

AQUAFIN®-IC (IntegraCoat)

Crystalline Waterproofing Slurry

CSI Div. 07, 09, 13, + 33

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LEED Points

MR Credit 5.1, Regional Materials:.....Up to 2 Points
 IEQ Credit 4.2, Low-Emitting Materials, Paints and Coatings:.....1 Point.
 Using this AQUAFIN product can help contribute to LEED certification of projects in the categories shown above.

Product Description:

AQUAFIN-IC (IntegraCoat) is a state-of-the art one component, penetrating cementitious material which waterproofs and protects new or old structurally sound concrete. It resists strong hydrostatic pressure and is not a vapor barrier (allows concrete to “breathe”).

AQUAFIN-IC is powered by Aquafin’s advanced crystalline technology which chemically reacts with moisture and free lime to reduce the water absorption of the resultant cement matrix within the concrete. This is a result of the formation of nano-scale crystals by the active catalysts present in the capillary system. This sustains a durable waterproof effect in the concrete, thereby blocking the passage of water. This reaction will continue to take place anytime water is present for the life of the concrete structure where by making the AQUAFIN-IC a truly permanent and integral waterproofing solution. The AQUAFIN-IC nano-crystals will also grow in and along static hairline crack sealing them and preventing further incoming water.

Typical Applications:

AQUAFIN-IC (IntegraCoat) is commonly used for positive and negative side waterproofing on interior and exterior solid concrete surfaces, in above grade and below grade projects such as:

- Basement walls and foundation walls
- Parking garage walls
- Retaining walls
- Slurry walls
- Elevator pits

Physical and Technical Data		
	Cement Gray	White
Aggregate State:	Powder	Powder
Bulk Density:	68 lbs/ft ³ (1.09 kg/dm ³)	
VOC:	(0 g/L)	(0 g/L)
Pot Life:	30 minutes	30 minutes
Setting Time:	~45 mins	~60 mins
Potable water certified (www.wqa.org):	Yes	No
Permeability (CRD-C 48-92):	No measurable leakage up to 460 feet (140 m) head pressure or 200 psi (14 bar), positive or negative water pressure side.	No measurable leakage up to 460 feet (140 m) head pressure or 200 psi (14 bar), positive or negative water pressure side.
All data are average values obtained under laboratory conditions. In practical use humidity, temperature, and absorbance of the substrate may influence the above given values.		

- Utility vaults
- Tunnels
- Potable water tanks (for drinking water)
- Water catchment basins and cisterns
- Reclaimed water holding tanks and wastewater holding tanks
- Stormwater holding structures including retention tanks and concrete ponds

Advantages:

- Advanced crystalline technology that penetrates deep into concrete
- Cement gray color is potable water approved - NSF/ANSI 61
- Applied to moist (damp) substrate
- Environmentally friendly, inorganic/non organic, non toxic, zero VOC’s
- Permanently active
- Easy to use - needs only water for mixing
- Can be applied to green concrete as soon as forms are stripped
- Protects concrete against fresh water, salt water, waste water & aggressive ground water
- Resists strong hydrostatic pressure
- Applied to positive or negative side water pressure
- Seals and post seals shrinkage cracks, up to 1/64” (0.4 mm)
- Contains no chlorides
- Cost effective

Crystalline Waterproofing Properties:

AQUAFIN-IC contains active waterproofing chemicals which react with moisture and free lime in the concrete, creating insoluble crystalline complexes which seal the capillaries and minor shrinkage cracks.

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They penetrate even against strong hydrostatic pressure, becoming an integral part of the concrete. The waterproofing chemicals remain active for the life of the structure, permanently sealing it from water penetration. Unlike a membrane, AQUAFIN-IC may require up to one month to reach its maximum waterproofing capability. Environmental factors such as ambient temperature, density of concrete, moisture present and weather conditions all can affect the timing of the sealing process. Under dry conditions the AQUAFIN-IC chemicals lie dormant, however they reactivate whenever re-exposed to moisture. AQUAFIN-IC post seals static shrinkage cracks up to 1/64" (0.4 mm), which occur after the product has been applied and cured.

Plug Active Water Leaks:

- If water is accumulating from an active leak(s) through cracks or joints in concrete walls, or concrete floors, Aquafin recommends the process of injection grouting as a first step in stopping severe water intrusion. For more information about Aquafin's extensive line of Injection Grouts, contact your local Aquafin Representative.
- Leaking cracks and other minor leaks (with little to no water accumulation) can be plugged using MORTAR-PLUG-IC. Refer to the current MORTAR-PLUG-IC Technical Data Sheet for preparation instructions and other important information.

Substrate Preparation:

- All concrete substrates must be strong, solid, stable, and of load bearing capacity.
- Areas designated to receive repairs must remain structurally sound and stable during demolition and surface preparation work, and these conditions must continue throughout the course of the repair work. Any areas of concern or uncertainty should be discussed immediately with the site Superintendent and brought to the attention of the Engineer of record.
- Substrates must be clean and free from all potential bond breakers such as sand, dirt, dust, efflorescence and mineral deposits, cement laitance, grease, oil, previous coatings, paint, sealers, water repellants, curing compounds, form release agents, etc. Mechanically clean the substrate to remove any bond-inhibiting substances and/or contaminants.
- For new concrete that has been mixed with a Super Plasticizer (High Range Water Reducing Admixture), a 48-hour bond test is recommended to confirm compatibility.
- All concrete surfaces should be even and flush, and free from holes, voids, gaping cracks, honey combs, or ridges.
- Mechanically remove all laitance, loose or deteriorated concrete by suitable means.
- The substrate must be sound, clean, and have an "open" capillary system ("tooth and suction") (ICRI CSP 3 - 4 profile) to ensure mechanical bond (surface adhesion) and allow AQUAFIN-IC chemicals to penetrate. Horizontal surfaces should have a rough wood float or broom finish. Smooth formed walls, or smooth troweled slabs; must be mechanically roughened. Do not apply AQUAFIN-IC to smooth slabs.
- Remove bond-inhibiting substances/contaminants and mechanically prepare surface to achieve a surface profile equal to CSP 3 - 4 as per ICRI Guideline No. 310.2R-13. Wet or dry sand-blasting, shot blasting, and hydro blasting (high pressure water-blasting at > 5,000 psi) are the preferred methods.
- Properly clean mechanically profiled area(s) by hydro blasting (water-blasting) or thorough pressure washing.
- Pre-water (thoroughly soak) the substrate extremely well with clean water. Pay particular attention to concrete substrates with excessive absorption or applications during hot/windy conditions.
- All surfaces must be saturated surface dry (SSD), which is damp but with

no standing water, immediately prior to the application of AQUAFIN-IC. In addition to general surface preparation requirements listed above, the following supplementary guidance is also provided:

- **Concrete Repairs:**
 - Use MORTAR-40 CI for structural and non-structural concrete resurfacing, patching, and repairs.
 - Use MORTAR-IC for minor patching and for filling in surface voids (bug holes).
 - Use MORTAR-PLUG-IC for fast minor patching and repairs.
- **Drilled Injection Grouting Holes, Tie Holes, and Static Cracks Exceeding 0.02" (0.4 mm):**
 - Prepare holes and cracks and fill flush to surface with MORTAR-IC or MORTAR-PLUG-IC.
- **Reglets in Perimeter Joint Areas:**
 - Create reglet, prepare cavity, apply AQUAFIN-IC (IntegraCoat) in reglet cavity as a slurry bond coat using a small paint brush, and fill prepared reglet flush to surface with MORTAR-IC.
- **Triangular Coves in Perimeter Joint Areas:**
 - In the perimeter joint area where the concrete wall(s) meet the concrete floor, apply AQUAFIN-IC (IntegraCoat) as a slurry bond coat using a small paint brush in the area that will receive the cove.
 - Form triangular coves using MORTAR-IC.

NOTE: Refer to the current MORTAR-40 CI, MORTAR-IC, or MORTAR-PLUG-IC Technical Data Sheet for preparation instructions and other important information.

Zoo Ponds and Aquariums:

Zoo Ponds and Aquariums require pre-approval from Aquafin Technical Department prior to application of AQUAFIN-IC (IntegraCoat) order to qualify for any type of warranty. Contact Aquafin Technical Department or your local Aquafin Representative for assistance.

Jobsite Conditions & Preparation

- Protect mixing and application area from wind and direct sunlight. Provide artificial shade and wind breaks.
- Hot surfaces should be cooled and shaded while cold surfaces should be heated and sheltered.
- Only proceed with application when ambient and surface temperatures are above 40°F (4°C) and below 90°F (32°C).
- Do not apply AQUAFIN-IC when rain, frost or freezing temperatures are expected within 24 hours after application.

Mixing (for slurry applications):

Read all instructions thoroughly prior to mixing and application.

- Pre-condition material to ~70°F (21°C) for 24 hours before mixing.
- Add the appropriate amount of potable water into a clean mixing bucket.
- Use an accurate measuring container and always carefully measure the water amounts. Start with lowest water amount per mixing ratio.

For Each Bag:	Add:
45.0 lb (20.4 kg) bag	1.4 to 1.7 gal (5.3 to 6.4 l) of clean water

By Volume:	Add:
3 parts powder	1 part water

- Add the AQUAFIN-IC powder to clean water and mechanically mix until the mixture is completely free of lumps and has the consistency of thick oil paint.
- If "false setting" occurs after mixing (product becomes stiff), use a drill to

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bring product back to a workable consistency. Do not add water when remixing.

- Mix only as much material as can be used within 30 minutes.

Application:

Always apply AQUAFIN-IC over damp, SSD substrates.

Vertical Concrete Surfaces:

For vertical applications, AQUAFIN-IC may be applied as a traditional slurry using a masonry brush, or with appropriate compressed-air spray equipment such as a peristaltic pump (i.e. Quikspray carousel pump). Do not use a roller to apply AQUAFIN-IC.

- **Brush Application (slurry):**
 - Apply two coats of AQUAFIN-IC, in the specified quantity, in a slurry consistency with a masonry brush. Brush on the material evenly and work it well into the surface.
 - Apply second coat while the first coat is still tacky ("green").
- **Spray Application (slurry):**
 - AQUAFIN-IC may be applied using appropriate compressed-air spray equipment. Spray on one or two coats, according to the specification, in circular movements.
 - Apply second coat while first coat is still tacky ("green").

Existing Horizontal Concrete Surfaces and Horizontal Applications in New Construction:

For new construction in horizontal applications, AQUAFIN-IC may be applied as a dry powder using a dry-shake method. For existing slabs, AQUAFIN-IC may be applied as a traditional slurry using a masonry brush, or with appropriate compressed-air spray equipment such as a peristaltic pump (i.e. Quikspray carousel pump). Do not use a roller to apply AQUAFIN-IC.

- **Over Top of Existing Slabs - Brush Application (slurry):**
 - Apply one coat of AQUAFIN-IC, in the specified quantity, in a slurry consistency with a masonry brush.
 - Brush on the material evenly and work it well into the surface.
- **Over Top of Existing Slabs - Spray Application (slurry):**
 - Apply AQUAFIN-IC using appropriate compressed-air spray equipment.
 - Spray on one coat, according to the specification, in circular movements.
- **Over Top of New Slabs (on or above grade) Dry-Shake (dry powder):**
 - Allow fresh concrete bleed water to rise and wait until water sheen disappears or has been removed. Concrete should support finisher and knee boards without more than approximately 1/4" (6 mm) of indentation.
 - Float open all surfaces using a power trowel, or by hand using a wood float.
 - Follow immediately behind the float application and evenly dry-shake (dry-sprinkle) approx. 1/2 the specified amount of AQUAFIN-IC using a mechanical spreader, or by hand using a sieve or similar tool.
 - Float AQUAFIN-IC into the surface using a power trowel, or by hand using a wood float as soon as the AQUAFIN-IC powder darkens slightly from absorbed moisture. Work the edge areas first.
 - Evenly dry-shake the remaining 1/2 of the specified amount of AQUAFIN-IC at right angles to the first application.
 - Flat trowel using a power trowel, or by hand using a wood float. Work edge areas first.
 - Create final surface texture per project specifications.

- **Beneath Foundation Mat (over mud slab), or Split Slab Application:**

- Apply AQUAFIN-IC in slurry or dry powder consistency to pre-wet "mud slab", or to prewatered concrete slabs / construction joints immediately prior to casting the structural slab or wall.
- For dry shake (dry powder) application method, pour the foundation mat, as soon as the AQUAFIN-IC powder darkens slightly from absorbed moisture.

NOTE: Aquafin recommends a trial or test application with the concrete contractor prior to actual application in order to define the proper timing of the AQUAFIN-IC dry-shake application, troweling, surface finishing and curing operation.

Finish:

- AQUAFIN-IC (IntegraCoat) is formulated to be left as an exposed finish and is not designed to receive paint, coatings, flooring, tile, plaster, sealers, or similar materials.
- As the crystals develop, the application area of AQUAFIN-IC will resemble an efflorescence condition.
- For this reason, AQUAFIN-IC (IntegraCoat) is not considered to be an aesthetically appealing product or a decorative finish.
- When the building owner desires an attractive looking finish, recommend AQUAFIN-1K or AQUAFIN-2K/M instead of AQUAFIN-IC. Consult Aquafin Technical Department or your local Aquafin Representative for guidance.

Curing and Protection:

Outdoor or Exposed Treated Areas:

- Keep damp (moist) for a period of 2 - 3 days for standard waterproofing applications, 7 days for potable water tanks. Start curing as soon as AQUAFIN-IC has hardened sufficiently so as not to be damaged by a fine water spray.
- Protect application area from direct sunlight, wind, and frost by covering with plastic sheeting, burlap, or similar. Do not lay plastic sheeting directly on AQUAFIN-IC as air contact is required for proper curing.
- The freshly treated surfaces should be protected from rain and freezing temperatures for a minimum period of 24 hours.
- Back filling can be carried out 36 hours after completion of the AQUAFIN-IC treatment. Protection boards are generally not required. Backfill material shall be moist and not contain rocks or larger aggregate.

Indoor Treated Areas:

- Self curing in cool areas with high humidity.
- Keep moist for 2 - 3 days in areas with low humidity and 7 days for potable water tanks.
- Provide air circulation for minimum 24 hours following the AQUAFIN-IC treatment in poorly ventilated areas and deep pits.

Water Tanks:

- Water tanks can be carefully filled after 3 days. Do not fill large tanks faster than 6 1/2 feet per 24 hours (2 m/24 hours).
- After complete curing of AQUAFIN-IC, potable water reservoirs should be thoroughly rinsed with potable water prior to being placed in service.

Clean-up:

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

Limitations:

- Curing times and drying times are approximate and will vary depending on ambient (air) temperature, mix water temperature, the temperature of

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AQUAFIN-IC dry powder in the packaging, surface temperature of host concrete, host concrete profile, and the application thickness.

- Do not use AQUAFIN-IC as a parge coat.
- Do not use as a roofing membrane or in lieu of a roofing membrane.
- Do not use AQUAFIN-IC in swimming pools, hot tubs, or fountains.
- Do not apply AQUAFIN-IC over masonry substrates (brick, stone, CMU etc.). Ask your local Aquafin Representative about AQUAFIN-1K and AQUAFIN-2K/M products.
- Do not exceed maximum total two-coat thickness of 60 mils (1.6 mm) when applying AQUAFIN-IC.
- Do not thin AQUAFIN-IC with additional water or any solvents.
- Do not retemper (do not add additional water to the mix once AQUAFIN-IC begins to set/thicken).
- Do not use additional water during the finishing process. The addition of excess water will negatively affect the material's final properties.
- Do not expose the application to water during the setting time.
- Do not apply AQUAFIN-IC at temperatures below 40° F (4°C) or to a frozen substrate.
- For temperatures of 90° F (32°C) and above consult Aquafin Technical Department or your local Aquafin Representative for guidance.
- Do not apply to a dry substrate.
- AQUAFIN-IC is not a replacement for proper repairs on damaged, deteriorated, or cracked concrete structures.
- If structural repairs are needed, consult a licensed Engineer and ask an Aquafin Representative about Aquafin structural strength repair mortars such as MORTAR-40 CI.

Packaging:

45 lb. (20.4 kg) bags or pails.

Storage & Shelf Life:

- **Storage:** Store AQUAFIN-IC in unopened, original, undamaged packaging in a dry, enclosed area off the ground.
- **Shelf Life:** 12 months

Note:

Proper application is the sole responsibility of the user. Applicators are expected to follow ICRI and ACI guidelines as well as other applicable industry standards. Aquafin personnel or representatives are not site inspectors or construction project managers and therefore do not approve surface preparation, mixing, or application of Aquafin products. Site visits by Aquafin personnel or representatives are solely for the purpose of making technical recommendations, not for providing supervision or quality control.

General Information:

All details in particular to the suggestions for the processing and use of the product is based on our present knowledge and experiences at the time of printing. Depending on specific applications, in particular regarding substrates, processing and environmental conditions may affect final results.

Safety:

Refer to Safety Data Sheet (SDS). The use of a dust mask, safety goggles and gloves is recommended. This document does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this document to establish appropriate safety and health practices and to determine the applicability of regulatory limitations prior to use. Dispose of water and materials in accordance with Federal, State and Local regulations.

Keep out of the reach of children.

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. We do not guarantee compatibility of Aquafin products with other brands. For this reason, we strongly recommend application of a sample area at the jobsite to help determine suitability with other products. 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. Any claim for a defective product must be filed within 30 days of discovery of a problem and must be submitted with written proof of purchase.

For Professional Use Only.

Cement Gray Color Only



AQUAFIN-IC (IntegraCoat) Application Rate, Consumption & Yield of 45 lb (20.4 kg) bag								
	Number of Coats	Application Rate per Coat		Total Consumption		Approx. Yield per Bag		
		lb/yd ²	kg/m ²	lb/yd ²	kg/m ²	ft ²	m ²	
Dampproofing (slurry)	1	1.40	0.75	1.40	0.75	288	27.3	
Waterproofing / Hydrostatic Pressure:	Walls (slurry)	2	1.25 - 1.40	0.75	2.5 - 2.80	1.50	144 - 162	13.6
	Existing Concrete Slabs (slurry)	1	2.00	1.00	2.00	1.00	203	20.4
	New Concrete Slabs (dry shake)	1	2.00	1.00	2.00	1.00	203	20.4
	Top of Mud Slab + Split Slabs (slurry or dry shake)	1	2.25	1.20	2.25	1.20	180	17.0
	Construction Joints (slurry or dry shake)	1	2.00	1.00	2.00	1.00	203	20.4
Salt Water & Wastewater Environments (slurry)	2	1.40	0.75	2.80	1.50	144	13.6	

Notes: Coating thickness is approximately 1/32" (0.8 mm). The thickness can vary depending on the porosity of the substrate and its suction effect based on its moisture content. The more moisture content, the better and faster the active AQUAFIN-IC chemicals penetrate into the concrete.