CHEM CONCRETE

BROCHURE

Hybrid ChemConcrete-WP

The NEW Generation of
Concrete Waterproofing Admixtures

“Highly Reliable, Cost Effective, Environmentally Friendly”

Developed by a Team of Globally Distinguished Professors, PhD Holders, and Engineers at
CHEM CONCRETE

(Patent No. 2023902368)

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www.chemconcrete.com.au

CHEM CONCRETE is an Australian-owned company comprising a team of globally-distinguished professors, PhD holders, and engineers specializing in developing, manufacturing, and supplying a NEW generation of concrete waterproofing admixtures, known as “Hybrid ChemConcrete-WP Admix” – a more reliable, cost-effective, and environmentally-friendly product compared to traditional admixtures.

Some Expert Team Members of CHEM CONCRETE

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If you are tired of dealing with the constant maintenance and repair of your concrete structures due to ingress of water and corrosive substances, then

Look no further than
“Hybrid ChemConcrete-WP Admix”

This is Your Ultimate Solution for Enhancing Durability & Waterproofing!

(Patent No. 202390236B)

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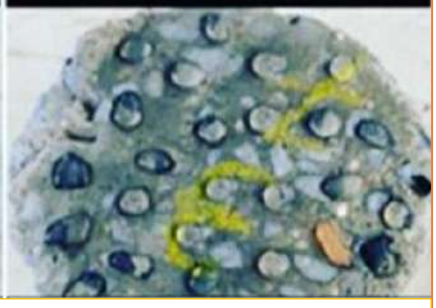
What is Hybrid ChemConcrete-WP Admix?

- ChemConcrete-WP Admix is a NEW generation of integral concrete waterproofing admixtures known as **“hybrid”** admixture- which is proven to be more reliable, cost effective, and environmentally friendly compared to traditional products.

- Hybrid ChemConcrete-WP Admix is used to enhance the durability and water resistance of concrete structures and pavements. It is added to the concrete mix to provide superior protection against water penetration and minimize the risk of damage caused by water and waterborne contaminants.

Untreated Concrete	ChemConcrete-WP
	
	
Untreated Concrete	ChemConcrete-WP
	
Untreated Concrete	ChemConcrete-WP
	
Untreated Concrete	ChemConcrete-WP

- The application of Hybrid ChemConcrete-WP is very simple and straightforward. 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.

- Hybrid ChemConcrete-WP has several benefits over surface protection methods and coatings. For example, concrete treated with ChemConcrete-WP does not require regular maintenance, is not vulnerable to deterioration, can be used where it is too complex or impossible to apply a layer of protection, and does not include labor work. As an admixture added to concrete during the batching process, this product saves time and cost and eliminates the ongoing maintenance expenses.

- 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.

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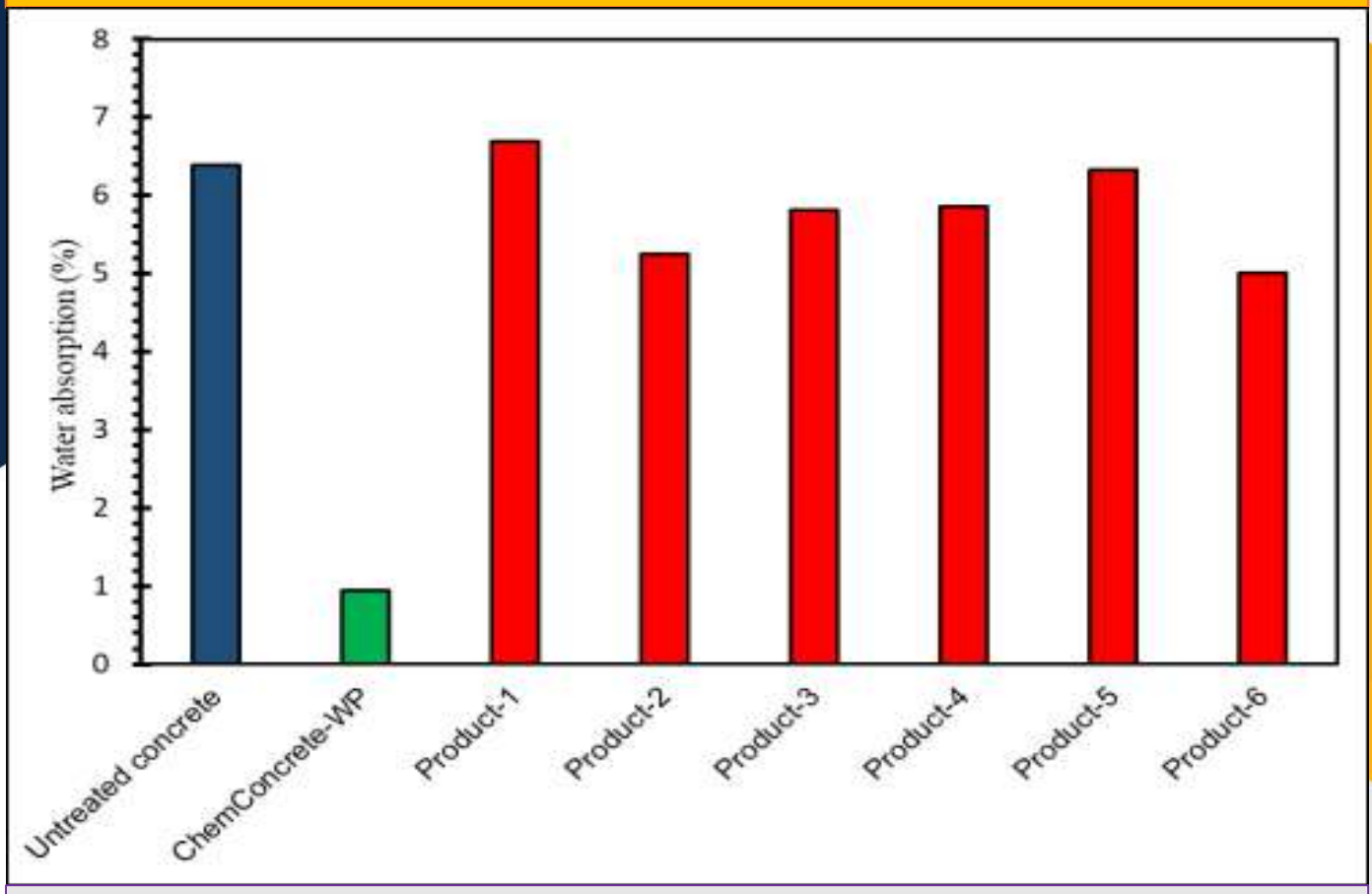
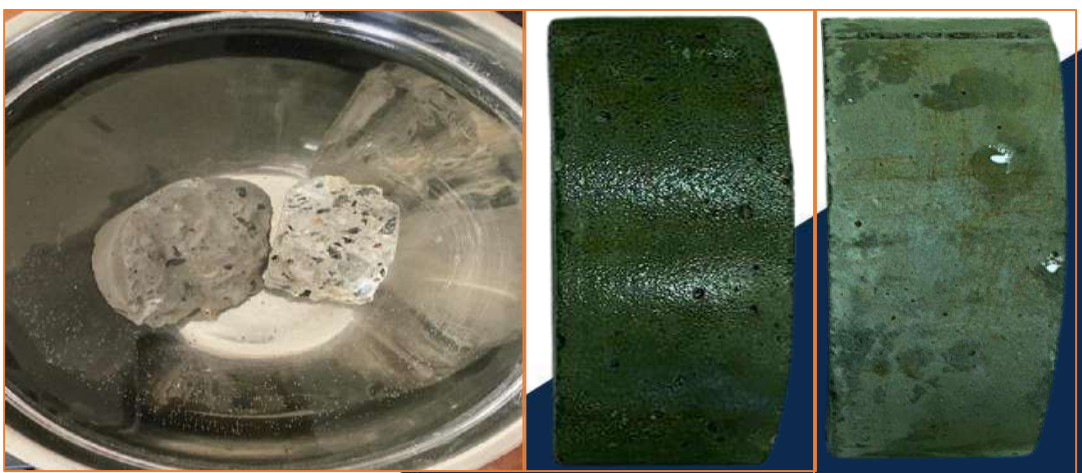
Why ChemConcrete-WP is a "Hybrid" waterproofing admix? How does it work?

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.



Water absorption rate of concrete treated with Hybrid ChemConcrete-WP Admix versus concrete treated with a few other waterproofing products [independent testing by Concordia University in Canada and University College London in the UK published at *The International Congress on Civil Engineering, Architecture and Urban Development*].



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Why we need Hybrid ChemConcrete-WP Admix?

- ✓ Ingress of water and waterborne contaminants is the main reason responsible for all the major physical and chemical degradations of concrete structures and pavements. Research has also proved that there is a direct relationship between the durability of concrete and its water absorption rate and permeability.

- ✓ The reduced water absorption and permeability of concrete containing Hybrid ChemConcrete-WP Admix drastically slows down the diffusion of aggressive chemicals and water into concrete and significantly improves protection against reinforcement corrosion and alkali-silica reaction (ASR).

- ✓ Independent research publications have proved that ChemConcrete-WP Admix is at least over 60% more effective than other similar products on the market in terms of reducing the water absorption rate and permeability of concrete.

- ✓ ChemConcrete-WP Admix is proven to be more cost effective and environmentally-friendly product compared to current similar products on the market - thanks to our R&D team for providing the opportunity to dive into a new world where reliability meets environmental consciousness and affordability!

- ✓ Hybrid ChemConcrete-WP Admix significantly improves the durability and service life of concrete in exposure to seawater, chloride, acid, sulfate, rainwater, salt, freezing-thawing, efflorescence, and any other corrosive environment.








Corrosion Resistance?

The chloride ion content of Hybrid ChemConcrete-WP Waterproofing Admix is below 0.01%. This product is proven to be effective under both static and heavy hydrostatic water pressure.

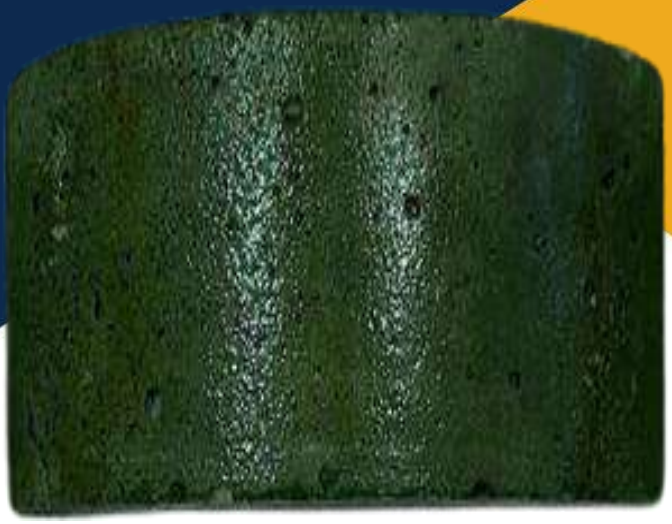
Cracks in concrete are a common phenomenon due to its relatively low tensile strength. However, the self-healing ability of concrete treated by Hybrid ChemConcrete-WP Admix assists in repairing its micro-cracks autogenously.

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

Hybrid ChemConcrete-WP Admix 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.

Hybrid ChemConcrete-WP Admix

After 8 hours of immersion in water



Control concrete

After 8 hours of immersion in water

Hybrid ChemConcrete-WP

In a very simple experiment, both untreated concrete and concrete treated with Hybrid ChemConcrete-WP Admix were immersed in water.

After eight hours of immersion in water, samples were exposed to air dry for two minutes. It was noticed that the untreated concrete was completely wet, while the concrete treated with ChemConcrete-WP remained almost dry.

Generating Positive Impact on our Environment!

- Water damage is the main cause of concrete degradation resulting in the need for costly repairs or even the complete replacement of structures. 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. The much lower price of this product in comparison to similar products can also indirectly generate positive impacts on our environment.

- 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.

- 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.

- Independent researchers have demonstrated that some types of concrete waterproofing admixtures on the market (i.e., hydrophobic admixtures and a few types of crystalline admixtures) can negatively affect the strength properties of concrete. Therefore, concrete manufacturers use more cement or supplementary cementitious materials (SCMs) to achieve the designed strength. However, independent tests results have proved that ChemConcrete-WP Admix improves the strength properties of concrete by over 16% (in most cases by over 20%). Accordingly, concrete manufacturers can achieve their target compressive strength with less consumption of cement. A less consumption of cement directly generates impact on less CO2 emissions and a healthier environment.

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Independent Testing of Hybrid ChemConcrete-WP?

Hybrid ChemConcrete−WP has been independently tested by several ready-mix concrete suppliers, private laboratories/companies, and universities and academics (e.g., Laval University in Canada, New Mexico Institute of Mining and Technology in the USA, University College London in the UK, Concordia University in Canada, RMIT University in Australia, etc.).

Some test results have been published and some are under review in international journals and conferences, such as The 9th International Congress on Civil Engineering, Architecture and Urban Development. Some major findings of the independent tests are provided below. In brief, independent testing results show that Hybrid ChemConcrete−WPAdmix provides permanently waterproof concrete with significantly improved fresh, mechanical, and durability properties compared to the untreated concrete and concrete treated with a few other commercial waterproofing admixtures. Further independent testing demonstrated that this admixture improves the abrasion resistance and eliminates both segregation and bleeding.

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	48	ASTM C 39
Flexural strength (MPa)	5.5	6.4	ASTM C 78
Slump (mm)	170	170	ASTM C 143

* For particular concrete mixes and site conditions, it is suggested to evaluate the specific effects of Hybrid ChemConcrete-WP Admix on the properties of concrete through site trials prior to the application.

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Countless Benefits of Hybrid ChemConcrete-WP Admix

- ❖ Protection against water damage
- ❖ Cost-effectiveness
- ❖ Protection against waterborne contaminants
- ❖ Protection against corrosive chemicals
- ❖ Improved strength & abrasion resistance
- ❖ Enhanced cohesion
- ❖ Improved workability
- ❖ Reduced maintenance
- ❖ Reduced bleeding and segregation
- ❖ Ease of application
- ❖ Eliminated application cost & no labor work
- ❖ Reduced backfill
- ❖ Environmental friendliness
- ❖ Elimination of excessive excavation to install membranes
- ❖ Absence of the necessity for drainage-related cavity walls
- ❖ No weather-related delays
- ❖ Long-term/permanent efficiency
- ❖ And many more ...

Key Applications of Hybrid ChemConcrete-WP Admix

- Basements
- Foundations
- Swimming pools
- Concrete waterways
- Concrete pavements
- Sewer pipes
- Service environments
- Roofs & balconies
- Mining structures
- Concrete blocks
- Bridge decks
- Wharves
- Concrete pipelines
- Water & OSD tanks
- Podium decks
- Trafficable concrete
- Concrete kerbs
- Boat ramps
- Jetties
- Warehouse slabs
- Concrete piles
- Parking lots
- Reclaimed land
- Road barriers
- Landscaped concrete
- Tiles
- Dams
- Tunnels
- Concrete pavers
- And many more …

Hybrid ChemConcrete-WP Admix can also be used in any situation that is damp or wet and where the transfer of moisture, the intake or absorption of water, and the presence of salts, acids, or other corrosive chemicals is unpleasant. This product provides a permanently waterproof concrete under both static and hydrostatic water pressure.

Use of ChemConcrete-WP has several benefits over traditional surface protection methods because it is not vulnerable to deterioration, does not require regular maintenance, can be used where it is too complex or impossible to apply surface coatings or membranes, and does not include labor work. As an admixture added to concrete at batching plants or to concrete trucks on job site, this product saves time and cost and eliminates the ongoing maintenance expenses as well.

Durability Monitoring and on Site Testing

Hybrid ChemConcrete-WP Waterproofing Admix has been successfully used in many different types of projects (e.g., basements, water tanks, foundations, swimming pools, warehouse slabs, concrete pavements, roof slabs, etc.), both in Australia and overseas.

Many field and laboratory tests were performed on the fresh and hardened concrete. Several experiments were conducted on core drilled specimens at different time intervals, and long-term durability monitoring has been conducted to prove the long-term benefits.

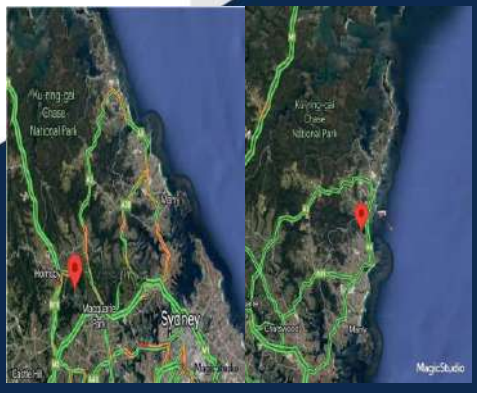
Excellent test results have been received as a result of Hybrid ChemConcrete-WP application. The test results will be published by our CHEM CONCRETE Team in international journals and conferences in the near future. Stay tuned!











Why Engineers Choose Hybrid ChemConcrete-WP Admix?

- ❑ Why engineers specify, builders and ready-mix suppliers use, and distributors help supply *Hybrid ChemConcrete-WP Waterproofing Admix* ???
- ❑ Why *CHEM CONCRETE* has been rapidly growing worldwide ???

Simply, the reliability and cost-effectiveness of Hybrid ChemConcrete-WP Admix is beyond comparison! This product has been proven to be the current **most reliable, most cost-effective,** and **an environmentally-friendly** solution for enhancing concrete durability and waterproofing. Refer to the extensive independent test results and published articles comparing Hybrid ChemConcrete-WP Admix with other similar products!

ChemConcrete-WP has been developed through many years of research by the most **globally-recognized professors and experts** in the field of concrete technology – a world patent that is the outcome of our commitment to quality and heavy investment in R&D.

In terms of **"waterproofing mechanism"**, Hybrid ChemConcrete-WP Admix is very different from all the existing admixtures on the market! This admixture is the most comprehensive/hybrid product that benefits from all the existing waterproofing mechanisms (i.e., hydrophobic, pore-blocking, crystalline/self-healing, densifying, etc.), hence providing a far more reliable and permanent solution for concrete durability and waterproofing needs.

Hybrid ChemConcrete-WP Admix has a **proven track record of success** in protecting concrete structures (both in Australia and overseas) against water and corrosive chemicals. Ask CHEM CONCRETE Team for the list of case studies along with the independent test results.

Behind this novel product and company, there is a growing team of **over 6 globally-distinguished professors, 14 PhD holders**, **and 7 engineers** who are specialized in the area of "concrete durability and waterproofing" with a combined **experience of over 230 years** in both concrete industry and research. Hence, everyone can rely on ChemConcrete-WP Admix and the team behind it!

CHEM CONCRETE provides the distributors with a highly attractive and generous profit margin (often over 50%) along with the most reliable, advanced, and cost-effective product which has been proven to be far more efficient than any similar product in terms of enhancing concrete durability and waterproofing.

It has been proven that Hybrid ChemConcrete-WP Admix significantly improves the strength properties of concrete as well (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**.

CHEM CONCRETE Team has a rapidly growing network of over 1.2 million followers from the decision-makers within the concrete and construction industry on social media (e.g., LinkedIn). This provides the opportunity to raise awareness about the benefits of Hybrid ChemConcrete-WP Admix and help distributors attract leads. Our partners and distributors have an **impactful marketing, technical, and R&D support.**

At CHEM CONCRETE, we are dedicated to delivering a high-quality product and **exceptional customer services**. We use the best raw materials in our manufacturing process, and our product is tested rigorously to ensure it meets our strict quality standards. We also offer long-term warranty, technical support and advice to our customers, providing assistance with product's applications and troubleshooting.

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Contact Us

Contact us today if you are interested in:

- **Learning more about our Hybrid ChemConcrete-WP Admix,**
- **Forming a partnership,**
- **Being a distributor in your region,**
- **Placing an order,**
- **Receiving the contact information of your local distributors,**
- **Requesting a free sample for testing.**

Our friendly and knowledgeable Team of Experts is always available to answer your questions and provide you with the information you need to make the right decision for your concrete waterproofing needs.

We are more than happy to work with you to address the issues that our community and industry are facing. We have the knowledge, experience, and an exceptionally unique product to protect concrete structures and keep them looking great for years to come!

Under some specific conditions, CHEM CONCRETE can provide long-term performance-based warranties (sometimes up to the design life of the projects) when Hybrid ChemConcrete-WP Admix is used. Please consult this with a technical team member of CHEM CONCRETE in Sydney office, Australia.

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