

AQUATHON CERAMIC

INSULATIVE CERAMIC FLUID APPLIED EXTERIOR WALL WATERPROOFING

Technical Data & Application Instructions

PRODUCT DESCRIPTION

AQUATHON CERAMIC is an all acrylic elastomeric coating incorporating a heat reflective ceramic additive. This specialized ceramic additive increases the heat reflectivity of AQUATHON CERAMIC beyond that of typical white reflective coatings. The brilliant white pigments create insulative wall protection by reflecting up to 90% of the solar heat from the wall surface. AQUATHON CERAMIC provides the ultimate in elastomeric waterproofing for various wall substrates. AQUATHON CERAMIC is a permanently flexible "breathing" membrane, allowing moisture vapor from the building interior to escape while remaining impervious to mass water penetration from the exterior.

BASIC USES

AQUATHON CERAMIC was specifically developed to waterproof vertical concrete, stucco and masonry building exteriors. It has the ability to uniformly cover the profile of textured substrates, forming a continuous membrane resistant to all forms of weather and airborne pollutants.

AQUATHON CERAMIC effectively covers existing hairline cracks and repaired areas, and bridges hairline cracking caused by further building movement. It provides long term, aesthetically pleasing waterproofing on all types of concrete and masonry surfaces. AQUATHON CERAMIC is also effective over wood and hardboard substrates. It is available in smooth or a wide range of textured finishes.

AQUATHON CERAMIC forms a waterproof elastomeric seal, uniformly covering the textured profile of various substrates to form a monolithic membrane, providing protection from normal weathering, aging, and ultraviolet exposure.

COLORS

Although white is standard for maximum insulative power, AQUATHON CERAMIC is available in 36 standard natural toned colors. An unlimited selection of custom colors are also available for specific applications. Color chips must be furnished to UNITED COATINGS for all custom matches.

TYPICAL PROPERTIES TABLE I

| Property | Value | Method |
|--|---|-------------|
| Solids by Weight | 68% (±2) | ASTM D 2369 |
| Solids by Volume | 55%* (±2) | ASTM D 2697 |
| Tensile Strength | 150 psi (±25) @ 75°F 400 psi (±25) @ 0°F | ASTM D 412 |
| Elongation | 300 (±50) @ 75°F 400 (±50) @ 0°F | ASTM D 412 |
| Hardness | 60-70 Shore A | ASTM D 2240 |
| Permeance | 7.7 perms at 15 mils | ASTM E 96 |
| Dry Time @ 75°F, 50% R.H. | 1½ hrs @ 20 wet mils | ASTM D 1640 |
| Low & High Service Temperature Limits | -30°F to 200°F (-34°C to 93°C) | |

ADVANTAGES

- **Single Component:** AQUATHON CERAMIC is a ready-to-use material requiring no catalyzation. It has no pot life problems.
- **No Solvents:** AQUATHON CERAMIC is a water-based elastomeric emulsion conforming to all VOC and air pollution standards.
- **High Resin Content:** AQUATHON CERAMIC contains a higher ratio of acrylic resin to filler pigments than other coatings.
- **Uniform High Film Build:** AQUATHON CERAMIC'S thixotropic consistency gives it excellent vertical hold, allowing full application in one or two coats.
- **Self Cleaning:** AQUATHON CERAMIC seals and protects, releasing dirt, dust and pollution from its tight surface skin.
- **Elastomeric:** Permanent and non-aging, AQUATHON CERAMIC moves with the building to bridge hairline cracks that may develop.
- **Low Temperature Performance:** AQUATHON CERAMIC is unique in that its elongation properties increase in cooler temperatures, contributing to its ability to bridge hairline cracks and withstand freeze/thaw cycling.
- **Abrasive Weather Conditions:** AQUATHON CERAMIC will withstand all normal weather conditions.
- **USDA Standards:** AQUATHON CERAMIC is authorized by the U.S.D.A. for use in Federally inspected meat and poultry processing plants.

PERFORMANCE PROPERTIES
TABLE II

| Property | Test Procedure | Value |
|---|--|--|
| Accelerated Weathering–Ultraviolet (U.V.) Resistance | Atlas Carbon Arc Weather-Ometer Type EH - Continuous UV and water spray cycling at elevated temperature. ASTM D 822, ASTM G 23 | After 2,000 hours of continuous exposure AQUATHON CERAMIC showed no deleterious effects, no surface checking, cracking or delamination. |
| Resistance to Wind Driven Rain | Pressurized test chamber producing 5” (12.7 cm) of water pressure, equivalent to 100 mph wind pressure (161 km/hr). Federal Spec. TTC-555B | During 40 hours of continuous testing, no apparent moisture penetrated the AQUATHON CERAMIC sample. |
| Resistance to Salt Spray | Harshaw Salt Spray Cabinet (5% sodium chloride fog solution). ASTM B 117 | After 500 hours of continuous exposure AQUATHON CERAMIC showed no deleterious effects, no surface checking, cracking or delamination. |
| Resistance to Mildew | Five different fungus cultures grown on potato dextrose agar in an 86°F (30°C) incubator. ASTM G 21 | After 14 days, all AQUATHON CERAMIC samples showed absolutely no fungus growth. |
| Low Temperature Flexibility | Federal Test Method No. 141a-6221, utilizing Gardener Mandrel set at cryogenic temperatures. | AQUATHON CERAMIC has the ability to withstand multiple 180° bends over a 1/8” mandrel at -30°F (-34°C). |
| Elongation After Aging | Atlas Carbon Arc Weather-Ometer Type EH (ASTM D 822, ASTM G 23) and Instron Universal Testing Instrument. ASTM D 412 | After 2,000 hours exposure in the Weather-Ometer, AQUATHON CERAMIC retained 95% of its elastomeric properties. |
| Low/High Temperature Stability | Aged films tested in accordance with ASTM D 822 in thermostatically controlled heat chamber and freezer. | Films retained their ability to be flexed 180° without cracking at temperatures from -30°F to 200°F (-34°C to 94°C) with no age hardening or slump. |

SURFACE PREPARATION

NEW OR UNPAINTED: Bare concrete, brick, stucco or masonry must be structurally sound, clean, dry, fully cured, and free from dust, curing agents or form release agents, efflorescence, scale or other foreign materials. On new poured-in-place concrete, use a non-staining form release agent which is either easily removed or is designed to be compatible with surface coatings. **AQUATHON CERAMIC** may be applied directly to clean, sound surfaces of concrete, brick or stucco, as well as wood, siding and exterior wall-board. Concrete surfaces exhibiting high alkalinity should first be primed using **UNITED’S Primer 707**.

Prior to application over masonry block, **UNITED’S Block Filler 704** or other approved block filler should be utilized to fill the pores and achieve a pinhole-free surface. **Block Filler 704** is a water-based, high solids acrylic that enables it to uniformly fill and seal porous substrates. Application of a block filler will maximize the effectiveness of the **AQUATHON CERAMIC** topcoat.

The amount of block filler required to uniformly fill or surface a masonry block or other porous substrate will depend upon the texture and porosity of the surface. The average application rate for **Block Filler 704**, or other high quality acrylic block filler will be 2 to 2½ gallons per 100 sq. ft. For additional information, refer to separate **Block Filler 704** Technical Data & Application Instructions.

PREVIOUSLY PAINTED: All dust, dirt, efflorescence and loosely adhering paint or coating shall be removed. Paints which show failure due to alkalis and moisture, which is recognizable by flaking, peeling and white deposits, must be completely removed. Chalky or oxidized surfaces must be washed with **United Cleaning Concentrate (UCC)** or equal, and thoroughly power rinsed with clean, fresh water prior to application of **AQUATHON CERAMIC**. **UCC** is a 100% biodegradable cleaner formulated with penetrants from wetting agents and surfactants. It is non-toxic, non-polluting and will not harm ground vegetation, septic tanks or sewer systems. **UCC** should be diluted at a 10 to 1 ratio with water. The diluted cleaning solution is then applied to the substrate at 150 to 200 sq. ft. per gallon and allowed to stand for a minimum of 15 minutes. The cleaning solution is then rinsed from the surface with water under high pressure utilizing either airless spray or pressure washing equipment. A sample application of **AQUATHON CERAMIC** should then be applied to test for adhesion. If test indicates poor or marginal adhesion, surfaces shall be primed with **UNITED’S Primer 707** at 300 to 400 sq. ft. per gallon. **Primer 707** is a resinous acrylic designed to lock down residual chalkiness on sound, previously painted surfaces. Any existing painted surfaces that are not tightly adhered must be removed by sandblasting, water blasting or other mechanical means.

CONCRETE REPAIRS

SPALLED OR DELAMINATED CONCRETE:

All delaminated and/or spalled areas in the concrete shall be repaired prior to the application of **AQUATHON CERAMIC**. Locations of delaminated concrete shall be determined in the field by tapping the concrete with a sounding rod or hammer.

Remove all unsound concrete with electric or pneumatic chipping hammers or with hand tools as required. Size of hammers shall be such so as not to damage sound concrete adjacent to repair area. Care shall be taken to avoid damage to embedded steel reinforcement. Sandblast all exposed embedded reinforcement to remove corrosion and old concrete, replacing reinforcement as required. Sandblast the cavity and the immediate surrounding concrete area to remove laitance, dirt, grease, chalk, curing compounds, paint and other contaminants. Blow the cavity clean with compressed air to ensure that all loose particles have been removed. Thoroughly coat all areas of exposed steel reinforcement with a two-component epoxy resin.

Fill cavities using UNITED'S **Uni-Crete** or other high quality polymer-modified cement mix. After predampening cavity surface with clean water, latex-modified portland cement mortar shall be scrubbed into the surface. Immediately following, latex-modified portland cement concrete patching mix shall be worked into the cavity and compacted adequately to ensure that no voids remain in the patch.

Patch thickness shall be a maximum of 1½" and a minimum of ⅛". Finished surface of patches shall be flush with and shall match texture of existing surface. For major repairs involving deterioration greater than 2" in depth, and/or severe corrosion of the reinforcement, consult a structural engineer for repair procedure.

CONCRETE CRACK REPAIRS: All cracks larger than hairline shall be considered as "moving", and shall be routed and sealed. Mark all cracks with chalk to provide visibility of the crack during routing. Rout out full length of crack to form a ¼" wide by ¼" deep joint centered on the crack. Thoroughly blow out the joint with compressed air or flush the joint with clean water to remove all grinding dust. Routed surface must be clean, sound and square.

Remove all failed caulking material previously applied over cracks and clean thoroughly. Remove any existing paint as required to provide a clean, sound concrete surface prior to repairing cracks. Apply bondbreaker along entire length at the bottom of the joint, taking care to avoid applying bondbreaker to the sides of the joint. Fill the full length and depth of the joint with a high quality acrylic or single package urethane sealant. Tool the sealant as recommended by the Manufacturer to ensure bonding, consolidation and uniform appearance. The sealant must be completely cured prior to application of the **AQUATHON CERAMIC**.

APPLICATION

AQUATHON CERAMIC may be applied by roller as well as conventional or airless spray equipment. A brush or pad may also be used for touch-up and edging work, or for small areas unsuitable for spray application. Airless spray and rolling are the most effective methods for obtaining uniform film build.

AQUATHON CERAMIC is a single component material available in 5-gallon pails (19 liters) and 55-gallon drums (209 liters). Upon extended storage, the product will settle into a two-stage suspension. It is necessary to thoroughly mix all **AQUATHON CERAMIC** containers prior to application. Use a slow speed mixer capable of mixing the entire contents.

AQUATHON CERAMIC has a rich thixotropic consistency. The addition of water reduces this thixotropic nature and decreases the ability to achieve heavy film builds with good vertical hold. The material is easily pumped and sprayed without thinning, provided equipment is in good working condition, and coating is properly mixed and maintained at a minimum temperature of 60°F (16°C).

All surfaces should be sprayed with multi-directional spray passes to assure positive coverage. On applications requiring two or more coats, subsequent coats shall be applied in a direction perpendicular to the previous coat after it has dried. All surfaces must be uniformly coated and free from voids, pinholes or blisters.

The theoretical thickness given for coverage is based on smooth, non-porous surfaces. Actual gallons required to achieve the minimum dry film thickness will depend upon the surface texture, method of application and weather conditions. It is the responsibility of the applicator to apply sufficient material to achieve the minimum dry thickness required. **AQUATHON CERAMIC** applied at the rate of one gallon per 100 sq. ft. (.4 l/m²) will theoretical yield 8.8 dry mils (224 dry microns). For issuance of a 5-year waterproofing warranty, UNITED requires one or two coats of **AQUATHON CERAMIC** applied at a nominal thickness of 13 dry mils (330 dry microns), with a minimum thickness of 10 mils (254 dry microns) at any location. For issuance of a 10-year waterproofing warranty, UNITED requires a minimum of two coats of **AQUATHON CERAMIC** applied at a nominal thickness of 19 dry mils (483 dry microns), with a minimum thickness of 15 dry mils (381 dry microns) at any location. The following estimated coverage rates can be used as a guide in figuring material requirements for 5 and 10 year warranties:

TABLE III

| Substrate | Gallons/100 sq. ft. for 5-yr. | Gallons/100 sq. ft. for 10-yr. |
|--|-------------------------------|--------------------------------|
| Concrete (smooth) | 1.67 | 2.5 |
| Concrete Block, Brick | 2.25 | 3 |
| Lightweight Pumice Block | 2.75 | 3.5 |
| Split Face, Stucco or Coarse Textured Surfaces | 3.25 | 4 |

APPLICATION (Continued)

As work proceeds, the applicator must periodically check the number of gallons used and compare to square feet coated. If adequate gallonage has not been used, adjust accordingly and apply additional material to previously coated areas. Allow 15 to 30% more material for structures with grooved design or recessed mortar joints.

AQUATHON CERAMIC shall not be applied when one or more of the following conditions exist:

1. If ambient and/or surface temperatures are below 45°F (7°C).
2. If relative humidity is in excess of 95%.
3. Threat of rain or freezing temperatures within 4 hours of application.
4. The dew point is less than 5°F (3°C) above the surface temperature.

In addition, caution must be exercised when applying **AQUATHON CERAMIC** in dark colors under high heat conditions. Surfaces exposed to direct sunlight should be coated with thin passes during the morning or late afternoon hours. Application of dark colors under extreme direct sunlight can cause blistering and/or excessive cellular structure within the cured coating film.

AQUATHON CERAMIC has been applied over a wide variety of substrates, utilizing many different brands, types and sizes of conventional and airless spray equipment. Airless equipment is best for field application, with the following recommended minimums:

- Pump:** ¾ GPM minimum output capacity.
Gun: Any airless hand gun compatible with pump used.
Screen
Size: 30 mesh or larger
Tip: A reversible self-cleaning tip with orifice size of .021 to .031 and 40° to 60° fan.

Larger equipment will always increase production capabilities.

AQUATHON CERAMIC is also available in light, medium and heavy texture finishes. **UNITED** also has the ability to match a wide variety of custom textures. When utilizing a textured finish, it is recommended that a minimum of two coats be applied, with the first being non-textured, or smooth **AQUATHON CERAMIC**. This will provide a monolithic, waterproof membrane underneath the textured topcoat(s).

Use water and **United Cleaning Concentrate** or equal to thoroughly flush equipment. Purge the water from the system using Mineral Spirits or Cellosolve solvent. Leave the solvent in the lines and equipment until next use.



LONGEVITY BY DESIGN
19011 E. Cataldo Ave. • Greenacres, WA 99016
(509) 926-7143 • Fax: (509) 928-1116
(800) 541-4383 • www.unitedcoatings.com

SAMPLE AREA APPLICATION

UNITED recommends that a sample area be applied by the Contractor using the desired **AQUATHON CERAMIC** color and texture, and approval be obtained prior to any general application of the material. This will help determine proper coverage rate and application technique. Final appearance will be affected by surface texture and porosity, as well as application technique. For these reasons, written approval should be obtained from the Architect and/or Building Owner prior to proceeding with the general application. Approved sample area shall serve as a standard of comparison with respect to color and overall appearance.

APPLICATION TIPS

Whenever **AQUATHON CERAMIC** is ordered, every effort is made to supply the coating from a single batch. Due to fluctuations in inventory levels, there are occasions when different batch numbers of the same color are sent to complete an order. Whenever this occurs, it is the sole responsibility of the Applicator to make certain that only one batch number is used on any one side of the building. Different batch numbers cannot be used on the same wall unless they are “boxed” or mixed together to ensure total color uniformity.

Partially full containers of **AQUATHON CERAMIC** may surface skin under hot conditions. Examine before mixing and remove skin (if present). To prevent skinning during application in hot weather or in partially full containers, pour a thin layer of water on surface after mixing.

While **AQUATHON CERAMIC** has excellent vertical hold, it is virtually impossible to apply more than ½ gallon per 100 sq. ft. per coat unless utilizing airless or conventional spray equipment. Therefore, additional coats must be figured in to achieve the required dry film thickness when utilizing roller or brush application.

LIMITATIONS & PRECAUTIONS

AQUATHON CERAMIC should generally not be used over cold storage tanks or buildings where a vapor barrier coating is required. **AQUATHON CERAMIC** shall not be used for interior applications in place of a thermal barrier.

AQUATHON CERAMIC will freeze and become unusable at temperatures below 32°F (0°C). Do not ship or store unless protection from freezing is available.

AQUATHON CERAMIC requires complete evaporation of water to cure. Cool temperatures and high humidity retard cure. Do not apply if weather conditions will not permit complete cure before rain, dew or freezing temperatures occur. Do not apply in the late afternoon if heavy moisture condensation can appear during the night.

Do not apply **AQUATHON CERAMIC** at temperatures below 45°F (7°C), or when there is a possibility of temperatures falling below 32°F (0°C) within a 4 hour period after application.

For additional information, refer to OSHA guidelines and **AQUATHON CERAMIC** MSDS.