



ULTRAFINE ADDITIVES FOR
HIGH PERFORMANCE
CONCRETE AND MORTARS
For **LONG SERVICE LIFE**

Durable



Faster



Strong



An Essential Ingredient **for good** Rheological **concrete of** **every** High Rise Structure

Concrete for high rise structures is characterised with

Good Rheology

- Vertical pumpability for more than 300 meters
- Highly flowable concrete without bleeding and segregation
- Low pressure on concrete pumps



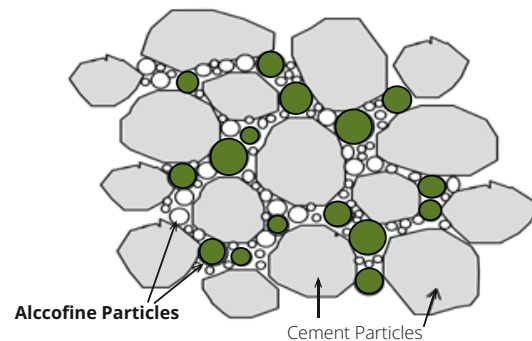
Alccofine 1203 is a proprietary patented product (IP Patent No. 297735) with low calcium silicate based mineral additive. Controlled granulation process results in unique particle size distribution.

Its latent hydraulic property and pozzolanic reactivity results in enhanced hydration process. Addition of Alccofine 1203 improves the packing density of paste component. This results in lowering water demand, admixture dosage and hence improving strength and durability parameters of concrete at all ages.

Very high compressive strength

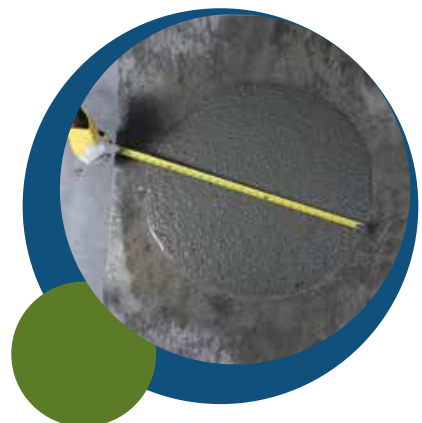
- Low water to binder ratio (< 0.30)
- High levels of cement content which tends to increase heat of hydration (possibility of shrinkage cracks)
- High range water reducer and microsilica (making concrete sticky)

Graded Alccofine particles improves packing density of cement paste



High fineness of Alccofine 1203 does not increase water demand. Unique PSD (Particle Size Distribution) of Alccofine 1203 compliments the PSD of cement & other cementitious materials. This facilitates better particle packing and enhanced density of paste component.

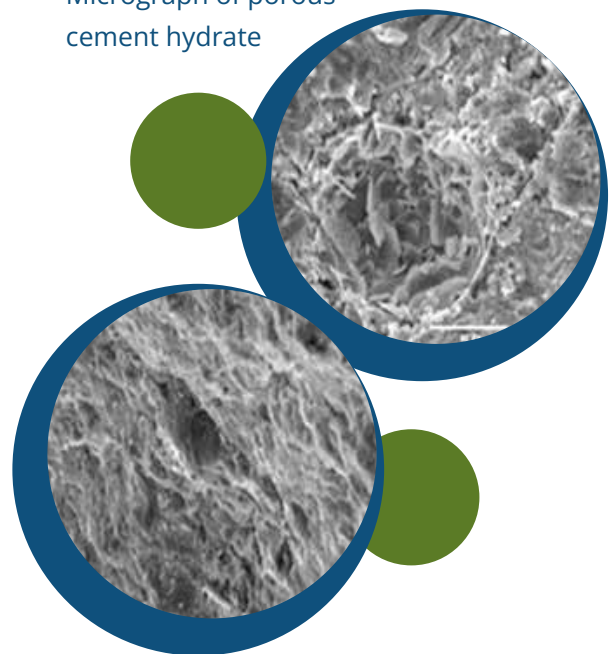
Surface texture of charged Alccofine 1203 particles facilitate releasing the water entrapped between cement grains which results in enhanced pumpability of concrete.



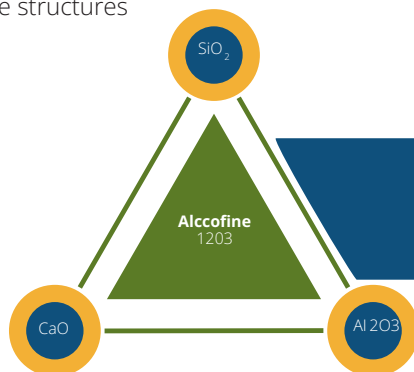
A Perfect Choice **for** High Performance High Strength **concrete** of Durable **structures**

- Unique composition of Alccofine 1203 has perfect balance of CaO, SiO₂ and Al₂O₃
- This enables dual action: Hydraulic as well as Pozzolonic
- Concrete containing Alccofine 1203 will have increased amount of strength enhancing C-S-H gel
- Use of Alccofine 1203 results in hydrated cement matrix with refined pore structure
- Alccofine 1203 help maintain alkalinity of pore solution to protect steel reinforcement against corrosion
- Alccofine 1203 helps in designing concrete with stringent durability parameters viz. water absorption, chloride migration (RCPT), water permeability test, etc.
- This facilitates high strength high performance concrete for durable structures

Micrograph of porous cement hydrate



Micrograph of dense hydrate formed by Alccofine and cement



“ Alccofine 1203 complies to IS 16715 and has been a part of many projects with design life of 100 years and more in India & abroad. Durability parameters and strength of M100 and above is possible to achieve with Alccofine 1203 ”

For design service life of more than 100+ Years
Durability features achieved with **Alccofine 1203**

Durability Tests	Ref. Codes	Results Achieved
▪ RCPT	ASTM c1202	> 100 - 1000 Coulomb
▪ RCMT	NT Build 492	> 2x10 ⁻¹² m ² /s
▪ Water Permeability	DIN 1048	> 5 mm
▪ ISAT-10 min	BS 1881	> 0.25 ml/sqm/s



Cable Stayed ROB at Nagpur

For success of Precast Construction , high Early Strength is essential which can be imparted by Alccofine 1203

- Particle Size Distribution, secondary hydration process and reactivity index of Alccofine 1203 facilitates high early strength concrete
- Adequate strength for faster removal of moulds / de-shuttering and lifting of concrete elements can be achieved within 12 to 18 hours
- Helpful in eliminating or reducing steam curing process
- Speedy production or construction process helps achieve economy

Precast Segments for Mandovi Bridge



Tunnel Precast Lining



- Unique action of Alccofine 1203 help develop high early strength concrete with slow reacting pozzolanic materials like GGBS, fly ash, etc.
- Precast segmental construction, girders with pre-stressed or post tensioned concrete with low heat of hydration is possible with Alccofine 1203
- Alccofine1203 offers right solution for precast construction

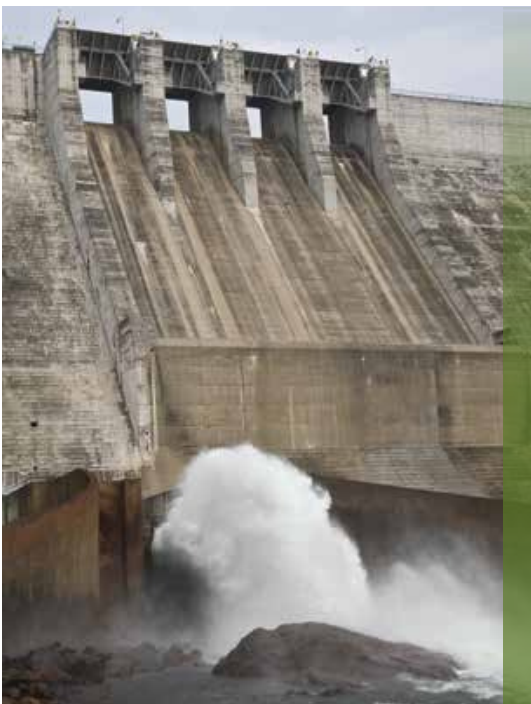


Kochi Metro Rail

Superiour quality Shotcrete is possible with Alccofine 1203 with Reduced Rebound Loss



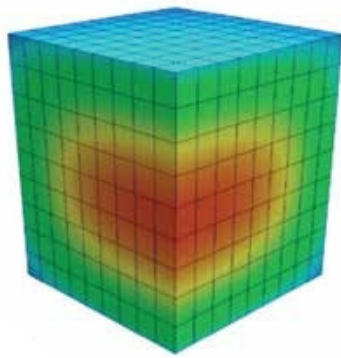
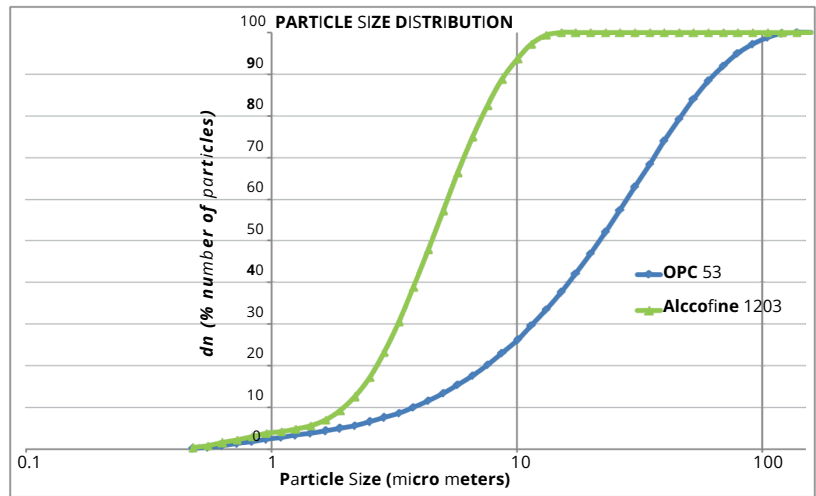
- Unique PSD of Alccofine 1203 blends well with cements and helps in achieving optimum packing density
- This results in cohesive mix for shotcrete / gunite
- Rebound loss is considerably reduced
- High early strength mix for shotcrete can be designed with Alccofine 1203



- Structural repairs needs sprayable concrete for soffit, micro concrete for jacketing and void filling
- Dam spillway and stilling basin needs high abrasion resistant concrete
- Large repair of steep inclined portion of dam spillway is possible with shotcrete
- Alccofine 1203 facilitates high performance concrete mix with good abrasion resistance

Alccofine 1203 improves Performance of every Concrete and help develop Sustainable construction

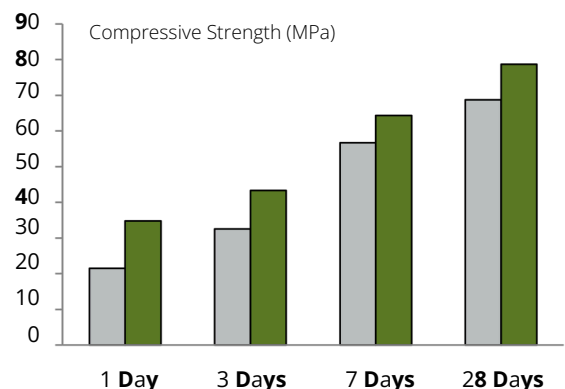
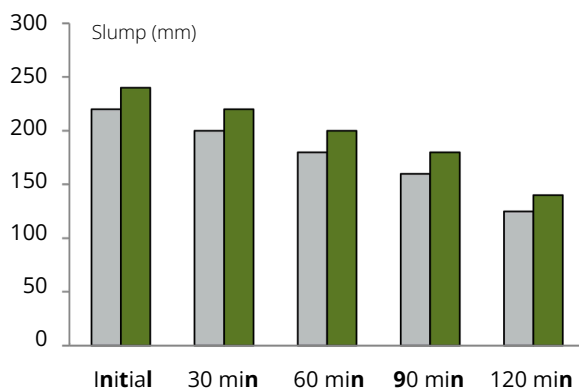
- ALCCOFINE 1203 is a new generation supplementary cementitious material (SCM) with a built-in high tech content
- Low calcium silicate based specially processed product of high glass content and reactivity
- Controlled granulation process results in unique particle size distribution



- With the help of reactive ingredients of Alccofine; larger amount of cement replacements with pozzolanic materials like fly ash (more than 40%) and GGBFS (70%) is possible without compromising on rate of strength development
- This facilitates mass concrete with reduced heat of hydration
- Alccofine 1203 helps develop green and sustainable construction

Alccofine 1203 improves the packing density of paste component. Its latent hydraulic property and pozzolanic reaction results in enhanced hydration process. This results in lowering water demand, admixture dosage and hence improving strength and durability parameters of concrete at all ages.

	CONVENTIONAL MIX (Kg/Cu M)	ALCCOFINE MIX (Kg/Cu M)
OPC	420	400 120 NA 25
Fly Ash	80	(~5%) 4.4
MS	40 (8%)	(0.8%)
Alccofine 1203	NA	
Admixture	5.4 (1%)	



They Believe In Our Abilities



Mumbai Metro

OTHER SOLUTIONS



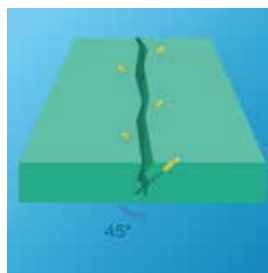
Tunnels / Mines Grouting



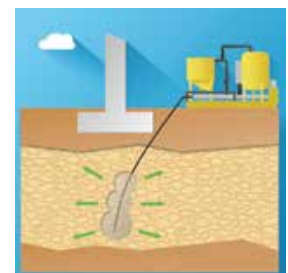
Dam Curtain Grouting



Crack / Joint Injection



Soil Stabilisation





Building Solution Experts: Holcim is a global leader in innovative and Sustainable Solutions. **over 70,000 people** passionate building progress across our 70 markets and four business segments: Cement, Ready-mix Concrete, Aggregates and Solutions & Products.

Ambuja Cement

Ambuja Cements Ltd is India's foremost cement company known for its hassle-free, home-building solutions. Unique products tailor-made for Indian climatic conditions, sustainable operations and initiatives that advance the company's philosophy of contributing to the larger good of the society, have made it the most trusted cement brand in India

Ambuja Cements Ltd., a member of Holcim - global leader in innovative and sustainable building solutions, is among the leading cement companies in India. Ambuja Cement has provided hassle-free, home-building solutions with its unique sustainable development projects and environment-friendly practices since it started operations. Currently, Ambuja Cement has a cement capacity of 30.0+ million tonnes with five integrated cement manufacturing plants and eight cement grinding units across the country.



A joint venture company of Ambuja Cements Ltd and Alcon Group, Counto Microfine Products Pvt. Ltd. is a pioneer in the country for patented micro fine mineral additives technology. It has world's one of the **biggest manufacturing facilities of micro fine materials** dedicated for construction industry. Alccofine range of products provide environment friendly solutions of injection grouting for soil stabilization, tunnel grouting, structural repairs, as well as innovative additives for durable and ultra high strength concrete & mortars.

CORPORATE OFFICE

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