



HVAC Energy Optimizer and Anti-Corrosion Coating

SUBJECT: Evaluation of Coated Test Panels after Accelerated Exposure

We met with 22 HVAC manufacturers at a recent AHR show. In order to recommend our coating they asked for a third party salt test.

The laboratory testing consisted of exposing the test panels to a cyclic accelerated weathering environment for 1008 hours (6 weeks) as described in ASTM D5894-21, "Standard Practice for Cyclic Salt Fog/UV Exposure of Painted Metal". The results achieved the highest Blistering and Rusting grades available.

We know of no other coating worldwide that has achieved these results. SIMIX will add years of life to any HVAC system, heat pump, refrigeration unit and pool heater equipment while at the same time significantly reducing you kWh consumption from 15%–25%.



Blistering, Rusting, Coating Delamination, and Coating Discoloration Evaluations

After the 1008 hours of exposure, the test panels were digitally photographed and visually evaluated for the degree of blistering per ASTM D714-25, "Standard Test Method for Evaluating Degree of Blistering Paints." Blister size was rated on a 0–10 scale with the top grade of 10 indicating no blistering and progressively lower grades indicating progressively larger blisters. The frequency (amount) of blistering was rated as either none (no rating), few (F), medium (M), medium dense (MD) or dense (D) as compared to pictorial standards.

The degree of rusting of each exposed test panel was also evaluated per ASTM D610-08(19), "Standard Practice for Evaluating Degree of Rusting on Painted Steel Surfaces." The degree of rusting was rated using 0–10 scale based on the percentage of visible surface rust where a low grade of 0 indicated greater than 50% of the surface was rusted and a top grade of 10 indicated less than 0.01% of the surface was rusted (see "Rust Grading Scale" below); the samples were also compared to pictorial standards. The distribution of rusting was classified as pinpoint, spot, or general rusting, designated as either P, S, or G respectively.

Results of Visual Evaluation of Test Panels after 1008 Hours Cyclic Weathering Exposure

KTA ID #	Panel Type	ASTM D714 Blistering Rating	ASTM D610 Rusting Rating	Coating Delamination Observations	Coating Discoloration Observations
66077381-1	Aluminum	10	10	Delamination along top edge where panel rested against panel rack in QUV cabinet, and along side edges.	Coating became opaque and beige in color on upper half of panel, fading back to clear in lower half.
66077381-2	Aluminum	10	10	Delamination along top edge where panel rested against panel rack in QUV cabinet, and along side edges.	Coating became opaque and beige in color on upper half of panel, fading back to clear in lower half.
66077381-3	Aluminum	10	10	Delamination along top edge where panel rested against panel rack in QUV cabinet, and along side edges.	Coating became opaque and beige in color on upper half of panel, fading back to clear in lower half, with several darker spots.
66077381-4	Copper	10	10	Delaminated spots near top and along side edges.	Coating became opaque and beige, slightly darker in color on upper half of panel. Green oxidation evident at top edge. Delaminated spots were dark in color.
66077381-5	Copper	10	10	Delaminated spots near top and along side edges.	Coating became opaque and beige, slightly darker in color on upper half of panel. Green oxidation evident at top edge and strip running down right side. Delaminated spots were dark in color.
66077381-6	Copper	10	10	Delaminated spots near top and along side edges.	Coating became opaque and beige, slightly darker in color on upper half of panel. Green oxidation evident at top edge and strip running down left side. Delaminated spots were dark in color.

Rust Grading Scale – Percentage of surface rusted (from ASTM D610-08(19))

Grade 10 - less than or up to 0.01%
 Grade 9 > 0.01% and up to 0.03%
 Grade 8 > 0.03% and up to 0.1%
 Grade 7 > 0.1% and up to 0.3%
 Grade 6 > 0.3% and up to 1.0%
 Grade 5 > 1.0% and up to 3.0%
 Grade 4 > 3.0% and up to 10.0%
 Grade 3 > 10.0% and up to 16.0%
 Grade 2 > 16.0% and up to 33.0%
 Grade 1 > 33.0% and up to 50%
 Grade 0 > 50%



Testing by KTA-Tator Inc.
 Project No. 66077381

PRESERVES • PROTECTS

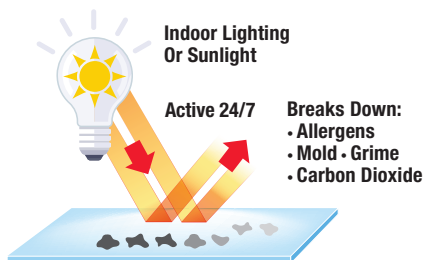
A/C - HEAT PUMP - REFRIGERATION - ROOF - ALL EXTERIOR SURFACES

The Key to Better Indoor **AIR** QUALITY



RESULTS

- Breaks down greenhouse gases, airborne allergens, germs, viruses, mold, foul odors and generates clean fresh air
- Eliminates Dirty Sock Syndrome
- Prevents Legionella
- Prevents salt damage
- Cuts down on sick days
- Reduces PM time
- Significantly improves air flow
- Prevents airborne kitchen grease build-up
- Can be easily applied in the field
- Units stay cleaner longer
- Adds years to the life of unit
- Payback 3–9 months



What is SIMIX?

SIMIX Ceramic Clearcoat is a permanent, hygroscopic, non film-forming, super-hard liquid glass that will never yellow, chip, peel or crack. Just like in glass, the primary ingredient in SIMIX is silica (sand). That is mixed with potassium and lithium, which are very conductive. SIMIX conducts heat. It is not an insulator, like all other coil coating products on the market today.

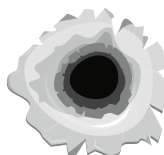
What is hygroscopic?

A continual process to attract and adsorb water molecules from the air to the surface. This process of evaporative cooling draws heat from the coils and also enhances the sustainable photocatalytic oxidation technology (SPOT-ON™) which breaks down greenhouse gases, airborne allergens, germs, viruses, mold, foul odors and generates clean fresh air.

Why do you need SIMIX?

Air conditioners start losing efficiency the moment you install them. Tiny gaps are created by the expansion and contraction of the tubes and fins. Airborne corrosive particles and salt ions enter those microscopic gaps, corroding the unit and making it less efficient. SIMIX fills in those microscopic gaps, leaving behind a smoother surface that improves heat transfer.

What does SIMIX do?



SIMIX fills in microscopic gaps between fins and tubes created by salt, air pollution, and expansion and contraction.



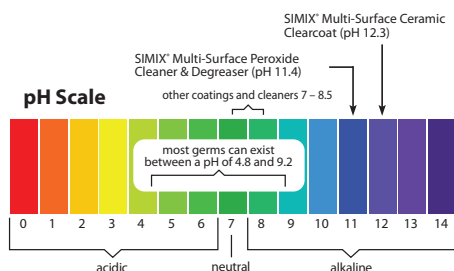
SIMIX is a conductor. It pulls heat away from the coils.



SIMIX SPOT-ON technology breaks surface tension allowing the fans to pull more air through the condenser and evaporator coils, destroying odors and generating clean, fresh air, indoors and outdoors.

What is SPOT-ON?

Sustainable Photocatalytic Oxidation Technology (SPOT) is what we call the titanium dioxide inside SIMIX Clearcoat and SIMIX Cleaner. Titanium dioxide is a safe, naturally occurring compound that reflects natural and artificial light. As that light is reflected, it converts water in the air into a radical form of hydrogen peroxide, often referred to as the “detergent” of the atmosphere which breaks down greenhouse gases, airborne allergens, germs, viruses, mold, foul odors and generates clean fresh air.



Mold, bacteria and pollen – and the odors they create – live and grow on surfaces that have a pH level between 4.8 and 9.2. While most cleaning and coating products are pH neutral, SIMIX Multi-Surface Cleaner/Degreaser/Sanitizer (pH 12.5) and SIMIX Multi-Surface Ceramic Clearcoat (pH 12.3) create a permanent, safe, high pH that prevents the growth of mold, bacteria and viruses.



REAL SUSTAINABILITY • REAL SAVINGS™

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SMX199

