

STOPS FORMICARY CORROSION IN ITS TRACKS



The Nortek Global HVAC line of Anteater MC[®] Micro-Channel evaporator coils eliminates leaks caused by formicary corrosion. These products are ideally suited for climates and environments where formicary corrosion is an ongoing problem.

Anteater MC coils feature an all-aluminum Micro-Channel construction. This coil design provides water management and thermal performance results equal to the standard copper tube-in-fin designs, except with superior resistance to formicary corrosion and galvanic corrosion. Benefits include:

- Same size as traditional tube-in-fin coils
- Eliminates both formicary and galvanic corrosion
- Reduced weight – approximately half the weight of a traditional coil
- Easier handling and servicing of units



WHAT IS FORMICARY CORROSION?

As the major cause of indoor coil leaks, formicary corrosion occurs in copper-based alloys and is comprised of small, wandering pits that are not observable to the unaided eye. The tunneling effect that occurs to the copper material is similar to tunnels formed in an ant's nest. "Formicary" literally means "ant's nest."

The standard industry copper alloy used in indoor coils can form leaks within the first three years after being installed in highly susceptible regions of the country with high humidification levels. Standard copper coil life expectancy varies depending on organic acid formed, and how quickly it can make it through the copper grain to form a hole.

CAUSES OF FORMICARY CORROSION.

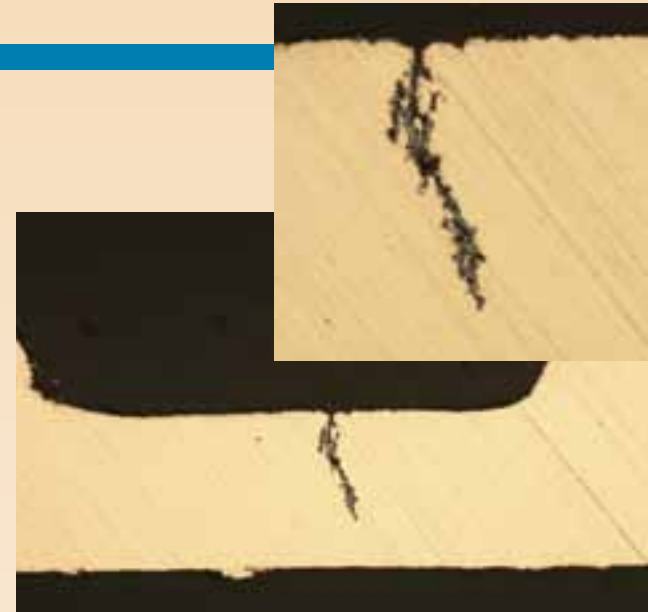
There are four elements that lead to formicary corrosion. If one factor is removed, then the corrosion can be prevented. These elements are copper, moisture, oxygen and acid. The combination of these elements leads to formicary corrosion.

Copper – An indoor coil is an integral part of a central air conditioner and heat pump system. Typically, indoor coils consist of copper tubing used for heat transfer.

Moisture – When condensation is present on the coil, it becomes susceptible to formicary corrosion. Formicary corrosion is mostly found in southern markets because moisture is typically present on the coil year-round.

Acid – Environmental contaminants such as household particles collect on the copper tubing and mix with the moisture. This forms an organic acid that begins to eat away at the copper. The acid creates a tunneling effect similar to that of ant tunnels, penetrating the copper completely and creating the leak.

Tighter home construction, building materials, household cleaners, carpet chemicals, acidic foods and adhesives are just a few examples of common household items that contribute to formicary corrosion. It is nearly impossible to control these airborne particles just as it is to prevent moisture from forming in a high-humidity environment.



C12200 Alloy sample 100X & 200X magnified, unetched formicary field failure



Anteater MC Micro-Channel coils are constructed of aluminum extruded tubes that are brazed to enhanced aluminum fins.

HOW ANTEATER MC® MICRO-CHANNEL WORKS.

Because Anteater MC Micro-Channel coils are all aluminum, they eliminate the copper element in the formicary corrosion combination. Without copper, the corrosion process cannot happen.



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