

Frequently Asked Questions

By Building Owners, Facility Managers, HVAC Engineers

This document addresses the many questions we hear most often from building owners, HVAC engineers and facility managers:

Q. Why should I spend money on saving energy?

A. Energy is typically the second or third highest building operational expense in your budget. HVAC cooling costs typically represent 40-60% of your monthly utility bill. Costs are expected to increase 3-7% annually for the foreseeable future

Q. What is the “Dual Coating Process”?

A. It is a patent-pending HVAC “dual coating process” for condenser coils and exterior metal cabinetry. The coil coating is a liquid, glass-like coating and the exterior metal cabinet coating is an Energy Star-rated ceramic coating, used successfully for over thirty (30) years.

Q. How can a coil coating improve my efficiency?

A. Many traditional Epoxy, Polyurethane and Fluoropolymer coatings do not improve efficiency and because they are quite thick (4-6mils DFT), may impede heat exchange on the condenser coil, actually lowering efficiency. Our coil coating is one of a kind. It is only .2 mils dry film thickness (DFT) - “thinner than water” with the viscosity of isopropyl alcohol. That is 20-40x thinner than traditional coil coatings. It is this “innate thinness” that separates it from every other coating. This thinness allows it to wick into cracks and crevices on the coil and actually fill the gap between the fin shoulder and copper tubing that loosens with age and wear and is responsible for most efficiency loss.

In addition, our coating forms a “*covalent bond*” that becomes a permanent part of the coil and tube. It is no longer just a coating, but rather a permanent part of that substrate.

And when it hardens, it fills in the air-gap between the aluminum fin shoulder and copper tube forming a strong, ceramic-like bridge between the tube and fin and because it is a “*conductor*” of heat, it literally re-tightens the tube to fin connection. It can return the unit back close to its original factory efficiency, as measured by kilowatts per ton (KWT).

Q. How can an exterior ceramic coating reduce my unit's run-time?

A. As you know, there are only two things that impact your unit run-time:

- Warm air returning to the unit from your building (internal load).

We can't help with that!

- High interior temperatures inside your HVAC metal cabinet.

We can positively impact that!

Our Energy Star-rated exterior ceramic cabinet coating will effectively block 95% of the sun's solar heat, thus dramatically reducing the exterior surface temperature of your unit to within 5-10° F of outside ambient temperature. This will definitely reduce your unit's internal temperature and reduce run time significantly, as well as extend useful life.

- Preventing corrosion, lower cooling utility bills; extending unit life, less repairs and lower maintenance costs are your results.

"Run Less with Greater Efficiency"

Q. Has ASTM testing been done?

A. Third party testing labs have conducted standard ASTM B-117 Salt Chamber Testing and have substantiated that OPTY HVAC protective treatments have performed in excess of 4000 hours; ASTM G-21 Mold Inoculation Tests also substantiate zero mold growth occurred on treated samples, while control samples experienced 60-100% mold growth; the ASTM D-4060 Tabor Abrasion Test showed a 12.5 mg film loss using a CS-10 wheel at 1000 cycles.

Q. Will this application affect my factory warranty?

A. Absolutely not! The EPS System has worked with manufacturers, national and regional account reps from almost every manufacturer for over 10 years. We have coated over 35,000 coils since inception, and we have never had a warranty issue or problem.

Q. Can the EPS System be installed to my existing field units?

A. Yes! EPS Coil System treatments can definitely provide benefits to your existing units. However, the condition of the unit, pre-installation, will determine the final degree of effectiveness. We routinely deliver 15% or better reductions in kWh, prevent corrosion completely and reduce unit run time.

A. Energy studies conducted by AT&T, Florida Power & Light, Southern California Edison, TXU, as well as the EPA, indicate treated units significantly reduce the efficiency degradation curve on HVAC coils. It is further noted, units experiencing periodic cleaning maintenance will operate more efficiently than units not cleaned. However, it should also be noted that such cleaning gains are temporary and coils begin dirt buildup immediately after such cleaning,

Q. Why doesn't my manufacturer or my HVAC contractor offer this system to me?

A. The answer is twofold:

First, they do not have this system, as it is a new patent-pending process provided only through EPS. The coating products are patented and have been used very successfully for many years, but the combination of the two, used together, expressly for HVAC applications, is a new "process".

Second, they really have not had a chance to see actual performance results. It's totally reasonable to be skeptical without witnessing the results first-hand. Also manufacturers are more interested in selling you new replacement units than in extending useful life on your existing equipment!

We encourage industry experts to be open-minded regarding our technology, and at a minimum, give EPS the opportunity to prove these results are achievable. Our process will enable your equipment to enjoy a longer useful life, well beyond what a factory offers, as well as fewer repairs and reduced routine maintenance costs, all while reducing your cooling costs by 15% or better. We feel there is definitely a strong financial incentive for you to consider this unique process.

Q. How long will it take to get my return on investment?

A. Your Return on Investment (ROI) will depend on what you are currently paying for a kilowatt hour, peak demand charges, run-time, condition and age of your equipment and relative climate temperatures. ROI's of less than one (1) year are routine.

Q. How often will my coils need to be cleaned after the application?

A. Because of the glass-like surface that is created by our coil coating and the fact that it is an “inorganic compound”, it cannot support mold, mildew, or bacteria. Dirt and other debris will not adhere to the surface and definitely will not impact into the coil, as with an uncoated coil. All such debris are repelled and rejected by the glass-like coated coil surface and will require only a mild washing with an ordinary garden hose (no high pressure needed) to completely remove any surface dirt. An annual cleaning or two of this nature should be all that is needed to maintain a clean coil.

Q. How long will this process last and when will I have to do it again?

A. Both coatings are designed for very long life and harsh environments. Both coatings are known for performing for many years in the harshest environments and our goal is to provide you with a “one and done” solution. Typically we expect both coatings to last the entire useful life of a unit. Both coatings come with a 10-year warranty but should last much longer.

Here’s why: EPS Coil Coating is an “inorganic” coating that chemically bonds, at the atomic level, to the bare, non-ferrous aluminum coils and copper tubing. When properly applied, this “covalent bond” actually becomes a part of the substrate and is very difficult to break.

In contrast, phenolic organic paints adhere by what we call “London Force” adhesion, which means they cling to whatever surface anchor pattern is available. They can chip and peel and dynamic energy forces, such as expansion and contraction and vibration can cause organic coatings to prematurely lose their adhesion, whereas the EPS Coil Coating System creates a covalent bond is not impacted by these forces. A typical rule-of-thumb is, whatever life the unit experiences uncoated, depending on existing environmental exposures, EPS Coil treatment should double the useful life of that unit.

Q. Are your savings guaranteed?

A. Due to many variables: weather, run-times, local power rates, maintenance levels, etc., we cannot guarantee your savings level or percentage. However, we do offer a “NO RISK” test on your unit to provide you with a “proof of concept”.

For our test, we do guarantee a minimum 15% or better reduction in kWh consumption and a 15% or better improvement in overall operating efficiency as measured by (kW). We address your cooling costs in the only three ways they can be improved: Improved operating efficiency, reduced load and extended useful life

“Run Less with Greater Efficiency

Remember, doing nothing does not reduce your cost. Cooling and heating costs are projected to increase by 40% or more over the next five years. Maintenance costs will not be going down either. So your cost of doing nothing simply guarantees higher energy costs, higher repair costs and higher capital expense replacement costs.

With HVAC cooling costs being one of your largest utility costs, we think it just makes good sense to focus available energy budgets where it will deliver the best results.

Deferring Capital Replacement Costs

Also, do not overlook the Net Present Value (NPV) of dramatically deferring cap replacement costs. ASHRAE has determined average, new higher efficiency HVAC commercial unit replacement cost at \$2000/T. Consider we can add several years to your unit’s useful life. Consider the NPV savings on deferring replacement of a \$50,000 unit for the next 5-7 years.

Just analyzing the Net Present Value (NPV), may actually save you as much or more than your energy savings, and it goes directly to your bottom line in that year.

We look forward to working with you to reduce energy costs!