



BROCHURE

10/02/2024

ChemConcrete WP Admix

Sole IP holder, Manufacturer, and Supplier of
“Hybrid ChemConcrete Admixture”

**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)

*Operating in Australia, New Zealand, USA, Canada,
UK, ... with Distributors in Major Countries*





CHEM CONCRETE

www.chemconcrete.com.au (Australia)
www.chemconcretenz.co.nz (New Zealand)
www.chemconcreteusa.com (USA)
www.chemconcretecanada.com (Canada)
www.chemconcreteuk.co.uk (UK)

CHEM CONCRETE is a rapidly-growing company comprising a team of 6 globally-distinguished professors, 14 PhD holders, and 8 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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Dr. Alex Pooria Ghadir



Dr. Mara Samadi



Dr. Hardy Fatehi





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!

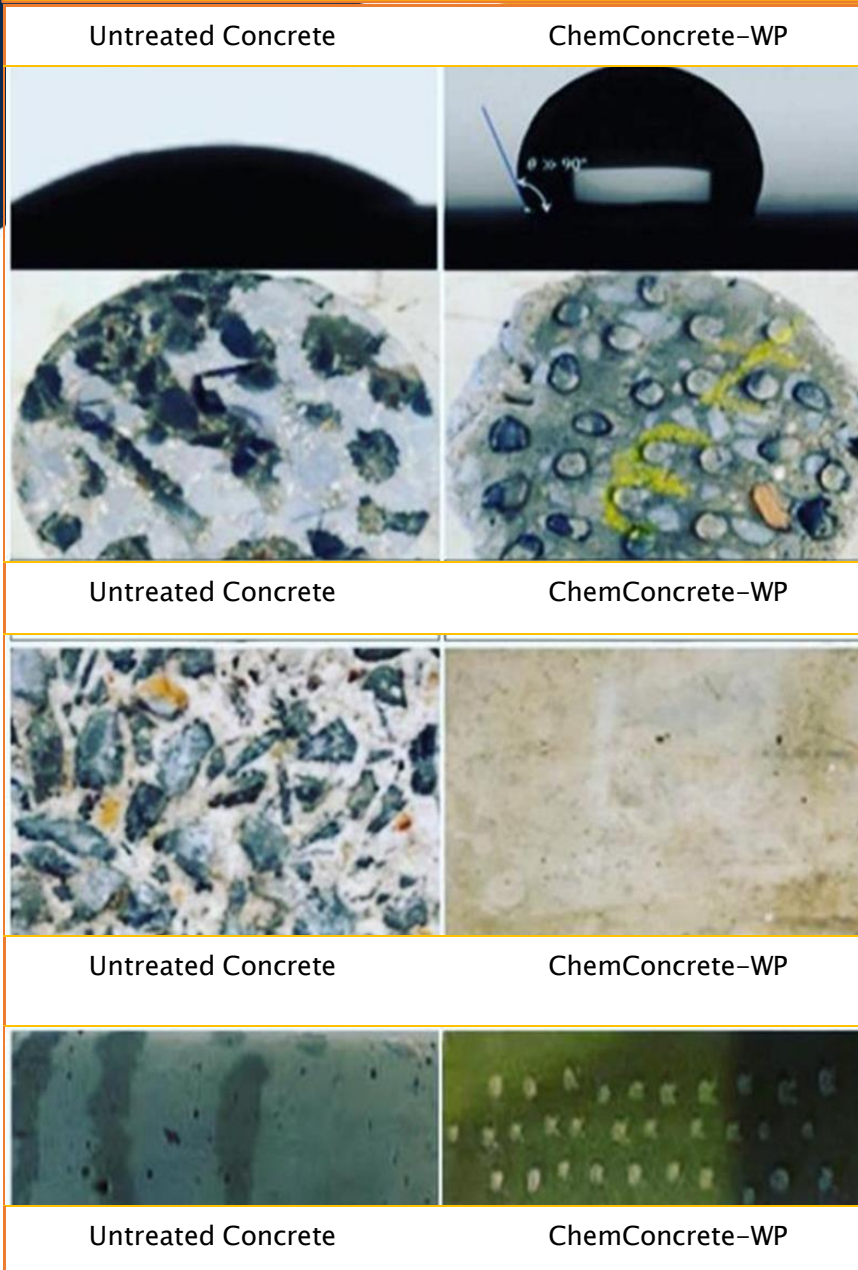
(Patent No. 2023902368)



What is Hybrid ChemConcrete-WP Admix?

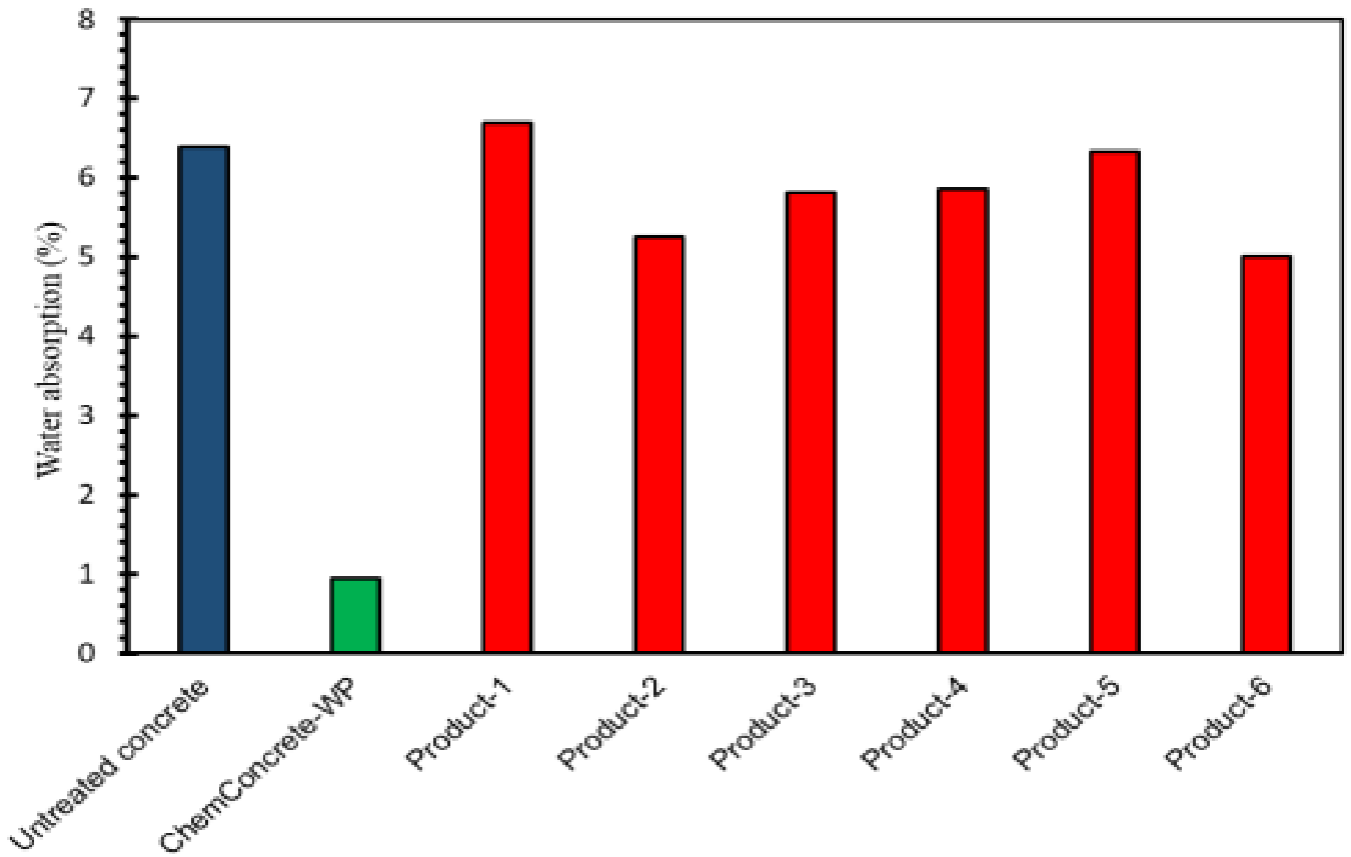
- Hybrid ChemConcrete-WP Admix is a NEW generation of integral concrete waterproofing admixtures known as “hybrid” admixture- proven to be more reliable, cost-effective, and environmentally friendly compared to traditional products. This product complies with the requirements of ASTM C494 and AS1478, as tested by well-known AASHTO and NATA accredited laboratories.
- 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.

- 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.
- ChemConcrete-WP Admix 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.



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

Current waterproofing admixtures on the market normally 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, self-healing, and densifying nano-sized chemicals were modified and used to provide a more comprehensive “hybrid” waterproofing mechanism. This approach resulted in the development of a 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 researchers at 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 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 testing and published research 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 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.
- ✓ ChemConcrete-WP Admix is compatible with different types of cements including blended cements, different types of admixtures, SCMs (fly ash, GGBS, silica fume, etc.), and is suitable for application in both cold and hot regions.



Corrosion Resistance?

The chloride ion content of Hybrid ChemConcrete-WP Waterproofing Admix is below 0.001%. 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 (containing an air-entraining admixture) indicated 102% relative durability. A relative durability factor of 108% was achieved when no air-entraining admixtures were used in the concrete containing ChemConcrete-WP Admix.

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 a few minutes. It was noticed that the untreated concrete was completely wet, while the concrete treated with ChemConcrete-WP remained almost dry.

Carbon Footprint Reduction & 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 doubled or tripled service life with minimal or no maintenance and replacement over time. Consequently, there will be a much less demand for cement production and less construction activities, which ultimately results in up to **85% less CO₂** emissions and a healthier environment over the designed life. 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 almost 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 almost zero 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, more cement or supplementary cementitious materials (SCMs) is required to achieve the designed strength. However, independent testing showed that ChemConcrete-WP Admix improves the strength properties of concrete by **20 – 50%** (depending of the used dosage). Accordingly, concrete manufacturers can achieve their target compressive strength with up to **32% less consumption of cement**. A less consumption of cement directly generates impact on less CO₂ emissions and a healthier environment. Moreover, **the price of the cement that ChemConcrete-WP Admix saves is often less than the price of the product itself.**



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Independent Testing of Hybrid ChemConcrete-WP?

Hybrid ChemConcrete-WP has been thoroughly tested by well-known AASHTO and NATA certified labs in the USA and Australia, receiving the compliance certifications with **ASTM C494** and **AS1478**. This product has also 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 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 ChemConcrete-WP Admix provides permanently waterproof concrete with significantly improved fresh, strength, and durability properties compared to the untreated concrete and concrete treated with other commercial waterproofing admixtures. Further independent testing demonstrated that this admixture improves the abrasion resistance and eliminates both segregation and excessive bleeding.

Designation		Mass loss (%)	Compressive strength reduction (%)
Acid (H ₂ SO ₄)	Control	6.89	58
	ChemConcrete-WP	2.34	21
Sulphate (Na ₂ SO 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 (%)	2.89	0.32	ASTM C 642
Water penetration (mm)	13	2	DIN 1048
Compressive strength (MPa)	43	60	ASTM C 39
Flexural strength (MPa)	5.7	7.7	ASTM C 78
Slump (mm)	130	130	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.

❖ 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.

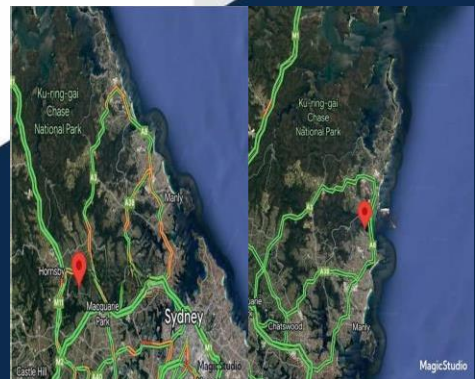


Durability Monitoring and on Site Testing

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 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 fundamentally 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 8 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 60%) 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 can also improve the strength properties of concrete by **20 – 50%** (at a dosage of 10 – 20 litres per cubic metre of concrete or 2 – 4 gallons per cubic yard). Therefore, ready-mix concrete suppliers can reduce the amount of cement by up to **32%** and still achieve their target strength values, drastically reducing costs as well as CO₂ emissions by up to **85%**. **In fact, the price of the cement it saves is often less than the price of the product itself!**

CHEM CONCRETE Team has a rapidly growing network of over 1 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 attract leads for the distributors. 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.



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.

Legal Disclaimer

The information provided in this document, and, in particular, the recommendations related to the application and end-use of Hybrid ChemConcrete-WP Admix, are given in good faith based on CHEM CONCRETE team's current knowledge and experience on the product when properly stored, handled, and used in normal conditions in conventional Portland cement concrete in accordance with recommendations provided by CHEM CONCRETE team. In practice, the user of the product must investigate the product's suitability for the intended application and purpose, and CHEM CONCRETE reserves the right to regularly change the properties of its products and update the related technical information. All orders are accepted subject to our current terms of sale and delivery.

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