

HEIDELBERGCEMENT

HeidelbergCement India Limited
9th Floor, Tower 'C', Infinity Towers,
DLF Cyber City,
Gurgaon, 122002, Haryana, INDIA
Phone: (0124) 4503700,
Fax: (0124) 4147698

Lucknow	8004947837	Jabalpur	9425008633
Agra	9415227682	Satna	9826680090
Allahabad	9453044195	Faridabad	9312725255
Gorakhpur	8004947992	Dehradun	8935001213
Kanpur	9415412214	Mumbai	9860095300
Ghaziabad	7838559960		9821833745
Jhansi	8935001218	Pune	9822264495
Bhopal	9926604411	Bangalore	9902043034
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Indore	9425608734	Hassan	9980812728
Gwalior	9425008723	Cochin	9895759294