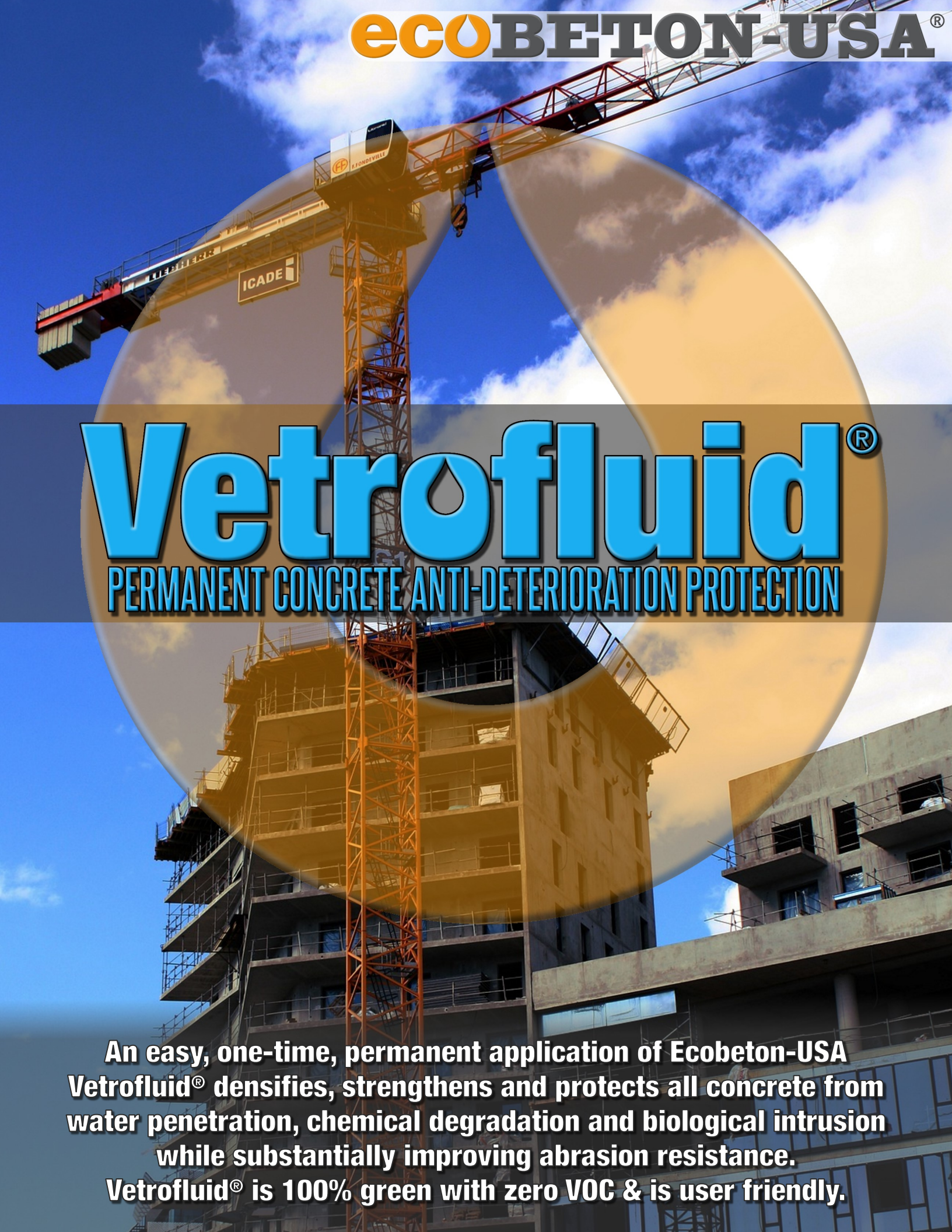
ecoBETON-USA®



Vetrofluid®

PERMANENT CONCRETE ANTI-DETERIORATION PROTECTION

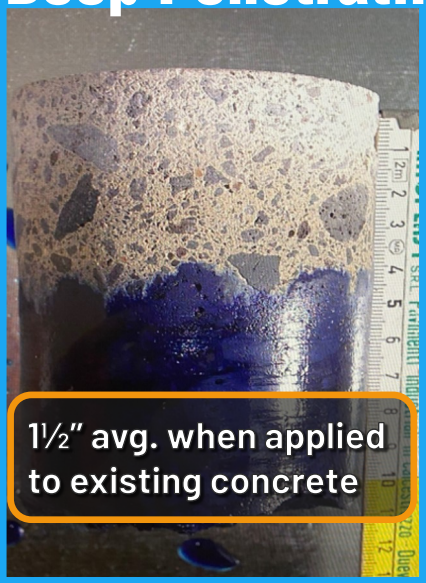
An easy, one-time, permanent application of Ecobeton-USA Vetrofluid® densifies, strengthens and protects all concrete from water penetration, chemical degradation and biological intrusion while substantially improving abrasion resistance.
Vetrofluid® is 100% green with zero VOC & is user friendly.

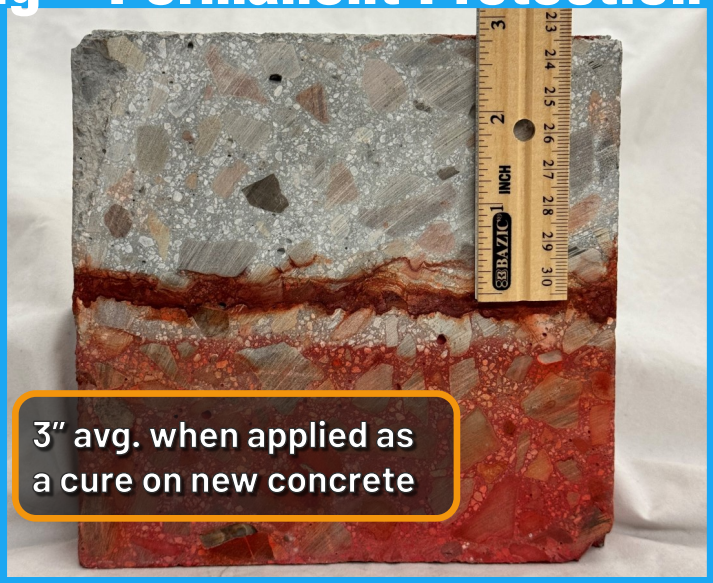
ecoBETON-USA®

What is Vetrofluid?

Ecobeton-USA Vetrofluid® is permanent anti-deterioration protection for new and existing concrete. Vetrofluid® becomes a permanent part of the internal concrete matrix, increasing density, providing increased durability and abrasion resistance, while protecting your concrete from water penetration & freeze-thaw damage, carbonization, and aggressive chemicals. Vetrofluid® in test after test shows that when used as a cure on new concrete during the normal cure cycle, Vetrofluid® penetrates an average of 3 inches and penetrates existing concrete 1-½ inches on average. Vetrofluid® prevents concrete from cracking while simultaneously creating a water-impermeable barrier. Vetrofluid® has been tested for both interior and exterior, above and below-grade applications, showing positive and negative side impermeability at pressures over 200 psi. Vetrofluid® is the perfect protection for all concrete against water intrusion. Vetrofluid® is 100% non-toxic, environmentally friendly, odorless, approved for use over open waterways, and is drinking water compatible. Ecobeton Vetrofluid® is sold in 38 countries and has over 35 years of unsurpassed global performance with its proprietary chemistry.

Deep Penetrating – Permanent Protection





Vetrofluid®

PERMANENT CONCRETE ANTI-DETERIORATION PROTECTION

One-Time, Easy to Apply
Low-Pressure Application for All Concrete

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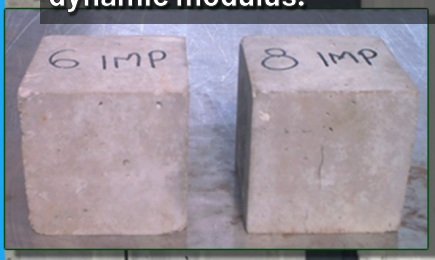
Independent Lab Testing

Vetrofluid® treated concrete cubes and untreated control specimens were subjected to 303 freeze/thaw cycles. The Vetrofluid® treated cubes maintained 94% relative dynamic modulus.



Vetrofluid® treated samples were tested for water permeability at 200 psi (13.6 atm) for 10-days. No water (0.0 cm^3) passed through the specimens.

Magnified view shows the degradation in untreated concrete versus Vetrofluid® treated concrete after long-term exposure to 34% acid soluble chloride.

Background Image: Vetrofluid® treated concrete was tested against un-treated control specimens and showed an average increase of almost 20% (795 psi to 950 psi) in flexural beam break tests.

Visit www.ecobeton-usa.com for additional product testing information.

Vetrofluid®

ASTM C666-15 Freeze/Thaw Resistance

Vetrofluid® prevents moisture intrusion into concrete and greatly reduces chipping and spalling caused by freezing.

Vetrofluid® treated concrete: 94% durability factor after 303 cycles.

BS EN 13892-4:2002 Determination of Wear Resistance

Vetrofluid® densifies and strengthens concrete, greatly increasing wear resistance.

Vetrofluid® treated concrete average abrasion depth .029 mm, Class AR 0.5

Army Corps of Engineers CRD-C 48-92 Standard Test Method for Water Permeability of Concrete

Vetrofluid® creates a deep, water-impermeable barrier within the concrete that even resists intrusion under long term pressure. Total volume of water passed through specimen: 0.0 cm^3, Post test measure depth of penetration: 1 inch.

ASTM C78 Standard Test Method for Flexural Strength of Concrete

Vetrofluid® treated concrete gains massive flexural strength and increased density over untreated concrete. After curing for 28-days, treated beams broke at 950 psi vs 795 psi for untreated concrete beams, an increase of 19.5%.

ASTM C1543 Standard Test Method for Determining the Penetration of Chloride Ion into Concrete by Ponding

Vetrofluid® treated concrete resists moisture intrusion and the degradation caused by soluble deicing salts. Vetrofluid® treated concrete contained 70% less chloride at 1" than untreated control specimens after 90%.

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Environmental & Fiscal Responsibility

Ecobeton-USA Vetrofluid is environmentally friendly and will protect concrete extending its service life, vastly reducing maintenance costs and service downtime. Ecobeton-USA Vetrofluid is 100% green, with no VOC or harmful chemicals, and can be used over your open waterways.

Ecobeton-USA Vetrofluid® reduces the frequency required for new concrete used for repair or replacement will reduce the CO_2 contribution to our environment produced when new concrete is manufactured.

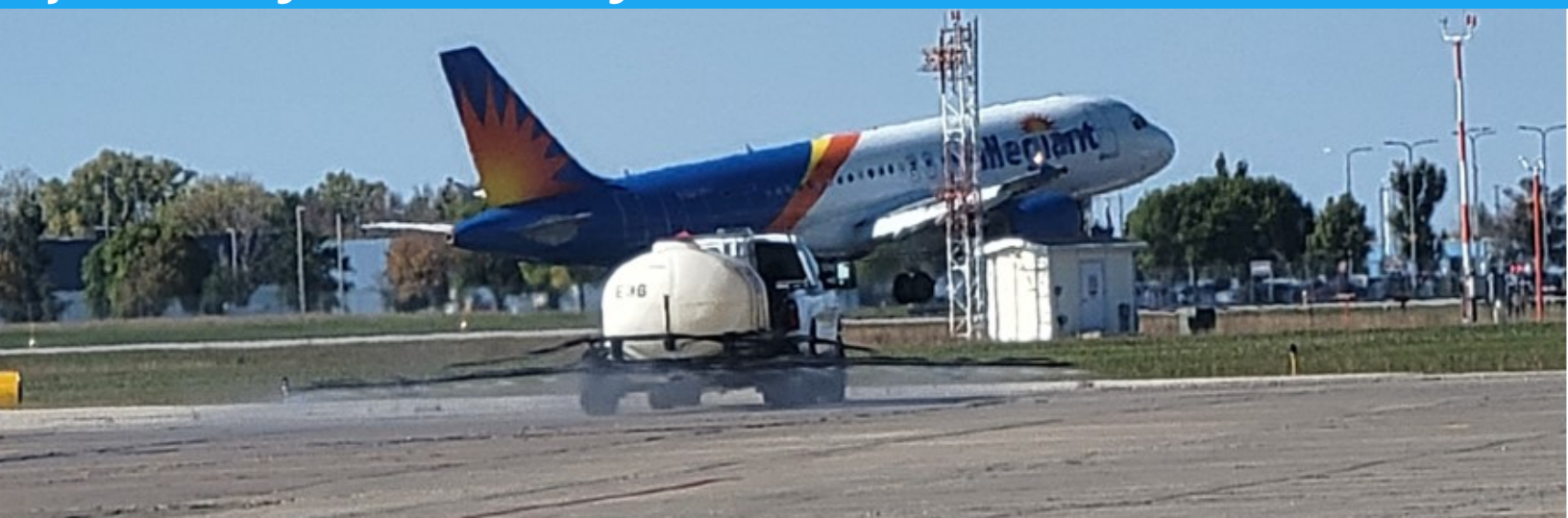
Working with tomorrow's engineers

The ASCE Concrete Canoe Competition provides students a unique opportunity to gain hands-on practical experience while testing their skills with concrete mix designs and project management challenges. Ecobeton-USA worked with the team at Sacramento State to produce the only canoe that did not take on water in the competition.

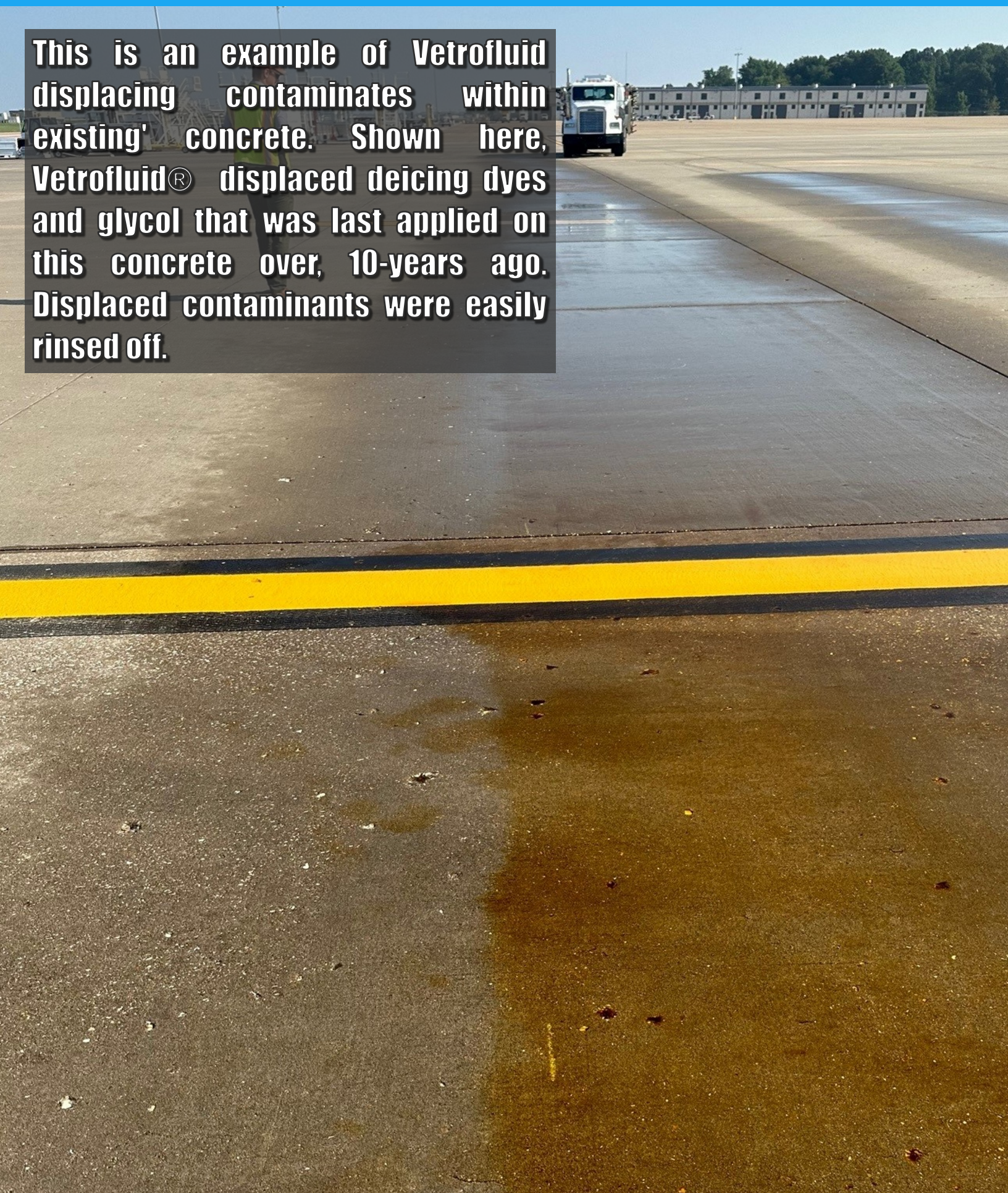
Vetrofluid®

Ecobeton-USA Vetrofluid® when used as a cure will penetrate 3" on average substantially reducing plastic shrinkage cracks. Vetrofluid's® immediate internal reaction allows quicker access to complex project tasks while dramatically reducing call-back items and providing a more durable finished concrete surface.

Ecobeton-USA Vetrofluid reacts as an internal post-cure when applied to existing concrete, regardless of age. Penetrating 1½" on average, this internal reaction heals existing cracking while displacing any contaminants within the concrete to the surface. This reaction will stop any additional contaminants from penetrating the concrete. Increasing the strength and reducing the attack by foreign substances will drastically extend the life of your existing concrete. Saving dollars, the environment, and time.



ecoBETON-USA®



This is an example of Vetrofluid displacing contaminates within existing' concrete. Shown here, Vetrofluid® displaced deicing dyes and glycol that was last applied on this concrete over, 10-years ago. Displaced contaminants were easily rinsed off.

Vetrofluid®

Ecobeton-USA Vetrofluid® protects your new bridge structures from freeze/thaw damage and deicing chemicals substantially extending the valuable service life of your bridge's structures while also reducing maintenance costs.

Ecobeton-USA Vetrofluid®, when applied to existing bridges, will mitigate the existing damage. Vetrofluid® permanently protects the concrete structure from water infiltration, deicing salts, freeze/thaw, chemical and environmental damage, as well as normal wear and tear.

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Biological Security for Agriculture

In today's world Biosecurity is paramount to the agricultural industry. Protecting your poultry, livestock and grain facilities from various pathogens, contagions and contaminants can mean the difference between a cull and a profit.

Your concrete is porous, acting like a sponge, allowing for the penetration of microbes, moisture, and contaminants, giving them an environment to colonize and grow. Cleaning solvents cannot penetrate concrete to eliminate pathogens and other contaminants. Ecobeton-USA Vetrofluid® is a one-time, permanent application that can be used on new and existing concrete, displacing the contamination to the surface, and sealing the pores to densify the treated concrete matrix, preventing recurring contamination from everyday activities. This allows you to clean your facilities quicker, more completely and return to service faster, reducing maintenance costs 40% on average.

Vetrofluid®

Vetrofluid®

PERMANENT CONCRETE ANTI-DETERIORATION PROTECTION

FOR PROFRESSIONAL USE ONLY – REVISION DATE: January 4, 2024

An easy, one-time, permanent application of Ecobeton-USA Vetrofluid® densifies, strengthens, and protects all concrete from water penetration, chemical degradation, and biological intrusion while substantially improving abrasion resistance. Vetrofluid® is 100% green with zero VOC & is user-friendly.

The Ecobeton formula combines our proprietary catalyst with select silicates allowing the product to penetrate existing and new concrete on average 1-½" to 3", sealing the pores and becoming a permanent part of the internal concrete matrix. Ecobeton Vetrofluid® permanently protects all types of concrete from degradation, dramatically increasing its lifespan, and making your project both fiscally and environmentally responsible.

Properties

Ecobeton Vetrofluid® prevents water intrusion into concrete when applied to either the positive or negative side withstanding pressure of 200 PSI. It is a permanent and definitive treatment.

Ecobeton Vetrofluid® provides concrete with extraordinary resistance to freeze and thaw cycles, chlorides, sulfates, and de-icing salts attack.

Ecobeton Vetrofluid® seals concrete pores, blocking the carbonization of steel and the penetration of chlorides, providing a stable alkaline environment over time and protecting the reinforcing steel.

Ecobeton Vetrofluid® is approved for use over open waterways, contact with drinking water.

Ecobeton Vetrofluid® provides concrete with excellent resistance to chemical attacks.

Ecobeton Vetrofluid® improves concrete heat resistance, to the physical limits of the treated concrete.

Ecobeton Vetrofluid® accepts painting and marking and is compatible with other finishes and overlays.

Ecobeton Vetrofluid® is an odorless, colorless, and non-toxic product.

Technical Features

Composition	Proprietary blend of catalyzed selected silicates in solution
Expiry	36-months with unbroken seal.
Flammability	Not flammable
Organic properties	Odorless, colorless liquid
Storages	Store in a dry, protected environment out of UV light and between 40°F - 104°F
VOC Content	None
Curing	3 – 8 days. Walkable after a few hours.
Packaging	1-gallon & 5-gallon standard, special order 264-gallon totes

Uses

Underground structures to prevent water intrusion from both inside and outside.

- Concrete bridges, roadways, barrier walls, Jersey barriers, underpasses, parking structures, dams and tunnels.
- Purification plants, water treatment and storage tanks in contact with aggressive substances.
- All immersed concrete structures to block attacks from chlorides.
- Sewage treatment, biogas plants and biomass facilities.
- Farm structures and cellars (biological security for cattle sheds, piggeries, poultry facilities, storage facilities for grains and hay).
- Protects concrete in contact with aggressive acids, chemicals and hydrocarbons.
- Protects concrete subject to severe climatic conditions.
- Stops basement slab moisture and dampness penetration.
- Anywhere you want to increase the durability of concrete.
- Precast cement beams, pipes and irrigation channels.
- Any exposed concrete.

More Information

Scan the code to visit our website.

www.ecobeton-usa.com

ecoBETON-USA®
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Email: info@ecobeton-usa.com
www.ecobeton-usa.com

Certification

Ecobeton Italy Srl
Via Galileo Galilei 47, 36030 Costabissara (VI)
08
Certificate no GB08/76012
DOP no 140107DOP-1504-2

0120

Tests in accordance with ASTM
(American Society for Testing and Materials International)

Waterproofing & Concrete Protection Product Tests

ASTM C1202	Rapid Chloride Ion Penetrability: 448 C (< 61%*)
ASTM E96	Water Vapor Transmission: < 26%*
ASTM C1585	Rate of absorption: < 52%*
ASTM C666-A	Freeze/Thaw Durability: 94% relative dynamic modulus through 303 cycles with 1-coat
ASTM C779-C	Abrasion Resistance Improvement: > 30%
ASTM E303	Skid Resistance: Negligible difference wet & dry between treated and untreated
ASTM C1543	15% NaCl Solution Absorption[1]): < 59%* 15% NaCl Solution Vapor Transmission < 26%*
ASTM 156	Water Retention: Comparable results with membrane curing compounds.

1) Dry weight variation after immersion for 1, 3, 7, 14, 21 days.
* Compared with the unsealed sample

Tests in accordance with MTO
(Ontario Ministry of Transportation)

MTO LS-412	Salt Scaling Resistance: 0.123 kg/m2 (std < 0.8 kg/m2)
MTO LS-417	Chloride Content: 0.231% by mass (< 16%*)

Tests in accordance with Army Corps of Engineers

CRD C48-92	Water Permeability of Concrete: 0.0 cm3, depth 1-inch @ 200 psi after 10-days.

UNI EN 1504-2:2005
Ecobeton – Vetrofluid®

Products for the concrete protection on buildings and works of civil engineering

EN 13892	Abrasion resistance: improvement > 30%
EN 1062-3	Capillary absorption and water permeability: w < 0.1 kg/m2 x h0,5
EN 13529	Chemical resistance (astringent attack): no visible defects
EN 13687-1	Thermal compatibility: ≥ 1.5 N/mm2
EN ISO 6272-1	Falling-weight test: Classes III: ≥ 20 Nm
EN 1542	Bond strength by pull-off: ≥ 1.5 N/mm2
EN 13501-1	Reaction to fire tests: Euro class A1 Slip/skid resistance: NA Depth of penetration: > 10 mm Dangerous substances: absent

The above technical data has been obtained with a dosage of 400 g/m^2

Other performance

Properties	Result	Reference Standard
Carbonization	Total resistance	UNI 9944
Contact with drinking water	Suitable	D.M. 21.03.73
Resistance to negative pressure	1MPa – ca 14 atm	Sintef
Freeze-thaw cycles resistance	No visible damages after 300 cycles	UNI 7087/72

Application

Review the material safety datasheet and application guide on www.ecobeton-usa.com prior to use. The product should be applied in two coats on clean surfaces that are free from sealers, cures, oil and grease. The product is not effective on concrete which has been previously sealed. Vetrofluid® can be applied by spraying, roller or brush. Spray application using low-pressure pumps is recommended (max. 72 psi / 5 BAR) normally available for gardening (both manual and electric, no special seals required). For concrete casted in formworks, apply after having removed the release agent. On older existing concrete, wet the surface the day before application. Stir the product thoroughly before use. Ecobeton Vetrofluid® can also be applied as a cure on new concrete.

Application on Vertical Surfaces

On vertical surfaces, apply from the bottom upwards. Apply the first coat to saturation, brushing out any drips or run to ensure an even coat. Apply the second coat after the first coat has visually dried. The product is cured in 8 days under normal conditions; however, the surface is ready after 8 hours. All non-hydrophobic coatings (plaster, concrete castings) can be applied after a few hours, even though it is recommended to wait at least 2-3 weeks for treatments that require a completely dry base (paints, resins, etc.).

Application on underground structures

Repair all panel holes and gravel nests with a mortar/concrete. Treat the surface with Ecobeton Vetrofluid®. It is possible to cover Vetrofluid® treated surfaces with soil after 12 hours.

1. Spray Ecobeton Vetrofluid® on the surface prior to repairs.
2. Apply Ecobeton Vetrofluid® once again when the repair is complete and has dried.

Concrete Slabs/Roads/Runways/Structures

Ecobeton Vetrofluid® can be applied to old or new concrete achieving the same results. Ecobeton Vetrofluid®- can also be used as a curing agent.

- Existing concrete shall be pressure washed prior to application of Ecobeton Vetrofluid®. Concrete may be damp but cannot be water saturated (wet, pooled surface water, etc.) prior to application.
- Application to new concrete, any previously applied sealer or curing compounds must be removed prior to the application of Ecobeton Vetrofluid®.
- Ecobeton Vetrofluid® can be used as a curing agent in place of other curing compound products. Apply after the finishing of newly placed concrete while the surface is still wet.

Warning

Temperature: do not apply below 40°F or above 104°F. Do not apply when rain is forecast within 24 hours.

Glass and Aluminum: protect glass and aluminum during application (watches, glasses, etc.) as they can be damaged by the product.

Coverage rate

The coverage rate per square foot varies depending on the absorption capacity of the surface treated. In general, treat the concrete until saturated but not pooling. Coverage rate varies from 160-220 square foot per gallon of Ecobeton Vetrofluid® per coat. Coverage rate is affected by the age of the existing concrete, surface porosity, and type of finish; power trowel versus heavy broom will influence the application rate. Existing conditions should be reviewed before the application. A test section may help determine the application rate.

Note: The information contained in this sheet is accurate to the best of our current knowledge. The products are guaranteed and have the highest quality and standards with regard to product tolerances. As it is impossible to carry out controls on every application of the product, no express or implicit guarantee is provided as regards to the final result and no responsibility is accepted directly or indirectly for the use of the products. Users are encouraged to carry out tests before application.

ECOBETON-USA®
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www.ecobeton-usa.com

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What is Everwood?

Ecobeton-USA Everwood® is permanent anti-deterioration protection for new and existing wood & lumber increasing density and stopping full depth penetration of water or contaminants. Everwood® is applicable on all types of wood and does not alter the natural color while allowing application of paint, stain or other coatings after curing. Everwood® is 100% green, non-toxic and environmentally friendly. A one-time application of Everwood® provides superior waterproofing, prevents biological growth of mildew, fungi & bacteria as well as adding substantial fire retardance to all treated wood.

Gondolas treated with Everwood®

Everwood®

Ecobeton-USA Everwood® is involved with fire testing being performed in the State of California. Everwood® was applied as a single coat to wooden test structures that were inserted into controlled wildfires. In one of these tests, the grass surrounding the structure was sprayed with an accelerant and ignited to test the fire retardance capabilities of Everwood®. Untreated control structures burned to ash and Everwood® treated structures withstood the fire.

Ecobeton-USA Everwood® can be easily applied with a low pressure sprayer, be brushed or rolled on to any wood. For superior protection, Everwood® should be applied to all exposed surfaces. Everwood® is compatible with all wood types; common construction lumber, pine, cedar, spruce, etc. as well as plywood, particle board, OSB, LVL and more.

Everwood® was applied as a single coat to new untreated pilons in Venice Italy to test long term exposure to salt water. The pilons are still there today since Everwood® application in 2012.

Ecobeton-USA Everwood's® permanent, one-time application is non-toxic, contains no VOC and is perfect for protecting outdoor furniture, decking, fencing, barns, pens and all exposed wood from wet rotting, organic growth and environmental deterioration.

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Find out more about Vetrofluid®

Visit us at www.ecobeton-usa.com

800-723-2198

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