

Cementitious Waterproofing & Protective Coating

- ☑ 1-Component
- ☑ Stand-alone coating or in combination with AQUAFIN-2K/M
- ☑ For Concrete, Brick & Masonry
- ☑ Polymer modified
- ☑ Meets NSF/ANSI Standard 61
- ☑ Gray or White Color standard
- ☑ Provides a smooth cementitious finish
- ☑ Contributes to LEED (EQ 4.2)



Product Description

AQUAFIN®-1K (in short "1K") is a cementitious powder, which is mixed with water to form a dense, waterproof, rigid surface barrier. It consists of Portland cement, well graded quartz sand and polymer enhanced special chemical ingredients.

"1K" does not contain any ingredients which could negatively affect reinforcement or concrete. After mixing with water it cures to a hard membrane. In zones posed to cracking or movement AQUAFIN®-2K/M is recommended.

LEED Points:

- ◆ MR Credit 5.1, Regional Materials:..... up to 2 Points
- ◆ IEQ Credit 4.2, Low-Emitting Materials, Paints and Coatings:.....1 Point.

Typical Applications

- Horizontal or vertical applications to concrete, masonry, brick and parging (render) by brushing, troweling or compressed-air spraying (do not use roller). Note: always apply in two coats.
- Waterproof coating of new or old structures, above or below grade, positive or negative water pressure side.
- Base coat for AQUAFIN-2K/M in negative side applications.
- Sealing static hairline cracks in concrete structures not subject to movement.
- "Bug hole" filler and scratch coat for "sacking" of concrete surfaces.
- Top coat over MORTAR-LN or MORTAR-40 on brick and stone (rubble) walls.

Especially suited for waterproofing of

- Masonry + brick substrates
- Basements
- Potable + open wastewater tanks
- Fish ponds
- Swimming pools
- Elevator pits
- Foundations
- Retaining walls.

Advantages

- Potable water certified as per NSF/ANSI 61
- Resists strong hydrostatic pressure
- Applied to the positive or negative water pressure side of a structure
- Improves watertightness of water tanks

Physical & Technical Data

Aggregate State: Powder	Bulk Density: 88 lb/ft ³ (1.4 kg/L) dry; 116 lb/ft ³ (1.85 kg/L) wet mix
Color: Gray or White	Setting Time: approx. 2 to 4 hours at 68° F (20°C)

TEST	RESULTS	METHOD
Compressive Strength: Gray White	3300 psi (22.7 MPa) at 28d 3000 psi (20.7 MPa) at 28d	(ASTM C-109)
Flexural Strength: Gray White	330 psi (2.3 MPa) at 28d 300 psi (2.1 MPa) at 28d	EN 196/1 (ASTM C-348 modif.)
Bond/Adhesion:	>220 psi (>1.5 MPa)	(ASTM C-321)
Shrinkage:	0.014% at 28 days	(ASTM C-596)
Shore 'D' Hardness:	D/66/1	(ASTM D-2240 : 05)
Vapor Permeability: U.S. perms	8 (untreated control = 10)	(ASTM E-96)
Potable water certification:	approval (see www.wqa.org)	NSF/ANSI Standard 61 by WQA
Microbiological growth:	not supported	DVGW-W270 Germany
VOC content:	0% (0 g/L)	
Permeability: positive & negative side water head	No water ingress with: 50 ft (15 m) (1.5 bar) hydrostatic pressure.	DIN 1048 sample 80 mils (2.0 mm) thick

All data are averages of several tests under laboratory conditions. In practice, climatic variations such as temperature, humidity and porosity of substrate may affect these values.

- Easy to use - needs only to be mixed with water prior to application
- Not a vapor barrier - lets concrete "breathe"
- Excellent freeze/thaw resistance
- Withstands foot traffic
- Applied to moist concrete/substrate
- Non flammable - no odor - non toxic.

Preparation of Substrate

The substrate to be sealed must be firm and relatively even, and its surface fine-pored to provide mechanical bond (surface adhesion), free from voids, gaping cracks, or ridges. Active water leakages must be stopped before application of "1K" using PLUG-IC.

1. Remove all cement laitance, curing agents, surface coatings, loose particles, bitumen, oil, grease, etc. by suitable mechanical means, i.e. waterblasting, wet or dry sandblasting. Pay particular attention to sufficiently roughen slab substrates. Steel troweled or any smooth surfaces must be mechanically roughened prior to application to provide mechanical bond. All substrates must have minimum ICRI CSP 3 to 5 profile.
2. Repair static cracks, honeycombs, unbound concrete and weak mortar joints using structural repair MORTAR-40 or waterproofing repair and lining MORTAR-LN.

3. Alternatively seal static cracks and joints using AQUAFIN JOINT SEALING TAPE-2000 and for dynamic cracks and joints TAPE-2000-S, embedded in AQUAFIN-2K/M. Use on positive water side only.
4. Stop and seal active water leakage with PLUG-IC fast setting water stop and patching compound.
5. Pre-patch and level uneven substrates, such as brick, natural stone, etc. using MORTAR-LN or MORTAR-40.
6. Form coves 1.5" x 1.5" (38 x 38 mm) at floor - wall joints using MORTAR-LN.
7. **Pre-water the substrate extremely well with clean water.** Pay particular attention to substrates with excessive absorption such as CMU-block walls and any substrate during hot climatic conditions.

Mixing

Approximate mixing ratio (by volume) is:

- ◆ 5 parts powder to 2 parts water ◆

or:

**50 lb powder to 1.6 - 1.7 gal water
(22.7 kg to 6.0 - 6.4 L)**

(Spray application up to 2.0 gal (7.6 L).)

Add the "1K" powder to water and mix for at least 3 minutes with a mechanical mixer to a creamy slurry consistency for brush or broom and to a pumpable consistency for spray applications.

Consumption & Yield of 50 lb (22.7 kg) bag

Water sealing condition	Total Coating thickness (wet film) inch mils (mm)	Application rate (dry powder) lb/y ² (kg/m ²)	Appx. Yield per bag ft ² (m ²)
Dampproofing (applied in 2 coats)	1/16" 60 (1.6)	4.6 (2.5)	98 (9.1)
Waterproofing (applied in 2 coats)	1/10" 100 (2.5)	7.4 (4.0)	60 (5.6)

All above values theoretical. Variations may apply due to substrate conditions. Thickness per application or lift, up to 50 mils (1.25 mm).

Prepare only as much material as can be applied in 60 minutes for gray and 45 minutes for white slurry. Stir the "1K" slurry frequently to maintain workability. Do not add more water. (If workability cannot be restored by stirring, discard.)

Application

1. Do not apply "1K" at temperatures below 40°F (5°C) or to a frozen substrate.
2. Protect application from direct sun and wind to prevent premature surface drying and shrinkage cracks. Apply material in 2 (two) coats minimum.
3. Pre-treat (level) uneven substrates and sharp edges such as brick, natural stone, etc. with MORTAR-40 or MORTAR-LN, to prevent minor thickness spots in the "1K", which can lead to leakage.
4. Protect and seal alkali sensitive metal substrates such as copper, aluminum, galvanized or zinc treated metal first with a primer (i.e. KRYLON Primer, or equal) prior to applying (over-coating) "1K".
5. "1K" must be applied onto a damp, but not wet, substrate (SSD). Free surface water can inhibit bonding and weaken the coating.
6. "1K" may be applied with a masonry brush, broom or appropriate compressed-air spray equipment such as hopper gun, peristaltic pump (i.e. Quikspray carousel pump, Inomat-M8), or rotor-stator pump. Application by roller is not recommended.
7. Quantities are dependent on the amount of protection desired. Apply in two or multiple coats at the rate determined on the Consumption Chart.
8. Application thickness per coat maximum 20 - 50 mils (0.5 - 1.25 mm) in areas exposed to the elements. Contact Aquafin for possible single coat applications up to 1/8" (3 mm) thickness in tunnels, or other controlled environments.
9. Apply the second coat as soon as the first coat has set, but still "green". (Normally 4 - 6 hrs. indoors at 68°F (20°C) @ 60% rH.) If this is not possible then the first layer must be roughened and dampened prior to applying the second coat.

10. "1K" can be left as a brushed finish, or it can be troweled up by a skilled plasterer to a relatively smooth cementitious finish.

11. Protect the fresh application from rain, wind, frost, and direct sun light.

EXPOSURE* OF APPLICATION TO:

- ◆ rain, vertical surfaces, after approx. 4 hrs
- ◆ rain, horizontal surfaces, minimum 8 hrs
- ◆ foot traffic after approx. 1 day
- ◆ hydrostatic pressure after approx. 7 days
- ◆ back filling after approx. 3 days
- ◆ top coating with AQUAFIN-2K/M after 24 hrs. minimum.

*) at 68° F (20° C) and 60% humidity.

Curing:

- Protect "1K" from frost, wind, direct sun, rain, etc. which can leave "1K" as a weak, powdery substance.
- Keep moist for at least 3 days in hot and/or dry environments and 7 days for in contact with potable water.
- Self curing in cool areas.
- Provide air circulation for 24 hrs. following the "1K" treatment in poorly ventilated areas and deep pits, swimming pools, etc. Stagnant air will prolong the setting time and/or proper hardening.
- Use de-humidifiers in indoor areas where condensation exists or appears until "1K" has properly set.
- During winter time, do not use un-controlled direct air blowing gas or oil heaters to keep air warm.

Clean-up:

Clean tools and equipment with water immediately after use. Cured material can only be removed mechanically.

Decoration & Tiling:

"1K" is waterproof and highly vapor permeable (lets the concrete "breathe"). The surface should be cleaned with a stiff, dry brush prior to painting or coating.

- ◆ Vapor permeable, alkali resistant paints can be applied after 3 days provided that the AQUAFIN treatment is dry.
- ◆ Tile mortars can be applied after 3 days.

Limitations:

Do not use "1K" in areas exposed to "soft" water.

Maintenance:

Mechanically damaged "1K" can be easily repaired by roughening the affected substrate with a wire brush or equal, and after cleaning the substrate by reapplying a new coat "1K".

Packaging:

"1K" (gray or white) is supplied in 50 lbs. (22.7 kg) bags or plastic pails.

Storage & Shelf Life:

"1K" must be stored in a dry enclosed area off the ground. Shelf life in unopened, undamaged bags is 12 months.

Note:

Installer is responsible for proper product application. Site visits by Aquafin personnel or representatives are solely for the purpose of making technical recommendations, not for providing supervision or quality control.

Safety:

Refer to MSDS. This product contains Portland cement and sand (crystalline silica) and is highly alkaline (irritant) in contact with water. Avoid breathing dust. May cause delayed lung injury (silicosis). Use rubber gloves and goggles during mixing and application. Protect skin and eyes. After contact with skin, wash with plenty of water. In case of eye contact, rinse immediately with plenty of cool water and seek medical advice.

KEEP OUT OF REACH OF CHILDREN.

Proposition 65:

This product contains material listed by the state of California as known to cause cancer, birth defects, or other reproductive harm.

For professional use only. Not for sale to or use by the general public.

LIMITED WARRANTY: AQUAFIN, INC. warrants this product for a period of one year from the date of installation to be manufactured free of defects and to be consistent with its technical properties as stated in our current Technical Data Sheet. This product must be used as directed and within its stated shelf life. AQUAFIN INC. will replace or at our discretion refund the purchase price of any product, excluding cost of labor, which is proven to be defective. Our product recommendations are based on industry standards and testing procedures. It is the buyer's obligation to test the suitability of the product for an intended use prior to using it. We assume no warranties written, expressed or implied as to any specific methods of application or use of the product. AQUAFIN INC. MAKES NO WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED. AQUAFIN, INC. shall not be liable for damages of any sort including remote or consequential damages, down time, or delay.

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