

BridgeDECK® PROtectant Plus is a bio-based, waterproofing product, specifically designed for D.O.T. applications or large bridges. BridgeDECK PROtectant Plus employs a sodium silicate formula, that is enzymatically modified to chemically bond with concrete. With the introduction of water, the formula increases in mass and forms a gel that encapsulates water trying to enter the concrete. This vapor permeable gel fills cracks, pores, and voids in the concrete, creating a long-term barrier to water infiltration. It penetrates into the concrete and it reacts with the calcium and water contained in the concrete, to form a calcium silicate gel complex that fills the cracks, pores, and capillaries.

BridgeDECK PROtectant Plus has the ability to seal cracks up to **1/16" (1.5 mm) in width** upon initial application. In the matrix, the product remains reactive when in contact with water, to provide autogenous crack sealing properties to future cracks less than **1/128" (.3 mm) in width**. It is recommended that for cracks greater than 1/16" (1.5 mm) that routing and an application of sealant be applied.



KEY BENEFITS

- 20-year re-application
- 100% trafficable within 8 hours of completion.
- Protects against the harmful effects of corrosion by penetrating the surface and forming a protective layer between the surface and steel reinforcing bars.
- NSF 61 approved for water potability.
- Vapor permeable (does not trap moisture within the slab)



LIMITATIONS

BridgeDECK PROtectant Plus is not suitable for sealing cracks in excess of 1/16" (1.5 mm) in width, expansion joints or control joints. All cracks greater than 1/16" (1.5 mm) in width and control joints should be sealed with an appropriate sealant.



PRODUCT PROPERTIES

- Colorless, clear to slightly opaque, odorless, soapy feel
- Non-toxic & Biodegradable
- Percent non volatile solids 26.55%
- Specific gravity at 77°F (25°C) : 1.2
- Flash point - no true flash - boils at 214°F (101°C)
- Viscosity - 14.3 centipoise or 0.1172 Stokes
- Hazardous chemicals - Sodium Silicate (modified)
- pH 11.51



TESTING

The NSF/ANSI 61 is a set of national standards that relates to water treatment and establishes stringent requirements for all equipment and products that come in contact with either potable (drinking) water or products that support the production of potable water. **BridgeDECK PROtectant Plus has been UL Certified NSF/ANSI 61.**

TESTING STANDARDS

- ASTM E514 Water penetration
- ASTM C952 Bond Strength
- ASTM C672 Scaling Resistance
- ASHTO T-259 Chloride Ion Penetration
- ASHTO T-260 Chloride Ion Content
- ASTM D1644 Non volatile Content
- NSF 61 Potable Water Certification
- ASTM C1568-08 Wind Uplift Approval
- ASTM C1202 Chloride Ion Resistance
- ASTM C39 Compressive Strength
- TAS 112 Permeability
- ASTM D93 Ignition temp
- ASTM E108 Non combustible Surface
- ASTM C-42 Compressive and Flexure Strength
- ASTM-C-666 Freeze/Thaw
- ASTM D-3960 Zero VOC's
- ASHTO T-38 Moisture Vapor Transmission

SHELF LIFE & STORAGE

BridgeDECK PROtectant Plus has no known limit to shelf life. Keep container sealed and avoid prolonged exposure to direct sunlight. Always agitate drum or container before use.

PERFORMANCE TIMELINE

BridgeDECK PROtectant Plus utilizes a bio-based modified sodium silicate gel-forming technology to stop water penetration. Sodium Silicate is often referred to as "liquid glass" and is a silicon-oxygen polymer containing ionic sodium (Na+) components. Sodium silicate is similar to carbon-based plastics since silicon-oxygen-silicon bonds between each monomer are covalent. The polymer-like nature of the sodium silicate matrix as well as the polar character of oxygen and sodium atoms allows for bonding of water molecules within the polymer matrix. The modified sodium silicate penetrates into and bonds with the concrete to create a barrier to water, stopping the water from within the concrete rather than on the surface. The chemical reaction that creates this barrier is catalytic in nature and **may require between 3-5 days to reach full water stopping capabilities.**

APPLICATION

SURFACE CLEANING & PREP

BridgeDECK PROtectant Plus must be applied to a clean, dry, dust-free concrete surface, at least 14 days after the concrete has been poured in place. In the case of old concrete and where the surface is not clean, then the use of the following products is recommended.

ACR Emulsifying Cleaner - Use this product to remove grease and oil that has penetrated into the concrete. This is a solvent-based product that will break down the oil and grease and allow it rise to the surface. Once used, clean with ACR Concrete Cleaner and rinse with clean water.

ACR Concrete Masonry Cleaner - Use this product to remove dirt and environmental debris. This product is sprayed on the surface and in most cases will require some agitation. Once the dirt and debris has been removed rinse with water.

ACR Concrete Etch - This product should be used when the surface of the concrete does not allow the proper penetration of the water based products. It is an environmentally safe and human safe substitute for muriatic acid. Apply by spraying over the entire surface of the concrete. Once the product is no longer reacting with the concrete, it may either be; 1) allowed to dry in place and once dry remove loose material with a broom or vacuum; 2) remove by rinsing with water.

ACR Paint Remover - Use this product to remove paint from the surface of the concrete. This is an environmentally safe product and will remove paint quickly and effectively. Once used, clean with ACR Concrete Cleaner and rinse with clean water.

Check the Alchemco website (www.alchemco.com) for technical data sheets on each of these products or for help on which cleaning product will provide the best result.

PROTECTANT PLUS



PROTECTANT PLUS APPLICATION

1. **Important** - If the system is to be applied to newly poured concrete, then the application must not begin for at least 14 days after the pour is completed. If the system is being applied to older existing concrete then the application can begin once the surface is clean and all cracks have been properly cleaned & prepared. Any existing coatings or sealers should be removed prior to application to ensure proper penetration of the BridgeDECK Protectant Plus product.
2. **NOTE: BridgeDeck PROtectant Plus should only be applied when the ambient temperature is 40°F (+4°C) and rising or 100°F (+38°C) and falling.**
3. BridgeDECK PROtectant Plus should be applied using a low pressure pump style sprayer. Sprayer may be a canister style, back pack sprayer or a tank fed spraying system.
4. Begin spraying BridgeDECK PROtectant Plus in a uniform pattern over the surface of the concrete. Make sure to slightly overlap spraying to ensure proper coverage. Product should be applied so that the concrete becomes wet without puddling the product.
5. Apply the product uniformly at a rate of 180-220 square feet per gallon (1 liter per 5 square meters).

6. Once all surfaces have been sprayed, allow the product to dry. Once the product has dried to touch (if you touch the surface and no wet product comes off on your hand). In direct sunlight this process may take as little as 1 hour, in some cases longer. In case the product does not completely dry to the touch within 5 hours, begin the washing application.
7. Once the product has completely dried to the touch or no later than the 5 hour point, begin washing the surface. Washing is to remove any excess material sitting on the surface. Washing should be done with clean, clear water. Washing should continue until there is no "white foaming" occurring, which is evidence of the presence of the material.
8. Once all waterproofing materials have been applied, washed and dried, it is then recommended that all routed cracks, control joints, cold joints and expansion joints be properly sealed. For recommendations or products to assist in detail work please check www.alchemco.com.



PACKAGING

BridgeDECK PROtectant Plus comes in the following sizes:

- 5 gallon pails (18.92 liters)
- 55 gallon drums (208.2 liters)

AVAILABLE WARRANTIES

20 Year PROtectant Plus
(LIMITED LIABILITY MATERIAL ONLY WARRANTY)

SAMPLE April 23, 2022

Building owner name
Address, city, state and zip code
Contract Name 847-123-4567
Certified Contractor Name
Address, city, state and zip code

Building name
Address, city, state and zip code
Description of the area or areas that have had the product applied.

This warranty is effective from 04/23/2022 through 04/23/2042

Subject to the terms, conditions, and limitations stated below, Alchemco, a division of MBC North America, Inc. ("Alchemco") warrants to the Building Owner ("Owner") of the described concrete structure, that: Alchemco will replace or repair any BridgeDECK® product, that is shown to have a manufacturing defect, for a period of **Twenty (20) years**, as shown above, commencing with the date the product was delivered. However, in no event shall Alchemco's obligations extend beyond the **Twenty (20) years**. This warranty shall be in lieu of any warranty, including all assumed warranties, except warranties issued specifically to a project by Alchemco.

TERMS, CONDITIONS, LIMITATIONS

- Owner shall provide Alchemco with written notice via letter, fax or email within thirty (30) days of the discovery of any defect in the Alchemco BridgeDECK products. Owner shall send written notice of a defect to Alchemco at the address set forth at the bottom of this warranty. **NOTE: Notify your contractor or Alchemco Certified Applicator when not constitute notice to Alchemco.** By so notifying Alchemco, the Owner authorizes Alchemco or its designated representative to investigate the defect. Should the investigation reveal the cause of the defect to be outside the scope of this Warranty, investigation and repair costs for this service shall be paid by the Owner.
- If, upon inspection, Alchemco determines that the problem has been caused by a defect in the BridgeDECK products, Owner's remedies and Alchemco's liability shall be limited to Alchemco's replacement of the product within the affected area.
- Alchemco shall have no obligation under this Warranty while any bids for installation, supplies, service, or warranty charges have not been paid in full to the Alchemco Certified Applicator, Alchemco, or the material supplier.
- This warranty shall not be applicable if, upon inspection, Alchemco determines that any of the following has occurred:
 - The BridgeDECK products have been damaged by natural disaster, including, but not be limited to, lightning, fire, insect infestation, earthquakes, tornado, or hurricane. Alchemco shall not be responsible for any changes in appearance or surface imperfections caused by hail incidents.
 - The BridgeDECK products have been damaged by any intentional or negligent act, accidents, misuse, abuse, vandalism, civil disobedience, or the like.
 - Loss of integrity of the building envelope or structure including, but not limited to, partial or complete loss of decking, wall siding, windows, doors, or other envelope components, or from damage by wind-blown objects.
 - Deterioration or failure of building components including, but not limited to, substrate, walls, mortar, HVAC units, non-Alchemco brand materials, etc., causes and causes a leak, or otherwise damages the BridgeDECK products.

4. This Warranty shall be null and void if any of the following shall occur:

- Failure by the Owner to use reasonable care in maintaining the protected area, said maintenance to include, but not be limited to, these items listed on Alchemco's Technical Data documents.
- During the term of this Warranty, Owner shall provide Alchemco with reasonable access to the project and the protected surface during regular business hours.
- Alchemco's failure at any time to enforce any of the terms or conditions stated herein shall not be construed to be a waiver of such provisions.
- Alchemco shall not be responsible for the cleanliness, discoloration, or appearance of the Alchemco BridgeDECK products or the finished surface, which may have been caused by environmental conditions including, but not limited to, dirt, grease, oil, efflorescence, pollutants, or biological agents.
- If any dispute, claim, or controversy arises from or relates to this warranty, and if the dispute cannot be settled through direct discussions, the parties agree to endeavor first to settle the dispute by mediation administered by the American Arbitration Association under its Commercial Mediation Procedures before resorting to arbitration. The parties further agree that any unresolved controversy or claim arising out of or relating to this warranty shall be settled by arbitration in the Commonwealth of Virginia administered by the American Arbitration Association in accordance with its Commercial Arbitration Rules and judgment on any court rendered by the arbitrator(s) may be entered in any court having jurisdiction thereof.
- This warranty shall be governed by the laws of the Commonwealth of Virginia, without regard to principles of conflict of laws.

Alchemco, a division of MBC North America (202) 549-9100, 3532 Mayland Court, Henrico, VA 23233 (800) 610-2895 www.alchemco.com

Alchemco
Berton Russell, Technical Director & Chief Architect
DATE: 04/23/2022

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WARNINGS



DANGER! TOXIC IF SWALLOWED

This product contains Sodium Silicate and may be harmful if swallowed. Wash hands, face and any exposed skin thoroughly after handling. Keep container tightly closed. Do not eat, drink or smoke when using this product.

IF SWALLOWED: Immediately call a POISON CONTROL CENTER, doctor/physician. Rinse mouth.

See Safety Data Sheet for further details regarding safe use of this product. Safety Data Sheets for any Alchemco product may be obtained by contacting Alchemco, 3532 Mayland Court, Henrico, VA 23233. 800-610-2895 or emailing technical@alchemco.com or calling

**CHEMTREC 800-424-9300 (US)
703-741-5970 (International).**

A Limited Liability Material Only Warranty is available at no additional cost, if the project is registered with Alchemco.

- BridgeDECK PROtectant Plus 20-Year.

For additional information about the Alchemco system specifications or available warranties, either contact your local Alchemco distributor or Alchemco's Technical Department at technical@alchemco.com or call 800-610-2895.



WARRANTY DISCLAIMER

Because of conditions of use which may be beyond our control, Alchemco shall not be held responsible in any manner for any personal injury or property loss resulting to the buyer or any other person from handling, storage, or use of this material not in accordance with directions. The buyer and/or user assumes all risk and liability resulting from improper handling or usage. There is no warranty expressed or implied of any kind, except as supplied in writing.