ORGANIC OR BIO-GROWTH IN AIR HANDLER DRAIN PANS

ATTENTION: Warnings, Cautions and Notices appear at appropriate sections throughout this literature. Read these carefully:

⚠WARNING	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
⚠CAUTION	Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It could also be used to alert against unsafe practices.
NOTICE:	Indicates a situation that could result in equipment or property-damage only accidents.

Background

The growth of 'bio-films' or organic matter (usually referred to as white slime) in air handler drain pans and drain lines has been a known HVAC industry issue. The occurrence of the organic matter in the field is typically reported during warm season when air handler units are usually running in cooling mode. This growth typically leads to water overflow in the drain pan and unit shutting off due to triggering of overflow switch.

Repeated occurrences over the last two decades have been reported in Air handler products. This phenomenon has been reported across southern united states – FL, LA, NC, SC, GA, OK and TX with highest reports from FL and LA.

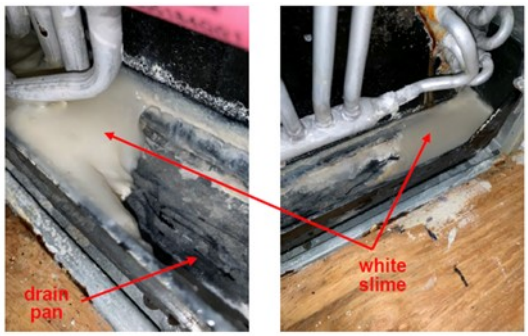

Figure 1. Build-up of white slime in air handler drain pans

Is occurrence caused due to product type or install?

Occurrence of white slime in these products has been found to be influenced by 'micro-climate' which is a combination of airborne particulates, humidity, cooling hours and temperature. Slime growth has been reported in one unit while not in the other for the same type of products installed in the same home. System/coil configuration and drain pan orientation does not seem to be an important contributing factor. A variety of air handler units have demonstrated the capability to produce white slime with horizontal or vertical orientation.

What is it?

Slime samples were analyzed by external micro-biology laboratories using microbial culture methods. Laboratory analyses have shown the white slime to be significantly bacteria making up more than 90% of the total slime content. Smaller amount of fungi was also detected and no algae was present.

How can the problem be fixed?

CAUTION: *Wear proper PPE and use MSDS or product instructions when deploying recommended actions.*

Step 1 *Cleaning out drain pan and drain lines* – Drain pans, drain lines and any other affected components should be thoroughly cleaned with a 50-50 mix of water-bleach and wet/dry vacuum attached to the outside of the condensate drain to suck everything out of the system.

Step 2 *Coil cleaning and Filter* – Next step of remediation is to clean the coil and replace the old filter. Biological growth thrives on 'unfiltered' airborne particulates due to an inefficient filter. Replacing the filter helps ensure no bio growth after a thorough cleaning.

Step 3 *Drain pan treatments* – Actabs Jr and Pro-treat 200 have both been found to be effective against white slime and were found to be compatible with polycarbonate and SMC drain pans. It is highly recommended to follow supplier recommendations for installation and periodic maintenance for effective results.

Effective mitigation and control of slime growth can be achieved with:

1. Good practices such as periodic filter maintenance (customer)
2. Thorough clean-out of the drain pans and drain lines with water and bleach and use of drain pan treatments per manufacturer recommendations