



MiraPrime Aqua-Blok XLi

Product Technical Data Sheet

MiraPrime Aqua-Blok XLi is a clear, single component, odorless, water-based, penetrating colloidal silicate primer and sealer that integrally waterproofs concrete, mortar and other cementitious materials. Based on a scientifically superior hybrid blend of lithium and potassium silicate technology, *Aqua-Blok XLi* is ideal for concrete affected by ASR (Alkali Silica Reactivity), or exhibiting high porosity and moisture vapor emissivity.

The lithium and potassium blend works in unison to react and seal the surface quickly, and achieve maximum penetration into the capillary structure to waterproof concrete integrally. Exhibiting highly reactive and hydrophilic properties, *Aqua-Blok XLi* quickly migrates through concrete waterways and capillary tracts to chemically convert free water-soluble calcium hydroxide into a dense crystalline network of insoluble calcium silicate hydrate gel. This conversion process prevents the migration of efflorescence, helps purge unwanted chlorides and contaminants from within the concrete, seals and densifies, permanently blocks moisture ingress, helps mitigate ASR expansion and damage, reduces moisture vapor emissivity and enhances resistance to aggressive chemical substances.

WHERE TO USE

- Concrete structures susceptible to or affected by ASR.
- Water and wastewater treatment structures.
- Water reservoirs and containment pits.
- Polishing of concrete floor slabs.
- Underground vaults and elevator pits.
- Dams, spillways and tunnels.
- Retaining walls and basements.
- Parking structure slabs, columns and walls.
- Concrete bridge decks and sub-structures.
- Sidewalks, balconies and breezeways.
- Masonry and stone structures.

ADVANTAGES

- Deep penetration into concrete substrates 2" – 4".
- Water thin micro-crystalline technology – penetrates fast.
- Purges/expels embedded chlorides and other contaminants.
- Enhances concrete physical properties – maintains breathability.
- Significantly reduces migration of efflorescence.
- Can be applied from the positive or negative side.
- Significantly reduces moisture vapor emissivity.
- Hydrophilic moisture barrier – resists osmotic pressures.
- Permanent and self-healing integral waterproofing.
- Enhanced protection of reinforcing steel to corrosion
- Meets USDA standards for non-incident food contact.
- Will not sustain mold, mildew or fungal growth.
- Non-toxic, low odor and environmentally safe.
- Cures, seals, densifies and hardens new/existing concrete.

THEORETICAL COVERAGE RATES**

Fresh Concrete:

First Application 150-200 sq. ft. per gallon
Second Application 150-200 sq. ft. per gallon

Cured Profiled Concrete:

First Application 50-250 sq. ft. per gallon
Second Application 50-250 sq. ft. per gallon

**A minimum of two applications is required for maximum function and performance. Consumption rates are dependent on many factors including substrate profile, porosity, and water cement ratio. Above rates of application represent typical values. Conduct mock-ups

PACKAGING and COLORS

Kit Size: 1 and 5 gallon pails - Color: Clear

MIX RATIO

Single component – ready to use.

SHELF LIFE AND STORAGE

Two years from the date of manufacture when unopened and material is stored in a protected environment free from moisture, excessive heat, freezing temperatures, and direct sunlight.

TYPICAL PHYSICAL PROPERTIES @ 75°F (24°C)

Vehicle Type.....	Water-based solution
Color.....	Clear to pearly white
Flash Point.....	None
Flammability.....	None
Odor.....	None or slight musty
pH.....	11.5 - 12
Weight per gallon.....	8.6 lbs./3.9 kg
Specific Gravity.....	1.10
VOC (grams/liter).....	0.0
Drying Time.....	2-3 hours

OVERVIEW OF INSTALLATION STEPS

• **Surface Preparation – Fresh Concrete:** Upon removal of formwork, evaporation of all bleed water and sufficient setting time, concrete surfaces do not require extensive surface preparation other than a thorough power washing at low pressures to remove laitance, form release agents, or any other pore blocking substances that may inhibit the penetration of *MiraPrime Aqua-Blok XLi*.

• **Surface Preparation – Cured Concrete:** Take a pH reading of the concrete substrate first by mechanically abrading off a layer of cement paste to remove what has likely become carbonated due to exposure from moisture and carbon dioxide. Ideal range of pH below abraded surface should be from 9-10 or higher. For anything under a pH of 9, MiraPrime Concrete Conditioner must be used to boost pH beyond 10. All surfaces to be treated must be clean with an open-pore structure to provide access to the capillary network within the concrete matrix. Concrete substrates need to be free from any substances that may inhibit penetration including, but not limited to, grease, oil, sealers, paint, curing compounds, form release agents, adhesives, mildew, algae, fungus, and other foreign matter. In the event subsequent Miracote surface coatings will be applied, a minimum surface profile of CSP-3 or higher is required as per ICRI surface preparation guidelines.

• **Mixing** – A single component ready to apply liquid, prior to use *MiraPrime Aqua-Blok XLi* should be thoroughly agitated and shaken well before use. Do not alter or dilute in any way, and use strictly as supplied in original containers. Mechanical mixing is acceptable but not required. Immediately rinse thoroughly with water, and clean up any spillage on surfaces not intended to be treated.

• **Application** – Depending on the type of application, *MiraPrime Aqua-Blok XLi* can be applied in a variety of methods including brush, roller or spray apparatus.

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Cure and Seal Fresh Concrete- Apply *MiraPrime Aqua-Blok XLi* when surfaces have achieved sufficient set to resist foot traffic. Uniformly apply at a rate of 300 to 400 square feet per gallon, and avoid ponding of material in slab depressions and low lying areas. When applying to vertical surfaces use low pressure sprayers (40 psi) with a fan tip nozzle or a minimum 3/8" nap roller and begin applying from the bottom and work up the vertical face with north/south and east/west spray patterns. Saturate the host surface thoroughly until excess material forms a rundown pattern of 6 to 8 inches below the spray contact point. On horizontal substrates, apply a flood coat with enough material to maintain a wet condition for 3 to 5 minutes. If material ponds in shallow depressions use a broom or roller to evenly distribute material to surrounding areas. For maximum function and performance on both vertical and horizontal surfaces, a second wet-on-wet application within 20 to 40 minutes is required. Apply the second application at right angles from the first in a crisscross pattern. During hot weather conditions, pre-wet the substrate to saturated surface dry (SSD) state to cool the surface down prior to application.

Cured Concrete Applications - When applying *Aqua-Blok XLi* to vertical surfaces use low pressure sprayers (40 psi) with a fan tip nozzle or a minimum 3/8" nap roller and begin applying from the bottom and work up the vertical face with north/south and east/west spray patterns. Saturate the concrete surface thoroughly until refusal and excess material forms a rundown pattern of 6 to 8 inches below the spray contact point. After the first coat has soaked in immediately apply the second coat, and apply only as much as the surface will readily absorb. Watch for areas that dry out at a faster rate, and re-apply as necessary. On horizontal substrates, apply a flood coat with enough material to maintain a wet condition for 3 to 5 minutes. If material ponds in shallow depressions use a broom or roller to evenly distribute material to surrounding areas. For maximum function and performance on both vertical and horizontal surfaces, a second wet-on-wet application within 20 to 40 minutes is required. During hot weather conditions, pre-wet the substrate to saturated surface dry (SSD) state to cool the surface down prior to application. As a final step and approximately 30-40 minutes after the last application of *Aqua-Blok XLi*, apply two light mist-coats of potable water to the entire treated surface 30-40 minutes apart. If MiraPrime Concrete Conditioner is necessary to elevate pH, apply in substitute for the first mist coat of potable water to accelerate the crystalline reaction. Misting with water helps transport any uncured inorganic potassium and lithium ions at the surface driving them down into the concrete capillaries. This also results in an open concrete surface pore structure for the uninhibited application and adhesion of repair materials, waterproofing membranes, coatings, stains and sealers.

FOR BEST RESULTS

- Always install a minimum 4' x 4' on-site mock up to verify actual coverage rates, potential for and duration of contaminant purge, and other critical requirements prior to proceeding with the installation.
- Verify and download current versions of product technical data sheets (PTDS), material safety data sheets (MSDS), and installation guides (IG) at www.miracote.com.



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- Protect materials at all times from excessive heat and cold, and pre-condition to room temperature as necessary.
- Measure surface and ambient temperatures to ensure the material is only applied when temperatures are 40°F (4.5°C) and rising during placement and cure time.
- When treating and applying *Aqua-Blok XLi* to concrete exhibiting excessive hydrostatic activity, as evidenced by saturated and weeping surfaces, vacuum and dry surfaces and immediately follow up the first application with a second and third application, as required.
- Depending on climatic conditions, density of the treated concrete, and potential for purging of chlorides and other entrapped contaminants, *Aqua-Blok XLi* is required to cure for 1-7 days prior to the application of surface applied materials. Allow maximum cure time for excessively contaminated concrete or high levels of MVE.
- Prior to applying subsequent surface coatings, any contaminants purged from the concrete must be removed by vacuum and cleaning.
- The proper application of this product is the sole responsibility of the end user. Job site visits by Miracote representatives are only for the purpose of making recommendations, and do not assume any liability for supervision or quality control.

LIMITATIONS

- Protect *MiraPrime Aqua-Blok XLi* treated surface from rain for a minimum of two hours after final application.
- Protect glass, plant life, aluminum, ceramics, glazed tile, wood vehicles from contact by overspray. Remove with water immediately.
- **Can etch glass**, avoid contact and rinse before it is allowed to dry.
- Do not apply if minimum/maximum ambient and substrate temperatures are 40°F (4.5°C) and above 100°F (37.8°C) 24 hours prior to and following application.
- Concrete surface sealers and polymer-modified mixes will inhibit penetration and function of *MiraPrime Aqua-Blok XLi*.
- Rebound-laden shotcrete and gunite, and poorly consolidated honeycombed concrete will be deficient in cementitious content to form a proper chemical reaction and full waterproofing potential.

LIMITED WARRANTY

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CAUTION: ALWAYS KEEP OUT OF THE REACH OF CHILDREN.



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