CHEM CONCRETE
ADLER INDIA

The Most Advanced Concrete Ad Mixture In The World

About Our Company

CHEM CONCRETE is a leading Australian company recognized globally for its expertise in concrete waterproofing and durability. The founders consist of six world-renowned professors, 14 PhD researchers, and eight highly skilled engineers, making it one of the most talented groups in the industry.

They have pioneered the development of “Hybrid Admixtures,” the most advanced waterproofing admixture technology available today. This innovative solution is more reliable, cost-effective, and environmentally friendly than any traditional admixtures.

Having achieved rapid success across Australia, the USA, the UK, Europe, and Canada, CHEM CONCRETE is now expanding its footprint into the Indian market.

6	14	8
Professors	PHD Holders	Engineers

Founding Team

CHEM CONCRETE comprises a team of 6 globally-renowned professors, 14 PhD holders, and 8 engineers, who are among the most talented experts in concrete waterproofing and durability in the world.

Professor Zhong Tao

Dr. Sam Soheil Jahandari

Prof. Adam Ahmad Dalvand

Professor Bijan Samali

Professor Mahdi Shariati

Dr. Aida Rahmani

Dr. Mehrtash Soltani

Dr. Md Abdul Alim

Eng. Salman Jahandari

Dr. Danial Jahed Armaghani

MAJOR ISSUES WITH CONCRETE

1. The ingress of water is the main reason for degradation of concrete.

2. In corrosive environments there is chemical degradation of concrete.

3. High humidity, heavy monsoons, and saline groundwater and soil add to the degradation of concrete.

4. Research states that there is direct relationship between the durability of concrete and its water absorption rate and permeability.

DIFFERENT TYPES OF CONCRETE ADMIXTURES

And Their Reduction In Water Absorption Rate

1. Hydrophobic Admixtures - Up to 30%
2. Pore Blocking Admixtures - Up to 25%
3. Crystalline Admixtures - Up to 25%
4. Densyfying Admixtures - Up to 20%

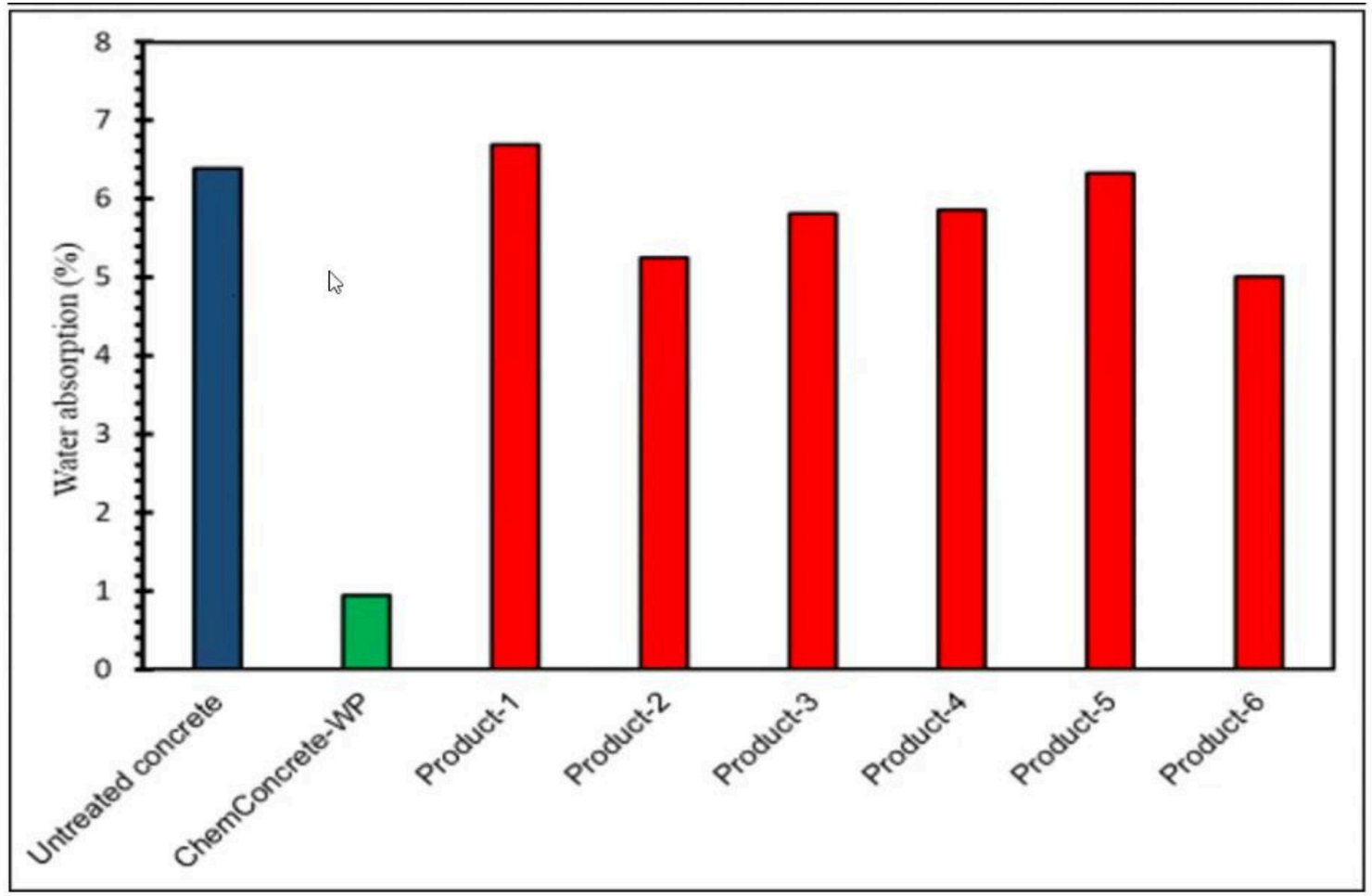
Chemconcrete

Hybrid Admixture - Efficiency 90%

Compatible with different types of cement, blended cements and effective in both cold and hot regions.

Current waterproofing admixtures on the market use only one waterproofing mechanism or agent (i.e., crystalline, hydrophobic, pore blocking). But in Hybrid ChemConcrete-WP Admix, different waterproofing agents such as hydrophobic, pore blocking, crystalline/self-healing, and expanding/densifying nano-sized chemicals were modified and used to providing a more comprehensive “hybrid” waterproofing mechanism. This approach resulted in the development of a far more reliable waterproofing admixture that can increase the confidence of the construction industry in these products.

“This admixture significantly increases the freeze-thaw resistance and reduces the alkali-silica reaction (ASR) of concrete. After 300 freeze-thaw cycles, the concrete samples treated with ChemConcrete-WP Admix indicated 99% durability factor.”



Patent Number: 2023902368

Water Proofing Performance

Research conducted by Concordia university Canada, University College London, International Congress, and The International Congress On Civil Engineering And Architecture.

Dosage 1% to 3%
Dosage 3% - Water Absorption Below 1 %
Dosage 1% - Water Absorption Below 2.5%

“ Leading Waterproofing Admixtures Reduce Water Absorption Rate Of Concrete Only By 10-30% VS 90% By ChemConcrete.”

As reported by concrete society UK, Concrete Institute of Australia, Journal of Building Engineering, American Concrete Institute.

UNTREATED CONCRETE

After

8 Hours

Completely Wet

After 8 hours of immersion in water the samples were exposed to air dry for four minutes.

TREATED CONCRETE

After

8 Hours

Almost Dry

After 8 hours of immersion in water the samples were exposed to air dry for four minutes.

Self Healing Properties

“Cracks in concrete are due to its relatively low tensile strength. However, the self-healing ability of concrete treated by ChemConcrete assists in repairing its micro-cracks autogenously. It maintains excellent cohesion within the concrete matrix and eliminates excessive bleeding or segregation. It improves the abrasion resistance and finish-ability of concrete as well.”

PRODUCT HIGHLIGHTS

1. At least 60% better than any product available in the market.

2. Always more cost effective than other products in the market.

3. Environment Friendly Green Product. No VOC, xylene, or Co2 emissions.

4. The only manufacturers who can offer erformance based warranties.

PRODUCT HIGHLIGHTS

5. Reduces water absorption and permeability by 90%.
6. Improves compressive strength by 16-30%.
7. Improves flexural strength and abrasion resistance by 16-30%.
8. Improves elastic modulus by 16-25%.
9. Improves workability, slump, segregation resistance and reduces excessive bleeding.
10. Does not affect the setting time.
11. Significantly increases durability in acid, sulphade, chloride, ASR, freezing, thawing, and prevents steel corrosion.
12. Compatible with different types of cement, admixtures, fly ash, GGBS, silica fumes etc.

ESSENTIAL FOR MIVAN CONSTRUCTION

1. **Improved Flowability and Workability:** The improved flowability ensures that concrete fills every corner of the form, preventing voids or honeycombing, which can weaken the structure.

2. **Faster Construction, Enhanced Early Stage:** ChemConcrete increases the early strength of concrete, allowing quick formwork removal.

3. **Adaptability to Tropical Climates:** It enhances the concrete’s resistance to humidity, rain, and thermal expansion, ensuring better performance in challenging climates.

4. **Reduces Cement Consumption by Upto 32%:** ChemConcrete allows for the reduction of cement in the mix without compromising strength. By lowering cement content: Cost savings are achieved.

5. **Added Protection to Reinforcement Bars:** ChemConcrete can enhance the alkaline pH, delaying the onset of corrosion even if the concrete is exposed to carbon dioxide or other agents that lower pH (carbonation).

6. **Crack Resistance and Durability:** Improves the concrete's resistance to shrinkage and cracking. With large, monolithic concrete walls and slabs, cracks could compromise structural integrity.

7. **Consistency and Quality:** Uniform strength across all elements. Smooth surface finishes, reducing the need for plastering and additional finishing work.

8. **Cost Efficiency:** Faster construction timelines, reduces labor and equipment costs. Lowers cement consumption. Reduces need for repairs and maintenance.

Savings Through Reduces Amount Of Cement Required

“ChemConcrete significantly improves the strength properties of concrete by 16-20% at dosage of 1% – 3% of cementitious materials by weight. Therefore, ready-mix suppliers have the opportunity to reduce the amount of cement and still achieve their target strength values, reducing CO2 emissions and helping the environment.”

GREEN
CONCRETE ADMIXTURE

1. Unlike several admixtures on the market that contain harmful volatile organic compounds (VOC) and xylene, Hybrid ChemConcrete-WP Admix is classified as non-toxic, environmentally-friendly, and non-hazardous material with no VOC or Xylene.

2. Based on Australian Industrial Chemicals Introductory Scheme (AICIS), Hybrid ChemConcrete-WP Admix and all the ingredients used in the manufacture of this product are non-toxic, environmentally-friendly, and non-hazardous with no or very low concern to human and environment. The manufacturing process of this product is also environmentally-friendly with 0% greenhouse gas emissions to the environment.

3. By using Hybrid ChemConcrete-WP Admix, concrete structures are protected against damage caused by water and corrosive chemicals, leading to longer lasting and more durable structures that require no maintenance and replacement over time. Consequently, there will be a much less demand for cement production and less construction activities, which directly results in less CO2 emissions and a healthier environment.

METHOD OF USE

1. This admixture is added to the concrete mix during the batching process or to concrete trucks on site following the manufacturer's instructions. It does not require any special equipment or training and can be used in both precast and cast-in-place concrete.

2. As an admixture added to concrete during the batching process, this product saves time and cost and eliminates the ongoing maintenance expenses.

3. Once the concrete has been mixed and poured, it should be cured according to standard industry practices. The result is a high-quality, durable, maintenance-free, and permanently waterproof concrete that will provide reliable performance for years to come.

DURABILITY

1. Adler ChemConcrete significantly improves the durability and service life of concrete exposed to seawater, chloride, acid, sulphate, rainwater, salt, freezing-thawing, and efflorescence.

2. The chloride ion content of the product is below 0.01%. The product also complies with the corrosion behaviour requirements given in BS EN 934-1-2008, Clause 5.1, by testing to BS EN 480-14-2006.

3. This product is effective under both static and hydrostatic water pressure. Cracks in concrete are a common phenomenon due to its relatively low tensile strength.

4. Self-healing ability of concrete treated by ChemConcrete-WP assists in repairing its micro cracks autogenously. Besides, after 300 freeze-thaw cycles, the concrete samples treated with ChemConcrete-WP indicated 97% relative durability.

“ChemConcrete has been thoroughly tested by AASHTO and NATA certified labs in the USA and Australia, receiving the compliance certifications with ASTM C494 and AS1478.”

Compliant By Any Standard - Germany, UK, USA, Australia

Designation		Mass loss (%)	Compressive strength reduction (%)
Acid (H_2SO_4)	Control	6.89	58
	ChemConcrete-WP	2.34	21
Sulphate (Na_2SO_4)	Control	0.51	12
	ChemConcrete-WP	0.08	3
Chloride (NaCl)	Control	0.48	13
	ChemConcrete-WP	0.08	3

Property	Control	ChemConcrete-WP	Standard
Water absorption- 30 min (%)	2.37	0.32	ASTM C 642
Water penetration (mm)	15	3	DIN 1048
Compressive strength (MPa)	42	50	ASTM C 39
Flexural strength (MPa)	5.5	6.7	ASTM C 78
Slump (mm)	160	160	ASTM C 143

Pain Point	Traditional Solution	ChemConcrete Advantage
Leakage	Membrane coatings & repairs	Integral waterproofing (no coating)
Corrosion	Coatings on rebar	Stops chloride ingress from inside
Cracks	External sealants	Self-healing internal mechanism
Durability	10–15 years	50+ years service life
Cost	High maintenance	One-time addition during batching
Environmental Impact	High CO_2 cement use	Green Solution

Sector	Key Use Cases	Customer Benefit
Real Estate / MIVAN	Basements, podiums, water tanks, roofs, bathrooms	No dampness or leakage, smoother finish, reduced plastering
Infrastructure (NHAI / Metro / Airports)	Flyovers, tunnels, retaining walls, underpasses	High durability against sulphate/chloride attack, lower maintenance
Water Retaining Structures	STPs, ETPs, reservoirs, overhead tanks	Permanent waterproofing, self-healing cracks, chemical resistance
Precast Industry	Precast panels, drain covers, boundary walls, paver blocks	Improved early strength, surface finish, uniform quality
Ports and Coastal Works	Jetty decks, quay walls, sea defenses	Chloride resistance, corrosion protection
Industrial Floors & Warehouses	Heavy-load slabs, chemical plants	Abrasion resistance, strength, zero dusting
Government & Defense	Border bunkers, armories, cold regions	Freeze–thaw resistance, self-healing, zero maintenance

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Thank You